

Communication for the Commons

Revisiting Participation and Environment

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Editors

IECA

Communication for the Commons

Revisiting Participation and Environment

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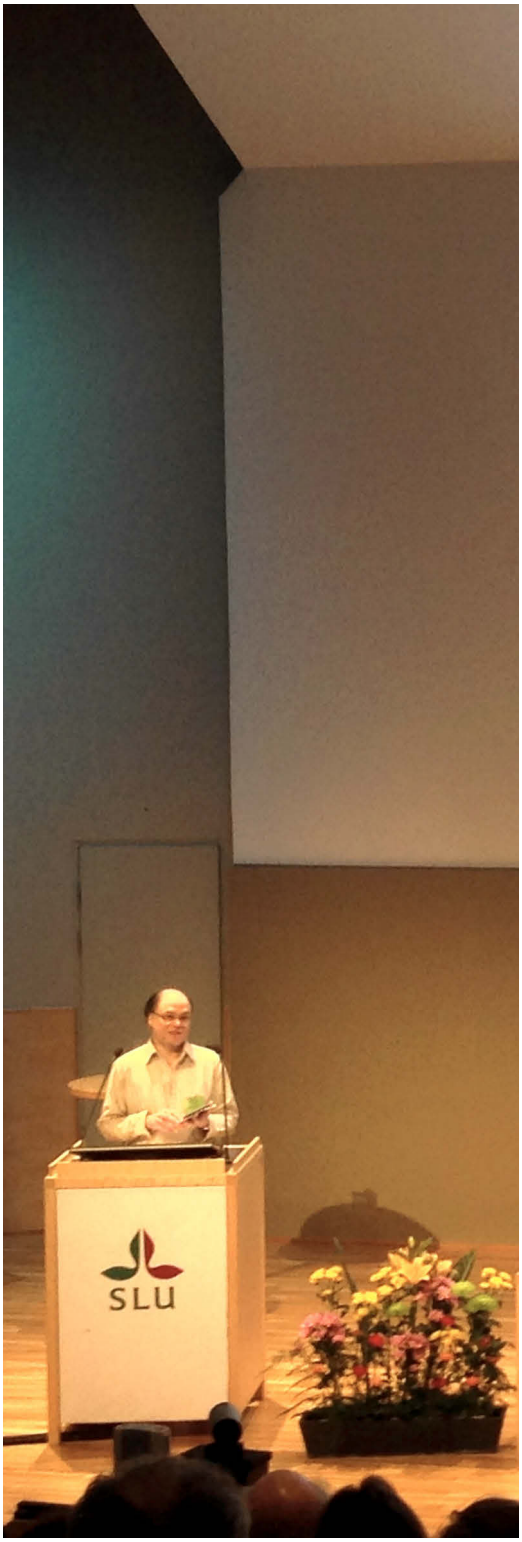
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Table of Contents

Acknowledgements ii

Table of Contents iii

PAPERS I

Post Rio Communication Styles for Deliberation - between individualization and collective action 2
Pernille Almlund, Jesper Holm

A Voice in the Wilderness: Cultural Barriers to Land Use Planning as Deliberative Democracy 10
Matthew Hoffman

Participation, learning and sustainable fisheries: the case of co-management at lake Vättern, Sweden 22
Cecilia Lundholm, Christian Stöhr, Beatrice Crona

Joint Forest Management in India: A Case Study of East Sikkim, India 33
Paulami Banerjee

Water Policy by Public Design on the Texas Coast 45
Chara J. Ragland

Process Literacy Across Shifting Rhetorical Frameworks in Internal Coalition Maintenance 50
Deborah Cox Callister

The Value of Environment in the Controversy Over Antibacterial Silver: A Swedish Case Study 65
Max Boholm, Rickard Arvidsson

Biosphere Reserves, a Matter of Communication Processes, Developing Models for Sustainability: Environmental Communication Processes with Different Expressions that Either Formulate Opportunities or Form Possibilities 77
Kristina Börebäck

Developing an Ecotourism Foundation in Indonesian National Parks 86
Adriana Salas

A Comparative Study Evaluating Conservation Education in Indonesian Provinces: Hinduism in Bali versus Islam in East Kalimantan 100
Bianca Ramirez

Supporting Water Governance and Climate Change Adaptation Through Systemic Praxis 107
Chris Blackmore, Ray Ison, Kevin Collins

The North American Model of Wildlife Conservation: Can It Move Beyond Just Hunting? 118
Andrea M. Feldpausch-Parker, Israel D. Parker

ImagineNATIVE 2012: Film Festival Eco-imaginations and Practices 128
Salma Monani, Miranda Brady

A Contradictory Approach to the Right of Public Access: Exploring Relational Factors in the Case of Agritourism 140
Elvira Caselunghe, Hanna Ljunggren Bergeå

Struggles for Water in Colombia: Communication and the Participation of Citizens 152
Valeria Llano-Arias

Flows, Locomotion, and the Wild West: Mobile Participation through North Dakota's Oil Boom 164
Brian Cozen

Hydrofracking in the News: How Media Coverage of Hydraulic Fracturing Shapes Public Discourse About Emerging Energy Technologies in the U.S. 176
Katelind M. Batill, Andrea Feldpausch-Parker

Re-imaging the Commons as "the Green Economy" 191
Joanna Boehnert

Can Stakeholders Hold the Commons? English as the Global Language of Capitalism and that of Sustainability: Contradictions and Potentials 204
M. Cristina Caimotto

Revisiting Participation: Who Matters 217
Chara J. Ragland, Adrienne Strubb

Participation in Environmental Communication: Culture, Nature, and Literature 224
Maris Sõrmus

Your Place, My Place, or Some Place More Exciting: Pro-Creative Possibilities for Environmental Communication Scholarship 234
James G. Cantrill

Mountains and Handrails: Risk, Meaning, and Responsibility in Three National Parks 246
Laura N. Rickard

Apocalyptic Framing and Conservative Action: Discourses of Climate Change Communicated in Swedish Mass Media, 2006-2009 260
Jonas Anshelm, Martin Hultman

Climate News Across Media Platforms: A Comparative Analysis of Climate Change Communication on Different News Platforms 272
Mikkel Fugl Eskjær

Overcoming the Issue Attention Cycle: Four Possible Ingredients of a Successful Climate Movement 288
Neil Stenhouse, Susanna Priest

Experiential Programs for Educators: A Case Study on Coastal Policy Communication in Cebu, Philippines 300
David W. Knight, Arren M. Allegretti

Learning in the Beat: What Influences Environmental Journalists' Perception of Knowledge? 310
Bruno Takahashi, Edson Tandoc, Jr.

Putting the U in Carbon Capture and Storage: Performances of Rupture within the CCS Scientific Community 320
Danielle Endres, Brian Cozen, Megan O'Byrne, Andrea Feldpausch-Parker

Articulating Resistance to Nuclear Power: Local Tactics and Strategic Connections in a Nuclear Construction Financing Controversy
William J. Kinsella, Ashley R. Kelly. Meagan Kittle Autry 332

Proof Of Power: An Exploration Of Clashing Evidence-Based Claims In The A.N.W.R. Oil Drilling Debate 346
Jessica R. Moyer

Meta-learning in the U.K. Environmental Movement: Culture Change Theories and Their Pedagogical Implications 359
Callum McGregor

Social Media and Environmental Activism in China: Enacting Social Change on Wild Public Screens 373
Kevin Michael DeLuca, Elizabeth Brunner

Negotiating the End of the World in Climate Change Rhetoric: Climate Skepticism, Science, and Arguments 384
Emma Frances Bloomfield, Randall A. Lake

Masculinity and Making Do: Outdoor Recreation's Risky Rhetoric 397
Samantha Senda-Cook

"Are you listening?!": Indecorous Voice as Rhetorical Strategy in Environmental Public Participation 407
Kathleen Hunt, Nicholas S. Paliewicz

"The Closer the Better": Possibilities and Limitations with Frontline Management. Lessons from the Majella National Park, Italy 415
Serena Cinque, Annelie Sjölander-Lindqvist

Promoting Sustainable Transportation across Campus Communities using the Transtheoretical Model of Change 427
Norbert Mundorf, Colleen A. Redding, Tat Fu, Andrea Paiva, Leslie Brick, James O. Prochaska

The Visual Rhetoric of Climate Change Documentaries: Aerial Shots and Interviews 439
Helen Hughes

The Ghost of Dr. Mesmer or the Illusionary World of Fantastic Claims 448
Dominique M. Richard

Distrust as a Tool in an Environmental Conflict 462
Marie-Ève Maillé, Johanne Saint-Charles

"Blue is the New Green": Neoliberal Logic and the Co-optation of Environmental Justice Discourses in the Pennsylvania Fracking Debate 475
Katherine Cruger, Michael Finewood

Citizen-Sourcing and Reframing Environmental Discourse: An Analysis of Frances Moore Lappé's *EcoMind* 487
Emilie O. Falc

Eco-Jokes and Their Relation to the UnCO_2nscious: Larry David's "Curb Global Warming" Campaign and Other Environmental Comedies 495
Xinghua Li

Policy Issues Dominate U.S. Environmental News: A Content Analysis of Seven U.S. Newspapers' Coverage of Environmental Issues from 1970-2010 507
Susan Grantham, Edward T. Vieira, Jr.

Assessing the Cognitive Autonomy of Audiences Towards Environmental Media Messages 518
Pierre Fastrez, Coralie Meurice, Thierry De Smedt, Julie Matagne

POSTERS 540

Press Coverage and Framing of Climate Change Issues in Nigeria: A Boost or Constraint for Participation Opportunities? 541
Herbert E. Batta, Ashong C. Ashong, Abdullahi S. Bashir

Participatory Art Exhibitions: Public Pedagogy and Global Climate Change 545
Andrew Bieler

The Green Economy: Discourse and Problem Map 550
Joanna Boehnert

Nature Incorporated: the Commons in a Spreadsheet 552
Mark Brown

Paradise and poverty: How Cultural Identity Supports Environmental Journalism in Jamaica and Nepal 558
Elizabeth Burch

Communicating New Perspectives of the Commons Through Art 571
Darlene Farris-LaBar

Blowin' in the Wind: How Collaborative Governance Communication Can Reduce Wind Power Siting Disputes in the United States 576
Susan Grantham

Credibility at Stake? "Clean, green" New Zealand in the News 581
Florian M. Kaefer

The Carrot or the Stick Approach? Effective Delivery of Behavioural Changes Towards Energy Conservation and the Use of Renewable Energy in Local Communities 586
Josephine I. Mmojieje

Hunting Elk on YouTube: An Ecocritical Perspective on the Nature-Human Relationship in User-Generated Media 594
Cecilia Mörner, Ulrika Olausson

Media's Role in Informing Public Opinion on Environmental Health Risk: Motivating Health Informed Policy? 598
Linda J. Pfeiffer, Eun Jeong Koh

Crossing Borders: Immigration and Agriculture in the Press 605
Jean P. Retzinger

Communicating Adaptation to Climate Change in Thailand: Communication Concepts for Practical Adaptation 617
Sukanya Sereeonchai

Mediated participation: The Case of Belo Monte Supporters and the Movimento Gota D'Água Dialogue on the Internet 624
Vivian Paes Barretto Smith

An Urban Environmental Handbook 628
Stinne Storm Folving

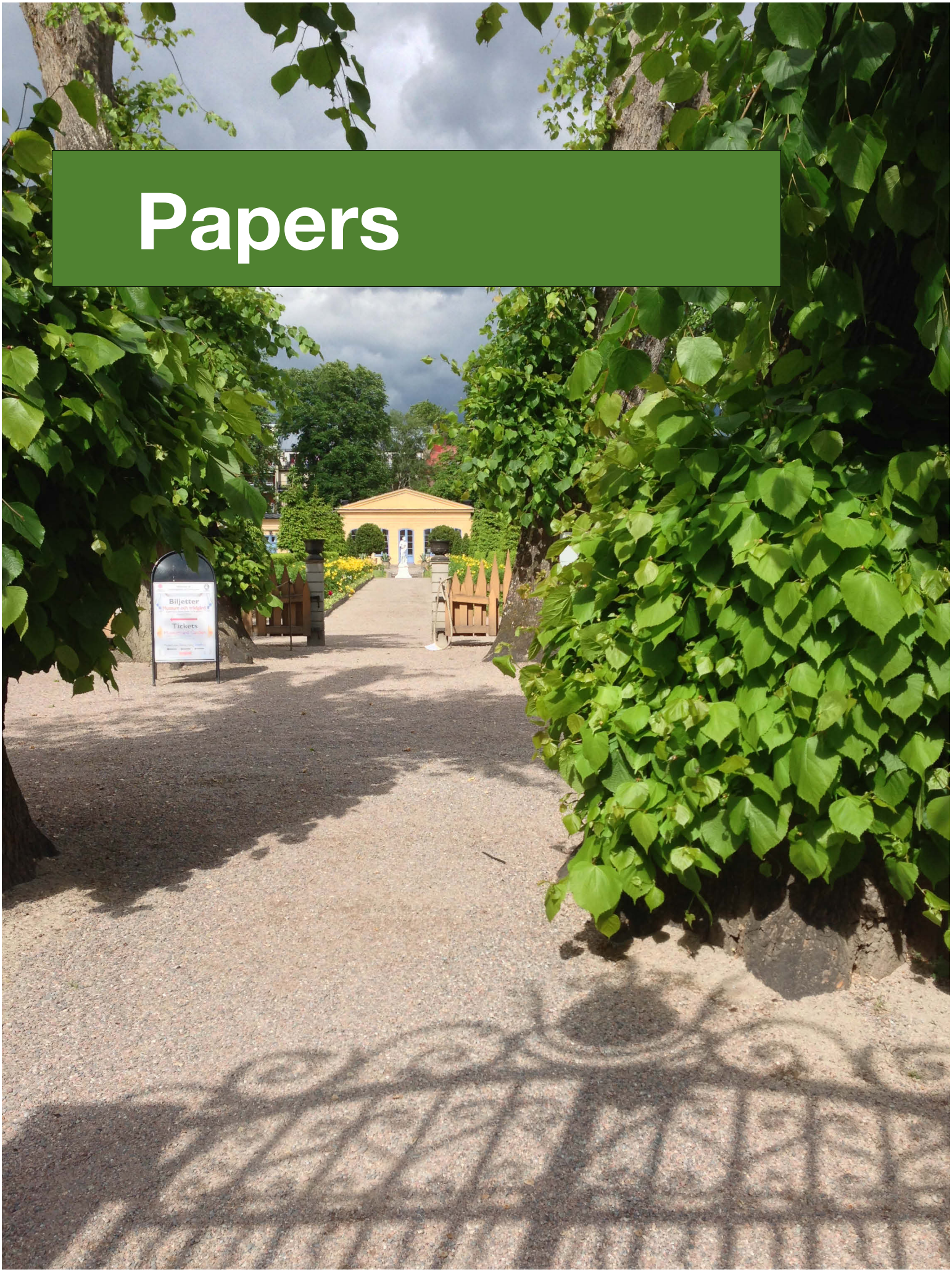
Environmental Observatories and Citizens Participation: Virtual Public Arenas? 632
María Ángela Torres Kremers

Politics, Logistics and Natural Resources: Cornerstones of the Sustainability Concept in Local Level Communication 638
Anne-Marie Tuomala, Heimo Tuomala

VOICES 642

PROGRAM 645

Papers



Post Rio Communication Styles for Deliberation - between individualization and collective action

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The communicative turn in planning, multi-layered governance and governmentality are analytical concepts from various schools of thought to comprehend the emergence of new types of public-private politics when it comes to complex, wicked issues such as sustainability or the 3rd wave of public health: health promotion. The paper explores a research approach to compare two different policy communication tracks in order to conceive various impacts on deliberation. The tracks are constructed along the narratives *individual-collective & consensus-conflictual* in the discursive framing of political communication. We build on an ANT inspired methodology and look into two simultaneously evolving political agendas during the last two decades - sustainability and health promotion - that have framed communication efforts, campaigns and politics in general. How is public participation and deliberation understood in the two policy tracks along historical stages? When is governmentality politics by deliberation for the individual actor, subsequently governing for collective action a winner or a loser?

Keywords: Consensus-conflictual, individual-collective communication for deliberation

Introduction

The modern world has witnessed two major complex policy areas governed by the United Nations (UN) take a leap into experimentation in new policy styles and new forms of governance. These areas matured during a regime shift in comprehension of the problem-issues at stake, encompassing multi-layered and systemic complexity in environment & development issues, as framed in the concept of *sustainable development*, and policies for handling modern public health problems, as framed in the so-called 3rd wave of *health promotion.*

The regimes may be regarded as efforts at enhancing a positive holistic approach to *wellbeing* and *sustainability* in eco-societal-balances, perceived to require the addressing of systemic complexity for a comprehensive transition. Both regimes have responded to this challenge in deliberative politics of especially communication on health promotion and sustainable development calling upon the commons on a fair, global, and inter-generational scale.

The health track

The World Health Organization under United Nations (WHO) initiated a process building up to the Ottawa Charter for Health Promotion in 1986 and onwards, carried out by a new public health wave incorporating social science informed understanding of health embedded in cultural and social systems (Kickbusch,

2007). Up till then, public health politics were building upon a medical focus on infectious diseases since World War 2, followed by an emerging psycho-pedagogical wave to handle chronic, life style diseases. In other words: reducing "bads" relating to illnesses.

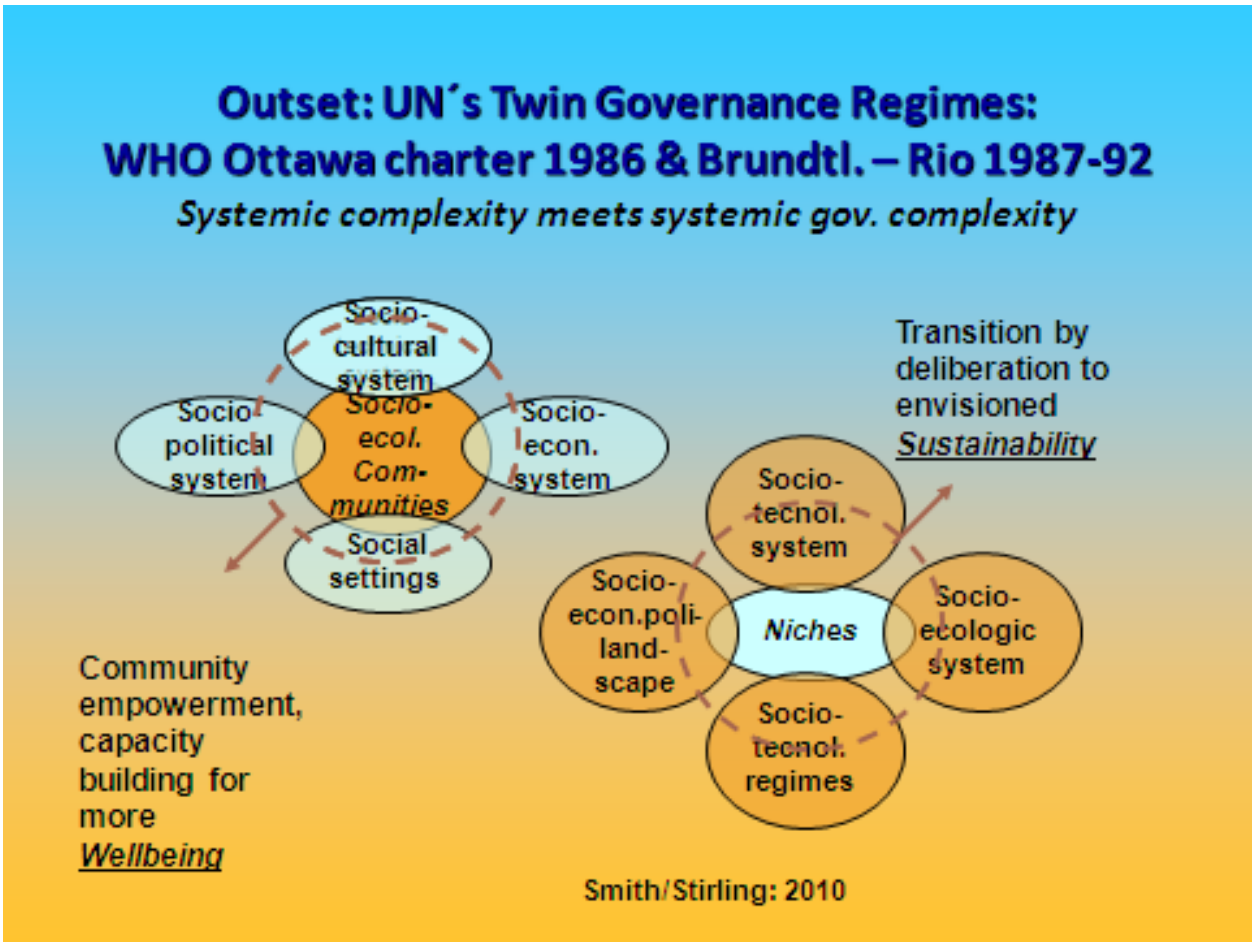


Figure 1: UN's Twin Governance Regimes

WHO defined already in 1946 health positively as "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 1946 – Constitution of the World Health Organisation). This definition on health was however criticised as being idealistic and difficult to use as guideline for policy formulation. Following this conceptualization it would be obvious to define health as *absence of disease* at a personal level. This definition also corresponds with the common understanding of the concept by many people, and more important it is in line with the bio-medical health concept, and hence it has been implemented and practised in the western world since the Age of Enlightenment. However partly under influence of the growing amount of life-style diseases, to which it has been difficult to produce satisfactory medical diagnosis, the critique of this rather narrow definition, with a view of human nature embedded in sciences, has been intensified. Practitioners from different occupations, and researchers representing different scientific vies from humanity and social sciences have offered alternative interpretations of the concept of health. Different perspectives were introduced, but since the Ottawa Charter we find a general agreement that health must be understood as *something more than* absence of disease. This reflects a common critique of the dominating bio-medicine conceptualisation of health as

insufficient to grab both the incidence and the characteristic of health problems in our contemporary society.

The WHO Ottawa from 1986 charter addressed a number of circumstances for ensuring a healthy life including ecological conditions, education, health literacy, social networks, local community, and healthy consumption products. Accordingly a number of actors and factors were called upon and made responsible for ensuring positive health. On top of the Ottawa Charter we have internationally witnessed a number of campaigns and political communications, calling for a multi-layered *deliberation for the common goods:* most often general policy statements and campaigns repeating the holistic approach of the charter, secondly more focussed efforts and communications on networks for health oriented settings; health promoting community empowerment; resource mobilizing individual empowerment on food and physical activity etc.

In Denmark however, 25 years of public health campaigns have witnessed a path dependency when it comes to causal factor beliefs, actors, institutions and policies for health promotion: an overall tendency to focus on healthy life styles and health literacy as something individuals have both obligations, conditions, and purposeful engagement to unfold. That is a policy style of *individualisation,* voluntary approaches and "blaming the victim" culture. Accordingly a narrow focus on health behaviour as smoking, drinking and eating has been isolated from life conditions, various societal formations and conjunctures, and from life chances set by property of different forms of capital (Abel, 2007). In other words a governance form of *governmentality*.

By a predominantly communicative health oriented politics of campaigns, a call for deliberation in health related self governing has weighed down other approaches (Lau, Holm, Andersen, & Dybroe, 2012). As a result the interiorization of public health has flooded schools, families, media, to such a degree that it has become a social stratification measure to handle cultural health capital. Accordingly a growing number of socially deprived, elderly, disabled etc. have refused to be socially accessible to these kinds of public health campaigns.

In Denmark it is only recently that a counter-moving public debate and communication have addressed social inequality in health (Sundhedsstyrelsen, 2011), and a growing orientation into more collective and structural measures are being communicated. In this turn more conflictual issues of burden sharing and welfare systems may be articulated in public discussions and campaigns that may encourage a new deliberation for public health. But up till now even this campaign tend to focus on carrying for the deprived instead of equalizing health conditions in general.

The environmental track

On top of nearly 30 years of single-issue, norms-standards dominated handling of environmental issues, the 1992 Rio process focussed on enabling a sustainable agenda for the 21st century under the auspices of the United Nations, encompassing a complex system of technologies, cultures, needs and policies to be involved in environmental issues all related to current development mechanisms (United Nations, 1992). It encountered a new multi-layered and governance based regulatory regime, a regime that Martin Jänicke has labelled the Rio-model of environmental governance (Jänicke, 2003). This regime of voluntary approaches to environmental policy innovations, lesson-drawing and policy diffusion is very much a knowledge driven effort to stimulate deliberation for Sustainable Development. The regime is characterised by long-term goals of a positive future in societal activities in socio-eco-systemic balances, sector integration, stakeholder participation, and activated self-regulation. Multi-level governance, as a conceptual policy framework, replaces notions of hierarchical and national policy structures with a conception of an

emerging multilevel structure. It implies that processes of policy and building of capacities for acting are seen as dispersed on many levels and distributed among many actors (Jänicke, 2003; Kern, 2010:2).

A window of opportunity for the local authorities to find a political role in the Rio model was to engage in Local Agenda 21. Local Agenda 21 (LA21) was addressed in Chapter 28 of the AGENDA 21 document (United Nation, 1992b) to bridge civic servants, citizens and NGO´s in consensus-oriented deliberation for environmental initiatives. The document claimed a call for greater public participation at the local level: 'As the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development.' (United Nations, 1992b).

In the document, attention was devoted to the serious involvement of local authorities, corporations and citizens in the planning of the common good. A spirit of deliberative commitment dominated where all actors are supposed to have a common interest in co-operating for sustainable development. A dialogue process with citizens, local organisations and private enterprises forms the basis for an LA21 as a shared community image that takes place by '…consultation and consensus-building… where local authorities learn and acquire the information needed to form the best strategies.' (United Nations, 1992b). To foster and encourage a more sustainable development depends thus upon something more than the hitherto normal environmental policy or ecological modernisation. The political deliberation was and is inspired by aspiration for substantial changes.

This pre-assumption in the Rio-model about a deliberative commitment was also behind the Local Agenda21 (LA21) implementation style in the Scandinavian countries, which had and have a relatively firm institutional capacity on a local or regional level when it comes to environmental infrastructure, licensing, enforcing national standards etc. (Lafferty, 1999). Based on national surveys and case studies we have maintained a general critique of the lack of continuity in the LA21 process. There has been far too much window dressing; too low ambitions in community transition; no change of basic environmental, business and welfare policy, and very few attempts at fundamental participatory approaches except from Denmark (Holm, 2004).

Never the less, this multi-layered type of governance have prevailed up till 2013 in Danish environmental policies, but the potentially critical focus on hinders and resistance in sustainable development have withered away, and a number of campaigns related to individual households, habits, and consumption choices have grown. The initial call and plea for deliberation of the commons still remains in some structural governance programs, but have also evolved into a general idea of the consumer to make preferences and morally be alert!

Policy style in public communication on deliberation for positive images

The majority of these deliberative efforts in communication and other means to address such comprehensive changes, have emerged under the conditions of reflexive, political modernisation among governed policy networks (as suggested by Beck (1994) and by Held (1995)). The politically modernised state is according to this approach best equipped to act as a responsive or inter-active state and plays a very indirect or intermediary role in health and ecological transition. Such a state should orient itself to merely formulating general health goals and environmental standards and scenarios to spur self-regulation and deliberation, thereby leaving it to business organisations, NGO´s and citizens' groups to make health & environmental initiatives.

The policy style focus is upon voluntary and communicative measures, stressing the need to incorporate stakeholders and target groups for consultation, co-production of collective images and negotiating

agreements on performance and measures. In Beck´s terms: weakening rule-directed and strengthening rule-altering arrangements (Beck, 1994). Geus (1996) finds that health and environmental problems are to be approached by the state via the creation of situations and conditions that will make it attractive to make environmentally or healthy positive choices. It is regulation through a contextual or procedural shift, rather than the more traditional coercive measures. These perspectives on regulation build upon the theorem of institutional reflexivity related to the health and environmental policy area (Murphy, 2000). This is described as a process in which modern society and its institutions attach specific meaning to the health and environmental problems, and build up capability to reflect on the social causalities and to perform adequate response (Beck, 1994). It is a central part of this understanding that in this reflexive process both the institutions and ways of reflection are changed. Changes occur in the roles and relationships of industries, government, citizens and agents (such as NGO's). This places the focus on how the health or environment is perceived and how it is communicated, on which agents are involved and how different agents reflect, act and communicate environmentally.

Why are we witnessing the withering away of deliberative communication politics on health promotion and sustainability in Denmark?

The consensus style of the post Rio regime in health promotion and environmental politics have prevailed in many areas of health promotion and sustainability politics in Denmark (e.g. public organic food schemes, LA21 politics). Communication of the positive approaches to health & environment did initially have an importance in a participative, regime change: New institutions, landmarks, management and professions emerged. These included product chain communication on SD product stewardship, public participation in LA21 and Green cities.

But previous risk communication is back: reducing ills, risks, and "bads". Positive regimes are marginalized to niches, NGO´s, subcultures, and academia. The public communication on sustainability is suspended by risky climate change discourses and unhealthy living choices. We are thus interested in *why the Post Rio deliberative regimes are withering away?* Alternative operative cases do exist so options are at hand. Is it because the two regimes are too radical systemic approaches to normal business? Or too soft-floffy when not substantialized?

Another curiosity we are interested to investigate in Denmark is: Health Promotion and sustainability policies are communicated in different policy styles (with a few exemptions and flows towards each other). Health promotion is characterized by *governmentality governance* targeting motivation and morale - the individual not the collective is subject to self governing technologies of Your own health. Sustainability politics is characterized by soft *structural governance for the collective* of institutions, trades, and citizens by regulatory intervention and duties, network of companies and R & D institutions to establish sustainable production chains etc*. Why so different policy styles and styles of communication?*

The two main research questions for the analysis are then: Why are we witnessing the withering away of deliberative communication politics on health promotion and sustainability in Denmark (as maybe in other countries)? And why do we see so different policy styles and styles of communication, when we compare the governance of health promotion with sustainability? With the ambition to shed light on these questions, we will use an ANT-framework in the analysis of the two policy areas and trace the networks 'wellbeing' and 'sustainability'. We will trace these networks through the investigation of different cases within the policy areas, where environmental communication, climate communication, environmental politics, climate politics, politics of health promotion and communication of health promotion will be in focus. This is an

adjusted use of an ANT-framework because we find tracing full networks, in this connection of 'wellbeing' and 'sustainability', too overwhelming, so a case orientation will be necessary. The selection of cases will be cases from both the positive and the risk oriented approaches to health promotion and sustainability.

Methodology informed by ANT - Bruno Latour and Michel Callon

Our research methodology for comparing sustainability and health promotion as two different policy communication tracks, find inspiration in the Actor network Theory (ANT) as it is launched by Bruno Latour (1996; 2005; 2008) and Michel Callon (1986; 1999; 2009). ANT gives us an analytical approach with focus at situated praxises and will thereby help us in the description of the two policy communication tracks. The way through an ANT-inspired analysis is method, theory, and practice combined into one.

According to Bruno Latour's interpretation of ANT, we should not talk about society, but about the collective and its relations. Latour points out that society as a virtual and always existing entity is exactly the opposite of what is needed to gather a collective, and he expresses this unabashedly by saying: "…: *either there is society or there is sociology*" (Latour, 2005, p. 163).

According to Latour, we cannot explain or comprehend 'the social' through the traditional understanding that the social or society has social explanations that work as invisible forces, or through the positivist choice of 'facts' as elementary building blocks (Latour, 2008, p. 136). In that sense we will use the Latourian approach to make a second order observation of the governing of these two policy areas, their policy styles and styles of communication.

Latour prefers to completely avoid the concept of 'the social', as it is conceptually too intertwined with classic sociology and social theory. He advocates a view of the social that focuses on relations and the relational, recalling an etymological understanding of 'the social' and thus redefining the concept. Instead of focusing on the social, he focuses on relations. Thus, he focuses on the relational and relations in the tracing of networks, and he talks about relations as translations, associations, movements, etc. (Latour, 1996; 2008)

Latour rejects a priori group divisions, a priori categories and predetermined focuses on certain groups and categories in sociological analyses; instead, he points to a dynamic and continuous group formation and an explicit focus on controversies. Instead of explaining actions through the social or society he points to the necessity of understanding agencies, which are always presented in association, in the process of doing something. In that respect, we will in the analysis avoid *governmentality governance* and *soft structural governance* as the explaining factors of the governance of health promotion and sustainability. Instead we will try to focus on the specific differences and similarities in the policy agencies of these two policy areas. In that way, we use the ANT-framework to look at sustainability and health promotion from another perspective to find explanations, which can shed light at our research questions.

An agency is making a difference and should be seen and felt through the influence of actants on each other – actants are doing something with and towards each other, thus creating unpredictable movements and agencies (Latour, 2008, p. 76). Latour also rejects a single-minded focus on social actors and points to the necessity of focusing just as much on objects and materiality. This is the reason why he has introduced the concept of *actanct* as a challenge of the more traditional used concept *actor*. (Latour, 2008) Thus, Latour emphasizes that it is not just human actants who do something to and with each other and with objects, but that objects have the same abilities – which becomes clear if you observe and follow them in the network.

An actant that doesn't make a difference is thus not an actant, and a network is the trace that is left after an actant in motion. Callon (2009) and Latour (2008) suggest that we follow the movements through controversies, because controversies leave empirical traces. They do this, because they both open and close uncertainties, or in other words establish both consensus and conflict. Controversies should be understand as taken shape in all different levels and could be both local and global, micro and macro etc. and everything at the same time. The level will within an ANT-framework never be the important and explaining factor because the suggestion for tracing networks to understand the social is to keep the social flat and give equal importance to every track and agency within the network.

Following the movements and controversies of the actants thus makes it possible to maintain the level of description and abstain from offering an external attempt at explanation. In relation to trace the network of 'sustainability' and 'wellbeing' in a Danish policy context it is obvious to follow the controversies, since these tracks consist of controversies on several levels.

The challenge of using an ANT-framework in this specific investigation is however that we only have the possibility to trace these networks with empirical focus solely on communication, because we will only have the access to the historical governance of these policy areas through documents, articles, summaries, verbal communicated experiences or memories etc. This is not the suggested methodology from Latour and Callon, but we will argue for that approach in the following way:

1. Many investigation worthy cases, we will only have access to through communication in a similar way as we suggest to trace the networks of 'well-being' and 'sustainability'. Then if we are not allowed to use the framework of ANT to investigate these cases, we can hardly look at ANT as reassembling the social, as Latour suggest in his book from 2005. Then it would only be a frame of reassembling the social in some cases.
2. If we investigate such a case, the way to follow the actants both humans and nonhumans will be through communication and even nonhuman actants will show their ability to communicate.
3. We can see that concepts become actants with the ability to do something to and with other actants within communication. This is precisely the case, if we look at the concepts 'sustainability' and 'wellbeing'. These are exactly concepts which push many different actants in many different directions on very different times and places. Their acting and meaning are unforeseeable, and should be followed carefully and focused if we will be able to understand at least some parts of their existence and their contribution to the society.

One of the most important factors in the ANT approach is that actants be allowed to speak for themselves; we - the researchers – should not establish frameworks, create categories, and provide explanations for their stories and beliefs. However, Latour points out that a good analysis is never an unmediated portrayal of its topic; it will always be a part of an artificial experiment that attempts to copy and illustrate the traces between the actants in the network (Latour, 2008, p. 163). Nonetheless, description is much more important than explanation, as tracing and explanation should appear from the description and not be added from other factors than that which is described (Latour, 2008, p. 167).

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A Voice in the Wilderness: Cultural Barriers to Land Use Planning as Deliberative Democracy

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The provision of landscape-level public goods such as wildlife habitat requires coordination among many landowners and can be inhibited by problems of collective action. The point-of-departure for this study is a survey revealing widespread support for habitat protection in a Vermont town (USA) and indicating a willingness on the part of landowners to commit to this goal in the context of a mutual agreement. Shortly after the survey was completed, the town planning process, which might have seemed an ideal opportunity for discussion of and commitment to shared goals, became the object of an impassioned opposition that succeeded in blocking the new conservation-oriented town plan. In order to understand the failure of this deliberative process, an in-depth case study was conducted over a one-year period, involving participant-observation, attendance at public meetings, and unstructured interviews.

Keywords: democracy; habitat; land use; planning; property rights

Introduction

The woods and fields that compose the typical Vermont landscape provide many public benefits, including scenic views, watershed maintenance, wildlife habitat, cultural significance, and a basis for tourism. About ninety-five percent of Vermonters in a recent poll said that they value the working landscape, making it the highest ranking value in that study (Council on the Future of Vermont, 2009). This finding is consistent with the concern that Vermonters have shown in other polls regarding sprawl (Smart Growth Vermont, 2009). And yet, at the same time that Vermonters articulate appreciation and concern for the landscape, it is rapidly being destroyed. During the last half of the 20th century Vermont lost over two million acres of farmland and more than ten thousand working farms (The Vermont Forum on Sprawl,1999). Between 1982 and 1992, while the population of Vermont grew by less than ten percent, the amount of developed land increased by more than twenty-five percent (Yacos Wilhelm, 1999). Nearly forty percent of this newly developed land was formerly cropland and pasture (The Vermont Forum on Sprawl, 1999).

Although Vermonters care about their landscape, there are apparently obstacles that come between their values and their actions. At the heart of the problem is the fact that each of the benefits listed above are not only public goods, but ones that arise at a landscape level as the cumulative result of many land owners' decisions over time. The effective preservation of habitat for animals with large home ranges, for example, cannot be carried out in an uncoordinated fashion on individual small properties (Noss, 1987). Nearly three quarters of the forest land in the northeastern United States is privately owned, with an average parcel size of about 22 acres (Kittredge, 2005). This highly fragmented ownership, when combined with the need for landscape-level management and the public goods nature of the benefits, can result in a situation where "individual forest owners are captured in a prisoner's dilemma" (Glück, 2000, p. 181). The impossibility of internalizing the effects of decision making on small parcels of land means that

some mechanism of cooperation needs to be established – and this requires communication. The essence of the classic prisoner's dilemma game is that the players cannot communicate and are unable to trust each other. In order to avoid the suboptimal outcomes that this situation produces in real-life conservation settings, we need to learn how to facilitate communication and build trust.

In the Vermont town that is the focus of this paper, an effort is underway to make a town-wide plan for the protection of biodiversity. Lying where the northern and southern ranges of many species overlap, it is an area of high biodiversity, but also one at high risk of habitat fragmentation due to increased housing development (Stein et al., 2005). Members of the Conservation Commission have worked with volunteers to inventory and map places of ecological importance, including such habitat elements as vernal pools, wetlands, mast stands, and deer yards. Based on this information, the Commission is creating a detailed conservation plan for the town.

The great challenge facing implementation of a town-wide conservation plan is the fact that the landscape to which it applies belongs to hundreds of private owners whose cooperation is necessary for its success. The hope is that landowners will donate easements to the development of "a regionally integrated system of conserved lands," and in other ways commit to accommodating the needs of wild nature. What is going to make them willing to do this? The main idea has been to run an educational campaign that will teach landowners the importance of protecting biodiversity. The implicit assumption is that active landowner support for the plan will hinge on whether or not they favor its goals. But even if most landowners are in favor of the conservation plan, the shared goals of a group and the incentives faced by each member as an individual frequently diverge; thus it does not necessarily follow that they will actively support it.

In order to determine whether education is the sticking point or whether conservation efforts are impeded by problems of collective action, a survey was distributed by this author to every household in the town and to non-resident landowners—about nine hundred in all—with questions designed to measure respondents' levels of support for conservation outcomes and their willingness to commit to conservation on their own land. Forty percent of the surveys were returned in usable form. The results indicated strong support for conservation outcomes and seemed to indicate that landowner commitment to conservation hinged primarily on the decisions of other landowners (Hoffman, 2011).

Shortly after the survey research was complete, an unanticipated turn of events furnished the experience that is the focus of this paper. At that time, the town Planning Commission had just completed their draft of a new, significantly more conservation-oriented town plan and a contentious public hearing process for it began. The question presented itself: can the public planning process—containing, as it does, opportunities for public engagement and mechanisms for mutual commitment—can this process be a solution to problems of collective action in land use? Throughout the following year the author engaged in participant observation: attending all of the public meetings and hearings related to the new town plan, taking notes on the public discussion, and speaking informally with as many people as possible. Surprisingly, in light of the survey results, the new town plan met with vigorous opposition that was seemingly widespread and ultimately successful. This paper describes and attempts to make sense of what happened.

The Survey

Respondents to a survey carried out by the Planning Commission in 2002 identified "natural beauty" and "rural atmosphere" as the town's two leading assets, demonstrating similar values to those of Vermonters state-wide (Council on the Future of Vermont, 2009). Ninety-two percent said that they would like to see large undeveloped tracts of land in the town protected. So it should not come as any surprise to see similar values expressed in response to the survey done for this study in 2009.

Responses indicate that most people are at least moderately well aware of conservation issues and that they care a lot about them (see Figures 1 and 2). More than three quarters of respondents said that they care “a lot” about the loss of adequate habitat for wildlife.

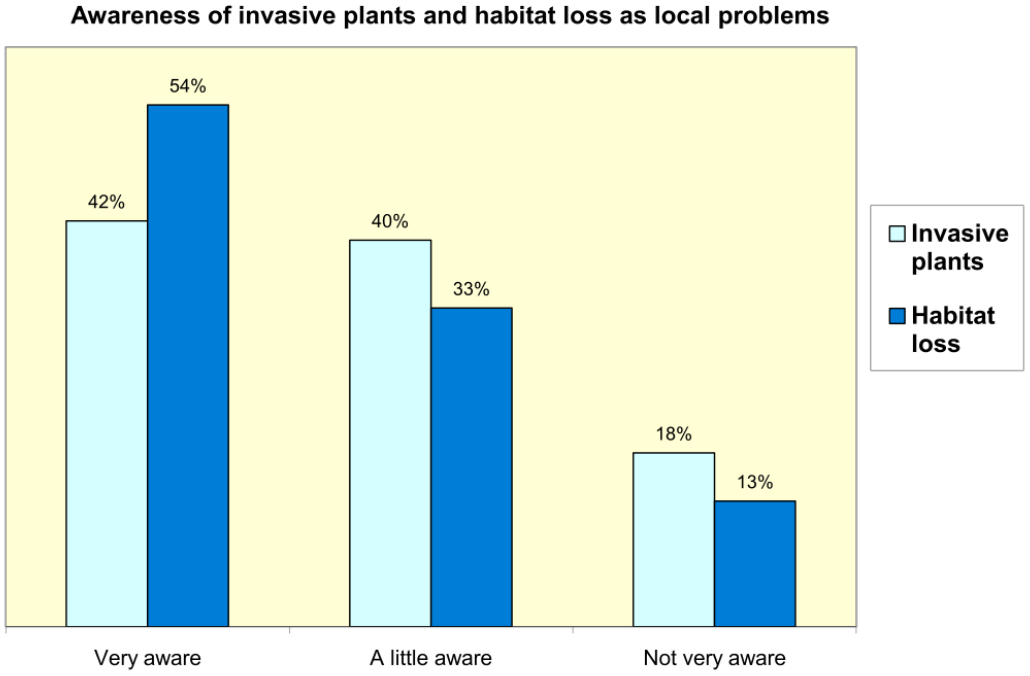


Figure 1 Level of awareness of local conservation problems

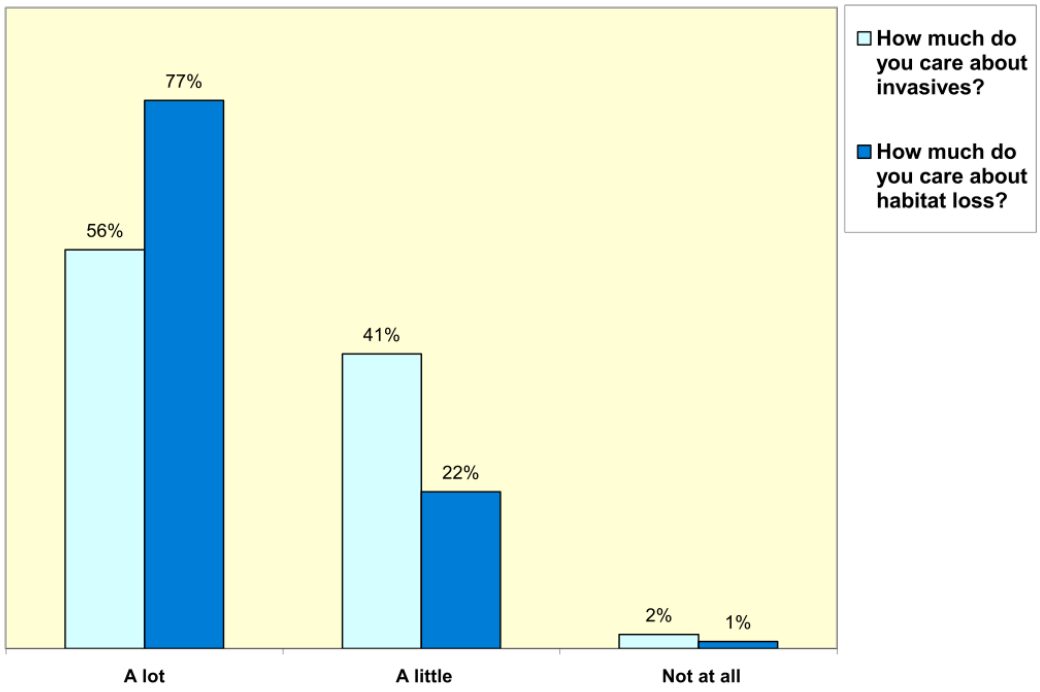


Figure 2. Level of caring about local conservation problems

When respondents were asked to "consider the following goal: That all native animal and plant species have the habitat they need to live here in [the case-study community]," more than two thirds said that they were "definitely in favor of that"; while only seven percent either didn't care or were "against having that kind of goal" (see Figure 3).

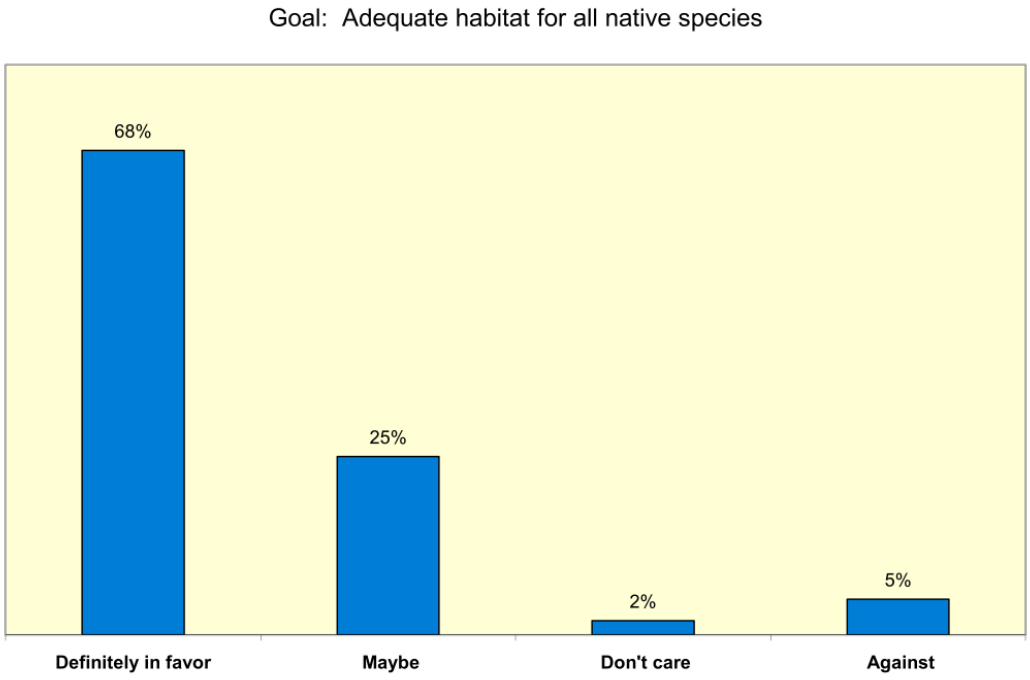


Figure 3. Level of agreement with goal of biodiversity conservation

Perhaps the most important question on the survey was this one: "Which of the following, if any, would make you more willing to commit to preserving wildlife habitat on your own land?" The most important incentive landowners identified was a mutual agreement with other landowners. This box was checked by more than twice as many respondents as the next most important incentive, financial compensation (see Figure 4).

If the views of those who responded to this survey are even approximately representative of the population as a whole, the Conservation Commission may well have concluded after this phase of the research that most people in the town already care a lot about the landscape and are worried about its future. It would appear that most people want to see development limited in some way and wildlife habitat protected. The most significant finding is that it matters to landowners what other landowners' intentions are when they are considering conservation commitments, and that this appears to be even more important than money.

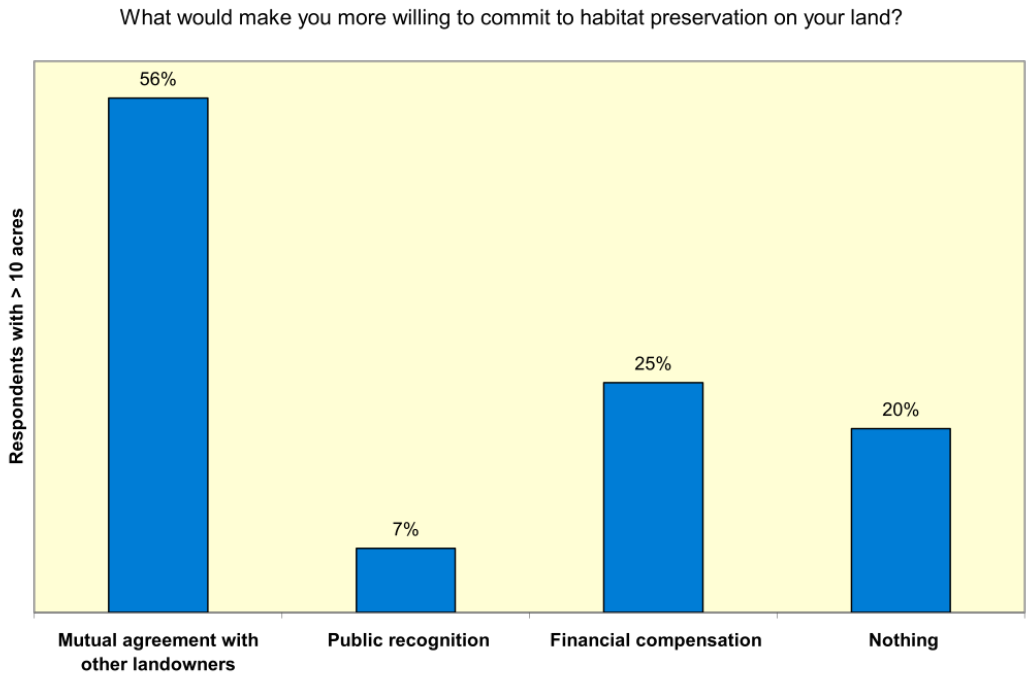


Figure 4. Incentives for habitat preservation

Civic Engagement

Shortly after the survey portion of this research was completed, the Planning Commission began a public hearing process for the draft proposal of a new town plan. This new plan was very conservation-oriented and included a number of significant changes from the old plan. Among these were the specification of maximum densities; newly redrawn conservation areas; the identification of wildlife travel corridors; and the decrease of commercially zoned land along a major roadway. In light of the survey results it seemed reasonable to expect that the public planning process might serve as a solution to the problems of collective action around land use, containing as it does numerous opportunities for public discussion and a mechanism for mutual commitment in the form of zoning bylaw. Any optimistic expectations, however, would be in for some bruising.

At the first public hearing, about a hundred people showed up, many of whom were strongly opposed to the plan. One long-time landowner was nearly in tears as he voiced his concern that he wouldn't be able to build houses on his land for his children. A lawyer threatened that the town would be faced with "takings" lawsuits; and several people complained that the town cared more about salamanders than about people. Even the zoning administrator asserted that it was a violation of people's civil liberties to tell them where they can or can't build their houses. Many people had only recently become aware of the new town plan and were upset not to have been involved in its creation. They wanted to know why the Planning Commission hadn't talked to them about it earlier. "Pick a time and a day and I'm there," said one landowner. "Let me in on the game and I'll play ball." Exasperated Planning Commission members explained that over the past several years they had organized numerous meetings and working groups in an effort to encourage public participation in the planning process. Asked why they hadn't gotten involved earlier, people said they didn't know it was important at the time and that they don't have time to go to many meetings.

After receiving written comments and discussing each part of the proposed plan over the course of several public meetings, the Selectboard sent it back to the Planning Commission with a long list of suggested changes and things that they thought the Commission should reconsider. The Planning Commission in turn organized a series of work sessions to which the public were invited in order to reexamine each part of the proposed plan. Attendance at these sessions and at regular Planning Commission meetings was good, with a dozen to two dozen people coming to regular meetings that were previously unattended by non-Commission members, and between a hundred and two hundred people at the public hearings that were to follow. Despite this increase in participation, and despite the fact that most of what people said they didn't like was removed from the plan (e.g., any reference to minimum lot sizes), opposition only grew.

At the next public hearing, opposition to the plan gravitated from specific grievances, many of which had been addressed, to a more general antipathy. Some speakers thought that the town should get rid of planning and zoning altogether. "You can't tell people what to do on their own land," one woman said. "It's not right. It's just not right." Prolonged applause followed another speaker's assertion that "to take even one landowner's rights away from him is *wrong*." Many people insisted that the new plan should not be any more restrictive than the old plan. Some said they relied on their land to provide for their retirement, and that they had long been expecting to be able to sell parts of it for residential or commercial development. They felt that to restrict their ability to do this where it had previously been allowed is tantamount to robbery, depriving them of much of their land's value. Others claimed that they have no intention of developing their land and don't see why they need to be told what to do by the Planning Commission. In the words of one man, "You are saying to the landowner, we don't trust you to do the right thing." Another man at a different meeting made the same complaint, "What this plan is saying is that the Planning Commission doesn't *trust* the landowners." Some landowners felt insulted by the idea of restrictions which seemed to imply that the Planning Commission, instead of honoring them as good stewards of the land, was casting them as a threat. Some owners of large undeveloped areas also resented what they perceived to be an asymmetrical transfer of benefits. Those people who went ahead and developed their land in the past not only get to retain the benefits of that decision, but are more likely to be allowed additional development; while those who have refrained from developing are now targeted for restrictions. "I don't tell other people what to do with their land," one farmer said, "what right do they have to tell me what to do with mine?"

Believing that the Planning Commission had run amok, or at least overstepped its bounds, a regular crew of residents and landowners began attending meetings in a watchdog capacity. "It's not until the people show up with pitchforks," one woman declared, "that the Commission will do what the people want." In the year following the first public hearing, several seats on the Planning Commission turned over, and one of them went to a leading organizer of opposition to the proposed plan. He and others circulated a petition calling upon the Selectboard to throw out the proposed plan and to readopt the old one from 2004. They gathered almost two hundred signatures; and at public meetings it was spoken of as common knowledge that everyone in town was against the plan. As the Planning Commission prepared to submit their revised version of the plan to the Selectboard, one of the selectmen made it clear that the board would not be comfortable approving it in the face of so much community opposition. When it was pointed out that the opposition represented only about fifteen percent of households, the selectman explained that the board cannot suppose the existence of a silent majority in favor of the plan. They can only go by the statements they receive in public meetings and during the period for submission of written comments; and it was their impression that the majority of these were in opposition to the plan. The Planning Commission decided to submit the revised plan anyway and a Conservation Commission member circulated an email telling those in favor of the plan that their active support was needed. At the next public hearing, support for and opposition to the proposed plan seemed more balanced, at least in terms of numbers; although the

opponents were more vocal and impassioned. Rather than passing the proposed plan, the Selectboard decided to make more changes and to schedule another public hearing. It would be more than a year before a watered-down version of the plan was passed.

Discussion

What makes the destruction of Vermont's landscape a tragedy is that it is happening as a result of Vermonters' own decisions and despite their professed desire to protect it. If Vermonters are sincere in the love they claim to have for the landscape and in their desire to protect it, why do they each make choices that contribute to its destruction? Why do they fail to collectively take measures for its protection?

It is clear that in the community where this case study takes place most people do care about the landscape. In 2002 a Planning Commission survey identified "natural beauty" and "rural atmosphere" as the town's two leading assets; and ninety-two percent of respondents said that they would like to see large undeveloped tracts of land in the town protected. In the survey done in 2009 for this case study, more than half of respondents said that they are "very aware" of habitat loss as a problem, and more than three-quarters of them care "a lot" about it. More than two-thirds said that they are "definitely in favor" of all native animal and plant species having the habitat they need to live in the area. Thus there does not appear to be a lack of awareness or a lack of caring on the part of most people regarding these issues; and since this is not the sticking point, an educational campaign is not likely to have much effect on people's behavior.

The sticking point appears to be the incentives faced by individual people when they consider whether or not to undertake actions that if taken collectively would lead to mutual gains. In the absence of any mechanism for mutual commitment, most people appear to be unwilling to take initiative or to risk acting unilaterally. When landowners were asked about their reasons for not committing to habitat preservation, only five percent said that they don't know how to go about it, and only five percent said that they don't care. When asked what would make them more willing to commit to habitat preservation, the most common answer by far was *a mutual agreement with other landowners* (see Figure 4). This idea of mutual commitment turned out to be a much more important incentive even than financial compensation. It is clear that it matters to landowners what other landowners' intentions are when considering conservation commitments. It seems equally clear therefore that promoters of landscape conservation need to work with groups of landowners together rather than with individual landowners one-at-a-time—and that in order to get more landowners to commit to conservation, some mechanism of mutual commitment is needed.

In "The Tyranny of Small Decisions," economist Alfred Kahn describes how many small decisions taken over time by many people can add up to outcomes that none of those people would have voted for had that outcome "ever been presented for their explicit consideration." In this way, "the consumer can be victimized by the narrowness of the contexts in which he exercises his sovereignty" (Kahn, 1966, p. 24). The ability to present land use outcomes for people's explicit consideration is one of the chief arguments in favor of planning. In the case-study community, the occasion of updating the town plan presented the opportunity for people to engage in a dialog about the future of the landscape and to commit to a common vision—one to which they would be bound by zoning bylaws enacted through their mutual consent. This would seem to be the perfect opportunity for them to achieve the landscape preferences that most of them expressed on the survey.

Instead, the proposed revisions provoked an angry backlash that brought the planning process to a halt and left the town without any plan in effect for over a year. This backlash was entirely unexpected by the Planning Commission and continued to gain momentum even as its demands were being met. Many

residents were mad at the idea that anybody could tell them what to do with their own land. The very mechanisms of mutual commitment that could enable them to achieve their shared goals came to be seen by many as restrictions on their liberty, imposed on them by some outside force.

Many public hearing attendees echoed the views of one man who asked, "Why should I be in favor of anything that restricts what I can do with my land?" He and others didn't seem to appreciate the reciprocal nature of these restrictions or see any way in which they might benefit from them. Many people complained that regulation, any regulation, would lower their property values by limiting what they could do on their land. It did not appear to be understood that regulation can protect a person's property values by limiting what that person's neighbors can do.

On a more fundamental level, it did not seem to be appreciated that the community can take ownership of the planning process and use it to achieve shared goals. Instead, there was a widespread perception that planning is a tool for the government to impose its interests on the community. While this has often been the case (Scott, 1998), it is not an apt description of planning in a small Vermont town. Nevertheless, at the very first public hearing, one opponent of the proposed plan stood up and told the Planning Commission, "You need to stay out of our lives." This and other similar statements express and serve to reinforce the idea that the planning process is a conflict between the Planning Commission and landowners, a conflict in which the Commission is pursuing interests of its own and in which landowners are bound to lose something if the Commission achieves anything. The unfortunate effect of this discourse is that it obscures the fact that there are naturally conflicting interests between landowners, which it is the purpose of planning to resolve. Once the landowner-versus-government dichotomy took hold in people's minds, it became difficult for them to see the planning process as a way for neighbors to come together to resolve their conflicts and to pursue mutual gains.

Another reason that some people perceived the planning process as an antagonistic intrusion on their lives is that they were not involved in it early on and it took them by surprise. One positive result of organized resistance to the proposed plan is that the number of people attending planning meetings increased dramatically. Often this was the result of opponents of the plan making rounds of phone calls prior to meetings to solicit attendance. There was also an increased interest on the part of opponents in volunteering for the Commission. Both meeting attendance and participation on the Commission, however, were done in a watchdog capacity: trying to put the brakes on the process and to whittle down the plan, rather than trying to understand the land use problems that the plan was attempting to deal with and to craft better solutions to those problems.

There was a clear perception on the part of the public that it is the job of the Planning Commission to author the plan, and that the purpose of public meetings is for community members to complain about parts of the plan that they don't like. The Planning Commission tried, apparently inadequately, to get the message across that the plan is meant to be the product of a process of public engagement, that people are expected to show up to planning sessions in order to work constructively on something that is understood to be a work in progress. A frequent exchange at planning meetings involved one or another community member standing up and threatening to attend every meeting from then on—followed by a Commission member trying to explain that this is exactly what was wanted. There is some ironic humor in a group of citizens showing up at the town clerk's office to protest government and not realizing when they get there that the only government is them. In the long run, this heightened level of civic engagement may well be a good thing. In the short run, however, the increase in participation doesn't seem to have increased satisfaction, as most new participants don't feel that they have anything to gain from the plan, but are only trying to protect themselves from losing something because of it.

One important role for education might be to give people a better understanding of planning, and why it is sometimes necessary to cooperate in large groups. Almost every survey respondent indicated an

understanding that what their neighbors did could have an effect on them. What may not be so well understood is that while contracts, litigation, and legislation can solve some of the problems that arise when our interests and actions extend beyond our property lines; there are other problems and aspirations that require sitting down as a community to talk and make agreements.

If, for example, I wish that my neighbor would cut down some of her trees so that I may have a better view, I can make a contract with her to that effect and simply pay her to do it. Alternatively, if she is doing something that impairs the use and enjoyment of my property, I could try taking her to court. Both contract and litigation, however, in order to be useful tools, require that it is within my neighbor's power to either create or withhold the harms or benefits with which I am concerned. This is not always the case. Many harms and benefits are cumulative, resulting from the combined actions of many people, none of whom are capable of either halting or guaranteeing the outcome.

If a particular action is always harmful and there is never any reason why it might sometimes be desirable, then the state legislature can simply prohibit it. We don't need planning for this. Likewise, if there are actions that we want to limit overall, but it doesn't matter when or where they occur to the permitted degree, these too can be regulated by the state—for example, auto emissions.

Yet there are other land use outcomes we might wish to pursue or avoid that have more to do with the spatial arrangement of uses than their overall degree. People want both houses and factories and wild spaces, but arranged such that each can perform its function best and without interfering with other land uses. If people want walking or bike paths in their community, it is necessary for them to sit down to discuss with each other where they want the paths go, and to negotiate as a group with all the landowners whose property they would run through. Not only is this type of project beyond what markets and legislation can provide, neither is it something that a group of planners can do on their own. In order to have a clear idea what people really want, what they are willing to contribute, and how a proposed project is likely to affect people, it is necessary to have a process of public deliberation.

One thing that became clear in the case-study community was that in order to have a successful public planning process, people have to be open and receptive to that process and willing to participate. This means that the Planning Commission needs to structure the process to be as inclusive and participatory as possible. Being open to the process does not mean that people have to share the same goals. It is to be expected that there will be conflicting interests. Resolving these is just what such a process is for. Where things fall apart is when some people, for fear of having other people's interests imposed on them, either refrain from participating or try to halt the process. And this is of course what people will do if they don't trust that the process is going to respect their interests. In the case-study community, people rallied to prevent the passage of a proposed town plan not because they disagreed with the vision it expressed, but because they were afraid that they wouldn't like the means for achieving that vision. The selection of means is supposed to happen later during another participatory public process when the zoning bylaw is written and other non-regulatory measures are considered. But opponents never wanted to get to this stage without first making sure that nothing they cared about would be on the table. The reason for this was frequently expressed: They didn't trust that the process would respect their interests.

An interesting feature of the debate was that, because the voices of opposition to the proposed plan appeared to be in the majority out of those who attended the hearings, it came to be widely assumed that an equally large majority of the whole town shared their views. This not only gave a great deal of momentum to their movement (whose members frequently express themselves on behalf of "the people of this town"), it also had a substantial impact on the deliberations of the Selectboard, which was reluctant to approve the new plan without community support. Thus perception of public opinion had a major influence on the process. Perception, however, is the operative word. Those who were actively opposed to the plan—that is, those who signed the petition or showed up to speak against it at public meetings—

represented about sixteen percent of households. Nevertheless, after the final public hearing, even supporters of the proposed plan came away with the impression that most everybody in the room had been opposed to it, which was indeed what the newspaper reported as well. Of the thirty-six people who spoke, however, sixteen were in favor of the plan and fourteen were against it. At the previous meeting, nineteen people had spoken in favor of the plan and ten in opposition. The reason why most people's sense of these meetings was so different than this tally is that many opponents of the proposed plan stood up to speak multiple times, spoke with passion, and were answered by loud applause. Most of those who were in favor the proposed plan spoke only once and were generally more subdued in their tone and in their applause.

We do not know whether there are many people who are pro-conservation but who were nevertheless against the proposed town plan. It is probable that there are some, and so it is worth considering a few possible explanations why this might be the case. Based on the concerns people have expressed in public meetings, the leading reason for opposition seemed to be the considerable loss of potential income that could result from future zoning changes, the burden of which would not be spread equally throughout the community. A person who at some time in the past purchased land with the explicit understanding that they would be allowed to subdivide it and to build a few more houses, and who paid a price reflecting this understanding, is going to feel that they are giving up a lot of the value of their land if they agree to a regulation that prohibits them from building or subdividing. For many in the case-study community, this loss of value would have a major impact on their lives, including their ability or their children's ability to remain in the community. Even those who would be willing to give this value up in the context of a mutual agreement must perceive that the enactment of zoning bylaw does not spread the burden of sacrifice evenly. Some parcels of land will bear greater restrictions depending upon their size, location, and attributes. Worst of all, people who went ahead and developed their land in the past retain all the benefit of having done so, while people who didn't develop are now called upon to forego that opportunity. There was no discussion during the planning process of any mechanism for compensating those who will bear the burden of greater restrictions. Consequently, those people feel that they are being robbed and it is no wonder that they are upset. It seems possible that the proposed plan might have been better received had it included the provision that property value losses would be shared by the whole community.

A final obstacle to planning for the future might be the short timeframe of people's lives compared to the long timeframe in which the benefits of planning or the consequences of a failure to plan take effect. Although seventy percent of survey respondents say that they will remain in the town for the rest of their lives, more than sixty percent of respondents with greater than ten acres are fifty-six or older, and more than a third are sixty-six or older. It is hard to apply the wisdom of making short-term sacrifices in exchange for long-term benefits to those who, due either to mobility or age, will not be around to reap those benefits. Thus, while it is all too often the case that future generations are saddled with the costs of decisions made by present generations for short-term gain; it may be appropriate to find ways to pass the costs of landscape protection on to future generations if this is what is required to make it happen, since they are the primary beneficiaries.

Conclusion

The survey portion of the research described in this paper confirms the expectation with which it was undertaken: that most people in the study community already care about the landscape and are well aware of the threats it faces. Education on these points, therefore, does not seem to be what is most needed in order to get people to contribute to landscape protection. There are, rather, problems of collective action that come in between people's preferences and their personal choices. The incentives faced by individuals acting unilaterally are quite different than those faced by people making mutual

commitments in a group; and many survey respondents indicated a greater willingness to commit to conservation in the context of a mutual commitment with their neighbors. The organization of mutual commitments in a group, however, is no easy task. Even getting individuals to participate presents collective action problems of its own.

All of this would seem to suggest a good rationale for public planning, which can provide both a forum for public discussion and a mechanism for mutual commitment in the form of zoning bylaw. That some citizens are deeply skeptical of planning is hardly surprising, for it has been different things at different times. Planning can be a bureaucratic, administrative process by which a central authority imposes rational order on the built environment; but it could also be a participatory, democratic process that brings people together to discuss and plan for the future of their community. The challenge for planners is to make this second vision of planning a reality.

In order to be an effective tool for overcoming problems of collective action, the planning process needs to be participatory. But the more that it becomes so, the more opportunity there is for people to obstruct it. In the case-study community, the leading obstacle to constructive public participation was the idea that the process was a contest between landowners and the Planning Commission, in which any restrictions on land use would be a loss to landowners. Planners need to help people to understand that there are inherent conflicts of interest between different types of land use, and to help people see the planning process as a place for landowners to work out these conflicts for their mutual advantage.

To facilitate this process, new mechanisms may be needed to distribute the costs and benefits of land use restrictions more fairly. Zoning is most easily applied when it reinforces existing land use patterns; but it is a very poor form of planning that is incapable of altering current patterns when it is perceived that these will cause problems in the future. The difficulty is that changes in the zoning bylaw distribute benefits and costs unequally across the population. Those who stand to lose a lot have a great deal of incentive to expend effort trying to block the changes, while those who are the recipients of more widely spread public benefits have comparatively less incentive to actively support the changes. All of this contributes to maintaining the status quo and, even were fairness not a consideration, suggests the need for a more equal distribution of the losses and gains resulting from the impact of public regulation on property values.

Efforts to mobilize Vermonters in response to the threats facing their landscape need to take into account that the problem is not a lack of awareness or caring, but a failure of the civic processes that would enable cooperation around shared goals. Just as the incentives for unilateral conservation efforts are inadequate, so, too, are the incentives to participate supportively in collective efforts. The challenge for planners is not so much to arouse people's sympathy for conservation, but rather to structure a process that provides adequate incentives for people to engage with other members of their community in negotiating their commitments to a shared vision of the future.

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Participation, learning and sustainable fisheries: the case of co-management at lake Vättern, Sweden

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In this paper we apply multiple perspectives in order to investigate a co-management initiative of fisheries in Sweden, using the frameworks of Adaptive Co-Management and the Trinity of Voice along with a cognitive and social perspective. The analysis and evaluation of participation in environmental governance, here fisheries, focuses on the context, pre-conditions and outcomes, as well as the participatory and communicative process of the initiative, identifying critical factors supporting and hindering the success of the exercise in relation to expected outcomes. We conclude that the project generated positive outcomes and discuss the supporting factors of this result. The discussion also focuses on the need to bring a cognitive and social perspective in to the analysis as it explains the pre-conditions - in terms of participants' differing views and understanding of ecological problems and changes - and that these views are crucial aspects of the communicative process and need to be addressed and attended to.

Keywords: participation, co-management, communication, learning, fisheries

Introduction

There is an interest in investigating participatory processes in the context of natural resource management, although henceforth the understanding of both process and outcomes are vague and unclear, along with the understanding of the ways pre-conditions and context influences the process and outcomes (Plummer et al 2012). This paper draws on two different analytical frameworks in order to analyse a 4-year project of cooperative management (co-management) including multiple stakeholders of fisheries. Using the integrated framework the foci is both on pre-conditions, context, process and outcomes (Plummer & Fitzgibbon, 2004), and the participatory process itself with regards to aspects such as access, standing and influence (Senceah, 2004). Additionally, we apply a cognitive and social perspective, assuming that it is of importance how participants perceive, understand and investigate the phenomena to be managed - in this case a marine eco system and fish stock - and that diverging views will have communicative and social consequences. This additional perspective furthers our understanding of the pre-conditions, participatory process and outcomes.

The involvement of local actors is expected to contribute potentially important information about a local ecological system and stimulate learning and capacity building among stakeholders (Ostrom 2005) leading to a positive input on the overall performance of the systems in terms of compliance, effectiveness, legitimacy, knowledge gathering and local adaptation (Folke et al. 2005). Empirical evidence, however, is

still marginal and often mixed with normative assumptions. The lack of documented cases is problematic as it hampers our ability to assess the effectiveness of cooperative governance arrangements. This requires examination and cross-comparison of more cases. Although context can be one key factor in explaining outcomes, coherent theoretical and conceptual frameworks that allow a meaningful evaluation and interpretation of the results across cases, and provide tools to compare different cooperative governance scenarios with each other, are nonetheless crucial for generating generalizable findings. While some work in this direction has already been done (Plummer & Fitzgibbon 2004; Plummer et al., 2012; Senecah 2004), further developments of conceptual frameworks appear a necessary and fruitful exercise. In a previous paper we report the results of such a comparison between Sweden and Poland, indeed varying in context and pre-conditions for communication between institutions and fisheries. The results show, interestingly, that although this is the case, the process of participation and positive outcomes are similar (Stöhr, Lundholm, Crona & Chabay, submitted). In this paper we wish to add a cognitive perspective and analyse the Swedish case study further, taking an interest in the ways that the participants perceive and views the marine eco system and changes within. The results are then discussed in the light of the pre-conditions of the co-management project, social interaction, and communicative forms dealing with diverging views.

Background and theoretical frameworks

Adaptive co-management (ACM) as a concept, is particularly concerned with the process of governance through shared authority and decision-making, learning and hence the ability to adapt to changing conditions (e.g. Plummer and Fitzgibbon 2004). ACM scholarship recognizes that the process typically involves a number of phases, such as preparing the system for change by engaging actors and building networks; seizing windows of opportunity to affect change and working to build the resilience of the governance system by continuous learning, negotiation and experimentation (Plummer 2009). These occur across multiple scales and are influenced by both exogenous and endogenous variables (Plummer 2009). Exogenous variables include the socio-cultural and political context in which the process is situated, while examples of endogenous variables are the properties of the social networks between actors, assets and attributes of the actors involved. While ACM work stresses the importance of learning, communication and power sharing to achieve desirable environmental governance outcomes, the growing body of ACM work has been rather vague on how these features are practically achieved (see Plummer et al 2012 for a full review).

To address this we explore and utilise the integration of a framework developed by Senecah (2004), originally designed for the structure and analysis of public hearings. Senecah's framework, the Trinity of Voice (TOV) focuses on the practical process of collaborative governance arguing that "the key to effective process is an on-going relationship of trust building to enhance community cohesiveness and capacity." (Senecah, 2004, 23). The approach rests on three concepts, *Access, Standing* and *Influence*, and provides a useful grammar for examining the power and communication within the ACM process in more detail. *Access* refers to actors' opportunity, potential and safety of participation. It includes the chance to speak and express opinions, but also the existence of sufficient support in terms of, for example, education and information in order to be able to actively participate in the process. *Standing* refers to the legitimacy of actors in the participatory exercise. It is concerned with the degree to which input by divergent actors is taken seriously. *Influence* refers not only to the outcomes actors are trying to achieve but also whether the ideas of the participants were considered carefully together with those of others.

Senecah (2004) suggests detailed conditions for each of these categories to allow for analysis of a participatory process and we have listed these as analytical foci in the analysis of the data (see table 1).

Methods

The study focuses its analysis and the integrated framework on a case of a Swedish co-management project on fisheries. A variety of methods were applied allowing for the analysis; the researchers participated as observers of the co-management meetings, where notes were taken, from 2006-2009. The County council also distributed detailed notes of each meeting.

After the Management plan was approved in November 2009, interviews were conducted individually with 13 participants in 2010. Interview questions focused on participants' views of the process and outcomes (social, ecological, and economical), reasons for decline/increase of fishing stock, and if they thought they had learnt about ecological, social or institutional aspects of fisheries. Interviews lasted between 60-120 minutes, were transcribed in full and analysed using content analysis (Kvale & Brinkmann, 2009, p. 219). All interviewed participants have been given new names in the section presenting excerpts (4.4).

Analysis

Context

Lake Vättern, the geographical area of the study, is situated in the middle of four counties and 8 municipalities in the south of Sweden. It is the sixth largest lake in Europe, 1912 km^2 and the second largest in Sweden. About 250.000 people are dependent on water from Vättern for their daily consumption and fishing is another important resource (County Administrative Board in Jönköping county, 2009). Since the 1990's there has been a strong reduction of the Arctic charr (*Salvenius umbla*) while at the same time an increase of American crayfish (*Pacifastacus leniusculus*), and the later has generated significant income for users such as professional fishers but also increasing income from tourism and leisure fishing.

Regulation and management

Fishing in the lake is regulated at the national level by laws; these regulate 'who, what, how, where and when'. Fishing is set as three legislative categories; the two main being professional and leisure (including sport fishing and fishing for subsistence), and also fishing on private water. Professional fishing requires a licence and this is provided by the county council (by mandate from the national Swedish board for Marine and Water, SMW), and currently there are 22 fishers in Lake Vättern. Professional fishers and others are free to fish all kinds of fish, however time (i.e seasonal closures), place (public or private waters) and minimum size is regulated by law. For example, cray fishing is aloud as leisure a few weekends in the end of summer. As to 'how', gear and mesh size is also regulated by law.

The County Administrative Board (in all 4 around the lake) have the task of supervision, acting on behalf of the SMW (which is acting as government body on behalf of the Swedish citizens nationally and locally), and is also in charge of monitoring, which means conducting investigations, etc. This is conducted in cooperation with the Lake Vattern Society for Water Conservation (LVWC) mentioned earlier; hence nearly 60 years of collaboration.

Stakeholders; interests and relations

The number of stakeholders with an interest in the lake and its water are numerous and their interests are not always compatible. For example, the public's need for clean water for households is in juxtaposition to more turbid and eutrophied waters beneficial to some fish species, but most important there have been conflicts with regard to fisheries between recreational and professional fisher groups. In the past, meetings were held with all fishing groups but these were discontinued in the 90's due to a national re-organisation.

Since then, the CAB fishery adviser has had regular but separate meetings with the different groups. Tension and mistrust has been growing within the fishing community and also between the fishers and the national fisheries agency. This has also affected relations between the CAB and the fishers. It is in this context that the LVWC and the four councils decided to move forward and apply to become a "Co-Management Initiative".

Preconditions

In the following we present the most important factors that led to the start of the co-management project well as the motivations of the different groups of actors to participate and invest in the process.

Real or imagined crisis

In lake Vättern, the ecological concerned the decrease of the Arctic charr. This was of concern to all stakeholders and initially different reasons to the decline were suggested; over-fishing, the increase of cray fishing (eating charr roe) and in combination with reproduction problems (where climate change is seen as effecting icing of the lake, in turn influencing reproduction). Importantly, as the analysis of discussions during meetings and interviews shows, the participants had varying views regarding the decline, and the causes presented above were not shared among all; some believed one of them were the cause, while others believed in one or a combination of several. Furthermore, there was an institutional crisis such that there was lack of trust between all groups (leisure and professional) and between fishing groups and the authorities, as well as non-compliance to rules and regulations. This lack of trust, we conclude, was due to lack of knowledge regarding the catch of fish (in particular for leisure fishing), and the lack of communication for several years, hence reinforcing possible misunderstandings. There was also a general interest from the County council to enhance communication and convey information to fishing groups from the authorities.

Willingness for local users to contribute

The ecological and institutional crises mentioned above were incentives for getting all groups to meet in 2004 and submit a proposal in 2005 to the national call initiated by the Swedish board for Marine and Water on co-management initiatives. The groups that were part of the co-management initiative represented; professional and leisure fishing, County Administrative Boards (2 of 4 in order to diminish the representativeness of authorities), council representatives (2 out of the 8 around the lake, again to diminish the representativeness of authorities), scientists working for the Swedish board for Marine and Water, and finally, a representative from the Vattern Society for Water Conservation (as mentioned above, an established organisation for water and fishing issues comprising various stakeholder). From the interviews it is clear that an incentive for the fishing groups to participate in in the co-management project and its meetings, was a feeling of 'rather in than out'. This means that information provided could be useful, and also important, and decisions would not be taken without the voice of these groups.

Opportunity for negotiation

In 2004 the Swedish Board of Fisheries (now the Swedish board for Marine and Water Management) initiated a co-management project and regional and local actors and institutions were invited to apply to become "pilot" projects. Representatives from the Vättern Society for Water Conservation perceived this as an opportunity. The perceived ecological and institutional crises provided the incentives for getting all fisher groups and other stakeholders to meet and submit a proposal for becoming a co-management pilot area. The groups that formed part of the co-management initiative included: professional and recreational fishers, CABs (two of four in order to diminish the representativeness of authorities), Municipal representatives (two out of the eight around the lake, again to diminish the representativeness of

authorities), scientists working for the SwAM, Water-owner representatives, and finally, a representative from the Vättern Society for Water Conservation.

Interviews show that an incentive for the fishing groups to participate in the co-management process was a feeling of "rather in than out". Fishers of all types felt the process could be useful, and most importantly, decisions would not be taken without their voices being heard.

Legal mandate

In Vättern the issue of legal mandate created some confusion, which has had effects on the perceived legitimacy of the process. Many of the participants interviewed were incentivized to participate in the process by the hope of having their voices heard and incorporated into governance. This concerned a particular instance when the ACM initiative worked hard and prepared a document, which suggested regulations for fishing, only to realize they had no such mandate. This discrepancy between the perceived mandate between the ACM participants and the national FB created anger and lowered incentives to stay involved.

Leadership or energy centre

In 2004, in response to the call by the SwAM for co-management projects, the Lake Vättern Society for Water Conservation sent an application and as the approval came they met with all four County Administrative Boards and the Fisheries board. Initially there was no funding connected to the initiative, but the group sent a supplementary application requesting funds. The Lake Vättern Society for Water Conservation, in close collaboration with the CABs, particularly Jönköping, have thus shown strong leadership and created an energetic core around the ACM meetings.

Common vision / Existing network

Visions were somewhat different among the participants, where some envisioned a management plan for the lake, others (the majority) thought the main purpose would be to enhance information, communication and reduce conflict and mistrust. Eventually however, the idea of a creating and writing a management plan was introduced, and the time was ripe for such an undertaking.

Process

In this section, we provide a table describing the characteristics of the process of the case using the elements of the TOV framework; Access, Standing and Influence (Senecah, 2004).

Access	
Attitude of collaboration	Skilled "neutral" mediator as chairman keeping an attitude of collaboration among participants Benefits of collaboration and dialogue / mediation techniques introduced prior to the actual meetings
Convenient times and places	Date and time coordinated with the participants and invited experts Accommodated at various places along the lake each time
Adequate and widely disseminated notice	Dissemination of notice through various channels (email, personal communication of the stakeholders with their community)
Readily available information and education	Documents prior to the meetings

Diverse opportunities to access information and education Assistance to gain a basic grasp of the issues and choices	Experts from both the CAB, and scientists from the SFB to give presentation and provide on-hand expertise during discussions Fishers were allowed the opportunity to voice their views and understanding of the state of the lake and fish stock Chairman ensures all questions and uncertainty of what the information was conveying was clarified Fishers inform themselves on websites (SFB and the Vättern Society for Water Conservation)
Early involvement	Early involvement of all but the fisheries organizations in preparing for the co-management projects
On-going opportunities for involvement	Long-term initiative with regular meetings on various topics
Standing	
Opportunities for dialogue and deliberation	Groups' differing viewpoints were taken to the minutes/record Notes of meetings distributed to all participants after the meeting, and "approved" at the next by to check "standing"
Courtesy or an absence of discounting verbal or non-verbal behaviour and active listening	Chairperson crucial in maintaining an atmosphere that would support dialogue and courtesy (e.g. humour to manage a sense of top-down/ expert-novice imbalances) Making sure that everyone had a say after a presentation, etc. Or, simply postponing decisions, that were not at a stage of consensus
Clear parameters of expectations for authority of participation	Objectives about the use of results not clearly enough defined and agreed in the beginning with the result that some CM participants 'lost' faith in the process)
Clear parameters of investment	Largely clear expectations about the necessary expenditures of time of participants (number of meetings per year, travel, preparation, length of meetings etc.) Fishermen get reimbursed for costs (travel, loss of income (as fishers are not out fishing) and additional costs such as parking fees (negotiated and settled every 2nd year)
Supporting arrangements for engaging dialogue and collaboration	Round table arrangement to indicate "equal voice" Coffee and lunch breaks and dinner for informal talks and trust building
Genuine empathy for the concerns of other perspectives, dialogue, debate and feedback	Difficult to judge, but mediator made sure that communication between groups maintained respectful and that gradual and mutual understanding of other perspectives increased.
Influence	
Meaningful decision space	Some participants thought they would influence fishing regulations but such was not the case. Groups' differing viewpoints were taken to the minutes/record
Transparent process that considers all alternatives	Process and meetings allowed for discussing alternatives of various aspects of fisheries and management The scope for decision space was not clearly communicated (and this caused problems)

Opportunities to meaningful scope alternatives	Few opportunities to meaningful scope alternatives in relation to actual decision-making
Opportunities to inform the decision criteria	Decision criteria could have been more clearly specified from the government and communicated
Thoughtful response to stakeholder concerns and ideas	The national Swedish board for Marine and Water and their representatives could have been clearer in communicating the limits of influence on decision-making

Table 1.

Perceiving, understanding and investigating the phenomena of management

While this paper presents an analysis of a co-management project in terms of context, pre-conditions, and participatory and communicative aspects with regard to the process, we also believe it is necessary to focus on the cognitive and social dimension of management and communication. This means addressing the 'what' of communication and decision-making and the ways participants perceive and understand the phenomena they are to manage, in this case a marine eco system and fishing stock. From a content analysis of the interviews we conclude on three main themes with regard to this issue; i) unpredictability of the marine system and fish stock and social consequences, ii), uncertainty of catch size, iii), uncertainty in relation to scientific and other enquiry. We conclude further that all participants but one view this as having negative social and communicative consequences, and further that these aspects of uncertainty were major parts of the topics, and social and communicative components that needed attention during the process. We return to this last point, and will in the following present some excerpts from the interviews.

Perception, understanding and social consequences

One the participants, Konrad, addressed invisibility and made a comparison between wildlife on land and that of the marine world.

- If you take hunting as an example, moose, it is pretty easy to estimate how much is out there and as a hunter you can sit in the 'hunting tower' (providing good sight), and actually count them, or wild boar; that would be same. You can make a quite accurate picture of the stand, and how much to hunt. You do not need to be well educated or a scientist but you need to have experience of hunting, and have knowledge of how the animals behave. It is more difficult to know 'how is the fish doing today', and how much fish is there; and that's where the problem lies; what to do then?

One of the fishers also addressed invisibility:

- There are number of things that have an effect (on the marine system and fish). It is not only the fishers, it is the environment itself, it is the weather, and it is simply difficult to manage something that you cannot see.

What kind of knowledge is necessary for the management of fish? The coordinator of the project made the following statement:

- There are two fundamental concerns: you need to have surveillance of the fish stock, in order to know how much fish there is. And, you need, from day one; to have knowledge of how much is being caught. In Vättern the knowledge concerning catch is good, but only with regards to professional fishing, not leisure fishing.

The importance of shared understanding

One of the interviewees, Nils, found a shared view of the resource to be a key issue:

- I was almost going to say; this is the core question. That is, to have a shared understanding of the resource, what it looks like, what state it is in? You cannot avoid this aspect but need to discuss it, and have the facts that you agree on. I'm really convinced this is very important.

Another participant, Robert, talked of the negative social consequences in terms of rumours:

- There was a rumour regarding the crayfish eating the charr roe; now, through these investigations, we can see that these were completely false statements.

However, one participant described the consequences of differing viewpoints in terms of a good and bad side:

- One the one hand, it can cause conflict since there are differing viewpoints regarding such complex and difficult questions. On the other hand, it can contribute to a feeling of community and kind of 'brotherhood' in that we share our wonders and thoughts, regarding for example the cray fish and its effect on the arctic charr. We can discuss it, a lot, and, well, it might also attract the interest of the participants.

Investigations and science

Finally, we present some excerpts regarding a third theme concerning if and how to gain reliable knowledge of the marine system and fishing stock. Lars**,** one of the participants, stressed that the full or 'true' picture was not possible to gain.

- But, the full answer might not be possible. Because it is simply too complex. And there might be numbers such as 10 % or 8 % of something, and then one simply has to keep in mind; this is about right. And then, always, there's the next question; What can we do about it?

The last excerpt concerns science and how to interpret scientific results. Participant Niklas, a scientist, shared the following experience:

- Often someone will ask, 'What is most dangerous or most important?' or the like. Well, you might answer, 38% is most important and 17 % this and that. This is difficult. Someone will ask about crayfish; 'How dangerous are they for Vättern?' Well, I have now idea. So, that's the trouble with science itself, there are no straight answers. Only probabilities. And that's disturbing. But, that is how we work, and 90% probability - that's good enough.

Outcomes

After 4 years and 20 meetings we here assess the changes that the initiative has induced on the social, institutional, economic and ecological level. The objective of instituting a process by building a bottom up participatory process and connecting it to the existing fisheries governance process to achieve more effective and sustainable governance of fisheries has largely been achieved.

Social and cognitive outcomes

Communication – open and respectful

An atmosphere of free and open discussion has successfully been implemented as "something different". The capacity for and experience of productive dialogues among highly diverse stakeholders about contested issues is also expected to be helpful in the long run.

Learning and 'uncertainty' as a fact

All participants acknowledge an increased understanding of the resource, that is the eco system (including human and environmental factors, e.g. climate change), and in particular of various fishing species (e.g. arctic charr and crayfish). The learning and increased knowledge was for example due to, as mentioned, investigations. Here, it is clear that both scientists and fishers' knowledge were contributing to this. The

County council's fishery experts, in referring to the fishers, used the expression "they are my eyes". This highlights that knowledge, and experience, can be of a complementary kind when experts/scientists and fishers engage in dialogue. However, importantly, participants address the fact that *uncertainty* remains a crucial aspect in discussions and decisions; although increased knowledge was gained through investigations conducted within the initiative leading to resolvement of some issues of conflict, uncertainty still remains due to the complexity of the eco system itself and many factors influencing it in non-linear ways.

Trust – reducing risk of conflict and increasing compliance

The meetings also concerned regulations and rules such as seasonal closures (e.g the arctic charr), and although these issues were discussed and could not be decided upon at that level, discussions of such issues enhance the likelihood of compliance. Thus, although uncertain, it is likely this would help if new conflicts occur.

Economic outcomes

The fishermen were able to get knowledge about how to economically better deal with some issues, especially concerning small-scale fisheries.

Institutional outcomes

The CMI has in 2009 become a so-called European Fisheries Fund, receiving funding for continued work with a focus not only on sustaining and monitoring fish but also on the economic and entrepreneurial aspects of fishing. The European Fisheries Fund (EFF) shall contribute to realising the Common Fisheries Policy (CFP) objectives, such as "ensuring the long-term future of fishing activities and the sustainable use of fishery resources; promote the sustainable development of inland fishing; help boost economically viable enterprises in the fisheries sector and make operating structures more competitive; and foster the protection of the environment and the conservation of marine resources".

(http://europa.eu/legislation_summaries/maritime_affairs_and_fisheries/fisheries_sector_organisation_and_financing).

Ecological outcomes

The arctic charr was reported to be increasing in 2009, however the reasons for this vary among stakeholders. Most would agree that this is due to seasonal closures (prolonged closure for mating period). But it is important to note that crayfishing is the major fishing resource (90%), and that crayfishing became this major resource around 2005; thus a shift in focus of economic resource was very timely.

Discussion

We have previously reported on a cross-comparison of two co-management arrangements in Poland and Sweden (Stöhr et al, submitted), and using an integration of the ACM framework with the TOV framework proved to be a fruitful way for the analysis of the two cases. It emphasized the different components of the process while not ignoring the importance of preconditions/context and actual outcomes. Although different in context and pre-conditions, the two cases shared a number of characteristics such as a highly skilled and neutral mediator/chair ensuring that communication was respectful and comprehensible such that participating scientists gave comprehensible information and if misunderstandings, or non-understanding, the chair attended to this problem. Also, the chair's role in relation to trust, and that of building trust, was important as he made sure that decisions were not taken until everyone had reached agreement, hence postponing decisions. Furthermore, CM organisations in both settings provided

information before meetings, and minutes to everyone after each meeting. In sum all these aspects concern the aspects of access and standing. However, there were struggles in terms of *influence*. In the Swedish case, there were unclear purpose and status of the dialogues in relation to decision-making, which resulted in disappointment among some participants, and the initiative did not become an institutionalized part of the decision-making process. Apart from this issue the initiatives was able to achieve observable outcomes in terms of:

4. Trust building, understanding of different viewpoints and capacity for deliberation and reduced conflict.
5. Learning and understanding of the eco system, fishing populations, and the institutional aspects of management

These positive developments are not only necessary steps in building the capacity for actual co-management (in terms of power-sharing) in the future, but the participants themselves also perceived them as highly useful. This is not only evidenced by the results of the interviews but also by the fact the initiative was able to ensure funding and participation on a long-term basis.

Finally, it is of importance to acknowledge the cognitive and social perspective that is added to the analysis of the case reported here. The participants' diverging views of the causes to the decline of the arctic charr along with a conflict situation between the fishing groups – each group thinking the other was over-fishing – influenced the participatory process and outcomes. Aspects concerning 'access' and 'standing' become crucial in that participants had a sense they were grasping what was presented as science, but likewise, had an opportunity to share knowledge and experience, and possible ideas for investigations and experiments. But, as stated by some of the participants, in order to reduce conflict it is not only important to know of the resource – in the realm of what is possible to investigate, and, given the complexity of the system – it is also necessary to have information about the amount of fish being caught.

In terms of outcomes, and the fact that all participants state the project has increased their ecological understanding, it is reasonable to conclude this is due to i) the high motivation of gaining information about species of interest, some threatened, ii), the different stakeholders with multiple experiences and knowledge of the lake and the marine system, iii) the skilled chairperson who made sure that questions were brought to the fore and gave participants a chance to understand the issues. To this it is of interest to add – as this was a conflict situation partly concerning what was known of the fishing stock and what were rumours - the mediator purposely stated he "knew nothing of fishing" (which was true) as a way of making people feel comfortable from the outset.

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Joint Forest Management in India: A Case Study of East Sikkim, India

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The adoption of Joint Forest Management (JFM) laid the foundations for decentralized, bottom-up approach to forest governance in India. Despite claims of creating successful linkages between everyday forest use by local communities and the conservation goals of the states, studies have questioned the validity of such claims within JFM. Sikkim, one of India's richest states in forest resources, is home to several communities dependent on forests for their livelihoods. Despite an increase in forest cover since its adoption in 1998, JFM in Sikkim has failed to achieve sustained community interest and meaningful participation, and has done little to reduce conflicts between local communities and the government over forest use and management. This paper explores how collaborative management through the processes of facilitation and ongoing dialogue between government agencies and the locals, could help create an environment conducive to social and joint learning, leading to better management of forest resources.

Keywords: Joint Forest Management, Collaborative Management, Public Participation, Social and Joint Learning, Sikkim

Introduction

The Joint Forest Management (JFM) program in India is defined as a "concept of developing partnership between forest department and fringe forest user groups on the basis of jointly defined roles and responsibilities" (TERI, 1999). Since its inception under the National Forest Policy 1988, JFM has increasingly been recognized as a powerful tool of sustainable forestry management in India. Based on the principle of "care and share" (TERI, 1999), the primary objective of JFM is to provide local communities with active roles and meaningful opportunities in the management and protection of forests, and a share in the benefits derived from the forests.

Joint Forest Management – The Origins

The origins of community-based natural resource management in India can be traced back to the Arabari Experiment, 1971, and the Sukhomajri Integrated Watershed Management Project, 1975. The Arabari experiment was undertaken by forest fringe communities of the Arabari Forest Range, Midnapore, West Bengal, to re-establish, manage, and protect degraded hardwood forests and plantations. This experiment was one of the earliest attempts by a state forest department to directly engage locals in the co-management and protection of forests. In exchange for their participation, the villagers were allowed to collect fuel wood and fodder from the forests at an ecologically sustainable rate, and had rights to 25% of the profits arising from timber sales. The Arabari experiment was successful in promoting greater transparency, accountability and equitability in the forest management process, leading to mutual trust and better understanding between the state forest department and the local communities. Increase in revenue yields from timber sales as a result of better management of forests also ensured the villagers a steady source of income. The success of the Arabari experiment led to the implementation of the West Bengal

Social Forestry Project in 1981, and consequently, efforts were taken to organize forest-based communities into village Forest Protection Committees (FPCs) in five districts of South West Bengal, India (Balooni, 2002; Harrison & Ghose, 2000; Roy, 1992; Sudha & Ravindranath, 2004; West Bengal, 2007).

Another successful attempt at community-based natural resource management in India during the 1970s was the Sukhomajri Project initiated in Sukhomajri, Haryana, in 1975. The project was a collaborative endeavor between the villagers, the Chandigarh Forest Department, the Central Soil and Water Conservation Research and Training Institute (CSWCRTI), Chandigarh, and the Ford Foundation to promote rainwater harvesting and soil conservation techniques alongside forest regeneration in catchment areas. With active involvement of the villagers in every stage of the Integrated Watershed Management Program, the Sukhomajri project, over the course of the next two decades became one of the most successful community-based natural resource management initiatives in India (Sudha & Ravindranath, 2004).

The success of the Arabari and the Sukhomajri projects as decentralized, bottom-up approaches to natural resource management ushered in a new era in India's forest management regime. The National Forest Policy, 1988, launched the Joint Forest Management (JFM) program in India, whereby, the state governments were directed by the Ministry of Environment & Forests, Government of India (MoEF), to create a "massive people's movement" through the active participation of village communities for re-establishment, management, and protection of degraded forests (Sudha & Ravindranath, 2004, p. 3). It was hoped that JFM as a people's project would empower the locals by making them an integral part of environmental decision making processes, minimize conflicts between the locals and the forest department over access to and control over forest resources, and allow for the sharing of benefits derived from the co-management and protection of forest resources. A JFM Cell was created in 1998 by the MoEF, Government of India, to monitor the activities, performance, and impacts of JFM Committees across the country (MoEF, 2000). As of 2005, the total forest area under JFM was estimated to be around 214,300 sq. km, with 99,000 JFM committees, involving over 13.8 million families across 28 states in the country (Sudha & Ravindranath, 2004; Vemuri, 2008).

Joint Forest Management – The Story So Far

Since its adoption in the early 1990s, Joint Forest Management (JFM) in India has undergone progressive changes to make the program more inclusive of the sustenance and livelihood needs of local forest users along with greater involvement of local communities, state forest departments, and environmental NGOs in the planning, implementation and monitoring of the program. JFM Guidelines 2000 and 2002 were regarded as positive steps towards institutionalizing and strengthening the JFM program in India. In particular, the JFM Guidelines emphasized on (a) participation of women in JFM, (b) giving legal status to JFM Committees (JFMCs), (c) extending JFM to good forest areas, (d) creation and adoption of micro-plans, (e) setting up conflict resolution committees both at the forest division and state levels, (f) recognizing other community and self-initiative groups involved in protection and management of forests, and bringing them under the purview of JFM, (g) establishing provisions for setting up village development funds, (h) monitoring and evaluation of the JFM program every 3 years at the forest division level, and every 5 years at the state level, (i) signing a memorandum of understanding (MOU) between JFMCs and the state forest department, clearly stating their roles, rights, responsibilities, conditions for sharing profits and procedures for conflict resolution, (j) using the organizational and administrative capacities of village panchayats (local self-governments) in order to better manage the forests, and (k) including provisions for collection of non-timber forest products (NTFPs) in the JFM working plans (Sudha & Ravindranath, 2004).

Joint Forest Management – A Brief Evaluation

Joint Forest Management (JFM) program in India has mostly been evaluated on its ecological, economic, and institutional impacts, with less emphasis given on JFM's performance as a bottom-up, participatory forest management program. Evaluations on ecological impacts mostly dealt with JFM's impacts on biodiversity (Ravindranath & Hall, 1995), forest cover (Ostwald, 2000), production of non-timber forest products (NTFPs) (Hill & Shields, 1998), biomass and density of trees (APFD, 2001; TERI, 1999), harvesting of plantations (Gupta, 2003), forest fires (Gupta, 2003), and forest regeneration and survival (PRIA & Samarthan, undated; TERI, 1999; West Bengal, 2007). Economic impacts focused primarily on economic incentives for timber sales (KFD, undated), biomass productivity (Hill & Shields, 1998; TERI, 1999), production and marketing of NTFPs (TERI, 1999), and livelihoods issues (Gupta, 2003). Institutional assessments of JFM included the spread of JFM in the country, the legal status of JFM, institutional structure and networks (APFD, 2001; Blunt, Fisher, Mitra, & Sarin, 1999; Gupta, 2003; Jagannatha Rao, Murali, & Murthy, 2004; TERI, 1999), functions of JFMCs (TERI, 1999), capacity building (PRIA & Samarthan, undated), and the implementation of JFM policies in the states (TERI, 1999).

Despite claims of its widespread success, critics call for a closer examination of the JFM program in India. According to Jagannatha Rao, Murali, & Murthy (2004), most of the JFM evaluations were undertaken by state forest departments, the MoEF, and donor agencies, often neglecting the perspectives of community members, and thereby, presented only a partial view of the JFM program and its overall performance. Critics however, question the effectiveness of JFM as a community-based, forest management program, and question the ecological, economic and institutional parameters used by government and donor agencies to measure the success of JFM.

Assessments of ecological impacts of JFM showed that most of the regenerated forests comprised of exotic firewood species with a relatively low percentage of timber and other non-timber species resulting in biodiversity decline over the years (Murali, Murthy, & Ravindranath, 2002; Ravindranath & Hall, 1995). Higher species diversity however, was often reported in forests managed outside of JFMCs, particularly in community forestry systems managed by locals based on traditional forest management and silvicultural practices (Rai et al., 2000; Ravindranath et al., 2000). According to Murali, Murthy, & Ravindranath (2002), for JFM to have any significant impact, there is a need to adopt an "integrated village ecosystem", where not just forests, but all land-use categories (including village common lands and private lands) are included and managed based on "site-specific" plans. The adoption of site-specific plans would result in an "adaptive forest management approach", where decisions on forest regeneration, biomass productivity, species varieties, and extraction strategies of forest products are made based on the subsistence and commercial needs of the local communities (p. 527).

Assessments of the economic impacts of JFM on local livelihoods generation showed less than favorable outcomes, for according to Sarin (1999), failure of JFM to successfully incorporate the subsistence and livelihoods needs of the rural poor resulted in greater economic differences between the poor and their wealthier counterparts. Profits from collection and sales of NTFPs were mostly appropriated by middlemen, traders, and the rural elite groups at the cost of the marginalized groups (Sarin, 1999; Vemuri, 2008).

The Joint Forest Management (JFM) program in India has also been widely criticized on institutional grounds. It is argued that JFM failed to adequately involve the marginalized sections, as membership to JFM Committees (JFMCs) were often restricted to elected members of the village panchayat, mostly representing the views of the dominant class (Kumar, 2002). Limited success of JFM has also been attributed to the failure of the government to devolve power and control to the desired levels. Ravindranath et al. (2000), point out that JFMCs failed to emerge as autonomous institutions as decision making powers remained in the hands of the state forest departments. Most of the JFMCs were registered under the

forest departments with no legal identity. While the villagers were entrusted with the duties of protecting the forests, the forest departments retained control over the planning and implementation of working plans, revenue collection, allocation of funds, and other important management decisions. According to Kapoor (2001), organizational hierarchy within JFMCs hindered bottom-up participation and resulted in "corruption and other unaccountable political and administrative barriers" (p. 5). Despite the modifications made to the JFM Policy in 2000 and 2002 mandating the inclusion of women and poor land-less villagers in Village Forest Committees (VFCs), very little was achieved in terms of its overall implementation. Lack of opportunities to meaningfully participate in the management and protection of forests often forced the marginalized villagers to engage in unlawful activities against the forest department, and as a result, conflict between foresters and villagers continued (Vemuri, 2008).

For Joint Forest Management (JFM) to be successful as a bottom-up, participatory forest management program, Jagannatha Rao, Murali, & Murthy (2004), call for the adoption of a "multi-institutional approach" that considers the perspectives of all concerned stakeholders in the JFM program (p. 30). Khare et al. (2000), in their study on policy, practice, and prospects of JFM in India voice a similar need. According to them, forest policies change their orientation over time, and in order to understand their changing nature, one needs to take into account the "competing claims, and relative influence, of key interest groups" (p. ii). They further argue that policy debates typically tend to stereotype people into "apparently homogenous" groups, often failing to recognize that in each group "there are goodies and baddies, intransigent conservatives and flexible radicals, and people may play all of these roles, or move between groups, at different times", and there is an immediate need to "cross the artificial boundaries created by entrenched positions and show both the legitimacy of alternative views and the practical necessity of dealing with them" (p. ii).

The research presented in this paper is part of an ongoing doctoral dissertation research that adopts a "multi-institutional approach" (Jagannatha Rao, Murali, & Murthy, 2004) to explore how Joint Forest Management (JFM) as a participatory, bottom-up approach to forest management works in the state of Sikkim, India, and for whom it offers advantages/disadvantages. Through the identification of key actors and analyses of their roles within the JFM program, the research recognizes participatory forest management as a highly contextualized social, political, and economic practice. It advocates for the adoption of an ongoing process of joint and collaborative learning that allows different actor groups to recognize and understand the importance of mutual interdependency, a recognition of which could promote mutual appreciation and working together towards common goals.

Case Study Context

As one of the largest forested areas in the country, the state of Sikkim has a long and cherished history of sustainable natural resource conservation and management paradigm along with steady economic growth and development (FEWMD, 2009). Its success in the fields of natural resource management, wildlife protection, environmental sustainability, and economic development has earned Sikkim the top position in the country (among the low population density states) in States Sustainability Competitiveness Report-2011 (assessed on the basis of social inclusion, environment and climate change mitigation, economic development, resource availability and utilization), and second position in Environmental Sustainable Index (ESI) ranking in 2009. The Forest Protection Index of Sikkim (0.903) was recorded to be the highest in the country by the Green Indicators, Report, 2004 (FEWMD, 2009). The Centre for Development Finance (CDF), India, recognized Sikkim as the top performer in the country in Performance in Land Use in 2008 and Conservation of Natural Resources in 2009 (FEWMD, 2009). Sikkim also holds the honor of being the home to the "Greenest Chief Minister of India" (FEWMD, 2009), whose conservation paradigm "not growth versus green but growth with green" has led to the integration of forestry with income generating activities

with active involvement of its people. A state with such high achievements in sustainable natural resource management seemed an ideal setting to explore, understand, and analyze the nature of Joint Forest Management (JFM) as a tool for sustainable, participatory management of forests in the state.

Method

A qualitative, naturalistic inquiry, based on ethnographic fieldwork was adopted for the study (Manning, 1992). The selection of villages for the study was based on the degree of dependency of its population on forest resources, and its inclusion under the Joint Forest Management (JFM) program in East Sikkim, India. Approximately 80% of the population in each of the four selected villages was either directly or indirectly dependent on forest resources for livelihoods generation, and came under the administrative jurisdiction of a JFM Committee (JFMC). For primary data collection, I conducted in-depth face to face interviews, focus groups, and participant observation. Participation in the study was voluntary, and interviews and focus group discussions happened at the discretion of the participants. Confidentiality of participants' identities was ensured by coding identifiable information. For preliminary data analysis, interviews and focus group discussions were transcribed and compared with extensive field notes taken during participant observation, and then coded and categorized under broad emergent themes.

Sikkim

The state of Sikkim is located in the Eastern Himalayas, surrounded by the Tibetan Plateau in the north, Bhutan in the east, West Bengal in the south, and Nepal in the west. The forested area of Sikkim is 3193 sq. km, accounting for nearly 46% of its total geographical area (FEWMD, 2007). While one of the largest forested areas in the country, Sikkim is also one of the most sparsely populated states in India, with only 0.02% of the country's total population (JICA, 2009). The state's population is almost entirely rural (91%), and many depend directly on the forests for their livelihoods (FEWMD, 2007). The physical remoteness of this region has created inseparable linkages between forests and people. For the rural communities of Sikkim, the forests and its resources are not only their primary source of livelihoods, but are also inextricably linked to their social, cultural, spiritual and emotional well-being (GoI, 2008; JICA, 2009). The Forest, Environment & Wildlife Management Department (FEWMD), Sikkim, has control over 84% of the total geographical area of the state, and is responsible for the protection of forests and biodiversity conservation (FEWMD, undated; JICA, 2009).

History of organized forest management in Sikkim.

The origins of organized forestry management in Sikkim date back to 1909 under the ruler Sidkeong Tulku, the 10th Chogyal of Sikkim. Considered the "father of forestry" in Sikkim, Sidkeong Tulku was instrumental in bringing the forests of Sikkim under an organized body, and to undertake the surveying and demarcation of forests on a scientific basis. As the Kingdom of Sikkim was not directly under the British Colonial Administration, the administrative and managerial control of forests until 1947 rested with the thikadars and kazis-the landlords directly under the Chogyal. The year 1905 saw the demarcation of "Reserve Forests," classified as forests not under human occupation and where "no rights and concessions exist." In 1911, isolated patches of forests within the villages and forests along the fringes of reserved forests and villages were delineated as "Khasmal" and "Goucharan" forests. Khasmal forests were those where people had rights to a free supply of timber and firewood after obtaining formal permission from the forest department, while Goucharan forests were demarcated as those where local people had rights to free grazing and collect deadwood and fodder (FEWMD, 2009). A forest manual was adopted in the year 1914, stating the functions of the forest department with respect to forest

administration and management. In 1952, the first cadastral survey in the state was undertaken to officially demarcate Revenue and Forest Lands, where cultivated lands were recorded in the name of its owner, while lands not under the ownership of any individual were recorded as Reserved, Khasmal, and Goucharan forests. These pioneering steps towards organized forestry management Sikkim under the Chogyals laid the foundations for modern day forest management in Sikkim (FEWMD, 2009).

Sikkim became a part of the Indian Union in 1975, and subsequently the Indian Wildlife Protection Act 1972 and Indian Forest Act 1927 (extended until 1988) was extended to Sikkim for the protection of its wildlife and forests respectively. The Indian Forest Act 1927 was replaced by the Sikkim Forests, Water Courses and Roads Reserve (Preservation and Protection) Act in 1988, and the Forest (Conservation) Act, 1980, was adopted in order to strike a balance between development and conservation, with particular emphasis on managing the diversion of forested lands for non-forest use (FEWMD, 2009). The year 1995 saw the adoption of "Harit Kranti Dashak" for a "greener Sikkim through people's participation" (FEWMD, 2009). The call for people's participation in forest management and protection was further operationalized through the adoption of the Joint Forest Management (JFM) program in the state in 1998. It was hoped that the JFM Committees (JFMCs), and subsequently the Eco-development Committees (EDCs), and Pokhri Sanrakshan Samitis (PSS) established as community-based natural resource management organizations would promote greater transparency, accountability, and equitability in the forest governance process through devolution of financial and administrative powers, and also provide opportunities to local communities to "enhance their livelihood through forestry, ecotourism and other income generation activities" (FEWMD, undated). As of 2009, there were 158 JFMCs, 57 EDCs, and 2 PSSs established in the state of Sikkim (GoI, 2008; JICA, 2009).

Joint Forest Management in Sikkim

According to Joint Forest Management Notification 2006 issued by the Forest, Environment & Wildlife Management Department (FEWMD), Sikkim, each of the 907 village wards in the state were required to establish either a Joint Forest Management Committee (JFMC) or Eco-Development Committee (EDC), which would be the "nodal agency for all programs related to forests, land use and environment, medicinal plants, watersheds, and wildlife and biodiversity" (JICA, 2009, p. 3-19). Each JFMC consists of a General Body (comprised of one member from each household in the ward), and an elected Executive Committee (EC). The main duties of JFMCs include the protection and maintenance of forests and plantations with particular emphasis on monitoring trespassing and grazing activities in JFMC areas, preventing forest theft, and helping forest officials prevent and control forest fires. JFMC activities are carried out under the provisions outlined in the National Afforestation Program (NAP). The NAP mandates the adoption of micro plans prepared with the involvement of local communities to reflect their needs. The activities included in the micro plans are 1) forest planation and regeneration; 2) Entry Point Activities (EPA); 3) awareness programs; 4) soil conservation; 5) fencing; and 6) monitoring and evaluation. Funds are provided to JFMCs by The Ministry of Environment and Forests (MoEF), Government of India, through the appointed Forest Development Agency (FDA) in the state (JICA, 2009).

JFMC members are required to protect the forests and plantations for a minimum of five years in order to be eligible for receiving benefits. According to the provisions outlined, the members are entitled to "25 percent of the net income derived from forest crops for every harvest at the concerned forests and plantations" (JICA, 2009, p. 3-21). Additionally, members may be entitled to 25% of the profits generated from "intermediate felling," and allowed to collect "fallen twigs, grass, fruit, flowers, seeds and leaves, and medicinal plants free of royalty if they do not damage the forests and plantations" (JICA, 2009, p. 3-21). Furthermore, JFMC members are also entitled to "one fourth of the products obtained as intermediate yields from thinning etc., and 25 percent of the sale proceeds of minor forest produce" (JICA, 2009, p. 3-21).

Results

Joint Forest Management (JFM) in Sikkim is claimed to be widely successful in integrating the livelihood needs of its forest dependent communities along with forest conservation and management goals of the state since its adoption in 1998. As of 2009, there were 158 JFMCs established in Sikkim, with a provision for including 90 new intervention villages for the establishment of new JFMCs (FEWMD, undated). Despite these claims, critical evaluations of JFM as a successful tool for bottom-up, participatory management of forests in other parts of India indicate that a close scrutiny of JFM in Sikkim is warranted.

Spaces of Conflicts within Joint Forest Management in Sikkim: Preliminary Findings

In the following section, I provide a multi-actor perspective on the nature of JFM as has been undertaken in the state of Sikkim. A dispute or conflict for the purpose of the study is defined as "any interaction of interdependent people who perceive opposition of goals, aims, and values, and who see the other party as potentially interfering with the realization of these goals (Putnam & Poole, 1987). The themes that emerged from initial data analysis are broadly categorized as 1) conflicts over forest conservation and management outcomes, 2) conflicts over access to and utilization of forests and forest resources, 3) lack of gainful employment and meaningful participation in JFM activities, and 4) struggles over power and authority.

Conflicts Over Forest Conservation and Management Outcomes

Joint Forest Management (JFM) outcomes have come to be perceived differently by different actor groups in Sikkim. On being asked about afforestation activities undertaken by the JFMCs, one villager explained, "…you see this tree, what do you see…forests are not the same anymore as it used to be …yes that's right…no value, no strength…".

For the villager, regenerated, secondary forests held no meaning or value, while a JFMC official on being asked to comment on the nature of afforestation work undertaken through JFM pointed out that secondary forests were important for their quick, regenerative capacities. According to the official,"….all this area was considered as degraded land and you wouldn't find anything here, but look at this place now, trees all around, we have undertaken massive plantation activities over the years, and have been successful in greening Sikkim."

While the total area under secondary forests have accounted for a net increase in forest growth in Sikkim (from 37% in 1975 to 46% in 2005), primary forests continued to be depleted due to numerous developmental activities in the state (FEWMD, 2009; GoI, 2008; Lama, 2006). Studies show that JFM plantation schemes in East Sikkim have been unsuccessful in the regeneration of primary oak forests due to a think undergrowth of quick growing exotic species (JICA, 2009). While the impacts of replacing primary forests with secondary forests of exotic species of uniform stands on Sikkim's biodiversity has not been widely studied, studies in other parts of India and globally have shown that secondary forests often fail to maintain species biodiversity and other crucial environmental services (Farley, 2007; Farley & Kelly, 2004; Jagannatha Rao, Murali, & Ravindranath, 2002; Murali, Murthy, & Ravindranath, 2002; Ravindranath & Hall, 1995; Robbins, 1998).

Conflicts Over Access to and Utilization of Forests and Forest Resources

Forests in Sikkim are classified into two broad categories-Reserved Forests and Protected Forests (further delineated into khasmal forests and goucharan forests). While any consumptive use of forest resources or grazing activities in a Reserved Forest is banned, subsistence use of Protected Forests has traditionally been allowed in Sikkim. Collection of firewood, timber, fodder, and other non-timber forest products (NTFPs) were allowed in khasmal forests, while grazing activities and collection of deadwood and fodder were allowed in goucharan forests. However, owing to severe biotic degradation, these forests were brought under the purview of JFM in 1998 and made out of bounds for the villagers (GoI, 2008). For the forest dependent communities, however, ban on entering the khasmal and goucharan forests have resulted in greater suffering. As pointed out by a villager: "…we have no access to forests, but you tell me how will my family survive? I have no land of my own, and now I have no access to forests, whatever little I used to earn by selling milk and cheese is now gone…I have no means to buy grass to feed my cow, the only one that's left now…most of us owned a number of cows 10…11, but now we have 1 or 2."

Poverty, coupled with the lack of access to forest lands often force the villagers to enter the forests illegally in order to collect fuel wood, fodder, and other minor forest produce. The villagers, in some cases, admitted taking their cattle inside the reserved forests for grazing, while some admitted to entering the forests to collect highly-valued medicinal plants and selling them at a nearby market illegally. Illegal activities inside the forests resulted in greater monitoring activities by the forest officials and the JFMCs, often leading to a greater clash of interests between the villagers and the forest officials over forest access and use.

Lack of Gainful Employment and Meaningful Participation in JFM Activities

While state evaluation reports claim that JFM has been successful in integrating forestry with livelihoods generation (FEWMD, 2009, undated), local community members however, had mixed views regarding employment opportunities in JFM activities. While majority agreed to be employed in JFM activities in some capacity, most of it however, was seasonal, mainly during the plantation season (May-September), with no provisions for year-round employment. Gainful, year-round employment in forestry activities were greatly favored by women participants. As one participant explained: "…it would be better for all of us, all of us here in this room if we were employed all year round in JFM activities…you know the forests are so close to our village…we wouldn't have to worry about walking all the way up to earn some money for the family…it is not easy for us women…you understand, don't you?"

Additionally, in the absence of definite incentives to meaningfully engage in JFM activities, community members were mostly hesitant to participate in JFM annual meetings or other related official gatherings, and skeptical of the desired outcomes of the JFM program. As pointed out by a respondent*, "…*meetings are held annually, I think, I am not sure of the dates…even if we participate, our voices are almost never heard…why then should we go?*"*

Struggles Over Power and Authority

For most villagers, JFM had done little to empower them in order to influence revenue and conservation outcomes to their benefits. Most of the administrative and financial powers rested with the elected members of the JFMCs who often represented the dominant and politically influential class. JFM, for most

of the community members was like any other state policy that favored forest growth at the expense of the economically less privileged forest dependent communities.

Discussion

The importance of public participation in environmental decision making has been widely recognized since the 1990s. According to Martin (2007), public participation is integral to democratic governance, as every citizen has the democratic right to participate in decisions that affect them and it also "vitalizes" democracy by "reinvigorating citizens, engendering civic competence, and building confidence in democratic institutions" (p. 174). Proponents of public participation claim that involvement of public in environmental decision making promotes "social legitimacy" through trust building which leads to lesser conflicts among different actors and enable effective implementation of policies.

Public Participation in Environmental Decision Making: Working Towards a More Collaborative Management of Forests in Sikkim

At the heart of any collaborative management process is trust. Trust plays a critical role in making collaborations work through sharing of information and communication between different actor groups, and in building relationship through reciprocation. According to Zand (1972), the lack of trust in any collaborative effort is counter effective towards information exchange, and diminishes the effectiveness of such collaborative initiatives. Collaborative efforts founded on the principles of trust add credence to the overall conflict resolution process. For Walker (2004), collaborative decision-making as a form of alternate dispute resolution is "constructive, open, civil communication, generally as a dialogue; a focus on the future; an emphasis on learning; and some degree of power sharing and leveling of the playing field" (p. 123). Emphasizing on the importance of collaborative management as a dynamic, ongoing process of understanding the knowledge, need, goals, and interests of each actor group, Buck, Wollenberg, and Edmunds (2001) put forth the idea of "joint or social learning." According to them, joint learning encourages different actor groups to recognize and understand the importance of mutual interdependency. Recognition of interdependency promotes mutual appreciation which enables diverse groups to work together towards common goals. According to Ramirez and Fernandez (2005), group facilitation could help encourage joint or social learning, ultimately leading to a "working together" towards common goals and ends. The success of any collaborative management depends on it being an ongoing process, with opportunities for the voices of the poor and less powerful to be heard, the failure of which could lead to sub-optimal decisions, and render collaborative processes ineffective.

For Joint Forest Management (JFM) to achieve its desired goals as a community-based forest management program in Sikkim, first, necessitates the recognition of forest-based communities as important actors in the forest management and protection process. In an environment where there is a lack of trust between different actor groups, no collaborative natural resource management effort can be successful unless trust is established and maintained in the long run. For a collaborative natural resource management program like JFM to be successful, it is important for authorities to recognize collaborative management not as a static, time-bound framework, but as a dynamic, ongoing process of understanding the knowledge, need, goals, and interests of diverse actors Through an ongoing dialogue between different actor groups, there is a greater possibility for the voices of the unheard to be heard and respected by others, a better understanding and respect for each other's perspectives, and the recognition of interdependency among diverse actor groups. Recognition of mutual interdependency would help create an environment that is conducive to social and joint learning, leading to knowledge building and working together towards the realization of common goals.

Conclusion

An analysis of the preliminary findings indicates that the limited success of Joint Forest Management (JFM) in Sikkim to incorporate effective and informed participation of diverse actor groups in JFM decision making and implementation process is built into the myopic formulation of its incentives. In the absence of a holistic mechanism that caters to the needs of those dependent on the forests and its resources, JFM will not be able to achieve its desired outcomes. For participatory forest management programs like JFM to be successful in a state like Sikkim, there is a need to design and implement environmental policies that do not alienate people from the resources that are inextricably tied up to their everyday existence, but rather, allow for sustained use of those natural resources. For JFM to be successful as a people's project there is a need to recognize its people as co-owners of forests and its resources, and as co-partners in the forest conservation and management process. Joint and collaborative learning initiatives can go a long way in bringing together diverse groups of actors in working towards the realization of JFM as an effective participatory forest management program that integrates forest conservation and management goals along with the livelihoods needs of the rural, forest dependent communities.

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Water Policy by Public Design on the Texas Coast

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Freshwater inflows are vital to ecosystem services in the San Antonio and Mission-Aransas Bays of the Texas Gulf coast. Historical policy privileges upstream urban and agricultural water usage to the detriment of bay systems. In an attempt to address this conflict, the state of Texas mandated stakeholder committees evaluate water quality and needs to make recommendations to the water permitting authority. This is the precedent for our public participation process involving mediated modeling, a process of shared learning. We describe a series of meetings in which participants build a knowledge base from which they begin to ask specific questions about the ecosystem. A quantitative model is then built by professional modelers to answer participant questions. With facilitation, participants run simulations to determine whether modeled policy and management practices might address estuary sustainability. The goals of the project are to actualize public participation through knowledge building in the water policy process.

Keywords: mediated modeling, water policy, community-based conservation, public participation, Texas Gulf Coast

Water Policy on the Texas Gulf Coast

The total value or importance of wetlands is the sum of its ecological value, socio-cultural value, and economic value. This sum value is identified as ecosystem services defined as "benefits that people receive from ecosystems" (Millennium Ecosystem Assessment. Ecosystems and Human Well-Being: Synthesis, 2005). Ecosystem services of coastal wetlands include: food, fresh water, climate regulation, biological regulation, hydrological regimes, pollution control, opportunities for tourism and recreation, aesthetic, informal and formal education opportunities, biodiversity, soil formation, and nutrient cycling (de Groot, Stuip, Finlayson, & Davidson, 2006). On the Texas coast, wetland ecosystems provide ecosystem services of clean water, recreational opportunities, harvestable fisheries, and protection against storms and are vital sites of intracoastal transport and energy resource extraction (Yoskowitz et al., 2012). In terms of economic value, Texas has the second highest commercial fishery impact in the Gulf region with approximately $200-million (2008 figures) and almost $2-billion in recreational fisheries (http://www.st.nmfs.noaa.gov/st5/publication/econ/2008/gulf_ALL_econ.pdf) that are dependent on healthy ecosystems. These figures value the catch alone and do not include the support industries. Thus, it is of value to protect these coastal ecosystems from pollution, loss of habitat, and sea level rise. All coastal wetlands rely on an influx of freshwater to maintain healthy ecosystems (Costanza, Farber, & Maxwell, 1989; Longley, 1994; Sklar & Browder, 1998). In the San Antonio Bay area, the Harte Research Institute estimates that the public is willing to pay over four million dollars to protect freshwater inflows into the system (http://www.harteresearchinstitute.org/soceco-projects).

Research suggests that the quantity, timing, and magnitude of freshwater into an estuary are critical to maintaining a functional, healthy ecosystem (Kim & Montagna, 2012). Historical water policy in Texas privileges upstream urban and agricultural water usage with little attention paid to downstream and

estuarine health. The privilege given to upstream users in Texas to the detriment of the estuaries (Chang, Parvathinathan, & Dyson, 2006; Kim & Montagna, 2012) has exacerbated the lack of water flowing into estuaries due to large fluctuations in natural rainfall from year to year. Management recommendations must therefore take into account not only upstream demand, but replenishment of reservoir levels that supply water during drought. In 2001, Texas Senate Bill 2 (SB2) instructed state agencies to develop a program ensuring a "sound ecological environment" on priority river segments (p. 38, Heitmuller & Raphelt). Upon review of the bill by the National Research Council (NRC) of the National Academies, the agencies were instructed to expand their analytical approaches and address the complexity of physical processes. The Texas Senate responded with Texas Senate Bill 3 (SB3) in 2007. SB3 establishes local basin and bay expert science teams (BBEST) with consultants from an advisory committee and in conjunction with a basin and bay stakeholder committee (BBASC) that develop "environmental flow analyses and a recommended flow regime" that "maintains the viability of the State's streams, rivers, and bay and estuary systems" (p. 37, Heitmuller & Raphelt, 2012). Note that the BBEST and BBASC committees only make recommendations to state regulating agencies and do not make policy decisions. SB3 is significant in that it 1) expands the geographic base beyond priority river systems, 2) involves a broad stakeholder base, and 3) includes impacts of flows to estuaries (Heitmuller & Raphelt, 2012).

SB3 mandated BBEST and BBASC committees for the Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays (GSA BBEST and GSA BBASC). These groups began working in December of 2009 and submitted flow regime recommendations to the Texas Commission on Environmental Quality (TCEQ) in March of 2011 (http://www.tceq.texas.gov/permitting/water_rights/eflows/guadalupe-sanantonio-bbsc). This is an especially important watershed in Texas as it encompasses the cities of Austin and San Antonio, Texas and downstream the bays north of Corpus Christi, Texas. These estuaries support the world's second largest chemical industry, energy extraction, the intracoastal waterway, and the Aransas National Wildlife refuge (primary habitat for several endangered species). Subsequent to the flow recommendations of the GSA BBEST, the GSA BBASC committee submitted a work plan for adaptive management to the TCEQ on May 25, 2012. Primary objectives in this plan included instream flow studies, salinity circulation pattern studies in the estuaries, and key biological species studies (http://www.tceq.state.tx.us/assets/public/permitting/watersupply/water_rights/eflows/20120525gsabbasc_wpam.pdf). As a means to begin implementing this work plan, the Mission-Aransas National Estuarine Research Reserve (MA NERR) initiated a science and stakeholder collaboration with the University of Texas at Austin and Texas A&M University in College Station (hereafter referred to as the Science Collaborative) to study a focal species and salinity monitoring and to involve stakeholders in land use projections and systems modeling (http://www.missionaransas.org/post_science_sciencecollaborative.html). This paper focuses on the systems modeling part of the Science Collaborative.

Mediated Modeling as Stakeholder Engagement

Estuaries are complex systems with rich resources for life. Effective polices for sustainable estuarine systems must address upstream and gulf inputs, ecology, geomorphology, adjacent land use planning, resource extraction, and human needs. Mediated modeling provides a tool for scientists and stakeholders to develop or increase a shared knowledge base that is a foundation for understanding complex and dynamic environmental and social issues. Models offer a way to expand our mental capacity to better understand complex ecosystems and the implications of our own policy and management actions but it does not provide answers or solutions. The primary goal of mediated modeling is shared learning fostering a vision and understanding of where we are. The modeling process is a systematic approach for

investigating and synthesizing research, policy, and management options. Stakeholders have a tool for sharing creative and flexible insights.

Mediated modeling has been used to address issues of watershed management, national park management, concurrent wildlife and grazing lands management, and greenhouse gas emissions (Thompson, Forster, Werner, & Peterson, 2010; Van den Belt, 2004). It is a tool that is appropriate in participatory settings where technical aids (computers and projector) are available, the skills of a mediated modeler is within reason (who may affect the outcome), and where there are a limited number of participants. Under these conditions, participants often develop ownership of the model and it is the ownership that reinforces the commitment to the course of action. By confronting the facts involved rather than discussing opinions, conflict is often either ameliorated or avoided. Mediated modeling creates the space for thinking individuals to create a shared understanding that can help solve complex environmental problems and make a significant impact toward a more sustainable future (Van den Belt, 2004).

Although the process varies, the general format consists of several basic steps as outlined below (adapted from Van den Belt (2004)).

> Step 1. Preparation. Select stakeholders. Baseline information is established about the group and the perception of its individual members with respect to the issues. This information can be gathered by means of a survey or questionnaire. A preliminary model may be developed to serve as a starting point for the workshops.
>
> Step 2. Workshops. A series of meetings are held to foster learning among stakeholders. With assistance of a mediated modeler, participants develop a problem definition – a qualitative model that develops into a quantitative simulation model. The participants run "what-if" scenarios during the scenario evaluation phase.
>
> Step 3. Follow-up. With assistance of the jointly constructed model, the participants practice communicating the results to a wider audience, make plans to disseminate the results, and prepare for implementation of the results. A survey or questionnaire reveals what improved or did not improve in relation to the baseline information.

In this case study, the Science Collaborative mediated modeling process focuses on evaluating freshwater inflows into the Copano and Aransas Bays on the Texas Gulf Coast. The anticipated outcomes of the project are to develop shared systems learning among the scientists and stakeholders and create a shared systems model of the estuary as a potential tool for exploring management alternatives. In this article, I discuss the process of building the model, not the actual model itself. A keystone of the modeling process is early and active stakeholder engagement to provide critical data needed to build the collaborative model. The model may ultimately provide local and state decision makers with insight they need to formulate sustainable policies regarding freshwater inflow into local bays and estuaries.

Current Status of Project

We are currently in the middle of the three year project. In the first year, stakeholders were identified through prior affiliation with the GSA BBEST, GSA BBASC, or with other groups having an interest in freshwater inflows. These other groups include resource managers (government, water authority, etc.), community members (Chamber of Commerce, media, etc.), conservationists (environmental non-profit organizations), educators and researchers (teachers, biologists, etc.), tourism operators (guides, hoteliers, etc.), non-tourism business operators (fisher, oil and gas extraction, etc.), land users (rancher, builder, etc.), and recreational users (boater, bird watcher, etc.). The database of invited participants includes over 500 individuals, and actual participants from all groups have been present at all workshops thus far. The

average meeting attendance in the first four meetings has been 30-40 participants. The overlap of same participants from meeting to meeting is 70% - 80%. During these four meetings, participants have explored their vision for the estuary; assessed the past, current, and future of the system; collected relevant information for the model; and developed a simple quantitative model addressing a very specific question regarding system dynamics in the Mission Aransas and Copano Bay estuaries.

During the first meeting, stakeholders began developing a shared vision of the estuary and assessing knowledge within the group. Stakeholders identified where and how they interact with the estuary, helped prioritize a key research species, and identified relevant research and experiential knowledge. The last was used to delineate the parameters for a collaboratively designed model of the estuary. Workshop participants were then split into small working groups to discuss the Mission Aransas Estuary from a systems perspective. They were asked to 1) tell a story of the system, 2) ask three basic questions, 3) translate the questions into modeling language and answer them, 4) retell the story, using modeling language, and 5) revise the model to tell a more convincing story. The output from this exercise was visual representations of the estuary system. These were used to define system components and important interactions (biological, geophysical, economic, and social) within the estuary system.

In the second workshop, a visual synthesis diagram and matrix of component interactions of the models developed in the first workshop provided the basis to assess important dynamics of freshwater inflow for estuarine health and sustainable fisheries. Participants worked in small groups to explore how their needs and concerns could be translated into questions that could be addressed using a quantitative model. Four primary question themes emerged: freshwater inflows, estuary health, sustainable fisheries, and human impact. The results from the second workshop were used as the basis for developing a preliminary quantitative model for the third workshop.

Between the second and third workshop, a professional ecological modeler used the qualitative model and the priorities identified by the group to develop a quantitative model using NetLogo software (Wilensky, 1999). This model was presented in the third workshop and participants tested various baseline scenarios to determine whether modeled policy and management practices might address estuary sustainability. They then tested hypotheses of varied freshwater inflows on system dynamics. The participants were enthusiastically engaged in testing the model and discussed the model and its implications within their small groups and with other nearby groups. Suggestions as to model improvements will lead to further refinement of the model in future meetings. The next step in the process is to figure out how to communicate this shared knowledge.

Mediated Modeling in Community-based Conservation

Mediated modeling gives communities traditionally excluded from decision-making processes in a large democracy the opportunity to enter into a meaningful role in management and conservation. The wide range of stakeholders involved in this case study brings a diversity of ideas and perspectives to bear on water resource management. The shared learning process encourages both resource managers and users to recognize their mutual interdependence, creates an environment of respect and appreciation of differing viewpoints through ongoing dialogue, and facilitates exchange of ideas and greater understanding of the conservation goals. This approach to participatory management opens space held exclusively by regulatory agencies and reintroduces local communities to the resource. All stakeholders build connections amongst themselves and the ecosystem they model.

Mediated modeling is just one way to go about collaborative learning. It is appropriate in the context of highly literate people comfortable with technology. The participants recognize that the model itself does not provide answers or accurate predictions, but presents a tool to learn about the system. As the process

is the focus of mediated modeling, communication about the system and water resource management within and beyond the group becomes the focal point. No two mediated modeling processes are the same (van den Belt, 2004) but all highlight the joint learning process; in this case, resource managers and scientific researchers addressing the issues of freshwater inflows into vital estuaries.

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Process Literacy Across Shifting Rhetorical Frameworks in Internal Coalition Maintenance

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This essay explores internal environmental coalition communication in the context of conflict and deliberation, and it introduces a model of process literacy. Process literacy is a rhetorical strategy in coalition maintenance that pivots communication toward collaborative rhetorical frameworks (both invitational and deliberative) during internal coalition conflict. The author puts democratic theory, conflict theory (including dialogue), and contemporary rhetorical theory into conversation to conceptualize, explicate, and graphically depict process literacy. Through participant observation, interviews and close textual analysis of collected texts, dimensions and best practices of process literacy are described, interpreted, and demonstrated with a brief case study involving internal coalition conflict over an impending two-state water compact. These findings contribute to scholarship focused on rhetorical dynamics and tensions between consensus and dissensus. The author discusses implications and suggests further research.

Keywords: collaborative, competitive, decision-making, democracy, dialogue

Introduction

Large-scale applications of democracy suffer encumbrances when seeking inclusivity of diverse and multi-cultural interests (e.g., Benhabib, 1996; Cunningham, 2002; Habermas, 1984, 1991). Making democracy work with multicultural publics and large scale applications requires a model that opens spaces, accommodates, and develops new forms of participation to create the conditions for deliberation within civic spheres and at interfaces with sovereign decision-makers (e.g., Cox, 2010). Descriptions of new participatory forms such as cultural activism (e.g., Delicath, 2004), community dialogues (e.g., Spano, 2001), collaborative learning opportunities (Walker, 2004), and third party or alternative dispute resolution (ADR) processes (e.g., Carpenter & Kennedy, 1988; Coalition for Utah's Future, 1995) have emerged in the literature. These are examples of participatory communication processes that create the conditions for deliberation among diverse publics and institutional decision-makers. Environmental coalitions also can function to create civic spaces for deliberation. This essay puts conflict theory in conversation with deliberative democratic theory and contemporary rhetorical theory to explicate the negotiation of internal conflict within the context of an environmental coalition. It offers a model of process literacy, a kind of discursive lubricant that pivots conflict communication toward collaboration. Process literacy, I argue, is an important rhetorical strategy in coalition maintenance, because it functions to keep communication productive as disparate (multi-cultural) coalition participants negotiate internal conflict while striving to reach mutual decisions.

Theoretical Scaffolding

Connecting theory that is constituted by democratic, conflict, and contemporary rhetorical tenets for this project enables the strengths of each to inform the weaknesses of the others. Simply put, democratic theory informs participation in decision-making, conflict theory informs participation in conflict, and rhetorical theory informs (audience) persuasion within decision-making and conflict. Environmental coalitions engage in all three of these complex theoretical domains because they use rhetorical tactics and strategies to influence decisions and to negotiate conflicts.

Democratic theory provides resources to illuminate the communicative practices and processes that seek to uphold principles of democracy such as liberty, equality, and justice during conflict communication. For example, Rural Water Defenders (RWD) is a culturally diverse coalition (e.g., environmentalists, ranchers, natives, business owners, government officials, etc.) of participants who are resisting the Urban Water District's (UWD's) proposal to drill for ancient aquifer water in rural Desert and Mountain states for the purpose of moving the water to metropolitan Urbana.[1] These aqueduct opponents perceive the proposal as a "water grab" (a common epithet used in the Western U.S. for large scale water projects) by powerful elites. They are fighting for freedom to carry on their livelihoods, equality for rural interests, and justice for the (native) inhabitants of a fragile and arid ecosystem. And while RWD is united by a common threat, they must also find ways to successfully negotiate diverse constituencies and internal conflicts that inevitably arise among coalition participants over strategies to prevent the aqueduct from becoming a material reality.

Deliberative democratic theory emphasizes the importance of communication (e.g., Benhabib, 1996; Habermas, 1984). This model of democracy opens up a space for and seeks the institutionalization of the *conditions* for deliberative communication in the public sphere and in governmental decision-making processes (Cunningham, 2002). Since deliberation entails the interchange of ideas that encourages the identification of collective preferences toward a common good, this approach assumes that specific interests and values get constituted through deliberative exchanges among publics and decision-makers over time. Deliberative democracy is a dynamic and communicative approach to democracy, which relates to process literacy in internal coalition conflict communication and maintenance because coalition participants must deliberate together within relatively flattened hierarchies in order to make collective and mutual decisions.

Conflict theory describes substantive, relational, and processual dynamics that affect communication climates in the context of (perceived) mutual incompatibilities (e.g., Carpenter & Kennedy, 1988; Deetz & Simpson, 1999; Kellett & Dalton, 2001; Mindell, 1995; Pearce & Littlejohn, 1997; Zoller, 2004). Conflict resolution literature, especially that which treats mediation (e.g. Cloke, 2001; Moore, 1986), assumes that parties are capable of resolving disputes in a mutually agreeable fashion and that imbalanced power relationships can be leveled (Folger & Bush, 2001). The assumptions in conflict resolution theory are generally compatible with the principles of deliberative democracy outlined above. For example, ADR and collaborative learning literatures contribute to understandings about creative communicative processes and practices that foster inclusive and democratic participation (Carpenter & Kennedy, 1988; Cloke, 2001; Daniels & Walker, 2001). Conflict theory also contributes to process literacy, because it informs communicative processes that facilitate open communication climates for deliberation in the wake of internal coalition disputes.

Additionally, rhetorical theory contributes to process literacy because it focuses on strategies for influencing audiences. I adopt Dickinson, Blair, and Ott's (2010) definition of rhetoric as "the study of

1 Pseudonyms are used throughout this essay to protect the anonymity and confidentiality interests of associated individuals and organizations

discourses, events, objects and practices that attends to their character as meaningful, legible, partisan, and consequential" (p.3) This emphasis in rhetorical theory on the framing and resonance of messages with audiences also contributes to conflict theory by putting rhetorical frameworks into conversation with processual models for resolving conflicts (e.g., mediation, facilitation, and dialogue).

In sum, I draw on democratic, conflict, and contemporary rhetorical theory to explicate a process literacy model, which functions to shift communication toward collaboration and deliberation within multi-cultural large group conflict communication.

Combining Rhetorical Criticism and Qualitative Methods

A growing number of scholars have used a combination of rhetorical criticism and qualitative field methods (e.g., Blair, 2001; Conquergood, 1992; Middleton, Senda-Cook, & Endres, 2011; Pezzullo, 2003). For this research, I used "rhetorical field methods" (Middleton et al., 2011, p. 387) to collect texts for rhetorical analysis. This included participant observation of eight full day RWD quarterly strategy meetings and 10, 1 1/2 to 3 hour long semi-structured interviews (Lindlof & Taylor, 2002) with 11 active RWD participants who represent a diverse range of cultural orientations within RWD. I then analyzed roughly 143 pages of field notes and relevant excerpts from interview transcripts. This research spanned three and a half years.

A portion of my findings follow in four subsequent sections: (1) I introduce the process literacy model, (2) I define key terms associated with the model, (3) I offer a brief RWD case study to demonstrate best practices in process literacy, and (4) I discuss implications and make suggestions for future research.

Process Literacy

To help conceptualize process literacy, I offer two diagrams (see Figures 1 & 2, below).

Figure 1 places macro- and meso- terms that I will describe into a conceptual map. It depicts internal coalition communication within three overlapping circles that are embedded within a competitive socio-economic and political milieu of North America. These circles represent three different approaches to discursive differences and cultural tensions — invitational, deliberative, and competitive — and the complexity of shifting rhetorical dynamics in internal coalition communication. The perforated boundary of the bottom circle represents the natural permeation of a competitive orientation into rhetorical situations for resolving conflicts in *Western* culture (capitalized here to distinguish the term from its geographical connotation).

Makau and Marty (2001) note, "Much modern argumentation …has rested on assumptions that…those who argue must come to the exchange… favoring an oppositional approach to interaction" (p. 157). These scholars suggest, "Ideological commitments to competitiveness, individualism, and winning" undermine the ability to achieve "idealized deliberative communities" (p.101). In short, Western argumentation practices are predominantly built on competitive models. The solid boundaries around the two upper circles represent a barrier between the predominantly competitive Western culture and collaborative ways of approaching conflict. Changing from a competitive to a collaborative approach when tensions arise is not a natural move for Westerners. It requires knowledge, skill and practice. Process literacy facilitates movement with intentionality in a collaborative direction as indicated by the arrows and perforated lines in locations where the three circles overlap.

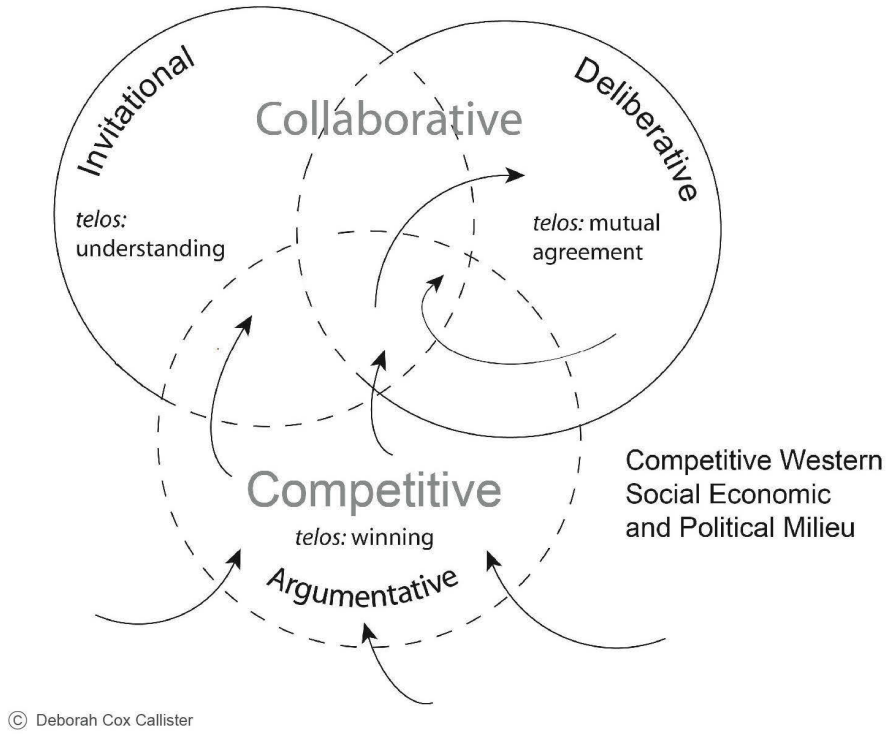


Figure 1. Communicative genres and the rhetorical dynamics of internal coalition communication. Process literacy supports movement across rhetorical frameworks toward a collaborative communicative genre and a deliberative rhetorical framework.

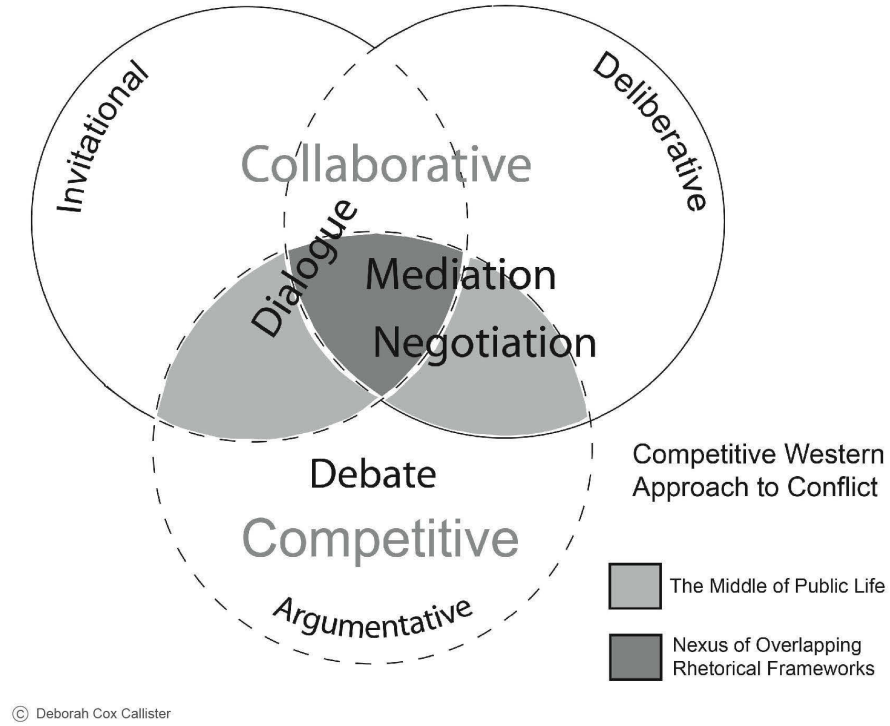


Figure 2. Locating conflict communication models within rhetorical frameworks.

Figure 2 depicts the same concepts, but it foregrounds four distinct conflict models – debate, dialogue, mediation, and negotiation. The overlapping areas among these three circles represent conflict communication that does not necessarily fall neatly within just one of these circles. For example, the shaded overlapping areas demonstrate that an argumentative approach to conflict can be a collaborative enterprise.

Process Literacy Terms

I have organized the process literacy terms on three levels: macro-, meso-, and mirco-. The macro-level terms refer to communicative genres, meso-level terms refer to rhetorical frameworks, and micro-level terms refer to conflict models. In this essay, I focus on the macro- and meso- terms and their connection to process literacy.

Communicative Genres – Macro Level Terms

The term *communicative genres*, references Bakhtin's (1981) broad conception of them. For Bakhtin, communicative genres are worldviews that influence daily behaviors. Communicative genres carry with them value systems, purposes, and a range of action/responses that are learned during primary socialization. As Morson (1991) explains, communicative genres from a Bakhtinian (1981) perspective are "models for change and central to how change happens" (p. 1087). In both Figures 1 & 2, I depict two communicative genres: competitive and collaborative, which I will define next.

Competitive. A *competitive* communicative genre refers to the dominant individualistic and aggressive cultural practices within Western cultural milieu. As Bohm (2003) explains, "The success of a person's point of view" is often rewarded either socially or financially and "the struggle of each idea to dominate is commonly emphasized in most activities in society" (p. 296). Those who disagree are viewed as "rivals" rather than "resources" (Makau & Marty, 2001, p. 88). The model for change within a competitive communicative genre assumes that aggressive and confrontational challenges to the status quo are necessary. This genre subsumes the argumentative rhetorical framework that I have observed in internal coalition communication.

Collaborative. By a *collaborative* communicative genre, I am referring to alternative (non-dominant) Western cooperative cultural practices. The orientation of a collaborative communicative genre adopts a premise of interdependence and mutual respect for others with plural worldviews (Arnett, 2004; Makau & Marty, 2001). Conflict is viewed as an opportunity to make change in mutually agreeable ways (Daniels & Walker, 2001). This communicative genre subsumes two of the three rhetorical frameworks I have observed in internal coalition communication—invitational and deliberative.

Rhetorical Frameworks – Meso Level Terms

In order to understand how process literacy pivots discourse toward a collaborative communicative genre, it is important to understand what I mean by *rhetorical framework*. The framework (e.g., the overall style, tone, and content) of rhetoric is shaped by intention, purpose, or *telos*. For example, if the *telos* is to compete, a more aggressive or confrontational approach to the rhetorical situation is likely to ensue. Rhetorical framework references a constellation of rhetorical characteristics that are associated with and influenced by *telos*. Figures 1 & 2 depict three overlapping rhetorical frameworks, each with a unique *telos* that I have observed in internal coalition communication.

Argumentative. Traditionally, an *argumentative* rhetorical framework adopts a win/lose, right/wrong, or judgmental set of assumptions. The *telos* in an argumentative rhetorical framework is to win audience

"adherence" or "informed support" (Rieke, Sillars, & Peterson, 1997, p. 4) at the potential expense of someone or something else (losers or losing propositions). I embed this rhetorical framework within the prevailing competitive communicative genre of Western culture.

Invitational. An *invitational* rhetorical framework adopts a type of curiosity or interest in learning, without the intention of persuading audiences toward a particular stance. The *telos* is to understand (Bone, Griffin, & Scholz, 2008; Foss & Griffin, 1995). Thus, rhetors and audiences are in a dialectic relationship, wherein the subject positions of teacher and student shift between them and are shared. This rhetorical framework is subsumed within a collaborative communicative genre.

Deliberative. A *deliberative* rhetorical framework also falls within the collaborative communicative genre. Within a deliberative rhetorical framework, the *telos* is to reach mutual agreements or decisions that address the primary interests involved. The ideal outcome among deliberators is consensus (Ellis, 2012; Gastil, 1993; Habermas, 1984; Makau & Marty, 2001).

Conflict Models – Micro Level Terms

In Figure 2, I locate communicative conflict models within the three rhetorical frameworks described above. Conflict communication models are patterned communicative practices or processes for productively dealing with conflict. These conflict processes can be initiated within any of the three rhetorical frameworks described above, but each is located in Figure 2 within the respective rhetorical framework that is most conducive for operationalizing it. I address the micro- term aspects of process literacy, elsewhere.

Process Literacy and the Collaborative Genre

I assert that the ability to negotiate the complexities of conflict in internal coalition communication while striving to reach agreement on action steps requires process literacy. In the case of the Rural Water Defenders (RWD), process literacy entails maintaining productive communication at the nexus of argumentative, invitational and deliberative rhetorical frameworks. Process literacy facilitates movement away from a competitive communicative genre toward a collaborative one. Process literacy allows for some shifts from collaborative to competitive communication genres, but it primarily creates openings where these frameworks and genres overlap and finesses interactions toward a deliberative rhetorical framework to arrive at mutual agreements. Next, I will briefly review the relevant literature for the meso-terms in Figures 1 & 2, and I will note how the macro- terms relate to process literacy along the way.

Traversing Rhetorical Frameworks

While process literacy pivots conflict communication toward a collaborative genre, it also allows for cooperative forms of argumentation and prevents the impulse to coerce or force mutual agreements. Thus, process literacy enables participants to fluently traverse all three rhetorical frameworks -- argumentative, invitational and deliberative -- in support of coalition maintenance.

An Argumentative Rhetorical Framework

I distinguish an argumentative rhetorical framework from deliberative and invitational rhetorical frameworks by communicative genre (primarily competitive) and by *telos* (winning). Argumentation "is the communicative process of advancing, supporting, criticizing and modifying claims so that appropriate decisions makers, defined by relevant spheres, may grant or deny adherence" to these claims and

conclusions that they support (Rieke, Sillars, & Peterson, 1997, p. 4). Inherent in this definition of argumentation is a *telos* of persuasion – to *win* the informed backing of audiences (e.g., decision makers). As discussed earlier, the style, tone, and content of messages enacted within an argumentative rhetorical framework typically reflects this competitive (win/lose) purpose in Western culture. The *telos* is not consensual decision-making as it is within a deliberative rhetorical framework.

While deliberation uses argumentation as a means for reaching informed, mutual decisions, and argumentation uses deliberation as a means for honing and advancing key claims, the primary distinction I want to call attention to is the communicative genre (i.e., the manner) in which dissent is enacted. This is because when it comes to internal coalition communication, the *approach* taken during the act of dissent is vital to the quality of participant relationships, an important aspect of coalition maintenance.

Cooperative argumentation. Makau and Marty (2001) distinguish *cooperative* from *adversarial* forms of argumentation in which "people tend to get locked into their positions" as adversaries instead of focusing on the issues, interests and values that underlie their respective positions (p. 84). This distinction is highly relevant to process literacy, which I argue pivots dissent toward a collaborative communicative genre in the context of internal coalition communication. If dissent takes place within a competitive (win/lose) argumentative framework, it risks perpetuating a cycle of conflict among coalition participants, which undermines coalition maintenance because it privileges the advocate's perspective at the expense of others. Alternatively, "[c]ooperative argumentation," as Makau and Marty (2001) suggest, "provides the means for reasoned give-and-take on complex and controversial issues" (p. 115). In sum, argumentation can take place within both competitive and collaborative communicative genres.

Turning back to Figure 1, Makau and Marty's (2001) notion of cooperative argumentation falls outside of a competitive communicative genre. Thus, cooperative argumentation is enacted within a collaborative communicative genre. In Figure 1, this is the upper portion of the sphere labeled "Argumentative Rhetorical Framework" where it overlaps with both the invitational and deliberative rhetorical frameworks. Similarly, Doxtader (2000) treats these overlapping frameworks in his discussion about the interplay between dissent and consensus. I locate what Doxtader (2000) refers to as "transgressive" (p. 339) forms of rhetoric primarily within the competitive communicative genre or lower portion of the argumentative rhetorical framework. I do this because in describing what he calls "the middle of public life" between "transgressive and consensual modes of communication" Doxtader (2000) likens the condition of being in the middle as being "caught between disrespect and mutual support" (p. 345). Thus Doxtader's (2000) "middle of public life" is located in the overlapping areas between a competitive and a collaborative communicative genre depicted in Figures 1 & 2. An invitational rhetorical framework enables movement toward a deliberative rhetorical framework. As such, it is often the route taken to get from a competitive argumentative framework to a collaborative deliberative rhetorical framework (as noted by the flow depicted in Figure 1).

An Invitational Rhetorical Framework

Foss and Griffin (1995) introduced the concept of an invitational rhetorical theory that eschews patriarchal impulses to dominate and change others. This rhetorical framework is "an invitation to understanding as a means to create a relationship rooted in equality, immanent value and self-determination. Invitational rhetoric constitutes an invitation to the audience to enter the rhetor's world and to see it as the rhetor does" (p. 5). Bone et al. (2008) have responded to criticisms over Foss and Griffin's (1995) totalizing linkage of traditional rhetorical strategies with coercive forms of persuasion or more violent forms of rhetoric that trespass on personal integrity. In doing so, these authors suggest that invitational rhetoric is "a move toward civility," which they define as a place where "we cannot pretend that we journey alone, that others are unworthy or without voice, or that our view is the only 'right' view" (p. 456-457). The ideal result of invitational rhetoric is the understanding of both issues and the participants, themselves, as they share

unique perspectives through listening to one another with a sense of "respect and appreciation" (Foss & Griffin, 1995, p. 5).

Thus, invitational rhetoric opens up a communication climate and fosters a shift from a competitive to a collaborative communicative genre. To move beyond genuine inquiry and understanding of diverse perspectives to an evaluative and selective process that involves ranking options and decision-making on a collective course of action, falls outside of an invitational rhetorical framework. This is because invitational rhetoric eschews rhetorical moves to persuade audiences about what is better or best.

Finally, an invitational rhetorical framework sets the stage for cooperative problem-solving and conflict resolution. As Foss and Griffin (1995) explain, invitational rhetoric *allows* for the "*development* of interpretations, perspectives, courses of actions, and solutions to problems different from those allowed in traditional models of rhetoric" (p.16, *italics* added). In the case of RWD, internal coalition conflict is often met within an invitational rhetorical framework before participants move beyond learning about the diverse perspectives represented in the room toward collaborative decision-making.

A Deliberative Rhetorical Framework

In contrast to invitational rhetoric, a deliberative rhetorical framework engages inventive, suasory, creative, evaluative, and collaborative problem-solving steps toward mutual decisions (Doxtader, 2000; Ellis, 2012; Gastil, 1993; Makau & Marty, 2001; Welsh, 2002). Through participant observation, I have found collaboration to be the predominant communicative genre in RWD strategy meetings. During these meetings, participant communication often shifts back and forth between invitational and deliberative rhetorical frameworks. I have observed that there is a natural progression in this group that begins with invitational rhetoric and ends with deliberative rhetoric as participants move through agenda items and arrive at mutual agreements.

Doxtader (2000); Goodnight (1982); Makau and Marty (2001); Peterson, Peterson, and Peterson (2005); and Welsh (2002) are among the few contemporary rhetorical scholars that explicitly theorize deliberative rhetoric outside of legislative contexts. Doxtader (2000) asserts, "The middle of public life appears when individuals, standing between various interests, desires, and discourses, enter into a struggle for recognition" (p. 361). RWD strategy meetings are an example of this space in the middle of public life where deliberative rhetoric happens. As I will demonstrate in the analysis section, process literacy, within a deliberative rhetorical framework, involves patience and the wisdom to stop short of decision-making if a clear pathway forward is not collectively understood. As such, process literacy keeps open a space for on-going dissent between deliberative and argumentative frameworks within a collaborative communicative genre.

Turning back to Figure 2, we might visualize Doxtader's (2000) middle of public life in the overlapping shaded areas, particularly at the nexus (depicted with the darkest shading in the center), where space is common to all three rhetorical frameworks. Here, in this communicative space, held open by process literacy, dissent thrives and pathways toward consensus emerge. This is the space between what Doxtader (2000) calls transgressive (competitive) and intersubjective (collaborative) dimensions of the public sphere.

In particularly tense conflict situations when competitive genres emerge and begin to dominate (imagine the overlapping areas in Figures 1 & 2 shrinking as the bottom circle moves downward, away from the top two circles), process literacy prevents the attenuation of this space in the middle. In other words, process literacy acts like a ligament that keeps argumentative rhetoric connected to and pivoting toward collaborative rhetoric.

Analyzing how process literacy helps participants manage to collectively and consistently enter this liminal space and dwell in it, responds to Doxtader's (2000) call for building deliberative rhetorical theory as a space between opposition and agreement. It is a means for determining how dissensus can facilitate consensus. Beyond rhetorical theory, much has been written about the Habermasian (1984) influenced term "deliberation". The term is polysemic and scholarship that treats deliberation spans many disciplines.

Within communication, Ellis (2012) defines deliberation as a type of communication based on democratic fairness with five qualities: (1) argument and reason, (2) fair and equal relationships among participants with genuine listening and respect for the ideas and realities of others, (3) consensus as a *telos*, (4) traditional authority and power can be challenged and questioned, and (5) no one group may dominate the interactions. I adopt Ellis' (2012) definition of deliberation with help from Gastil (1993) who claims that deliberation entails equal and adequate opportunities to participate in "agenda setting reformulating… and dissenting" (Gastil, 1993, p. 26). Thus, a deliberative rhetorical framework supports communicative speech acts marked by Ellis' (2012) notion of democratic fairness with room for dissent, because pressure to reach agreement can silence inarticulate and marginalized interests (Mouffe, 1993; Peterson et al., 2005).

We can see in deliberative rhetoric some overlap with Foss and Griffin's (1995) invitational rhetoric in the concepts of: fairness, equality, and an openness to questioning the status quo, as well as in honoring equality and inclusive participation. But there is a departure from invitational rhetoric with deliberative rhetoric's underpinnings in argumentation and the motive to reconcile differences or achieve consensus.

In sum, a deliberative rhetorical framework is respectively distinct from argumentative and invitational rhetorical frameworks, because, (1) it steers clear of competitive win/lose orientations, and (2) it seeks mutually acceptable ways to resolve differences. Invitational rhetoric creates an open communication climate in that it invites information sharing and articulation of perspectives. As such, an invitational rhetorical framework is compatible with and sets the stage for a deliberative rhetorical framework – both fall within a collaborative communicative genre. Questions remain, however, "to unravel the puzzle of how public transgression and opposition facilitates dialogue and mutual agreement" (Doxtader, 2000, p. 338). I assert that process literacy enables these shifts between competitive and collaborative communicative genres and elaborate on dimensions and best practices of process literacy next.

Case Study: Troubled Waters in Verdant Valley

First, I must describe a major internal RWD conflict that occurred over the proposed interstate water compact. Responses to this situation required negotiating serious differences about the compact's value without allowing a competitive communicative genre to dominate.

In late summer of 2009, water bureaucrats from Mountain State and Desert State held a series of promotional meetings for a negotiated two-state compact that allocated specific water rights underlying a basin that straddles the two-state border. Many RWD participants became passionately opposed to this compact, while a few supported it. A clash between Alonso and Joe required process literacy to negotiate the dispute.

Alonso is a small business owner in Verdant Valley with a keen sense of humor. His communicative style can be somewhat divisive at times, and he doesn't "take any bullshit" (DC, 01/08/10). He remarked in our interview that the governor of Mountain State would sign the two-state compact "in a New York minute" (or 45 seconds) if it were not for the legal ruling in favor of RWD's arguments and public awareness campaign. Alonso doesn't mince words and he often references his ethnic "radar" when he smells a rat. He makes public his opinions in letters to editors and he does not shy away from personalizing his messages. For example, in response to learning that Joe supported the two-state compact, he called

Joe's credibility into question in an open email letter addressed to Joe, which he circulated on the RWD listserv. He wrote:

> When some heard your statement re: the [water rights] split and know you are promoting a compact they said[,] "Is he being bought out?" Your reputation in these parts is being challenged. Stand strong Joe: oppose a compact and continue the long untarnished history you have.

Here, Alonso suggests that Joe's *ethos* is at risk if he continues to support the compact. He cautions him and implies, "You're either with us on this issue or you're against us." The overall tone of the entire letter created consternation for many RWD participants, who practice maintaining a collaborative communicative atmosphere within RWD.

Alonso's letter, along with other rumors circulating within the group, precipitated a call within RWD to adopt ethical guidelines. Alonso's strident position and willingness to "call out" Joe in front of his peers was perceived by some members of RWD as a personal attack on Joe that threatened to foreclose the opportunity to continue exploring options for mutual gain in collaboration with Joe, or anyone else that might take a favorable view of the two-state compact.

Three Capacity Indicators of Process Literacy

Before describing a sustained dialogic session that ensued in response to this controversy, I want to briefly describe three dimensions (or capacity indicators) of process literacy: (1) facilitation, (2) mediation, and (3) discursive accommodation. I assert that the capacity for process literacy is constituted by the collective skill sets among participants that support these dimensions, which function to keep communication within a collaborative communicative genre.

Facilitation

All of the RWD strategy meetings are facilitated by one of a handful of RWD participants. Facilitators are (disinterested) third-parties that concurrently track communicative group interactions on three levels: processual, substantive, and relational (Kaner, 2007; Daniels & Walker, 2001). I define facilitation as the practice of employing communicative strategies to foster participatory communication toward collectively derived group goals.

Mediation

In RWD, disputants either mediate their own disputes or one particular facilitator (with some background in mediation) mediates them using shuttle diplomacy. Mediation is a democratic, participant-driven, voluntary dispute resolution process that uses the help of a third-party to reach mutually beneficial agreement(s) (e.g., Moore, 1986).

Discursive Accommodation

RWD participants practice discursive accommodation. Having an awareness of unique cultural symbolic meanings enables a rhetor to build rapport across cultural divides by avoiding certain speech acts that might be perceived by audience members as culturally offensive. This is what I call *discursive accommodation*. It is akin to what Makau and Marty (2001) call "critical self-awareness" (p. 57).

Best Practices in Process Literacy

I will now demonstrate how best practices in process literacy enabled productive communication in a RWD strategy session through conflict over the two-state compact without the impulse to coerce consensus and in support of coalition maintenance. Best practices in coalition process literacy include: (1) creating ethical guidelines, (2) containing conflict and attending to the need for confidentiality, and (3) keeping communication participatory across shifting rhetorical frameworks.

After Alonso's letter stirred turmoil among participants, the group drafted and adopted ethical principles that emphasized the need to refrain from "personal attacks," to "respect similarities and differences," and to remember that "confidentiality" of internal conflicts and sensitive information is "crucial." The participants agreed that "breaches" to "what happens here stays here" would result in sanctions including a "3 strikes you're out!!" rule. Containing conflict and threatening sanctions can have a dampening effect on participation, but in the case of RWD, process literacy fostered engagement across all three rhetorical frameworks (argumentative, invitational, and deliberative) and communicative genres (competitive and collaborative).

The two-state compact issue was still a controversial topic several months after the ethical guidelines had been adopted by RWD. At the next strategy meeting, Rita invited participants in the circle (25-30 individuals) to share their opinions about the two-state compact (an invitational framework). Before opening up participation, she told the group that a consensus was not a viable goal since there were strong disagreements over the issue. This framing of the discussion tacitly conveyed that the group would fall short of mutual agreement (a deliberative *telos*).

In the dialogic session that followed, there were no fewer than 66 turns taken over a period of about 1 1/2 to 2 hours averaging between 1 1/2 to 2 minutes per speaker (01/09/10). During this time, individuals weighed in on their opinions about the controversial two-state compact. Aside from calling the names of the next speakers, Rita took 5 of the 66 turns. Not only did she facilitate a highly participatory communication process during conflict, she helped the group to move between invitational and deliberative rhetorical frameworks as the rhetorical situation shifted in the room. For example, at one point, Rita stated, "This is your valley, not mine. Folks from the valley, what would work for you?" This is an example of facilitating to identify options for mutual gain within a deliberative rhetorical framework. About 17 turns later, Ian facilitated a shift to an invitational rhetorical framework by explaining why those who would be directly impacted by the two-state compact might value the compact more than others. This is an example of paraphrasing disparate perspectives to signal that diverse concerns have been heard and understood. Another 17 turns later, a participant from the valley in question asked, "So what if we all agree against the compact? What do we do?" This question raised a red flag for Rita, as the facilitator, because it implied that the majority opinion in the room constituted a consensus.

At this juncture, Rita chose to straddle an invitational and deliberative rhetorical framework by reminding the group that a viable mutual agreement was not feasible. While cooperative argumentation and sharing of perspectives in a deliberative fashion were germane to the situation, mutual agreement was not. Rita, replied, "We can't agree. There is too much diversity in the group." Twenty-two turns later, Rita signaled that it was time to wrap up the dialogue, "We need to recap and move on the agenda." A proponent of the two-state compact spoke next within a cooperative argumentative framework. And Rita reiterated, "We need to recap this discussion. Can we discuss points to improve [our situation]?" Sarah, spoke next, "This has been a good discussion with important points made." Appu spoke with optimism, "We still have a chance to move forward without the compact." At this point, Rita cautioned, "We haven't imploded. There have been a variety of ideas." Then, she changed the discussion topic by asking David to complete the report on plans for the Mountain State's legislative session.

This scenario requires unpacking to better understand the importance of process literacy, which keeps communication participatory while engaging conflict. As is typical in the RWD meetings, Rita called on participants as they raised their hands. She often states three or four names in sequence as a way to regulate turn taking and manage participant expectations. During this rhetorical situation, at least 21 out of about 26 participants chose to speak. The primary proponent for the two-state compact, Joe, took about 10 turns, Ian took approximately 8, Alonso took 3 (but walked in and out of the room toward the end of the discussion), and everyone else took anywhere from 1 to 5 turns. Participation from almost everyone in the room, during a controversial discussion, is exemplary of a participatory communicative process (Kaner, 2007).

Throughout this two-state open discussion participants traversed argumentative, deliberative and invitational rhetorical frameworks within a collaborative communicative genre. Rita kept the turns rolling and maintained a diversity of voices. In spite of strong oppositional opinions, there was never an attempt on her part to flatten or reframe the differences in the room. Put another way, the distinctions among all of the different perspectives, as articulated by each participant, remained in relief. While the topic was highly controversial, participants offered up a wide range of diverse ideas and opinions, sometimes expressing positions within a cooperative argumentative rhetorical framework using logic and reason to persuade others. The process of turn-taking involved making sure that differences in opinions and concerns regarding issues were articulated with time for re-articulation, especially from Joe, who held the minority opinion in the room. This appeared effortless, but as Rita revealed to me later that day, “There were moments when I wasn’t sure we were going to make it through the meeting.”

Toward the end, when Appu spoke with optimism implying that the group was close to a consensus on the two-state compact, Rita cautioned everyone, “We haven’t imploded,” and quickly moved the discussion to a different topic. This is an example of backing away from the impulse to reach an agreement. Knowing when to back off of this *telos* is a best practice of process literacy within a collaborative communicative genre.

In summary, process literacy enabled a highly participatory strategy session and the practical wisdom (*phronesis*) to hold open a space for dissensus across shifting rhetorical frameworks in the context of internal coalition conflict.

Implications and Concluding Remarks

Doxtader (2000) calls for “a manifold exploration of the middle of public life…to unravel the puzzle of how public transgression and opposition facilitates dialogue and mutual agreement” or “how dissent contributes to the formation of consensus” (p. 338). I have responded to this call by exploring the ways in which RWD participants negotiate their conflicts aimed at reaching agreements on action steps to fight a proposed aqueduct. In response to a major internal controversy, RWD created ethical guidelines in support of healthy coalition participant relationships, contained the conflict by maintaining confidentiality about the controversy within the group, and kept communication participatory across shifting rhetorical frameworks. These best practices in process literacy serve group cohesion and resilience for weathering internal disputes that otherwise threaten to divide participants. As such, process literacy is a significant rhetorical strategy in coalition maintenance.

I suggest that RWD offers insights for other environmental campaigns in late modernity. Moreover, studying how RWD applies process literacy to come to (dis)agreements on particular action steps provides a case study with implications for how deliberative democracy can work within other multi-cultural organizational contexts. However, the maturity levels and previous experiences of the participants in this particular coalition must be taken into account. The RWD is comprised of seasoned activists with long-

standing relationships that date back to anti-nuclear campaigns in the 1980s. This cannot be ignored. The maturity-levels, relational histories, and the collective wisdom among the silver-haired participants in RWD are factors that lend themselves to best practices for negotiating differences, especially discursive differences and cultural tensions that constitute this coalition. Best practices may be more difficult to achieve in coalitions lacking these attributes. Moreover, coalitions are typically formed around single issues. Often this entails a common threat or enemy. However, there are models of coalitions that form and function to envision common futures rather than to fight common threats and enemies (e.g., Greater Baton Rouge Clean Cities Coalition and Envision Utah). I assert that process literacy, as a rhetorical strategy in coalition maintenance, may be key to identifying functional pathways forward for deliberative democracy as we strive to create sustainable futures at watershed levels.

Future research might explore process literacy within internal coalition communication contexts where participants have less relational histories or less activism experience and/or a younger or more diverse participant demographic. In sum, the findings in this case study point to several loci for future research in internal coalition communication. Given that water is the lifeblood of ecosystems on earth, I suggest that studying environmental coalition communication in the context of water conflicts is critical and fertile ground for gaining insights into practical ways to foster participatory and deliberative participation in an environmental democracy – one in which more than human inhabitants of land communities can also participate.

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The Value of Environment in the Controversy Over Antibacterial Silver: A Swedish Case Study

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This study analyzes the argumentation used in the Swedish controversy over using silver as an antibacterial agent in consumer and healthcare products. The analysis is based on texts from the news media, government agencies, non-governmental organizations, municipalities, companies, and the Swedish parliament and government. Opponents argue that silver harms the environment, while proponents not only refute this, but even claim it to be beneficial. Refutation of opposing views and invocations of scientific evidence are overall argumentative strategies used by both sides of the controversy. These patterns of the controversy form a complex and multi-faceted context that can be expected to restrict citizen conceptualization, information seeking, participation, and deliberation.

Keywords: antibacterial silver, argumentation, complex cause–effect chains, environmental controversy, environmental communication

Introduction

In May 2012, Swedish Minister for the Environment Lena Ek (2012) sent an open letter to the boards of the county councils inviting them to provide information on their use of biocides in textiles and medical supplies. The minister expressed concern over the environmental impacts of these applications. Silver is one of three biocides explicitly addressed in the letter, the other two being triclocarban and triclosan. By addressing the potential environmental risks of using silver as a biocide, the minister's letter contributes to a controversy over the use of antibacterial silver in Sweden and globally. This controversy engages a number of institutional actors in society: politicians, government agencies, non-governmental organizations (NGOs), municipalities, companies, and scientific experts. Through the media, press releases, reports, and on their websites, these stakeholders express various opinions about silver. A central issue in this debate is the effects of silver on the environment, while additional issues concern the impacts of antibacterial silver use on public health and the sewage treatment industry. These latter issues, however, are not addressed here.

Two basic positions regarding the environment are advanced in this controversy over antibacterial silver: opponents claim that the use of antibacterial silver harms the environment, while silver's proponents not only refute this, but even claim that silver benefits the environment. This study analyzes the structure of this Swedish environmental controversy over antibacterial silver by addressing the conflicting reasons, or arguments, articulated in support of these opposing standpoints. The paper addresses the following research questions: Who are silver's proponents and opponents in this controversy? and what arguments do they advance to support and oppose the use of antibacterial silver with regard to its environmental

effects? To answer these two questions, we conduct a content analysis of coverage of the issue in Swedish newspapers, government documents, and websites of government agencies, municipalities, NGOs, and companies. The results identify the arguments used and, in so doing, address, in some detail, important aspects of much environmental communication, namely, its controversial nature and the argumentation that structures it. Arguably, the arguments used in a controversy constitute a crucial context for citizen conceptualization, participation, and deliberation on an environmental issue (Depoe, Delicath, & Elsenbeer, 2004).

Environmental Communication, Controversy, and Argumentation

Although all communication is necessarily somewhat collaborative (Grice, 1975), environmental communication is often controversial (see, e.g., Depoe et al., 2004; Endres, 2009, 2012; Peeples, Krannich, & Weiss, 2008; Sovacool, 2008). Diverging, even incompatible, perspectives are often communicated and negotiated (Endres, 2012). Stakeholders disagree on the environmental effects of certain objects or behaviors, and on the scientific foundation for proposing such effects (Endres, 2009; Oreskes & Conway, 2010). Environmental values are negotiated in relation to other values and interests, such as economic growth or maintaining a certain lifestyle. The multitude of environmental problems attended to in contemporary society opens up a broad array of contentious topics (cf. Sovacool, 2008, pp. 349–352).

Furthermore, controversy generates argumentation, at the same time as argumentation feeds controversy. When beliefs, attitudes, and goals are questioned by others, it is natural to provide reasons for the positions one has advanced (Toulmin, 2003, orig. 1958, p. 90). We understand "arguments" to be such reasons that support standpoints or other arguments (Blair, 2012; Næss, 1961; Walton, 1990). Seeing argumentation as closely related to the notion of controversy, van Eemeren and Grootendorst (2004) define argumentation as a "verbal, social, and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by putting forward a constellation of propositions justifying or refuting the proposition expressed in the standpoint" (p. 1).

Defined as the reasons provided to support standpoints or other arguments, two sub-types of arguments can be distinguished, namely, *primary arguments*, i.e., those supporting particular standpoints, and *secondary arguments*, i.e., those supporting other arguments (Næss, 1961, pp. 88–90). The classification of verbal acts as standpoints, primary arguments, or secondary arguments derives from an interpretation of message context based on the purpose of the analysis. For present purposes, the standpoints analyzed are (i) the evaluative proposition that antibacterial use of silver harms the environment and (ii) the opposing evaluative proposition that antibacterial use of silver benefits or does *not* harm the environment.

Antibacterial Silver: Case Background

The metal silver has been used for its antibacterial properties since antiquity (Klasen, 2000; Luoma, 2008). In recent years, however, the use of silver in antibacterial products has been steadily increasing. In Europe, the volume of silver used in this way was estimated to be 30 tons per year as of 2004, increasing to a projected 110–230 tons per year as of 2010 (Blaser, Scheringer, MacLeod, & Hungerbühler, 2008). Areas of application include healthcare products (e.g., bandages), household products (e.g., vacuum cleaners and washing machines), sports gear, clothing, and makeup. Although all antibacterial silver products release silver ions (Ag^+), which kill bacteria and constitute the basis of their biocidal action, such products differ in the technical details of the silver used, ranging from silver salts such as silver nitrate ($AgNO_3$) to

colloidal silver, i.e., small (1–1000 nanometers) silver particles dispersed in liquid (Nowack, Krug, & Height, 2011).

Despite its intended benefits, i.e., killing bacteria and in some cases reducing odor, antibacterial silver has become a topic of global controversy engaging a variety of stakeholders, including scientists, NGOs, government agencies, the media, and companies. The environmental effects of silver have been addressed by the scientific community, which has suggested that silver released from antibacterial products could pose a risk to organisms in freshwater ecosystems and sediments (Blaser et al., 2008) and in soil (Arvidsson, Molander, & Sandén, 2012). Regarding antibacterial silver as a potential risk to both humans and other organisms, the global environmental NGO Friends of the Earth (2009) has demanded that the substance be banned until proven safe. Since antibacterial silver products sometimes occur in the form of silver nanoparticles (Nowack et al., 2011), or "nanosilver" (i.e., silver particles 1–100 nanometers in diameter), concerns over antibacterial silver are connected to growing concerns about the toxic effects of nanomaterials (Colvin, 2003; Maynard et al., 2006). According to the Project on Emerging Nanotechnologies (2012), the most comprehensive database on nanomaterials in consumer products, nanosilver is by far the most common nanomaterial in products, its use having increased tenfold from 2006 to 2012.

Opposing the criticism of antibacterial silver, some scientists argue that silver does not constitute an environmental hazard. For example, it is claimed that any silver reaching the environment will likely chemically react with the naturally-occurring substance sulfide, resulting in the harmless compound silver sulfide (Nowack, 2010). According to that point of view, antibacterial silver products will pose no risk to the environment. Furthermore, although not referring to silver specifically, the possibility of incorporating "smart functions" (e.g., by applying nanotechnology) in clothing to extend durability and reduce the need for washing has been highlighted as a means of reducing the environmental impact of the clothing industry (University of Cambridge Institute for Manufacturing, 2006). As we will see, this reasoning figures in the argumentation of silver proponents analyzed below.

Methods and Materials

The sources analyzed here comprise newspaper articles, TV news features, websites and reports of government agencies, NGOs, municipalities, and companies, and documents from the Swedish government and parliament. The analyzed material was collected in two steps. First, the keywords "silver" together with "bacteria" or "smell" were used for retrieving information from the websites of analyzed stakeholders (see list below) and from newspaper coverage collected via the Swedish distributor of LexisNexis, namely, Retriever Mediearkivet (http://www.retriever.se/tjaenster/research.html). The media search was restricted to the top ten paid-for Swedish newspapers in terms of circulation (see Nordicom, 2012), with the addition of two strategically chosen newspapers, *Borås tidning* and *Ny Teknik*. The former is included, in view of the increasing application of silver in textiles, since it is the local newspaper of the city of Borås, the location of the Swedish School of Textiles. The weekly *Ny Teknik* is included due to its focus on technology, engineering, and innovation.

In the second step, only those texts specifically discussing environmental issues were selected for further analysis. This means that texts exclusively discussing other aspects of antibacterial silver, for example, public health issues, are not analyzed here. The following list includes all the actors analyzed in this study, their websites, and the number of texts identified:

- Newspapers: 39 newspaper articles from *Dagens Nyheter*, *Göteborgs-Posten*, *Svenska Dagbladet*, *Sydsvenskan*, *Borås Tidning*, and *Ny Teknik*. These newspaper articles cover the period from April 2005 to June 2012.

- TV news coverage: two transcribed TV news features totaling 2 minutes 49 seconds from privately owned TV4 (http://www.tv4play.se). In addition, the Internet archives of the Swedish public service television company SVT were searched for aired TV news features on antibacterial silver, but none could be identified; four web pages from the SVT website (http://www.svt.se), however, were identified and included in the analysis.
- Government agencies: web pages and reports from the Swedish Chemicals Agency (http://www.kemi.se; 13 texts), Medical Products Agency (http://www.lakemedelsverket.se; two texts), National Food Agency (http://www.slv.se; three texts), and Swedish Environmental Protection Agency (http://www.naturvardsverket.se; three texts)
- NGOs: web pages and reports from the Swedish Society for Nature Conservation (http://www.naturskyddsforeningen.se; four texts), Swedish Water and Wastewater Association (http://www.svensktvatten.se; 12 texts), and Federation of Swedish Farmers (http://www.lrf.se; two texts)
- Municipalities: reports and web pages from the municipalities of Sweden's three major cities, namely, Stockholm (http://www.stockholm.se; seven texts), Gothenburg (http://www.goteborg.se; six texts), and Malmö (http://www.malmo.se: one text)
- Companies: first, the complete website (approximately 9000 words) of Polygiene (http://www.polygiene.com), the Swedish manufacturer of a silver-based antibacterial product applied in clothes and on hard surfaces; second, two Facebook posts (including comments) and a blog entry of Addnature (http://www.facebook.com/addnature and http://addnature.wordpress.com), one of Sweden's major retailers of outdoor and adventure equipment and clothing, some of which contain antibacterial silver; and third, two web pages from Gryaab (http://www.gryaab.se), the sewage treatment company of the Gothenburg region in southwest Sweden
- Swedish government and parliament: two opinion reports from parliamentary committees and one record of a parliamentary debate in the chamber (2 May 2011) (see http://www.riksdagen.se) and an open letter from the Minister for the Environment to the county councils, i.e., Ek (2012) referred to in the introduction

This body of empirical material was coded by the authors according to the arguments expressed to support standpoints on the environmental effects of silver: the critical standpoint that silver harms/does not benefit the environment and the positive standpoint that silver benefits/does not harm the environment. Combining the categories of primary and secondary arguments introduced above with those of critical and positive standpoints, we end up with the following coding categories for arguments:

- Primary argument *pro* silver: Reason provided to support the standpoint that silver benefits, or does not harm, the environment
- Primary argument *contra* silver: Reason provided to support the standpoint that silver harms the environment
- Secondary argument *pro* silver: Reason provided to support a primary argument or yet another secondary argument with the ultimate purpose of arguing that silver benefits, or does not harm, the environment
- Secondary argument *contra* silver: Reason provided to support a primary argument or yet another secondary argument with the ultimate purpose of arguing that silver harms the environment

Using the qualitative research software Atlas.ti, the empirical material was assigned to these abstract categories via open coding in which passages exemplifying these four categories were identified in the text. The resulting sets of quotations belonging to the argument categories were in turn analyzed to identify general and systematic patterns. These patterns are presented below under various names, for example, the *toxic argument* or the *emission argument*.

Arguing Over Antibacterial Silver: Results

The controversy under analysis engages various stakeholders expressing conflicting standpoints concerning the environmental effects of antibacterial silver. On the one hand, opponents express concern about the use of antibacterial silver due to its alleged negative effects on the environment. They advance the standpoint that antibacterial use of silver harms (or does not benefit) the environment. The proponents, on the other hand, both deny the alleged negative effects of silver and propose that using antibacterial silver positively affects the environment. Noting that denying a negative effect does not imply a positive effect, two kinds of standpoints are advanced by silver's proponents in the controversy: (i) that antibacterial use of silver does not harm the environment and (ii) (stronger) that antibacterial use of silver benefits the environment. Furthermore, both opponents and proponents provide reasons supporting these standpoints (i.e., primary arguments) as well as reasons supporting the primary arguments (i.e., secondary arguments).

Opponents and Proponents

Most of the stakeholders analyzed here (see "Methods and materials") are critical of antibacterial uses of silver. These critical stakeholders, i.e., the opponents claiming that silver harms the environment, are government agencies (i.e., the Swedish Chemicals Agency, Medical Products Agency, National Food Agency, and Environmental Protection Agency), NGOs (i.e., the Swedish Society for Nature Conservation, Swedish Water and Wastewater Association, and Federation of Swedish Farmers), municipalities (i.e., Stockholm, Gothenburg, and Malmö), the sewage treatment company Gryaab, the minister for the environment, and members of parliament. In addition to explicit claims that silver harms, or does not benefit, the environment, these critical stakeholders characterize silver as a "danger", "toxin", "problem", and "risk" to the environment. Critical standpoints towards antibacterial silver are also expressed in news media reporting, both on TV and in newspapers, which largely mediates the views of the above stakeholders.

In contrast to this view of silver, its proponents characterize silver as benefitting, or not harming, the environment. These proponents are the companies Polygiene, i.e., the manufacturer of a silver-based odor control product, and Addnature, a retailer of sport equipment. Positive standpoints favoring antibacterial silver are also found in TV and newspaper coverage. Standpoints in favor of antibacterial silver, in addition to explicit claims that silver benefits or does not harm the environment, include claims that silver is "environmentally friendly", "climate smart", and "ecologically sound"; that the use of silver has "a number of advantages from an environmental point of view", has "positive environmental effects", can "reduce the consumer's ecological footprint", and lower "environmental impact".

Primary Arguments

Silver's opponents use five primary arguments to support their standpoint, namely, that silver harms (does not benefit) the environment. First, the *toxic argument* states that silver is toxic to organisms in the environment. More specifically, reference is made to various organisms that might be negatively affected by silver, for example, fish and crustaceans. Even more specifically, concern is expressed over the harmful

effects of silver on the energy metabolism, genetic makeup, growth, reproduction, and embryo development of marine animals.

Second, for silver to harm the environment it needs to be in the environment. The emission argument proposed by the opponents in the controversy refers to such exposure, claiming that silver is emitted by silver-based products to the environment. The process of washing silver-treated clothes and the use of washing machines based on antibacterial silver technology are identified as sources of silver emissions.

Third, the scarce resource argument is articulated in the analyzed parliamentary debate (see "Methods and materials"). This argument claims that silver is a scarce resource, so using it in sports gear and other consumer products implies the unnecessary exploitation of a nonrenewable resource. Furthermore, the standpoint that antibacterial use of silver harms the environment is supported by two primary arguments, the *bioaccumulation argument* and *non-biodegradable argument*. The former points out that silver bioaccumulates in organisms, and the latter that it is not biodegradable, presupposing that such properties make silver harmful to the environment.

Denying the opponents' toxic argument, proponents of silver argue that silver is not toxic to organisms in the environment. This *not toxic argument* supports the standpoint that antibacterial use of silver does *not* harm the environment. Furthermore, denying the *emission argument*, the *no emission argument* claims that no toxic silver is emitted into the environment. Polygiene frequently refers to its product as "permanent." These two arguments do not, however, support the claim that silver benefits the environment. That a substance is not toxic does not necessarily mean it is healthy. However, another primary argument used by proponents, the *reduced environmental impact argument*, claims that silver does benefit the environment, because silver-based products have less environmental impact than do alternative products.

Secondary Arguments

Supporting the *emission argument*, silver is claimed to be used in large quantities in antibacterial products (*large quantity is used argument*), implying considerable silver emissions. Two other arguments supporting the *toxic argument* are the *small quantity suffices argument* and the *mercury argument*. The first argument says that silver is toxic even in small doses, the rationale being that the smaller the toxic (or deadly) dose of a substance, the more toxic it is. This argument reinforces the characterization of silver as toxic to organisms and harmful to the environment. Exemplifying the *small quantity suffices argument*, as well as the *toxic argument* and the *emission argument*, the Swedish Society for Nature Conservation states the following on its homepage:

> Silver is an element that in ionic form is very toxic to aquatic organisms. As low doses of less than 1 microgram (a millionth gram) per liter of water have been shown to disturb growth and reproduction. … When washing [silver-]treated clothing, the antibacterial agent follows the wastewater to the sewage treatment works, in the long run polluting lakes and watercourses, where silver can harm, for example, fishes. (Naturskyddsföreningen 2012, para. 1)

In turn, the *mercury argument* claims that silver is as toxic as, or even more toxic than, mercury. In comparison, mercury's more familiar and well-established association with toxicity can be invoked for silver as well. Such analogical reasoning has been of long-standing interest in the study of rhetoric and argumentation (Aristotle, 2004; Perelman & Olbrechts-Tyteca, 1969, orig. 1958). In a debate article by a representative of the Swedish Water and Wastewater Association in the newspaper *Ny Teknik*, we find articulation of the *mercury argument*, *bioaccumulation argument*, and *toxic argument*:

> Studies at Stockholm University have demonstrated that silver ions are taken up in plants and animals. Silver is bio-accumulating—it builds up in various organisms over time. Silver is very dangerous for fishes and crustaceans, which are important for the ecosystems of our waters. Silver ions are actually as toxic as mercury for aquatic organisms. (Finnson, 2012, p. 28)

By referring to "studies at Stockholm University", the quotation also illustrates how the authority of scientific expertise is invoked to support arguments and standpoints. Such *arguments from expert opinion* will be further discussed below.

Proponents of silver emphasize that the impact of silver on the environment needs to be assessed from a life-cycle perspective, particularly when silver is applied to fabric. In this vein, a number of "less X" arguments are used to support the *reduced environmental impact argument.* These arguments are justified using the following reasoning: since silver kills the bacteria that produce bad smells in garments (*antibacterial argument*), there will be less need for washing (*less washing argument*) and therefore less use of washing detergent (*less detergent argument*), less energy use (*less energy argument*), and less water use (*less water argument*). Antibacterial silver technology is also claimed to make it possible to wash clothes clean at a lower temperature (*low temperature argument*), resulting in even less energy use (*less energy argument*). Since less washing of a garment will make it last longer (*last long argument*), there will be less consumption (*less consumption argument*), which also reduces environmental impact. That the silver product kills bacteria (*antibacterial argument*) also supports the *last long argument* more directly than simply by reducing the need for washing, in that silver is said to kill bacteria that break down the textile fibers.

Another line of reasoning assumed to support the *reduced environmental impact argument* is the *travel light argument*. According to this argument, it is possible to bring less clothing when travelling: since silver-treated clothing stays fresh longer, there is less need to change clothes because they smell sweaty. Exemplifying this reasoning is the following quotation from the Polygiene homepage:

> Clothing, footwear and gear treated with Polygiene stay fresh and odor free. This means they can be worn several times before washing is required. Washing less at lower temperatures means using less water, electricity and laundry detergent, which is better for the environment. … Clothing, footwear and gear also last longer because bacteria and frequent washing break down synthetic fibers faster. Because less washing is required, Polygiene also enables you to pack less clothing and travel lighter with less baggage. (Polygiene 2012a, para. 19-20)

Related to the *less detergent argument* is the *avoids toxin argument*, i.e., that since silver is used to kill bacteria, use of the alternative and allegedly more dangerous antibacterial substance triclosan is avoided. Furthermore, Polygiene argues that its product "conserves resources" and that recycled silver is used in it (*recycling argument*). The *recycling argument* defends the antibacterial use of silver against the opponents' *scarce resource argument* mentioned above.

Supporting the *not toxic argument* is the *sulfide argument* claiming that the antibacterial silver ions of the product react with sulfur compounds (sulfides) in the water resulting in harmless silver sulfide. Opposing the opponents' *large quantity is used argument* and supporting the *no emission argument* is the *small quantity is used argument* made by proponents in defense of silver, which states that only small amounts of silver are used in silver-treated products. Considering that the silver content of antibacterial clothing may indeed vary by six orders of magnitude (Arvidsson et al., 2012), it is possible for both positions to invoke supporting experimental measurements.

The *argument from expert opinion* (cf. Walton, 1997) is invoked by both the proponents and opponents of antibacterial silver to support several of the above arguments. This argument functions by invoking the authority of experts and their claims (e.g., scientific studies, testing, and reports), as in the above quotation from *Ny Teknik*. The experts referred to are often scientists, and reference is often made, for example, to "laboratory testing" or to particular studies, reports, or articles. In addition, references to government agencies in the areas of environmental protection or chemical regulation are quite common.

Another authority-based argument used to support both the not toxic argument and the *reduced environmental impact argument* is the *certified argument*: Polygiene states that its silver-based product "meets the most demanding environmental certification for textiles" (Polygiene 2012b, para. 7). This refers to approval by Bluesign, the US Environmental Protection Agency, and the ECO CIRCLE system (a Japanese textile-recycling program), to registration under the EU Biocidal Product Directive, and to inclusion in the OEKO-TEX list of approved products.

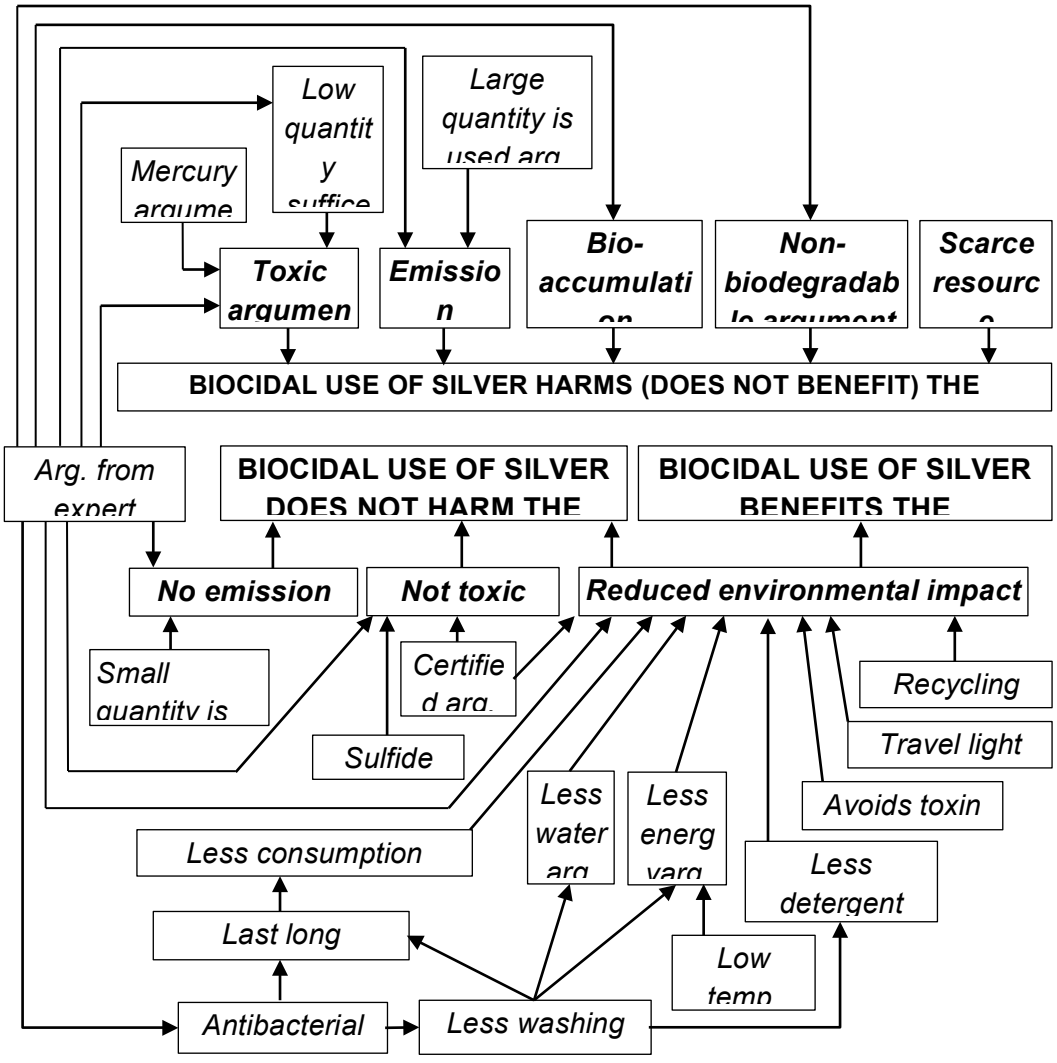


Figure 1. Standpoints (bold capitals), primary arguments (bold italics), and secondary arguments (non-bold italics) used in the Swedish environmental controversy over the antibacterial use of silver. The arrows indicate support, where "X → Y" should be interpreted as "X supports Y."

The argumentation used in the Swedish controversy over antibacterial silver is summarized in Figure 1, which graphically depicts the relationships between arguments.

As shown in Figure 1, the *argument from expert opinion* is used to support opposing arguments regarding the same issue, namely, both the *toxic argument* and *not toxic argument*, as well as both the *emission argument* and *no emission argument*. Arguably, the invocation of experts and science to justify various claims can be understood in relation to the scientific pluralism of modern society. Finding "scientific" data or experts supporting the claims one wishes to make is facilitated by new heterogeneous and pluralistic forms of knowledge production, not restricted to a limited set of universities (Endres, 2009; Gibbons et al., 1994).

Discussion

This study illustrates, in some detail, how a number of institutions have deliberated on and communicated the environmental effects of antibacterial silver. A central observation regarding this controversy is that, despite outright disagreement on a number of issues, the proponents and opponents claim to share an ultimate value, namely, the environment. This situation of disagreement but in the context of shared professed concern for the environment at a more general level can be understood in relation to at least the following factors: (i) the concept of "environment" itself, (ii) the variety of ways in which human activities affect the environment, and (iii) complex cause–effect chains that characterize these environmental problems.

The nature of the concept of "environment" partly explains how this situation of controversy but with shared stated environmental concern is possible (cf. Luhmann, 1989). Etymologically, the word "environment" derives from a set of related French words "*environner*" (to surround), "*environ*" (around), and "*environnant*" (surrounding), in turn derived from "*virer*" (to turn). Based on this etymology, we can identify a core meaning of the term "environment", namely, that of "surroundings of an entity". From this basic concept a more specific meaning, for example, "natural environment", can be derived: "the surroundings of human-constructed society". This is not the place for a more thorough analysis of "environment" as a concept; for our present purposes, it is enough to note the vagueness and relativity of the term.

The concept of "environment" is relational, being relative to the entity it surrounds: one and the same entity can be appropriately referred to, depending on the perspective, both as an "environment" and as the "surrounded entity". The concept of "environment" is also vague, lacking clear criteria for its applicability or extension, as it is sometimes difficult to distinguish the exact boundary between an entity and its surroundings. There are perhaps prototypical constituents of the natural environment, for example, plants, wildlife, air, water, and mountains, but what about bacteria and microorganisms, for example? For the relatively short time we have known of their existence, we have fought them to control one of the greatest challenges to society, that of sickness and disease. The relativity and vagueness of the concept of "environment" makes interpretation and perspective crucial to understanding its use in communication, including in environmental controversies. Consequently, the conceptual properties of "environment" make it logically possible that what constitutes an environmentally harmful act from one perspective may be considered beneficial from another, depending on one's interpretation of what constitutes the environment. Simply put, the term "environment" can be interpreted in various ways (cf. Endres, 2012).

Alongside the emergence of the environmental movement is increased awareness of the many ways humans can affect the environment. Humans have caused any number of environmental problems, including global warming, acidification, eutrophication, urban air pollution, chemical pollution, excessive energy and water consumption, nonrenewable resource depletion, biodiversity loss, and radioactive waste.

From a rhetorical point of view, this multitude of environmental problems and the lack of an agreed-upon ranking of them provide a range of possible arguments for actors interested in justifying, promoting, or blocking certain products or activities. Opponents of silver, for example, refer to potential chemical pollution (*toxic argument*) and the increased use of a nonrenewable resource (*scarce resource argument*). Proponents of silver argue that reduced washing of clothes will result in reduced environmental impact (*reduced environmental impact argument*) by enabling, for example, less water use (*less water argument*), less energy use (*less energy argument*), less chemical pollution from detergents (*less detergent argument*), and avoidance of toxins (*avoids toxin argument*). The energy saved contributes to lower greenhouse gas emissions, less resource use, and less dependence on energy from nuclear power plants, and so on.

Many environmental problems involve complex cause–effect chains. This is especially true of regional and global environmental problems, such as global warming and chemical pollution. The cause–effect chains of these environmental problems begin with activities in society, followed by emissions of greenhouse gases and of chemicals into the environment and their subsequent environmental fate, ending with adverse effects on the environment and, in the long run, on society as well. These cause–effect chains may span hundreds of years and extend over a continental or even global spatial scale, involving a vast number of complex physiochemical processes. Such complexity nourishes controversy, since almost every step in the cause–effect chain can be questioned. The silver controversy described above is a telling example. Proponents of silver products question the magnitude of emissions (the *no emission argument* and *small quantity is used argument*) and whether the environmental fate of the silver leads to problematic exposure (the *not toxic argument* and *the sulfide argument*). They therefore conclude that silver has no adverse environmental effects.

Conclusion

Although ultimately sharing a stated concern for the environment, the stakeholders in the Swedish controversy over antibacterial silver advance conflicting standpoints and arguments. We have suggested that such agreement with respect to the value at stake (i.e., the environment), combined with disagreement on what represents a threat to this value, arises at least partly due to the relational structure of the concept of "environment," the diversity of contemporary environmental problems, and the complex cause–effect chains involved in these problems. The structure of the Swedish environmental controversy over antibacterial silver resembles that of other contested situations focusing on the environment. For example, in the debate over nuclear energy, proponents argue that nuclear power produces low greenhouse gas emissions, while opponents cite radioactive waste and the risk of fatal accidents (see, e.g., Elam & Sundqvist, 2009; Pampel, 2011).

The legitimizing move of invoking concern for the "environment", with its polysemy and vagueness, enables rhetorical strategies to be used for various purposes. The environmental movement has successfully positioned environmental concerns at the center of the political agenda, using effective environmental rhetoric for this purpose (Killingworth & Palmer, 1992). However, as we have demonstrated, when criticized for selling and producing an environmentally harmful product, companies themselves respond by invoking the very same generic value, citing the concept of "environment" (including the variety and complexity of environmental issues attended to in society) to justify their product. This situation has contributed to an abundance of arguments used in the antibacterial silver controversy. Despite an ultimately shared value at stake—the environment—the controversy gives rise to a complex and possibly confusing context for citizen conceptualization, information seeking, participation, and deliberation.

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Biosphere Reserves, a Matter of Communication Processes, Developing Models for Sustainability: Environmental Communication Processes with Different Expressions that Either Formulate Opportunities or Form Possibilities

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Biosphere reserves in the UNESCO Man and Biosphere program work with the assignment to formulate knowledge from the practice of sustainable modelling. Biosphere reserves are interesting to study because the environmental communication concern the potential from the collaborative intersections that shapes for sustainable futures. The communication process frames communicative principles through different democratic codes. Various communication processes formulate various knowledge outputs or outcomes. This paper discusses the expressions of two different communication processes and how various biosphere reserve building activities shapes by different agents in action formulated as information for sustainability by the actors. The analyzed communication processes of the two studied Swedish biosphere reserves states that the actions in process shape two different expressions, which is framed by the activities, one formulating opportunities and the other forms possibilities. This analytical method has pedagogical and educational implications since different communication processes recognize knowledge from different expressions. The results put forward the importance of studying more than the outcome or output from these processes, though the processing actions is of pedagogical value.

Keywords: biosphere reserves, Man and Biosphere program, sustainability, process and processing

Introduction

This paper refers to analysis of a two years study of following the Swedish participation in UNESCO's program for sustainability. Focus is environmental communicative actions in the two different biosphere reserves, Vänern Archipelago with Mount Kinnekulle (VK) and East Vättern Scarp Landscape (EVS). Environmental communication hailed as the "generation and exchange of humans' messages in, from, for, and about the world around us and our interactions with it" (Jurin, Roush, & Danter, 2010, p. 15). The biosphere reserves are defined as learning-sites modelling sustainability for knowledge improvement in the UNESCO Man and Biosphere program (Unesco, 2013a). Each site becomes an active node, a model-area, in the worldwide network of learning-sites within the Man and Biosphere program (UNESCO, 2012; 2013a). Becoming a biosphere reserve is an ongoing process of emergence and as a learning-site for recognizing knowledge for sustainability. Environmental communication in biosphere reserves expresses

understanding from learning actions. The understanding shapes through information from agents various actions. Communicating actors use information and formulate knowledge framework for sustainability in the two model-areas.

The concept of sustainable development traditionally refers to the UNESCO document "Our common future", or the Brundtland report (United Nations, 1987). Knowledge that formulates processes concerning "sustainable development" is a scientific field that traditionally combines social science and natural science. Natural science highlights, for example, ecological processes that contribute to human survival and formulate this as "eco-system services" (Daily, 1997; Chapin, Kofinas, & Folke, 2009). The social dimension of sustainability can be expressed as management, or with critical aspects that concern power relations in between different agents; the various social discussions sometimes handle natural science and ecological processes parallel to social science as resources (Armitage, Berkes, & Doubleday, 2007; Nadasdy, 2007; Schultz, 2009; Bäckstrand, 2010) among many others. The intersection between social science and natural science and what will be recognized in the knowledge production has been discussed in research formulated as science and technology studies with, for example, actor network theory or as eco-criticism (Leigh Star, 1995; Latour, 1999; Buell, 2005; Haraway, 2008; Kahn, 2010; Goldman, Nadasdy, & Turner, 2011).

Studies of environmental communication concern various ways to bridge competing interests or to brake boundaries by solving conflicts and mainly focus on outcome or output (Peterson, Hall, Feld Pauscher-Parker, & Peterson, 2010; Peterson, Peterson, & Peterson, 2005; Sriskandarajah & Wals, 2010; Jewitt, 2009). Several studies perform as action-research or follow-research where the researcher-function is as a mediator or as a supplier, giving feedback and/or developing methods to improve or increase the possibility to success in environmental communicative processes (Læssøe, 2008; Wals, 2010; Svensson & Nilsson, 2008). Environmental educational research primarily embraces education with a focus on either participatory theories or stakeholder theories (Rickinson, Lundholm, & Hopwood, 2009; Waren, 2007; Rogerson, Sadler, Green, & Wong, 2011). The educational aspect of environmental communication provides information and facts that have an underlying intention of changing people's actions or behavior (Bureau of Public Information, BPI UNESCO, 2006; UNESCO, 2012; Jurin, Roush, & Danter, 2010).

A biosphere reserve is a physically demarcated area where local people and various authorities have chosen to organize work with the mission to shape sustainable futures. The biodiversity in each biosphere reserve has to be described from its national and international perspective. The biosphere reserve shall have legal zonation with various degree of nature protection. Further, there has to be collaboration between authorities, local and/or regional organizations, and the local population that have accepted the challenge (UNESCO, 2013). To become a biosphere reserve, the national government applies for an area's designation and assigns to the task in the UNESCO Man and the Biosphere program to shape models for sustainability. The UNESCO program requirements include collaboration in order to act in sustainable ways within the landscape it embraces. This fits well with the way sustainability formulates by the authors of the book Environmental communication (Jurin, Roush, & Danter, 2010).

"'Sustainability' is a continually evolving term and so fraught with a need for extensive discussion with each modification. Our role as communicators is to be aware of different perspectives and to help clarify them for our audiences" (Jurin, Roush, & Danter, 2010, p. 20)

As this study concern the internal communication processes that will be formulating knowledge in national and international networks of UNESCO, this also becomes a matter of understanding the value of nature in various ways (Rowlands, 2000; Unesco, 2013a). Previous research regarding biosphere reserves in Sweden has focused on socio-ecological systems and the management (Schultz, 2009; Thorell, Undén, & Olsson, 2005). This study focuses on communicating actions concerning the processing activities within the gap in between planning and the outcome or output. The necessity and importance of process-

oriented research and its reasoning is an important translation of what the environmental communicative processes express as they emerge.

In this study, the relational processes do not only concern humans, authorities and organizations, but also the relational processes including the whole biodiversity that embraces by the biosphere reserves in the communicative processes. Consequently, social science and natural science grows together as intersections.

The main biosphere reserve organization in both of the biosphere reserves express in text that the humans concern themselves as part of the biosphere (in emails and in the webpages). These statements are important in the understanding of the interplay that systematically could be termed, “biosphere services”. The term “biosphere services” is analogous with the term eco-system services, but becomes shaped and formulated through biosphere processes referring both to human and non-human interests (Daily, 1997).

Background

It is a study of communicative actions during a period of two years. An openness and willingness to cooperate in the organizations of the two biosphere reserves in Sweden, the East Vättern Scarp Landscape and the Vänern Archipelago with Mount Kinnekulle, made this study possible. The communicative actions grasp the active choices to work for sustainability at each site.

The source material emphasizes communicative actions both recurrent and occasionally activities. The data-material collected as digitalized sound recordings and notes from the observations of regular meeting activities, three times every two months at one of the biosphere reserve and once every second month at the other biosphere reserve. Further changes in documents for communication both public and internal studied through e-mail conversations and paper prints. Recurrent interviews was carried out with involved actors every third month and digitally recorded. In addition to these recurrent activities, documentation of several other occasional activities like outdoor excursions and a diversity of workshops within the biosphere reserve processes (The EuroMAB Network, 2011; CBM, 2010; Gränna skogsgrupp, 2012).

In Sweden, cooperation between authorities and inhabitants is supposed to build on democratic principle; likewise, biosphere reserve building requires this kind of collaboration. To explain the variation between the two studied communication processes, two ideal democratic models became useful. The models was helpful in explaining how different organizational principles shaped various communication processes that in turn shaped different kinds of knowledge frameworks (Börebäck, 2013 in press).

The communication process in one of the biosphere reserves was goal-focused and enhanced a deliberation to implement knowledge about sustainability by forming various possibilities to develop the area. The communication process in the other biosphere reserve shaped collective communication platforms to coordinate various initiative formulating opportunities for a more sustainable future.

These two communication processes have proven successful in several ways, but the success restricts by the communication principles that frame it. Goal-oriented communication processes demarcates by the goal-formulating actors’ capacity to formulate the goal. The output of a concerted pluralistic communication process is much harder to forecast because it limits by the will of participants to contribute in, with, and to various activities. These are structural differences and neither of them or the output/outcome of the processes is central in this paper. Because in this paper, it is the processing actions, the activities, what the environmental communication does, what it makes possible, its pedagogical expression.

The Two Different Environmental Communication Processes

To start with, it is important to state that the two studied communication processes are useful and that both of them shape successful outcomes or outputs. In a process-oriented study, the processing is central which make it necessary to focus on the formulation of relations and relational activities in the analytical method and the output or outcome are secondary.

Relational actions both frames by the different actors' interplay and by the actions of agents in the relational activities distressed by communicative actions.

There are organizational differences between how the biosphere reserves' activities formulates in the two studied biosphere reserves (Börebäck, 2013 in press). In the biosphere reserve Vänern Archipelago with Mount Kinnekulle, three different municipalities are co-operating to shape the biosphere reserve. This organization has one employed coordinator and some project leaders with duty to develop the biosphere reserve on daily basis. This organization has a foundation in municipality functions, but is not included in the municipality practice or organizations. The organization has a board with representatives from various actors in the society: for example, agriculture, nature protection, fishery, education/university, politicians, municipality officials, and county administrative board civil servants. The operational responsibility is set at the biosphere reserve office. These employed agents have to find actors within the municipality organizations and from the private sector to shape relational contacts to enable the development of the biosphere reserve. In this organization, the communicative actions formulates as a deliberative democratic co-management (Börebäck, 2013 in press).

In the biosphere reserve East Vättern Scarp Landscape, there are seven different and independent organizations. These organizations are the following: three authorities (the county administrative board, National Forest Agency, and Jönköping municipality); one cooperative company (Södra forest owners); and three NGOs (LRF [The Federation of Swedish Farmers]; WWF [World Wild Foundation]; Gränna forest-group [local association of the Swedish Society for Nature Conservation]). Each of these organizations do internally elect employees and/or members to represent them and act as participants in the biosphere reserve building process. During the period of this study, the biosphere reserve had a board with members from the different organizations, each having a relatively high position in their own organization. In fact, this constitution formulated an organizational opportunity. The board members high position justified each of the appointed employees/members in their commitments/participations in the biosphere reserve actions and activities. The biosphere reserve daily work develops as communicative actions at various meeting forums, where all the member-organizations participated autonomously. This organization framed communicative actions in a pluralistic, agonistic democratic way (Börebäck, 2013 in press).

The two different organizations constitute different kinds of action spaces for understanding the value of nature. These action spaces formulates through two different democratic processes where the formulation in knowledge recognition shapes with different expressions.

Two Examples of Environmental Communication from the Different Biosphere Reserves

Different ways of processing the activities at each biosphere reserve emphasis environmental communicative actions of importance to how the modelling of sustainability expresses. The examples of how the environmental communicative actions take place in these two biosphere reserves will reflect how

different agents acknowledges in these processes. Furthermore, it is significant to analyze what kinds of various interplays and interactions that shapes and how this communicates relationally.

Environmental Communication as the Formulation of Opportunities – East Vättern Scarp Landscape

A project where the National Forest Agency, the County administrative board, and the WWF collaborated in the biosphere reserve East Vättern Scarp Landscape that involved both human and non-human agents. This process concerns transformation of authority control, EU-support, and the non-profit nature conservation contribution to a coordinated action of cooperation. The County administrative board offers farmers who keep the landscape open as an environmental scheme for some economic compensation, if the farmers meet the EU requirements. The National Forest Agency has conservation agreements, which are voluntary agreements with forest-tree owners, such as agreeing not to harvest giant trees that give the owners a yearly compensation. WWF had for a few years in cooperation with ICA (a Swedish retailing corporate group) the opportunity to give economic support to build fences to keep grazing animals.

Through these organizations, cooperative action to communicate these options as a proposal to the landowners, as a combination of agreements and compensation and benefit systems as a "package" that is totally unique in the Swedish society. The uniqueness lies in the fact that the authorities coordinates and communicate information about their regulations and compensation systems to the users. Further, it was unique how they worked together, meeting not only LRF but also the single farmer as a joint action of officials and volunteers from NGOs. The joint action of environmental communication formulated a "package" to the landowners expressing opportunities by offering a communication platform to all the involved actors.

In this coherency, various things happen. Relations between the landowners and the official representatives for the authorities and the volunteers from natural conservation NGO was shaped independently if the landowner signed a contract or not. This relational act changed the communicative activities and opened a door to communicate more than the "package" like dialogues about biodiversity, the landscape, and the land in use. This frames the knowledge recognition from the relational acknowledgement between the humans as users and the species the farmers' work at and/or with. The authorities and the nature conservation NGO formulate an opportunity where the users (farmer/forester) potential is in focus and where the value of the landowners' work is highlighted. This communication does embrace various species and specific samples, for examples the giant oaks at Galgen, but also different species habitats that dependence on the human land-users work. This embraces acknowledgement that both animals and plants depend on grassing cattle and vice versa or when competing species harvested as winter fodder for the cattle give room for other plants to bloom.

Communicative Expressions in East Vättern Scarp Landscape

The environmental communicative process formulates opportunities, and become actions building the biosphere reserve. Relational processes in between human and non-human agents communicates as useful for both human and non-human agents. These relational processes are biosphere processes that can be termed as biosphere services.

In a task-oriented environmental communication like the one in East Vättern Scarp Landscape, willingness to share information/resources frames the activities. The coordinator works with the task to coordinate the different actors' participations in the various activities. These activities convert to a matter of impact from different actors' activities into actions in the biosphere reserve. Information from activities acknowledges as

knowledge for a sustainable future. This focuses environmental communication as a learning process, to learn from the other and to understand the particular actions as coherence by the specific actors relational position. The communication process expresses a coordinating issue from the possibilities various actors bring into actions that formulate opportunities to act. This formulates actions from a political action plane that include the critical aspect, but that will be formulated by societal hierarchies (Nadasdy, 2007; Peterson, Peterson, & Peterson, 2005; Mouffe, 2000). The communicative actions formulate an opportunity to value nature as eco-system services or as something else (Rowlands, 2000; Kahn, 2010).

Environmental Communication that Frames Possibilities – Vänern Archipelago with Mount Kinnekulle

In Vänern Archipelago with Mount Kinnekulle, the environmental communication is primarily an assignment to implement ideas for a sustainable future. There have been two main projects going on during the study time: one is part of the Swedish practice in the European Fisheries Funding (EFF), and the other one is an eco-tourism project (EU, 2006; Vanerkulle, 2013). The eco-tourism project concern the possibilities for travelers and tourists to stay, eat, travel, and experience the area from a holistic ecological perspective, in a sustainable way. Some of the strategies to shape this project concerns education to form "sustainable businesses," coordinating infrastructure actions, and formulating information that recognizes knowledge of sustainable interactions. The European Fisheries Funding project concern has the options to fund small or medium sized projects that involve activities that will gain a sustainable future in the area. The purpose of Environmental communication is to increase the possibilities to form innovative "business ideas" for sustainable development within and with the resources that are available in the biosphere reserve.

Taking action for the resources in the area, both human and non-human resources, builds up the communication process for various biosphere reserve-building activities. The nature resources highlights as ecosystem services. It involves forming the possibilities through productions and development of various sustainable ecological products and services.

Environmental communication shapes the possibilities through educational programs for entrepreneurs and for biosphere reserve ambassadors in order to implement knowledge concerning sustainable actions. Business networks formulates from these strategic educational activities. The educational programs have a holistic concept for sustainable, ecological products or services that develops in the various businesses. By taking part in the education program the participants can increase the possibility to shape networks for collaboration and co-management. For people who are willing to follow the regulation for a common sustainable future in the biosphere reserve, there are several possibilities, such as getting a nomination as representatives for the biosphere reserve with their business or as individuals.

In a landscape sold as a tourist destination, various species becomes labeled as attractive or rare in different activities. This gives them attention in media and in various documents as a part of the landscape. The media attention has a communicative role to inform (or to educate) people about the ecosystems in their neighborhood, and makes them more attentive to the specific species value. This communicative action forms a relative acceptance to protect the species because people are conscious about them and their role to attract tourists, as these species are forming the specific landscape. This has a positive effect because positive attention together with protection of the species' habitats increases the species' possibilities to survive in the area. Focus on ecological and locally produced products form possibilities for more farmers to venture the possibility in farming ecologically. This innovative environmental communicative action affects the credibility of the land as a tourist destination. The environmental communication process forms possibilities that focuses on various resources in the biosphere reserve both human and non-human.

Communicative Expressions in Vänern Archipelago with Mount Kinnekulle

The communication process addresses nature as the eco-system services, but the actions shape biosphere services as side effects. In Vänern Archipelago with Mount Kinnekulle, it is the coordinators'/biosphere office's task to form possibilities and to define the goals for the activities, and further also to form the possibilities in activities that gain these goals. The coordinator and the project leaders have no official action space. They have to implement each idea and every activity to municipality civil servants and to the politicians in the biosphere reserve.

In a goal-oriented environmental communication like the one in Vänern Archipelago with Mount Kinnekulle, the activities concerns the choice of actions as a how, what, and why they shall be in focus. Each communicative activity have to be formulated and implemented at the authorities, so they can create the best conditions to become the possibilities that matter for a sustainable future in the area. It is a matter of formulating strategies and visions to set goals for the relational actions. These communicative actions concerns the implementation that focuses education or to become educated. The communication process expresses a governing action where focus is on resources and what kind of possibilities they can form. These actions form activities that refers to management (Bäckstrand, 2010; Schultz, 2009; Wals, 2010). The value of nature forms eco-system services in the communicative actions (Chapin, Kofinas, & Folke, 2009).

Conclusion

These two different expressions are interesting in several ways. First of all the analyses make it possible to become aware of what a communication process does. Further, that the different communicative actions shape various preconditions for learning and knowledge formulation. That different communication processes frames the recognition of sustainability in various ways. The communication process in the biosphere reserve Vänern Archipelago with Mount Kinnekulle expresses a forming of the possibilities because it negotiate the biosphere reserve as a plethora of resources ready to be developed. In the biosphere, reserve East Vättern Scarp Landscape, the communication process works from another expression, to formulate opportunities from the different agents' possibilities to act.

The communication processes shape different expressions that highlights various foci for the communicative act. As an activity, a goal oriented deliberative democratic communication process reflects the educational aspect and the pluralistic agonistic democratic communication process the learning aspect. This is pedagogically important for how sustainability recognizes in the formation of knowledge. To form the possibilities, the communication processes expresses as a regulation that defines the point of departure from where the participative actions can take place. Activities expressing the formulation of opportunities are shaped by the willingness of the participants to bring in possibilities into the arena of communication. The opportunities are shaped by the actors learning activities.

The way human and non-human agents are acknowledged in the knowledge recognition varies. The formulating of opportunities define a knowledge formation from performing agents within actions of biosphere service processes. The knowledge recognition in a communication process forming possibilities reflects both human and non-human as resources, and how resources handles as eco-system services in various ways.

Neither of these communication processes are superior to the other, but does highlight that variation concern the matter in how the communication processes perform. Formulating knowledge for sustainable futures depends on what the environmental communication express.

This paper formulates the potential to emphasis the importance of further studying of the communication process in order to recognize how knowledge become acknowledged and what environmental communication can do. This require process oriented studies.

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Developing an Ecotourism Foundation in Indonesian National Parks

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There are several articles that focus on ecotourism and its positive and negative effects in Southeast Asia. However, the focus in this particular study is to look at what it takes to run a successful ecotourism site in four diverse areas in Indonesia. I will argue that a successful ecotourism site must carefully look at how their ideas and programs are framed. Ecotourism must also create a sense of value within the community and an acceptance of other cultures by creating a cross-cultural adaption between the local community, organizers, and tourists themselves. A successful ecotourism site should not be determined by the influx in revenue it should also be graded based on the positive effects on the local culture which leads to positive environmental practices. I will specifically address how ecotourism sites in Indonesia can have positive impact on the environment and local culture through communication framing and cross-cultural adaptation.

Keywords: Ecotourism, Indonesia, cross-cultural adaptation, communication framing

Introduction

My interest in ecotourism began towards the end of our month long journey throughout Indonesia. Initially, I wanted to focus my study on religious environmental initiatives since religion plays such an integral part of daily life in Indonesia. However, I realized that though religion is extremely important in Indonesia it cannot control issues that contribute to a non-conservation way of life. Issues like poaching and poverty plague the richly diverse lands of Indonesia.

I came to the realization that in order to address all three issues of environmental degradation, poverty, and poaching I would need to try a different approach. During the end of our trip, with the help of my professor, I realized that each site we visited had a recurring trend. The individuals who were running the sites were interested in creating a way of life through conservation.

At first I thought that there should be a better option than ecotourism, since ecotourism would open the doors to pollution, waste, and degradation. However, I realized that the positive outweighed the negative. Only ecotourism would have the ability to provide its message of conservation to the masses while creating the community involvement necessary to help maintain the land.

In a country like Indonesia where coal mining and palm oil corporations are most powerful and law and governing is almost considered a joke, the citizens need new ideas and the support from foreign advocates. Creating or setting the foundation for a positive ecotourism site where the local economy and environment thrive and the local culture is affected positively is the main goal for this project. In order to do so I found that it was important to focus ecotourism sites on two key processes. When an ecotourism site uses communication framing and cross-cultural adaptation when creating their site, based on prior research, the site is destined for success.

Through framing one can help sell the idea of ecotourism to several of the local citizens. For example, since several of the local citizens have much of the same economic issues the ecotourism sites can play a

role in helping relieve them. Through cross-cultural adaptation the ecotourism site ensures that the local culture is not negatively affected by the influx of different cultures that will be visiting the site. An understanding and acceptance of cultures is key in order to implement successful changes.

The challenge will be to cater the communication framing and cross-cultural adaptation process based on each ecotourism site. For example, Bali is predominantly Hindu where as other areas within Indonesia are predominantly Muslim. Areas like Samarinda and Jakarta have more westernized views. If we can take the time to understand each site's unique points of views and local issues, a sustainable environmental change can be created within each site.

In order to be able to begin a strong foundation for these sites that are hoping to implement an ecotourism site, my study will attempt to answer the following research question: How can an ecotourism site, within these diverse environments in Indonesia, be run in a way that would obtain the most economic gain and a positive impact on the environment and local culture, using the tools of communication framing and cross cultural adaption?

Literature Review

Ecotourism has been described as a way to focus on the appreciation for the natural environment through such activities like wildlife watching, hiking, trekking, scuba diving and several other outdoor activities (Sowards, 2012; Buckley, 2004; Ceballos-Lascurain, 1996). Ecotourism was first introduced to provide a more environmentally conscious form of travel while also providing the economic incentive necessary to help sustain a community (Lima & d'Hauteserre, 2011).

A successful ecotourism site entails not only providing the revenue needed to sustain a livelihood, but also to provide a positive effect for conservation and the culture of the community. Based on past research, the foundation of an ecotourism site determines whether the site will in fact be environmentally conscious and create the revenue the local communities are seeking without affecting local culture. An ecotourism site cannot function properly without ensuring that proper communication, self-sustaining initiatives, and community involvement are at the core of the ecotourism site (Fennel, 1999; Mulder et. al., 2006; Lima & d'Hauteserre, 2011).

Much like in Lin (2012), I will argue that a successful ecotourism site must carefully look at how their ideas and programs are framed. Aside from framing, ecotourism must also create a sense of value within the community's culture and acceptance of other cultures by creating a cross-cultural adaption for not only the local community and the program organizers but the tourists as well. Kim (2001) argues that it is the marrying of communication framing and cross-cultural adaptation that creates a successful adaptation of the new ecotourism processes.

Weaver (1998) said there are two types of ecotourism, an active and a passive ecotourism. With an active ecotourism, tourists are encouraged to change their lifestyles and behaviors and tourists participate in environmental practices. Passive ecotourism's main criterion is to leave little impact as possible to the environment (Weaver, 1998, p. 16). In order to create a successful form of ecotourism, both active and passive forms of tourism must be combined to increase the spectrum of participants (Weaver, 1998, p. 17).

Though ecotourism has been described as the best viable option for creating environmental change with an economic incentive, there are several issues that arise when the process is implemented prior to conducting research. Some of the most common issues vary from a loss of local economic gain, a loss of cultural identification, and a negative environmental impact leading to degradation. The intentions of the

site must be communicated thoroughly prior to creating an ecotourism site that can ensure conservation, local economic and environmental gain.

Media Advertising

In Sowards (2012), the author looks at changes that may occur within the ecotourist prior to being a part of an ecotour. According to Sowards (2012), an ecotourist conducts an extensive amount of research prior to taking part in an ecotour. The extensive research inevitably creates anticipation for the ecotourist which in turn creates a set path as to how their experience will be perceived prior to taking part in it. These same concepts that lure the ecotourist to ecotourism also lead to disappointments and false expectations when not faced with the same images the photos and literature described (Sowards, 2012, p. 179).

Like Sowards (2012), Lin (2012) argues that proper framing of advertisements is necessary in order to help provide the baseline for the success of the ecoutourism site. Lin (2012) focuses her study on the works of Sangduen Lek who founded the Elephant Nature Park in Chiang Mai, Thailand in 1995 (Lin, 2012, p. 194). Lek singlehandedly managed to rescue 27 abused elephants and implement a sustainable ecotourism site with a 15 percent annual increase (Lin, 2012).

Lek's story was distributed throughout the globe through documentaries, media reports, online information, and storytelling. Lin (2012) argues that it is important to have the information disbursed throughout different forms of media in order to create a "frame bridging" effect, where different media outlets can reach different types of audiences therefore creating several different types of impacts (Lin, 2012, p. 199). Having Lek's journey disbursed throughout several different forms of media created a sense of uniformity and understanding of the particular frame that was intended to reach the local audience and will now reach the global audience (Lin, 2012, p. 199).

According to Lin (2012), any form of media advertising can be turned into a positive experience for the site itself. Lin (2012) said online participation creates a borderless community, and face-to-face interaction is the most successful in creating frame transformation. Films and documentaries are the most effective means of introducing the audience to the park and creating an interest to continue to find out more information about the park (Lin, 2012 p. 200-201).

Physical Presence

It is important to look at how communicative events and experiences shape the way of thinking towards conservation efforts not only for the ecotourist but the local community involved in ecotourism as well (Sowards, 2012, p. 176). A recurring theme in Sowards (2012) is the idea that presence is the strongest tool that will help combat against counter environmental measures for tourists.

> Presence allows the ecotourist to experience beyond expectations, in that the experience itself cannot be fully described in words or images; experiences exceed expectations through astonishment, disappointment, or surprise. It is these moments when our expectations are not met that possibilities exist for new consciousness, transformations and identities as mismatched expectations and experiences create opportunities for self-reflection and awareness about the world. (Sowards, 2012, p. 183)

Similar to Sowards (2012), Bowman and Pezzulo (2010) look at how dark tourism affects the frame of mind of participants when they are placed in uncomfortable situations. According to Bowman and Pezzulo (2010), an uncomfortable situation for a tourist can simply be a deprivation or a lack of control of biological needs like sleeping, being able to release bodily waste, and eating. These types of deprivations allow them to change their frame of mind because it undoes the sense of humanity they've always known (Bowman

and Pezzulo, 2010, p. 198). Bowman and Pezzulo's (2010) rhetorical study argues that cultural norms, which include views on environmental degradation and other taboo subjects, are intertwined with their sense of humanity and until an individual is forced into an uncomfortable situation they cannot comprehend the issues that plague the area (Bowman and Pezzulo, 2010, p. 198).

Local Traditions

The major issues that needed to be tackled in Lin (2012) as far as elephant rescue were the locals' way of thinking, passed down from generation to generation. According to the study, it was not difficult to get the local community on board with tourism since logging, transport, and warfare had been made illegal in the recent years (Lin, 2012, p. 203). However, domesticated elephants were also being used for the benefit of the locals by teaching the elephants to do tricks and perform for tourists. Lek believed that the law, framing, and cultural adaptation would be most powerful in creating a positive frame for ecotourism and aid in reducing the exploitation of animals (Lin, 2012, p. 203).

Lek's ideas and continuous efforts have created one of the most successful elephant conservation sites and her story is known around the world. Lin (2012) proved that though the process towards creating a successful ecotourism site may be gradual, the benefits and positive frame will continue to stay with a community. The effect it leaves on a community creates positive changes for a community for much longer than what it took to implement the change.

A study conducted by Milstein (2008) looked at individual reactions to whales during a whale watching tour in Alaska. Milstein (2008) concluded that the experience was so grand for most individuals that they not only were left speechless but also felt as if the value of the experience would be cheapened if they spoke of it (Milstein, 2008, p. 181). When tourists make these connections with the animals, they can better relate to the animals and make a conscious effort to conduct research on the animal and ultimately care for the animal in a non-superficial way (Milstein, 2008, p. 184).

However, individuals in Lin's study lived in the region so it is difficult for them to experience what individuals in Milstein's study experienced within their first encounter. Years of passed-down beliefs on how these animals should be treated are ingrained into new generations form birth. For example, for many years elephant handlers would deal with elephants using a sharp hook, Lek's approach was to handle them with her hands. The way she convinced the handlers to try her approach was by framing the approach in terms of masculinity once the, predominantly male, handlers saw a small female using the approach they had no choice but to try it (Lin, 2012, p. 204). An approach like Lek's may be the answer to combat counter-progressive ingrained ways of life.

Local Economic Development and Community Involvement

In a study by Lima & d'Hauteseree (2011), the authors looked at the negative effects that come with ecotourism but argue that ecotourism serves as an economic development tool for the local community. A transformation in caring for nature can only occur through economic development within a community (Lima & d'Hauteseree, 2011, p. 185).

According to Lima & d'Hauteseree (2011), the sites suffer when bringing in an outsider to spearhead the project. Only local residents or those living within the community can truly understand the capacity of the community and therefore would be the best decision makers for the community (Lima & d"Hauteseree, 2011, p. 186). It is essential that the community come together during the beginning process, because, according to Roddick (2000), when a community shares a task the community is able to accomplish larger tasks that they did not feel they could undertake before (Roddick, 2000, p. 55).

According to Zambrano el. al. (2010), some issues that arose when involving the community included when the funds that were created through ecotourism were not being distributed evenly among community members. Community members also needed to be taught how to save their earnings since there was a peak and slope in tourism throughout the year (Zambrano et. al. 2010, p. 78). When residents did not save, there were times where they could not afford to care for their families usually during the wet season.

Another potential issue was the distance between the lodge and the employee's home. The distance caused most employees to be away from their families for long periods of time (Zambrano et. al. 2010, p. 81). The situation was not ideal for those who had to travel for a week to work and return home for a week or two. Bringing the family to the ecotourism site was unattainable due to feasibility.

If a site can create community involvement in a successful way, not only would they have a successful ecotourism site but it would also create what Lima & d'Hauteseree (2011) describe as "community capital." Community capitals means the community has created communal assets, hence a sense of commonality. In essence, creating "community capitals" for a community to grow and care for leads to a self-sustaining community.

Aside from building "community captitals," Lima & d'Hauteseree (2011) found that ecotourism helped local community members expand their knowledge and helped them gain more confidence when interacting with foreigners (Lima & d'Hauteseree, 2011, p. 196). The study found that when presenting their culture, artwork, and folklore the local's identities were enhanced. The feelings of inferiority the local residents once had are reduced, and new traditions are revived (Lima & d'Hauteseree, 2011, p. 189).

> When cosmopolitan people come and share space and time with the locals and show interest in their culture, lifestyle and environment, a new paradigm takes place: Amazonians in remote areas gain an inner feeling of social ascension and importance, enhancing both social and human capitals. (Lima & d'Hauteseree, p. 200).

However, once a community is immersed in the ecotourism culture, community members soon realize that new skills must be learned in order to be better prepared for their new way of life in the ecotourism culture (Jones, 2005). Because a new culture of ecotourism and tourists of different cultures and backgrounds now exist, the sacred lifestyle and traditions of the local community may be affected (Lima & d'Hauteseree, 2011, p. 199). The idea of losing traditional values is also a sentiment shared by Byczek (2011) in a case study based on the ecotourism in Bali. Byczek (2011) argues that ecotourism has been said to contribute to social instability, a loss of traditional values, a transformation of cultural customs, and even crime throughout the city (Byczek, 2011, p. 87).

Negative Effects

Like Lima & d'Hauteseree (2011), Byczek (2011) thinks it is important to localize ecotourism within the community. In Bali's case, the leaders in the ecotourism projects and lawmakers were found in Jakarta. The disconnect between what officials in Jakarta thought Bali needed and what Bali tried to communicate to Jakarta was problematic. The elites in Jakarta were being criticized as solely benefiting while Bali bore the ecological sprawling costs (Howe, 2005, p. 17; Picard, 2003, p. 109; Telfer & Sharpley, 2008, p. 205; Byczek, 2011, p. 83).

Along with the disconnect, Byczek (2011) argued that the sudden boom in ecotourism created an onslaught of issues that had already existed and grew to be a larger issue through the influx of ecotourism. Waste management, lack of freshwater, traffic, poor air quality, and noise in urban areas are just some of the issues Bali continued to face (Byczek, 2011). Since a large amount of the land was taken up by a premature boom of controversial mega-projects to accommodate a tourist population that was lower than

expected, the agricultural land suffered as did self-sufficiency (Utama, 2007, p. 6; Byczek, 2011, p. 85 & p. 86).

A study conducted by Horton (2009) looked at the negative effects brought by ecotourism in Costa Rica. Horton (2009) argued that the sudden influx of tourism created an economic loss and a cultural loss for the local community. The community is losing economically because foreigners are not only taking the jobs related to tourism but they are also taking the local's land. The land prices increased significantly to the point that the only foreigners can afford it (Horton 2009, p. 198). Though ecotourism did help do away with environmentally damaging activities like mining, new issues like solid-waste disposal and agrochemical runoff arose (Horton, 2009, p. 100).

The issues that plagued Bali and Costa Rica can be attributed to the fact that there is no clear cut global definition for ecotourism (Norajlin et. al., 2012) Norajlin et. al. (2012) found that ecotourism is sometimes misinterpreted as a nature-based form of tourism set in the natural environment (Ceballos-Lascurain, 1996). Norajlin et. al. (2012) blames this lack of understanding on the lack of measures that are implemented to control ecotourism activities in a national level. The argument has also been made that ecotourism has grown to become nothing more than a large business handled by individuals only interested in economic growth regardless of whether or not the environment can sustain itself (Carter & Lowman, 1994).

Framing

According to Benford & Snow (2000), frames not only serve as a way for individuals to label an occurrence, but also serve as a way to help develop a meaning to the occurrence and to help guide actions to their intended results (Benford & Snow, p. 614). Collective action frames are mainly intended to help support social movements in that the process involves the understanding of an issue, understanding the need for change, finding the source of the problem, creating a solution and encouraging others to work towards the direction of the solution (Benford & Snow, p. 615).

Benford & Snow (2000) refer to the framing process as set of "collective action frames" separated by two types of characteristics (Benford & Snow, p. 614). "Collective action frames" contain both "core framing tasks" and the processes that join the tasks to the frame (Benford & Snow, p. 614). The "core framing tasks" are defined as diagnostic, prognostic and motivational (Benford & Snow, p. 614).

For the purpose of this study, the issue (diagnostic task) is the lack of economic incentive in the national parks in Indonesia and abuse of the natural environment. The source of the problem (prognostic task) would be the acceptance of the way of life as far as abuse of natural environment and not being recognized for their financial need. The solution (motivational task) for these issues would be to develop a successful ecotourism site.

Cross-Cultural Adaptation

An adaption of cultures is essential for a positive form of ecotourism and a sense of pride and identity within the local community. Lin (2011) and Lima & d'Hauteseree (2011) argue that is important to highlight the local culture to not only build that sense of pride but to also prevent the cultural practices from being lost when making the transition into a tourist site. Not only is it important to adapt to the cultures of the local community, but it is equally important for the local community to understand the cultures and customs of the ecotourists themselves to create a balance between the sacred and the new.

Kim (2001) said that when individuals cross cultures a gap is developed between the familiar and unfamiliar, which affects the individual's ability to function in an effective manner. The author describes

individuals who are crossing cultures to be experiencing existential alertness which brings out feelings of inadequacy and frustration (Kim, 2001, p. 5). From there the individual either resists the change or attempts to live with the crossed culture and does not deal with it emotionally (Kim, 2001, p. 5). When I visited Bali, I noticed several locals who did indeed look like they felt despair and inequality due to an abatement of the culture they had grown up with (field notes, August 1, 2012).

In order to enter into a cross-cultural setting successfully, one must essentially begin the process of enculturation all over again (Kim, 2001, p. 50). It is important to partake in the cross-cultural adaptation process not only for locals but for tourists as well because a change in familiarity or 'scripts' can create a new self-concept or collective ethnic identity for the individual (Kim, 2001, p. 50). A meshing of cultures can combine the uniqueness of both cultures and create a greater sense of understanding between individuals.

Ecotourism Sites

Three of the four areas I will focus on for this study were visited throughout the month of July in 2012 as part of an environmental conservation project, funded by USAID. We spent about two to three days in each site with the exception of Taman Nasional Bali Barat. Due to the remoteness of the site, we were only able to stay there for almost the entire portion of the day. The fourth site, Bukit Bangkirai, was added after having been discovered in a follow-up trip that I was not able to attend.

Karimunjawa Island

The first site that was visited was the untouched Karimunjawa Island, a two hour boat ride away from the nearest city of Jepara. On a website homepage, Karimunjawa Island is described as a 27 island chain with only five of the chains being inhabited (Karimunjawa Island info, 2010).

The website fails to advertise the island's mangrove forest, which houses one of the rarest mangrove species in the world (Indonesia Fascination, 2012). The area currently has an ecotourism program called "Karimunjawa Explore" spearheaded by Yusuf Syaifudin. During our short time in Karimunjawa he and the tour guides expressed an interest in reaching out to a greater public in order to increase their ecotourism program (Salas, field notes).

Taman Nasional Kutai

We visited Taman Nasional Kutai for the most extensive time during our trip. The main attraction to the national park is wild orangutan and bird watching as well as a two hour boat ride to see the Macaca fascicularis (Salas, field notes). The website for the national park is very well developed and has several different links for information; however the entire site is written in Bahasa Indonesian (Taman Nasional Kutai info).

The park is separated into three different sites, Prevab, Sangkima, and Muara. Prevab focuses on late night nature walks around the forest, and nature walks during the day to search for orangutans in their natural habitat. The Muara site is centered on Proboscis monkeys. Sangkima is geared towards local tourists and focuses on wild monkey watches by boat. Unlike several other sites that focus solely on selling the tour to the visitor, this website touches, briefly, on being a "life support system" for the surrounding areas (Taman Nasional Kutai info, n.d.).

Taman Nasional Bali Barat

The last stop during our visit to Indonesia was the Taman Nasional Bali-Barat located in West Bali (Bali-Barat). The main attraction to the national park is the Balinese Starling reintegration program. On a website I found, the park is described as a conservation area and advertises itself as having several different nature based activities, related to science and some related to tourism (Taman National Bali-Barat info, 2011).

Istiyarto Ismu is the creator the reintegration program and during our visit he talked about how he wished to see a start to ecotourism in the area. Currently, Ismu has local residents working as part of the reintegration program by housing the Starling's and their newborns prior to their release. He said he hopes the start of the site can benefit the local community and showcase their achievements and successful program (Salas, field notes).

Bukit Bangkirai

This park is located between Samarinda and Balikpapan. Though not much information was available online I was able to find one particular website that provided some information. The area is known for its wide variety of orchids and animals, and its 150-year-old bangkirai trees (Bukit-Bangkirai, n.d.).

The site was visited during a second trip made in January of this year as part of the environmental conservation project funded by USAID. It was explained to me that this site had potential to grow as an ecotourism site and contained the positive values found in all four sites.

Methodology

In order to determine what each site needed to run a successful ecotourism site and what I could provide, I decided to develop a needs assessment survey. I divided the survey into three different sections. I developed a section that asked for a site description another that looked at the future of the site, and a final one that looked at the impact of the site.

The first two sections contained four questions and the last section contained three. The questions were developed in collaboration with my professor on what we felt would be within our realms to provide to the representatives and issues that we thought were important to know their stance on (Figure 1). I believe the questions in the survey will help to determine not only where they would like to see their site go but for what reason. It will also help me determine if they are aware of the cultural and environmental impacts of ecotourism.

The needs assessments (Figure 1) were disbursed both electronically and in person. My professor presented the survey to the representatives from Bukit Bangkirai and Taman Nasional Kutait. The other two surveys were presented through a Facebook group page. The group page consisted of interpreter, Dimas Wijaya, Karimunjawa representative, Yusuf Syaifudin, Bali Barat representative, Istiyarto Ismu, and myself. I was able to converse with the two representatives and advise them of my intentions with the survey with the help of Dimas. After the initial surveys were returned back to me and translated I followed up with some of the park representatives for further clarification on some key points through the use of e-mail and Facebook.

Ecotourism Needs Assessment Questionnaire

Tell me about your site

1.) What have you done for your site so far?
2.) Who are your primary targets?
3.) Can you tell me what facilities and structures you have?
4.) What do you feel are some of the issues that are preventing you from further developing your site?

The future of your site

5.) What direction would you like to steer your site?
6.) What are your primary objectives in developing an ecotourism site?
7.) What kind of things can UTEP do to help you? (Ex. Promotional material for foreigners)
8.) Who will be employed by your facilities? Do you need assistance designing a training program for employees?

The impact of your site

9.) How do you envision this being a community development project?
10.) How will you deal with the issue of trash?
11.) How do you plan to deal with the environmental and cultural impacts of ecotourism?

Figure 1

Results and Analysis

The surveys not only provided a look at what park representatives felt was necessary in order to have their ecotourism site grow successfully, but they also gave me insight into how they felt about other important aspects of ecotourism. The assessment also helped me to understand how developed each site was and what their main focus was in creating an ecotourism site. For the purpose of space I could not provide all of the responses in this paper and was only able to provide a synopsis.

Each of the four sites essentially asked for several of the same resources. Each site expressed an interest in learning the English language to a greater extent and having more promotional material in English. The promotional material they were seeking was to be disbursed within the local area and in more global terms. Though there were several other maintenance issues that were brought up by some parks, my focus as far as assistance was on the communication aspect of the ecotourism site.

In this section I will break down what I felt were the most important sections to address. I will also address how I catered the assistance based on the site I was working with.

Bali Barat

At the top of the list for Ismu was being able to greet guests in foreign languages and having brochures in English in order to advertise in different areas outside of Bali Barat. Ismu also requested assistance with a

detailed plan in order to start a successful village tour within his site. He also requested that data be collected in order to be able to disburse that information during the village tour.

Response. After the initial needs assessments I asked Ismu some follow-up questions through the use of an interpreter to gain a clearer perspective on what it was he was asking for. Upon further inspection I found that Ismu's main focus was on village tours and interpretation of material from Bahasa Indonesia to English. Ismu was also very interested in bringing students from UTEP to study the birds on site. The studies would prove to be beneficial not only to the student but to Ismu's continuing research as well. The national park is located in a very remote area with little access to advanced technology. The park itself is poorly advertised and does not have an official online presence. As far as village tours I decided to create a training program to help Ismu and the community understand what basic accommodations are of Westerners and what necessities tourists expect from a home stay.

Since Ismu was interested in both inviting foreign students and promotional material in English. I decided to create something for students who would be interested in these types of studies for the annual study abroad program to Indonesia that is offered in conjunction with USAID. Once the promotional material for that event was created, we could tailor it to send to Ismu as a type of year-round promotional material as well.

A basic sheet to assist tour guides in understanding and speaking English was also created using the sheets we received prior to visiting Indonesia as a guide. Aside from the cheat sheet, through further research, I found that it is absolutely vital for a successful ecotourism site to have their tour guides take professional English courses. According to Skanavis and Giannoulis (2009), it is recommended that each tour guide attend a vigorous training program that will help them create a closer relationship with the tourists and make more connections to conservation.

Karimunjawa Island

Like Ismu, Yusuf also requested assistance with promoting his site through various kinds of media and interpretation training for his guides. Unlike Ismu, Yusuf can get by with his English and his park has a strong online presence.

Response. For Yusuf I also created promotional material that I will be able to provide him so that he can disburse and promote as he pleases. Upon further research of advertising for ecotourism sites, I found that sites are more successful once they are combined with a common conservation interest (WWF). When a site has an environmental seal of approval like The International Ecotourism Society or the Rainforest Alliance, it then becomes a part of a bigger, more highly advertised group that has access to several ecotourists who visit these sites to plan their next vacation. However, enrollment into programs like these costs a considerable amount of money and would not be beneficial for sites like the ones in my study that are just starting up.

I decided to do what I could within my realm and create a link between all four sites within a Wordpress account that was created for the UTEP, RARE, and USAID partnership. On the website, I created a short write-up of what each site consisted of along with a group of photos. The site also includes a link to a Facebook page that I created for each site.

Bukit Bangkirai

Pak Tamrin of Bukit Bangkirai also requested promotional material in English in order to increase their numbers of foreign visitors. The only promotional material the site has is a few road signs between

Balkipapan and Samarinda. There is no online presence for the site and most visitors are either locals or foreigners who live near the area.

Response. It was difficult to communicate with park representatives from both Bukit Bangkirai and Kutai National Park. I did not visit Bukit Bangkirai firsthand so I knew it would be a little more difficult to communicate with individuals I did not personally meet. I only had a portion of the needs assessment they filled out to work off of.

Like the other sites, I incorporated Bukit Bangkirai into the website. However, I did not attempt to create a Facebook account for them because I do not have enough information to be able to create it. The site was in dire need of road signs based on observations from those who visited the site earlier in the year. Instead of contacting them directly, I contacted a graduate student who visited the site with the group who provided her feedback on the type of road signs she felt the site needed.

Kutai

Pak Ating and Pak Supiani of Kutai National Park expressed several issues with the site but did not know how I could be able to help them resolve those issues. Aside from structural issues, Ating and Supiani also requested that at least five of their tour guides know English well enough to be able to work with foreign tourists. They were also very interested in creating home stays in surrounding cities that are located near the two sites.

Response. Again, it was very difficult to communicate with these park representatives. What was surprising about this particular park, however, was the amount of interest they expressed in being a part of this project when I initially visited. It was discovered in the second visit that the original director was replaced and the current director did not appear to want to work with me on this project. Both Bukit Bangkirai and Kutai appear to have some interest vested with the coal mining companies, however nothing was confirmed. The surrounding coal mining companies may possibly help provide a steady income for surrounding community members making the ecotourism option a little more unappealing for some.

Kutai was also incorporated into the Wordpress website and a Facebook page was created for it. I thought an additional resource the site would benefit from was a set of guidelines created for site tourists that would outline what they can and cannot do while visiting the site. I based my set off guidelines for the site off of the Samboja Lodge codes of conducts.

Samboja Lodge is an orangutan survival foundation and sun bear sanctuary that hosts group tours (Samboja Lodge). The guidelines that are provide for the site outline what tourists can and cannot do to the land and the animals while visiting (Samboja Lodge). The guidelines for Kutai would serve as key towards placing conservation and animal rights first before the tourist's experience.

Summary

Once I received such a high request for tour guide training, I decided to do a little research on it in order to have something to base my training off of. It became clear to me that tour guide training plays a more vital role in the success of the ecotourism site than I once thought. The lack of communication between the tour guide and the tourist could prevent tourists from forming an interest for the cause and the site (Skanavis and Giannoulis, 2009).

I learned that in order to properly train a guide they must go through years of training in order to obtain the proper certification, learn English well enough, and be able to convey the message of conservation and

local culture to the tourists (Skanavis and Giannoulis, 2009; WWF, 2001). There are several sites that recommend and produce tour guide training, however, they stem from organizations like TIES and Rainforest Alliance and the funds are not available to be able to send Indonesian tour guides to these programs.

I decided to do what I could with what I had and go ahead and create a two-day training program that would be implemented during this summer's study abroad program by fellow students with the assistance of the professor. The training program would be implemented at each of the four sites and would not be required however would be open to both tour guides and site managers. The training was scheduled much like a conference, with two coffee breaks in each day, a lunch, and a dinner. The training went over the importance of community involvement, what tourists expect from a tour site, a basic English session, what accommodations tourists expect and what connections tourists need to make in order to return or buy into the idea of conservation.

Conclusion

With ecotourism being the most valid choice to combat both the local issues of income and land use and global issues of environmental conservation, it seems only fitting to focus on the idea for the Indonesian sites. However, what's equally important is the way in which the new concept is introduced to the local community. By avoiding foreign takeover of ecotourism sites, implementing the power of local leaders, and creating detailed guidelines for visitors, a successful ecotourism site is possible (Sowards, 2010).

Since every community varies in their way of life and local culture it is important to cater the ecotourism format around the local culture and belief system. Also, by implementing ecotourism sites an opportunity arises to work with the local government and education facilities to help relay the message of conservation through other formats (Sowards, 2010). Communication framing and cross-cultural adaption are therefore absolutely vital in order to achieve the goal intended.

However, upon implementing my needs assessment and receiving feedback from the site managers, I learned that there are several other issues that pose a hindrance on the success of the site. How tour guides are trained to interact with tourists also plays an integral role on the success of the site. If the tour guide, who represents the site for the tourists, does not link ecotourism with the visit then the concept of an environmentally friendly site has failed.

Though my research has only scratched the surface for these developing sites, I hope that it has opened the door for other researchers to study and have the funds necessary to see a successful formula through. I hope that in my future studies I can further my research within this country and develop a more prominent ecotourism plan for the site, having already learned their weaknesses and necessities.

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A Comparative Study Evaluating Conservation Education in Indonesian Provinces: Hinduism in Bali versus Islam in East Kalimantan

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This paper seeks to examine the differences in conservation between a predominant Hindu Bali and a predominant Muslim East Kalimantan. This paper will also examine the contrasting practices of religion and ecotourism between the two provinces. This paper will briefly highlight Muslim and Hindu religious ideologies and the differing viewpoints on ecotourism as well. This paper will document conservation campaign sites in the provinces and determine whether or not their efforts are successful. The analysis will then deduce how many of the individuals involved with the campaign site belong to which religious groups, in order to evaluate if devotion to a specific faith is (or is not) indicative of their conservation ideologies. In addition, ecotourism will be evaluated to determine the influence it has on conservation education and religion.

Introduction

In this contemporary era, it is not uncommon to read various excerpts on conservation campaigns being conducted in the Brazilian jungle and forests in Asia. The majority of these studies focus on exposing the scientific significance of preserving the natural resources of the earth. However, what have been rarely studied are the religious beliefs behind certain cultures that incorporate it into the very core of their identity and ideologies. Several of the Asian cultures focus on maintaining the knowledge of their cultural folklore and ensuring that the ancient religious practices of their ancestors remain rooted in an industrialized society of the 21st century.

Literature Review

Toxic Tourism

Tourists in this contemporary era are sometimes unaware of the role they play in environmental conservation. It is normal for individuals to avoid destinations that could pose a possible detriment to their health. Pezzullo (2007) asserts that tourists are the primary source of contributing pollution to designated ecotourism areas (p.1). She states that these individuals are “invasive and ignorant” (Pezzullo, 2007, p.1) to the impact of their actions on their surrounding environment. There are two examples of how this corrosive behavior can affect an ecosystem, which consisted of a visit to Karimunjawa Island in which individuals took part in a snorkeling activity. Essentially, students from the university began to snorkel around a depleting species of coral, yet in the process ended up damaged the coral due to how they were swimming. The fact that the students were flailing their arms around and kicking their feet to paddle

around resulted in some of the coral breaking apart or accidental physical damage to some areas. The secondary example of how Pezzullo's research parallels that of an example in my borderland community concerns the phenomena that occurred at Hueco Tanks state park in El Paso, Texas, in which visitors are prohibited from roaming around the park near the ancient cave dwellings. The Texas Parks and Wildlife Department released a statement online issuing sanctions "For the protection of natural and cultural resources at the park, visitation is limited" (Texas Parks and Wildlife Foundation, 2012). In addition, visitors and tourists are required to pay an entrance fee, register at the front desk and watch an informational eco-friendly video discussing the importance of maintaining the park and then taking part in guided tours. The author also asserts that the primary objective in coordinating such political events is to acquire support from the general population to take an active part in generating awareness regarding tourism (Pezzullo, 2007, p. 7).

Toxic tours also furnish the means for the community located in the toxic environment to express their: anguish, achieve justice for the harms committed against their land's biodiversity, and to investigate the processes and name the predecessors involved with polluting the environment (Pezzullo, 2007). Prior to the creation of these tours, communities could not seek relief from the government for harms committed against their environment. However, the environmental justice movement was the product of a 1982 toxic waste landfill dispute in Warren County, North Carolina (Pezzullo, 2007). The Warren County citizens unsuccessfully opposed the establishment of the toxic landfill in their area. The major demographics of individuals residing in the rural area were black and impoverished (Pezzullo, 2007). The story soon gained international recognition, and activists commented on how these marginalized communities were being racially targeted by Anglo state officials to construct such filthy landfills (Pezzullo, 2007). This was the first example of environmental activism on behalf of environmentalists who were not only active in the preservation of national parks, but of local communities as well. Pezzullo cites that advancements in technology have culminated into various products and manufacturing procedures that present a threat to the environment (2007).

Milstein (2008) explored the role of utilizing communication as a means of joining individuals of diverse cultures to resolve issues related to conservation. This study is essential since it also pertains to another aspect of toxic tourism concerned with individuals watching wildlife and their habitat. During our research, students participated in day-time excursions to view the protected wildlife in Taman Nasional Kutai. While there, students were allowed to assess and document the environmental damaged caused by primary (Mining and logging corporations), secondary (Indonesians) and tertiary parties (tourists). In return, participants were able to witness the different species of wildlife (orangutans, yellow-bellied long bill) affected by the deforestation and trying to adapt to their surroundings.

Religion

According to O'Brien and Palmer (2007), about "80% of people profess some religious allegiance, mainly following one of the 11 mainstream faiths," (O'Brien & Palmer, 2007, p. 23). Furthermore, 90% of the individuals residing in Indonesia have categorized themselves as Muslims (Friends of Indonesia, 2012). Not only that, but Indonesian legislators have included a law making it illegal for anyone to profess a faith outside the following five religions: Islam, Roman Catholic, Hinduism, Protestantism, and Buddhism (Friends of Indonesia, 2012). Bhagwat et. al's (2011) sentiment is supported in this paper, in which "Critics might argue that religious beliefs promote conservation only arbitrarily ...However, where people follow a religion, they are also likely to be receptive to that religion's ethics of conservation and development" (Bhagwat et. al., 2001, p. 234). The above study examined a series of "hot spots" (Bhagwat, et al. 2011, p.234), or areas populous with humans in biologically diverse communities, and how this overpopulation posed a detriment to conservation efforts. Within this study, religion was analyzed as a potential driving force for individuals who may or may not engage in environmentally friendly methods or practices.

Bhagwat et al.'s study examined three different issues pertaining to religion and biologically diverse communities. The first of these was to look at the "religion-based public support for conservation and development" (Bhagwat et. al., 2011, p. 235). The researchers established that the premise of this concept was to distinguish whether or not there is a link between religion and conservation. Another issue the researchers examined was the relationship between industrialization and religious ideologies.

The primary focus of this tenet was to understand if certain conservation methods are dispersed during the economic development of the land. The last point sought to comprehend the actual detriment individuals with a certain religion had on their land. Even though the above researchers were able to successfully establish a relationship between religion and conservation ideologies, the fact still remains that this was a study based solely on a collection of various statistics and figures. A much more intimate study needs to be created to evaluate the daily lives of individuals to see if religion is taught simultaneously with conservation education. One such example of this would be Sheridan and Nyamweru's 2007 study. These researchers concluded that the majority of the African religious sites associated with animist faiths were preserved almost in their entirety. In the process, these individuals were able to preserve the agriculture within the region as well (Sheridan & Nyamweru, 2007). Various herbs and plants were used by these animist faiths for healing, rituals and several important ceremonies (Sheridan & Nyamweru, 2007). Dudley, et al. (2010) also asserted that there was a link between animist faiths and a high degree of biodiversity within his study. In addition to this, Verschuuren et al. (2010) suggest that religions that are not part of the mainstream culture may have an extremely influential part in protecting the ecosystem they live in. The authors also state that mainstream religions will still maintain some form of the older faiths by ensuring that sites of worship be maintained and respected (which is a primary characteristic of indigenous cultures ritualistic faith) (Verschuuren et al., 2010).

Analysis

Religious Ideologies

Differing religious ideologies are oftentimes overlooked when teaching conservation education to individuals of a different culture. Researchers should consider evaluating this topic a bit more in order to be culturally sensitive to those around them so as to not offend individuals who place immense importance in it. According to the Pew Forum on Religion and Public Life (2011), it was estimated that approximately 203,823,000 Sunni Muslims resided in Indonesia in the year 2010 (See Tables 1 and 2). It was then predicted that the statistic would increase by 33, 816,000 people in the year 2030. Since Indonesia is predominantly Muslim, visitors are expected to adhere by religious customs out of respect for the public or face a penalty for their conduct.

Country	Estimated Sunni Population	Projected Sunni Population	Annual Growth Rate
Pakistan	155,834,000	224,103,000	1.8%
Egypt	79,624,000	104,539,000	1.4%
Bangladesh	147,864,000	186,568,000	1.2%
Indonesia	203,823,000	237,639,000	0.8%

Table 1. Shia Muslim Population Growth in the Four Largest Shia-Majority Countries

Another issue facing Indonesia right now is the rising religious intolerance in the country. An article published in the *Jakarta Post* described how a man named Alex Aan was imprisoned solely for being an Atheist. According to the article, Mr. Aan stated that several "Radical Muslims came to his office, beat him up, and called the police after reading about his [Atheist] views on Facebook" (Rogers, 2012). It is most probable that Mr. Aan will serve the six years in prison for being "charged with blasphemy, disseminating hatred and spreading atheism" (Rogers, 2012). Several protestors have taken to the streets in a recent attack against individuals of the Christian faith (Rogers, 2012). Some of the Muslim Radicals have even physically blocked and barred the individuals from worshipping. The journalist noted how he experienced a multitude of tense moments that nearly lead to violence when the parishioners decided to conduct mass in the streets instead (Rogers, 2012). A few Muslim radicals had previously pressured the Mayor of Jakarta to pass a "zero church" policy a few years ago as well (Rogers, 2012).Despite the negative events, it is still important to note that Indonesia is the only Muslim dominated country that has adopted a democratic system. This country has its roots established in the Muslim religion and all legislative actions are dependent upon it as well. This means that in order to appeal to the country for conserving their land's biodiversity, it would only seem logical to appeal to their religious ideologies as well.

In a personal interview with a female Muslim scholar named Ibu Tia from the University of Mulawarman, she stated that "The Muslim religion does teach to conserve, but people just want fast money and ignore their religion. Their excuse is that they need money. We all need money! But we are not going out and harming one another to get it" (I. Tia, personal communication, July 16, 2012). Ibu Tia went on to state that people who do this go against "God's will" (I. Tia, personal communication, July 16, 2012). Afterwards Ibu Tia stated that some people will alter parts of the religion to their convenience. She stated that the Muslim religion is not violent and tells them they should not hurt each other or the world. Finally she concluded that "Those people are just not as close to the religion as they claim, and just need to be educated by others" (I. Tia, personal communication, July 16, 2012) knowledgeable about the tenets of the Muslim faith. Incorporating religion into conservation education is rendered ineffective when individuals no longer possess the same devotedness to their religion as the previous generations did. Ibu Tia stated that some of the younger generations are increasingly influenced by "Western music, film, fashion" (I. Tia, personal communication, July 16, 2012) and etc. that some of their personal preferences in entertainment no longer coincide with their religious ideologies and practices.

Ecotourism

Another issue facing conservation deals with the impact of ecotourism on conservation. McNeely and Scherr stated that the primary dilemma of individuals have who are residing in lesser developed countries that implemented ecotourism into their conservation methodology, was that they had a hard time trying to conserve nature and gain profit (McNeely & Scherr, 2003). Several ecotourism activities may pose detrimental effects on nature. One such example of this would be scuba diving. Although individuals may not know the full scope of how harmful it is to touch the rare coral species and underwater plants, they may still end up doing it unknowingly. This in turn means that more funds would be required for policing the areas and ensuring that all of the agencies coincide with conservation legislation. Ecotourism can have either a positive or negative effect on conservation if it is not backed by legislation from Indonesian officials. Areas in which ecotourism thrives and employment is high, individuals may not be as apt to accept bribes from neighboring oil firms and etc. to kill orangutans for money.

Ecotourism is a concept that seems to influence how much people are willing to conserve even if it goes against their religious ideologies. For example, an ethnography documented that, scholars from the University of Texas at El Paso, who participated in a 2012 Indonesian summer research internship, noted that the Balinese province of Denpasar was a major focal point of tourism in comparison to Semarang and Samarinda, East Kalimantan.

In addition, the ethnographical study noted that the province of Bali was not only modern and thriving, but the majority of Balinese individuals were employed or owned several upscale stores with designer merchandise. The Balinese welcomed tourists from different nationalities and some had even studied English under the instruction of the foreign shopkeepers. Some foreigners even owned stores on the island and employed a multitude of people as well. This openness to tourist may be due primarily to the predominant Hindu religion persistent in the Balinese province. Additional information that was acquired during the 2012 Summer Research Internship to Bali, Denpasar, noted how significantly liberal the Hindu province was in comparison to the predominantly Muslim province of Samarinda, East Kalimantan. The conservative culture persistent in Samarinda may not appear alluring to potential tourists who would like to spend time in a "bikini or shorts" at the beach. However pioneers in Muslim fashion have tried to introduce the "burquini" for women to wear while at the beach. The burquini is essentially a one-piece garment that covers the entire body except for the hands, feet and face. According to the ©Ahiida trademark and vendors of the burquini, the garment was developed to give "Muslim women the choice to participate in sporting, swimming and day to day activities with confidence. All our products incorporate choice as well as pure functionality" (Ahiida, 2012). Although it is a progressive form of celebrating Muslim culture through fashion couture, it is in no way an attractive concept for foreigners to utilize while staying at a presumptuously conservative Muslim province. In addition to this, Islamic culture dictates that visitors must adhere to the strict dress codes that do not permit women to show their legs or arms in public. Not only that, but some areas require women to wear the traditional headdress as a sign of respect when in certain public areas. However, it is not uncommon to see a few figures who are not wearing the Hijab due to their religious preferences.

However, ecotourism in effect could turn negative if all the tourists inadvertently destroy the biodiversity in that community. An example of this would be the Karimunjawa campaign site, located in Jepara (near the Java Sea in Central Java), that was visited by the previously mentioned scholars from the University of Texas at El Paso. The students marveled at the unpolluted air, thriving coral and clear water across the entire island. Environmental conservationist Yousif Shyafudin has been working to implement an ecotourism plan to boost revenue in the park and maintain conservation efforts on the island (Y. Shyafudin, personal communication, July 21, 2012). However, it is unclear as to whether or not the increased traffic of individuals would potentially destroy the coral in the sea from scuba diving and the mangrove tree forest from destructive tourists. If strict sanctions were imposed on individuals who break the conservation laws passed by Indonesian legislation, then the incidence of destructive environmental recidivism would be at an ultimate low. Tourists and tour agencies would be less likely to conduct their own personal oceanic expeditions that could potentially destroy the environment. Now, if we were to couple to it the possibility that the citizens could reap a reward if they report illegal activity, then both tourists and companies would be much more fearful of breaking the law.

Ecotourism can be beneficial in areas that are not only liberal in their social norms and customs, but financially established as well. Boosting ecotourism in an area that is not ready to incur the damages caused by some tourists may end up in greater trouble than they were before. A society that is industrialized will have an easier time adjusting to the pushes and pulls of tourism. Ecotourism is an important aspect to be considered in conservation education, but the primary factor should be to analyze the practices of the individuals currently involved with the situation. How have their actions helped or hindered conservation efforts and what methods could be implemented into conservation education.

Conclusion

Although the previously cited studies have illustrated the importance of being mindful of others' religions when teaching conservation education, it is unclear as to whether or not the implementation of religion into

conservation is still effective with the introduction of ecotourism into that community. When communities are given the opportunity to receive more funds in exchange for the land encroachment of a tourist agency, members will more than likely give in to the demands of acquiring more money in order to support their families. Not only that, but it is difficult to assess whether or not two distinct cultures with different inherent religious ideologies on conservation are able to successfully coexist with each other when promoting the conservation of land biodiversity. The main problem is constructing a plan that would create some sort of conservation equilibrium amongst all of the Indonesian provinces.

The rigidity of one religion's ideologies may not coincide with another's liberal perspectives when it comes to conservation education. However, it was noted that in certain cases, individuals will abandon their religious ideologies that tell them the importance of conserving land biodiversity, when it comes to earning more money.

The possibility remains that individuals may be able to conserve their land's biodiversity according to their religious values if more legislation was passed protecting the land. However, the legislation needs to be enforced by the officials. Officials who are enforcing the laws should also be paid more to reduce the possibility of accepting bribes in order to sustain their families. An essential part of this is for researchers and academia to emphasize the long-term benefits of conservation so that citizens of Indonesia will not be tempted to accept bribes from mining, logging and oil firms. It is not uncommon for individuals who live day to day to overlook the long-term effects their actions may have on their environment just to earn a few extra rupiah for their households.

These specific topics should be considered when promoting and introducing conservation education to the Indonesian culture. If not, then only sporadic portion of the public might incorporate the education into their ideologies. As studied first-hand, the problem cannot be solved by targeting different factors of the problem separately. If this was practiced, then positive results would surely follow over a long period of time.

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Supporting Water Governance and Climate Change Adaptation Through Systemic Praxis

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Understanding and working with multiple perspectives on issues of change is an essential part of managing "common pool" water resources. In uncertain and complex situations arising from changes in human settlements and climate, both lives and livelihoods can be at stake. One individual's or group's choices can adversely affect others and traditional processes of participation and legislation are often inadequate. Discourse on environmental law recognises that non-compliance with legislation is associated with weak national governance structures. A systemic approach to managing change is required to appreciate interconnections among issues at various levels and to mediate different stakeholdings. Yet there are no blueprints for effecting systemic transformations of complex situations. This paper explores how the implementation of climate change adaptation can be supported when grounded in situations, such as water governance. It draws on the authors' experiences of systemic praxis in the water sector.

Keywords: water governance, systemic praxis, participation, legislation, social learning

Introduction

A story heard by many familiar with the trans-disciplinary intellectual fields of systems and cybernetics, what Ison (2010) calls cyber-systemics, is the systemic failure in public policy that unfolded in the USA following the first successful moon landing. President Kennedy, on the back of this seemingly great and successful achievement, urged policy makers to turn their attention to the problems of inner city decay and the desire for urban renewal as a 'fix' for the problem. We know now that they failed – the thinking that achieved a successful moon landing was not the type of thinking (and practice) needed to address the complex and uncertain issues of inner city decay. It could be said that in the inner cities the problem was to know what the problem was but at a more profound level the framing of situations characterised by inner city decay as problems was itself unhelpful. As Thompson and Warburton (1985) found in their work on people-land interaction in the Himalayas, "The problem was that there was not a problem but a multiplicity of contending and contradictory problem definitions, each of which takes its shape from the particular social and cultural context that it helps to sustain" (p. 203). Within these situations all too frequently one person's problem is another's opportunity. This recognition of multiple perspectives on issues of change has led to many who have previously focused on problems in the context of sustainability

to take a step back to instead speak of 'issues' and how, by whom, and what is at issue comes to be constructed, agreed upon (through learning and negotiation) and acted upon (Open University, 2006).

The systemic failures of early attempts to address inner city decay did lead to another type of flourishing – the formulation of neologisms, new terms, to describe what policy makers and researchers experienced (Ison, 2010). Thus Rittel and Webber (1973) formulated the terms wicked and tame problems, Ackoff (1974) coined the terms mess and difficulty, Schön (1995) referred to the swamp of real life issues and the high ground of technical rationality. Around the same time those working for the global think tank, the Club of Rome, chose the term problematique to refer to the complex of interacting issues perceived to be confronting the world (The Club of Rome, 1970). Today the term anthropocene refers to a similar complex of issues but has at its core the recognition that humans themselves are, through their actions, effecting the world's future trajectory. Unfortunately in the 40 or so years since some of these concepts were invented practice to address the implications these framings carry has not greatly improved; there is still far too much public policy failure (APSC, 2007). Academic practice itself has contributed to this failure by the pervasive tendency to reduce, through processes of reification (making concepts into things), potentially useful framings of situations. This powerful and unhelpful epistemological shift from *concept as concept* to *concept as thing* (something real) can be understood by the following two linguistic framings: (i) we need to define rigorously what a wicked problem is and know one when we see it (concept as reification) and (ii) what can we gain in terms of improvement in this situation if we choose to frame it as a 'wicked problem'? (concept as epistemological device). As such linguistic framings are also at the core of how we do or do not communicate and learn, we argue that it is important to both notice and understand the implications of how concepts operate in language.

The emergence of the Anthropocene as an organising concept and metaphor has been particularly influenced by the evidence of human-induced climate change and a complex of other issues of which water or river governance is one of the most important (Crutzen & Stoermer, 2000; Rockström & Karlkberg, 2010; Schmidt, 2013; Syvitski, 2012). In recent history, rivers have traditionally been framed as hydrological or biophysical systems and the concern primarily of hydrologists, engineers, physical geographers and the like. With the emergence of the discipline of ecology they became framed as, or contributing to, important ecosystems. Thus a form of ecological rationality began to displace or merge with an earlier technical rationality (Steyaert & Ollivier, 2007). These contesting rationalities are prominent in important water policies of today such as the European Water Framework Directive, the Murray Darling Plan, the South African Water Act, etc. This shift has constrained water governance effectiveness as evidenced by the critique of stationarity (Milly et al., 2008) and of contemporary water governance generally (Ingram, 2008).

In this paper we draw on lessons from research conducted for over a decade, which concerns how particular forms of systems thinking and practice (systemic praxis) have been used to transform understandings of water governance. This includes the EU-funded SLIM project on social learning for the management and sustainable use of water at catchment scale (see Blackmore, Ison and Jiggins, 2007) which began by making a radical framing choice – to see sustainability of water catchments as a product of social process and not a feature of a biophysical entity. We draw on design features of a newly funded project (CADWAGO) to outline shifts in our own understandings and practices that take us beyond a naive concern with participation, and lead us to ask how concepts, such as 'the commons,' are deployed. We will argue that addressing these concerns can open up new possibilities for systemic governing in commons-like situations.

Outgrowing and Re-Framing Traditional Processes of Participation and Legislation

A focus on social process in contexts of climate change and water governance draws attention to the ways in which human activity and interaction can and cannot make a difference. Two aspects of social process that have been much associated with activity and interaction for sustainability are *participation* and *legislation*.

Participation has in the past couple of decades become something of a panacea in the contexts of water managing and climate change adaptation. Woodhill (2002) argues that "the idea of local level community action with an emphasis on stakeholder participation and empowerment …has become a corner stone of natural resource management and development programmes the world over" (p.318). Collins and Ison (2009) note that participation has become a recurring theme in climate change debates on adaptation. They are critical of framing participation in terms of power, as perpetuated by the use of the metaphor of Arnstein's (1969) ladder of citizen engagement arguing that "…Arnstein's enduring framing of participation, as a manifestation of power, can constrain policies and practices of adaptation…the foundational epistemology for Arnstein's typology is insufficient to enable progress toward concerted action for adaptation among multiple stakeholders" (Collins & Ison, 2009 p. 369). Woodhill (2002) and Collins and Ison (2009) argue instead for particular kinds of participation that lead to social learning about the nature of the issue itself and how it might be progressed. Within this framing participation, as long as meaningful and well managed, is necessary but not sufficient to transform complex, multi-stakeholder situations.

There are many examples to be found of multi-stakeholder, multi-level, dialogue processes that have led to concerted action for more integrated management and sustainable use of water (e.g., EUWI, 2011; Mostert, Craps & Pahl-Wostl 2008; Jiggins van Slobbe & Röling, 2007). This interaction does not happen automatically as a result of participation, but needs active and purposeful facilitation for social learning to take place. As detailed by Steyaert and Jiggins (2007) there are other factors which might enhance or constrain social learning in any given context – these include the history of the situation (which includes historical framing choices; initial starting conditions and potential pathway dependencies), institutions – including policies, the extent and nature of stakeholding in an issue, and whose knowledge or ways of knowing hold sway. Social learning from the SLIM perspective typically involves individuals and multi-stakeholder groups becoming more aware of the way in which they use water and for what purposes, and then changing their practices (Ison, Röling & Watson, 2007).

Articulating multiple perspectives or participating in a dialogue process may be a part of, but does not necessarily lead to, systemic praxis. There has been increasing recognition that in complex and messy situations such as management of scarce natural resources, stakeholders need to engage in joint-processes of learning of the sort that generates new and emergent understandings and harmonise their actions, drawing on their different ways of knowing. This kind of social learning requires interaction both across and within levels of a hierarchy (Blackmore, 2007).

Participation has also to some extent become reified, with legislation to support it such as the 1998 Aarhus convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters coming into force in Europe through, for instance, the Water Framework Directive (CEC, 2000) and the public participation directive (CEC, 2003). Many have also focused their attention on developing tools and techniques for participating in decision making (Open University, 2006; IEMA, 2002). Questions of purpose of participation do arise in these discourses and participatory techniques have been used purposefully by many communities (Woodhill, 2002; Planning for Real). But there are many examples where stakeholders' expectations of participating in decision making have been raised and not materialised because of the way participation has been framed regarding who has been

involved in which aspects of decision making (e.g. concerning the general public in the UK's currently ongoing contentious infrastructural planning processes for high speed rail and concerning the public and NGOs in building dams such as those on the Nu river in China [New Economics Foundation, 2011; Jiangto, 2012]).

Reification of participation extends beyond conceptual issues. Wenger (2010) sees them as a duality, a dual process of meaning making related to engagement in social contexts:

> On the one hand, we engage directly in activities, conversations, reflections, and other forms of personal participation in social life. On the other hand we produce physical and conceptual artefacts – words, tools, concepts, methods, stories, documents, links to resources, and other forms of reification that reflect our shared experience and around which we organise our participation. (p. 180)

In order to understand how the legal reification of participation has proven challenging for those involved in meaning making in relation to issues of water governance and climate change adaptation, it is necessary to step back and consider some processes and products of legislation more broadly.

McEldowney and McEldowney (2010) argue that the twenty first century is a new historical period in environmental law dominated by the market economy and globalization. They claim that in the early twenty first century "increases in oil prices and gradual acceptance of climate change has forced the environment further up the legal, economic, social and political agenda" (p. 353) and that science's role in understanding global change and humankind's environmental impacts has meant collaboration between scientific and non-scientific disciplines to shape the environmental agenda. But others tell different stories, perhaps because they are focusing on different events, regions, and times. Lee (2005) argues that environmental law faces some serious challenges associated with the complex, evolving, highly political nature of environmental problems together with significant legitimacy questions being asked of the EU, following its expansion. She links legal responses to these challenges to decision making, as the European Commission is extending its range of contributors to decision making (i.e., the 'market', the 'people', the experts, industry itself, environmental interest groups). Lee (2005) points out a need for responsible and accountable public decision makers if final decisions are to be in the public interest.

Kahn and Kotchen (2010) are among those who have found that effective environmental policy in general and climate-change policy in particular is more likely during economic booms than recession. A case in point is that large-scale transition to renewable and non-carbon sources of energy will require huge new investments, unlikely to take place during times of economic downturn. Beyerlin and Marauhn (2011), in their book on international environmental law, consider the success and failure of different states' endeavours to enhance international environmental and development co-operation. They highlight how when faced with economic challenges, national self-interest dominates actions more often than common concerns at an international level. They call for a holistic rather than a sectoral approach towards the further development of international environmental law to overcome fragmentation in the face of many different treaties.

There are some very large time lags between international agreements being made, coming into force and reaching domestic law and issues of poor compliance and non-compliance that are partly associated with lack of finance and inadequate administration and human resources. It is generally recognized that ensuring compliance is not just about trying to control what happens but also that it requires assistance as there are often multiple causes for non-compliance associated with weak administrative, economic or technical national governance structures (Beyerlin & Marauhn, 2011).

Beyerlin and Marauhn (2011) also comment:

> The number of multilateral environmental agreements (MEAs) concluded since the 1970s is impressive. The question must be raised, however, whether all these MEAs have had any effect. International relations scholars answer this question in terms of the behavioural or environmental changes which can be attributed to specific MEAs. In contrast international lawyers and legal scholars will examine the effectiveness of MEAs in terms of the extent to which parties comply with their commitments. (p.317)

It is therefore perhaps not very surprising that promises of, and even legislation for, participation in the contexts of water and climate change have not delivered what has been hoped for by some of the stakeholders in these situations. Traditional processes of participation and legislation have undoubtedly been found lacking in terms of addressing issues of sustainability and climate change. But whether or not they are found useful depends very much on how they are used. In the next section we use examples from our research to show how some of the discourses around participation that we are familiar with have moved on and how we expect them to keep moving on.

Learning From a Decade of Inquiry: An Evolving Discourse on Social Learning for Water Governance and Climate Change

The SLIM project began as the Water Framework Directive (WFD) passed through the European Parliament (Kaïka, 2003; CEC, 2003). It arose partly because the EU, in its research commissioning role, wanted to know how the WFD could be implemented not only through traditional legal and economic means but also through communicative and participatory approaches (e.g., Ison et al., 2007; Ollivier, 2004). SLIM was not directly involved with the WFD but the project took place at a time when we were conscious that the legislation would fundamentally change the historical basis of managing water in Europe (Kaïka & Page, 2003). The project acknowledged that a systemic approach to managing change is required to appreciate interconnections among issues at various levels and to mediate different stakeholdings. In recognition that there are no blueprints for effecting systemic transformations of complex situations, it focused on social learning. Different kinds of stakeholder participation were considered, but as sub-questions to consideration of new forms of governance (e.g., Ison et al., 2007; Steyaert & Jiggins, 2007). The starting conditions and details of the SLIM project are documented elsewhere (Ison et al., 2007; Blackmore et al., 2007). Here we are more concerned with what has happened since.

Research within the SLIM lineage has been pursued in the Netherlands – under the rubric of 'innovation systems' or 'systemic innovation' – (Jiggins et al., 2013), from Sweden (Powell, Osbeck, Sinh & Vu, 2011), and in Australia – under the rubric of the Systemic Governance Research Program – (Monash University Sustainability Institute). Within the UK post-SLIM research has continued to be concerned with water catchment governance (e.g., Collins & Ison, 2010), which has run in parallel with new educational developments in systems thinking in practice (STiP - see Blackmore & Ison, 2012). Cross-case comparisons have also been made (e.g., Collins, Colvin & Ison, 2009). Enacting social learning is for us a form of systemic praxis (theory informed practical action).

Colvin et al. (under review) consider three long term case studies that originated in the SLIM project, in England and Wales, in South Africa, and in Italy. They identify more than three pathways of praxis development that have emerged from the original SLIM experience. Whilst SLIM originally concerned water resources managing in the context of the European WFD, only one of the pathways of praxis development maintains this focus. All increasingly focus on governance; another pathway extends the original focus of inquiry to new cultural and political contexts beyond WFD and a third broadens the focus beyond water

resources to explore social learning in the context of climate change adaptation. The full detail of these pathways cannot be given here without compromising Colvin et al.'s paper which is awaiting publication, but we can consider here how and why these foci continued and have evolved.

Climate Change Adaptation

Since the SLIM project the discourse concerning climate change adaptation has progressed, both through the work of the Intergovernmental Panel on Climate Change (IPCC, 2007, 2008), but also through reactions of many individuals and groups of people in many different parts of the world in response to extreme weather events that have been linked to climate change, in particular to changing temperatures, droughts, and flooding. Collins and Ison (2009) suggest that "perhaps in recognition of the difficulties experienced by many researchers in relation to participation across various domains of environmental management … there has been a discernible shift in academic and practitioner literatures towards recognizing the social embeddedness of climate change adaptation" (p.360). They cite Adger et al. (2009) in suggesting a view of adaptation that increasingly includes thinking about the organisation and values of societies, the knowledge they construct and the relationships among individuals, institutions and the state. The new CADWAGO project mentioned at the start of this paper brings together focuses of climate change adaptation and water governance. The authors of this paper are contributing a work package (WP) to CADWAGO that is linked to the SLIM lineage. This WP will critically assess how history, facilitation, stakeholding and reflexive praxis contribute to water governance performances under conditions of climate change. In this way it will aim to appreciate key elements of praxis involved in transforming a water managing situation through social learning.

Social Learning, Systemic Praxis, and Governance

As noted by Ison, Blackmore, Iaquinto (2013) there has been a burgeoning of interest in social learning and a certain level of contestation as to how it might be understood and enacted. Few authors however make the distinction between social learning as social process (as in say the dynamics between the players in a string quartet) and a governance mechanism which can be invested in and understood as an entity (as in a particular named and sponsored quartet). Clearly both are needed; to this end we have come to understand that when the social processes exemplify systemic praxis which is embedded in a conducive governance framework then the possibility for systemic governance arises.

To further explain this idea, we draw on a cybernetic metaphor of a person at the helm of a boat charting a course in response to feedback from wind and currents (Ison, 2012). Examples from our work, for example in South Africa (Collins et al., 2009; Colvin et al., (under review)) show how the course of adaptive managing has been charted in relation to a purpose that is negotiated and renegotiated within an unfolding context i.e., in response to uncertainty (see Freitag, Biggs & Breen, in press; Cook & Yanow, 1993; Ison, 2010). The South African case is one where there has been leadership, seventeen years of adaptive learning, attention to process and relationships, changes in boundaries of systems of interest and a changed role for science. In this case, the 'response to feedback from winds and currents' is feedback to the daily activities of managing within higher level practices associated with planning, regulating, and governing. Systemic governance, or governing, is therefore the context in which adaptive planning, designing, regulating, and then managing sits. Governance that is 'adaptive' incorporates learning and change in response to uncertainty, but despite the growing need is, in the main, poorly done (e.g., Allan & Curtis, 2005). This is partly because, drawing on the South African example, it may not be possible to chart a similar course in another context where the governance framework is less conducive, i.e., there are no 'blue-prints' that can be 'rolled-out'.

The discipline of cybernetics, which has had a major influence on ideas about systems and about learning, involves the study of communication and control in both living organisms and machines. Understanding how communication occurs among humans and how it does or does not lead to action is central to developing an understanding of social learning. The cyber-systemic lineage of framing governance adopted in the Systemic Governance Research Program is not new (see Blunden & Dando, 1994) but is neglected in recent governance discourse. Cyber-systemic framing of governing encompasses the totality of mechanisms and instruments available for influencing social change in certain directions including a practitioners own history (i.e., traditions of understanding and identity). Whether purposeful or not, the collective of activities of governance produces effects comprising varying degrees of coordination/ lack of coordination, control/ loss of control and certainty/ uncertainty. The point is to arrive where a loss of control does not lead to fear but to social learning and innovation (Ison, Grant & Bawden, 2013).

Communities of Practice and Landscapes of Social Learning Systems Praxis

Although this paper makes many conceptual distinctions, an enduring feature of the SLIM lineage in terms of supporting water governance under conditions of climate change is not just a focus on theory but also on practice. In systemic praxis, systemic theories and practices inform each other, as discussed above. However, our praxis can also be described in other ways which are relevant when considering the post-SLIM evolution of discourse on social learning for water governance and climate change. Wenger's ideas on communities of practice (1998, 2010) and Bawden's ideas on critical social learning systems (2000, 2010) continue to be highly relevant to us and continue to evolve in use in the wider contexts that Colvin et al. (under review) refer to in the three post-SLIM pathways of praxis. Wenger's (1998, 2010) use of the concept of a 'landscape of practices' as an epistemological device in relation to the identity of individuals has also been found relevant as in our experience it can also help to understand more collective identities, of projects and groups. Blackmore (2010) mapped a 'landscape of social learning systems praxis' with fourteen themes, drawing on Wenger's (1998,2010) idea of a landscape of practices and his and several other authors' acknowledgement of the importance of praxis-based approaches. These themes were: institutions, organisations and institutionalising; ethics, values and morality; communication; facilitation; managing interpersonal relationships and building trust; communities and networks; levels and scale; boundaries and barriers; conceptual frameworks and tools; knowledge and knowing; transformations; time lag and dynamics of praxis; design for learning and stability, sustainability and overall purpose. Many of these themes will feature in CADWAGO, and while this project has not been framed exclusively as social learning systems, returning to our point at the start of this paper about using concepts as epistemological devices, we recognise the challenge of using a multiplicity of concepts in this way. It could appear that in our research we have moved on from focusing on participation and legislation to social learning to governance in relation to water managing and climate change adaptation but instead we argue that we need all of these focuses at different times for different purposes.

Emerging Research and Praxis Concerns for Water Governance – CADWAGO

The systems-theoretical stance adopted by our group within CADWAGO is based on an appreciation that systems are a social construct which involve boundary judgments by concerned stakeholders – i.e. what is in or outside a system of interest? and how are the internal dynamics between elements understood? When understood in this way a system is a way of framing an inquiry into complex or 'wicked' situations that leads to new, systemic ways of knowing about and changing a situation. When done with others, this process triggers changes in understanding and practice of those involved and can lead to concerted

action or social learning (Blackmore et al., 2007). Drawing on this form of systems theory contributes to epistemic resilience (Powell et al., 2011).

Our WP responsibilities employ the cyber-systemic lineage framing of governance outlined above. In the practical context of water governance a helmsperson might usually be a group existing in some institutionalized or self-organizing form. Equally it could be a government department. We hold no normative view of who the helmsperson might be – what is critical is the relationship between those who fulfil this role, how purpose is generated and understood, and how governance is enacted in relation to a changing and dynamic context. Thus, governance that is 'systemic' and 'adaptive' incorporates learning and change in response to unfolding circumstances which requires understanding and managing feedback processes. Built into CADWAGO is a distinction between generating different types of data that contribute to epistemic resilience based on incorporating different ways of knowing into praxis.

Conclusions

Effective support for water governance and climate change adaptation will take many forms depending on what and who are to find support and for what purpose. In this paper we have drawn on our experience of over a decade of research to illustrate the need for systemic praxis in this context, which uses a cyber-systemic tradition of understanding. Participation has been one of many concepts that has been found meaningful in this tradition but has to some extent become reified in unhelpful ways, partly through some processes of legislation. Nonetheless, it is still very much an essential part of our landscape of praxis. However, we have come to recognise that naïve concerns with participation are insufficient unless situated within a conducive, systemic governance context that has the capacity to conserve, through institutionalisation, any gains made from participation. Systemic praxis, which is not a capability that is widely encouraged, is for us another essential ingredient. Any gains from participation in terms of addressing complex and uncertain issues will necessarily be emergent and thus the design and conduct of participation is not amenable to command and control practices of managing and governing.

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The North American Model of Wildlife Conservation: Can It Move Beyond Just Hunting?

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The North American Model of Wildlife Conservation (NAMWC) defines the unique style of conservation on the North American continent comprised of equal and ethical public access to natural resources that are ostensibly held in trust for them by the state. Over the 12 years since the NAMWC was first articulated as a concept, many wildlife specialists and curriculums in North America have adopted the seven tenets of the model as a representation of conservation history and a preferred direction for future management strategies. In an ideological critique of the model we argue that its narrow stakeholder focus and ideological representation limits both a broader spectrum of citizen involvement in wildlife management decisions and the future applicability of the model due to changing values toward nature. This critique draws upon the written descriptions of the tenets from Geist et al. (2001) and other academic and popular literature addressing the model.

Key Words: critique, environmental ideologies, NAMWC, stakeholders, wildlife

The North American Model of Wildlife Conservation

In 2001, the North American Model of Wildlife Conservation (NAMWC) was popularized by Valerius Geist, Shane Mahoney and John Organ, describing the system of wildlife management in the U.S. and Canada characterized by protected areas, restricted commercial exploitation of wildlife, common and statutory laws dedicated to species and habitat conservation, state and federal wildlife and landscape management entities, and dedicated funding for wildlife conservation (Geist, 1995; Geist Mahoney, & Organ, 2001; Geist, 2006). The creation of a comprehensive and coherent system guided by laws and science helped North America retain many of its native species (Geist, Mahoney, & Organ, 2001) on public and private lands. The NAMWC is supported by seven core tenets:

1. Wildlife as public trust resources;
2. Elimination of markets for wildlife;
3. Allocation of wildlife by law;
4. Wildlife can only be killed for a legitimate purpose;
5. Wildlife are considered an international resource;
6. Science is the proper tool for discharge of wildlife policy; and
7. Democracy of hunting.

These core tenets, also known as the "seven sisters," serve as the guiding principles for wildlife policy and management. Hunters serve as the central stakeholders to the NAMWC due to philosophical, legal, and economic criteria despite efforts at pluralism and democracy.

Most wildlife research and conservation literature are fairly unified in the description of the NAMWC (Geist, Mahoney, & Organ, 2001; Decker, Organ, & Jacobson, 2009; Organ, Mahoney, & Geist, 2010; Organ et al., 2012) as both a historical descriptor and direction for future wildlife conservation. It is generally presented as a model woven into U.S. and Canadian history beginning with European settlement of the New World. As settlements established and grew and as the tentacles of civilization spread west across the continent, wildlife declined in the face of market (e.g., American bison [*Bison bison*], Passenger pigeon [*Ectopistes migratorius*]) and subsistence hunting, habitat loss, and organized attempts to decrease Native American food supplies (Geist, 1995). Even the earliest settlers quickly realized the negative impacts of unregulated hunting and instituted the continent's first game seasons and laws (Leopold, 1933). These laws proved inadequate in the face of market pressure (e.g., the decline of the American beaver [*Castor canadensis*] and multiple bird species due to the popularity of beaver fur and feathered hats in Europe). The progression of the 19th century witnessed this precipitous decline of wildlife but also an increase of human living standards that allowed a new group of leisure-based resource users to arise near the end of the century (Geist, 1995; Wellock, 2007). These new middle and upper class hunters eschewed market hunting for a new conservation ethic that transitioned the "wildlife as commodity" philosophy to a "wildlife as resource" philosophy that incorporated the common properties idea (Public Trust Doctrine) promulgated under the Roman Emperor Justinian in the 6th century C. E. and the Magna Carta in the 13th century C. E. (Sax, 1980; Smith, 2011). These new hunter-groups began to exert political and philosophical pressure for conservation that resulted in the creation of National Parks (e.g., Yellowstone National Park [1872]) and Forests, important legislation (Migratory Bird Hunting and Conservation Stamp Act 1934), and peer pressure amongst hunters (e.g., fair chase in hunting) (Boone and Crockett Club, 2013). The overwhelming majority of state wildlife agency budgets (and hence the majority of wildlife management funds) come from excise taxes on firearms and ammunition sales, fishing equipment, trolling motors, and motorboat fuel sales (Federal Aid in Wildlife Restoration Act 1937, Federal Aid in Sport Fish Restoration Act 1950). Perhaps most importantly, they helped create a system of conservation that not only presented conservation as important but instituted a reliable funding apparatus. This history has shaped and funded wildlife management into what it is today. It also serves as the justification for the need and continuation of such a model.

This interpretation of the NAMWC (both the history and the justification) has potentially important problems. Though Decker, Organ and Jacobson (2009) emphasize that the NAMWC must appeal to a broader swath of the general public to remain functional, the popular history of the model largely ignores the role of non-hunters in the development of wildlife conservation in the U.S. and Canada. An existing critique of the model by Nelson, Vucetich, Paquet, and Bump (2011) finds fault with the NAMWC for vague foundational tenets focused primarily on recreational hunting and a flawed ethical design that requires future actions (hunting) based on historical practices. Additionally, the model emphasizes the value of modern hunters with little acknowledgement of other important groups.

In our paper we examine the inclusivity and ideologies of the seven tenets of the NAMWC. Proponents argue that the NAMWC represents a highly desirable strategy for effective wildlife conservation but relies upon critical foundational tenets (primarily wildlife held in a trust for the public and democratic access) now under threat in the U.S. and Canada. Wildlife scientists and managers understand that effective wildlife conservation now and going forward requires understanding and participation from a much broader proportion of the public. Even staunch proponents acknowledge the hunter-focus of the NAMWC poses a fundamental problem of inclusivity and undercuts the public trust doctrine. We investigate the rhetorical tone and ideological underpinnings of the foundational components of the NAMWC informed by their use

in peer-reviewed literature and determine whether the NAMWC encourages or discourages non-hunter participation in conservation.

Ideological Critique

Tenets, or a set of guiding principles, are broad by nature in their attempt to be holistic while accommodating for social change. The seven tenets of the NAMWC are no different in their attempt to capture the unique circumstances and style of wildlife conservation in North America. Our analysis was comprised of an ideological critique of the seven tenets as outlined by Geist, Mahoney, and Organ (2001), with supplemental context provided by proponents of the model, most notably academics and professionals in wildlife management as well as The Wildlife Society as a professional organization and the Boone and Crockett Club as a sportsman association that contributes to academic research. We chose the tenets as outlined by Geist, Mahoney, and Organ (2001) because their article serves as the first published paper introducing the tenets as a model, though we acknowledge that an earlier version was presented by Geist in 1995 in a book chapter on North American policies of wildlife conservation. We also make reference to subsequent versions as these tended to either broaden or narrow the scope of the principles. Our critique focused on social values and symbolic forms present within the tenets (Berger, 2011). Specifically, we critiqued the tenets based on their (1) inclusivity of different stakeholder groups in wildlife conservation; and (2) representation of environmental ideologies using a spectrum provided by Corbett (2006).

Using text provided in the Geist, Mahoney, and Organ (2001) article, we coded each of the seven tenets for (1) stakeholder groups either implied or directly mentioned in the tenet and accompanying description; and (2) environmental ideology(ies) present within the text. We also deconstructed the tenets to further explore justifications for model structure and stakeholder inclusivity or exclusivity. The spectrum of ideologies used for coding span from unrestrained instrumentalism (i.e., resources exist solely for human use) to more transformative ideologies such as deep ecology and ecofeminism which seek to give equal consideration and rights to the human and non-human world (Corbett, 2006; Figure 1). The conservationism ideology generally takes on a tone of stewardship or "wise use," conserving resources for future generations of humans. Preservationism goes a step farther, incorporating importance beyond utilitarian use such as "scientific or ecological, aesthetic, and religious worth" (Corbett, 2006, p. 28). Ethics and values-driven ideologies move into intrinsic values for nature, imposing a moral or ethical duty on humanity to protect the rights of non-humans. Conservationism and preservationism are often mid-spectrum ideologies associated with wildlife management.

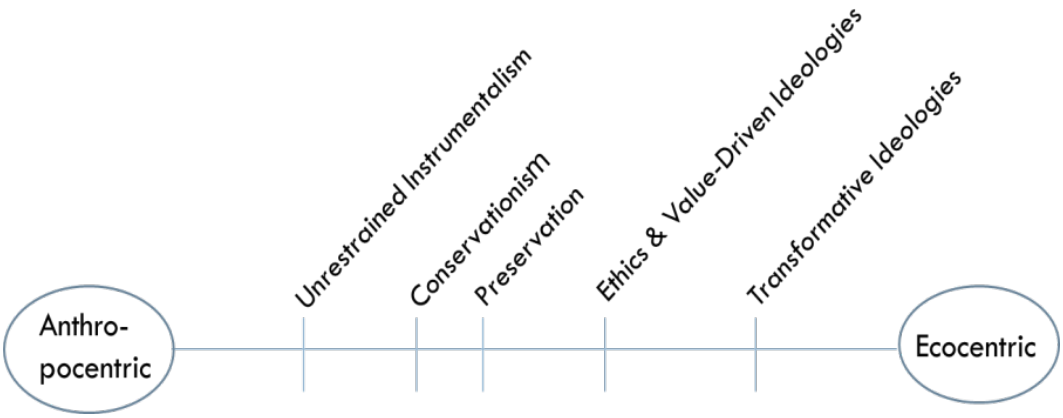


Figure 1. Reproduction of Corbett's (2006) spectrum of environmental ideologies

Dominant Stakeholders and Ideologies as Represented by the NAMWC

Our analysis of the seven tenets and accompanying text reveals both a heavy dependence on a language of consumption and an exclusive group of stakeholders (Table 1). Geist, Mahoney, and Organ (2001) refer to all citizens in the context of the Public Trust Doctrine, implying the importance of both consumptive and non-consumptive users. Descriptors of the NAMWC quickly depart from a broad plurality to a much more narrow interpretation of public. Interestingly, the only active and involved citizenry as seen by the NAMWC are (1) consumptive users such as hunters and trappers; and (2) wildlife managers and scientists. The intrinsic but shallow inclusion of policy-makers in the tenets (e.g., Allocation of Wildlife by Law) indirectly supports the importance of a broad public and diverse value system, but even these assumptions largely incorporate only the consumptive users (e.g., hunter importance in creating the Federal Aid in Wildlife Restoration Act of 1937). The "inadequate history" as described by Nelson, Vucetich, Paquet, and Bump (2011) limits the incorporation of non-consumptive users into the NAMWC tenets. The verbiage of the NAMWC largely lacks relevance to non-consumptive users since they are rarely mentioned as important players in the development of wildlife management strategies.

Tenet	Implied Stakeholders	Environmental Ideologies Present
1. Wildlife as public trust resources	National citizenry, wildlife managers, policy makers	Unrestrained instrumentalism
2. Elimination of markets for wildlife (later changed to game)	Hunters, trappers, wildlife managers	Conservationism
3. Allocation of wildlife by law	National citizenry, wildlife managers, policy makers	Unrestrained instrumentalism
4. Wildlife can only be killed for a legitimate purpose	Hunters, trappers, landowners, wildlife managers	Unrestrained instrumentalism
5. Wildlife are considered an international resource	Global citizenry, wildlife managers, policy makers	Conservationism
6. Science is the proper tool for discharge of wildlife policy	Wildlife scientists and managers, policy makers	Conservationism
7. Democracy of hunting	Hunters, trappers, wildlife managers, policy makers	Unrestrained instrumentalism

Table 1. The seven tenets of the NAMWC with identified stakeholders and environmental ideologies.

In addition to the exclusivity of stakeholder groups, the tenets of the NAMWC also reside predominately on the anthropocentric side of the ideological spectrum (Table 1). Most of the tenets treated wildlife as an object of possession; a resource requiring fair dispersal amongst the national and international citizenry. Less implicit or explicit ideals or verbiage are devoted to conservation (three out of the seven tenets), and none of the tenets claim a preservationist ideology. The tenets primarily market consumptive use values and create a protective ideology around hunting, trapping and associated rights. This does not eliminate

ideas of conservation and preservation but these are largely subsumed by the greater quest to protect consumptive use values. The following deconstruction of the individual tenets supports these claims.

Deconstruction of the NAMWC Tenets

The seven tenets of the NAMWC not only build on the unique history of North American wildlife use and management, they are also described as foundational and aspirational for future wildlife management and conservation. This mandates close and critical analysis when considering trends in views toward the non-human world in general and wildlife specifically. The individual tenets are described in multiple sources but a brief analysis of those descriptors help illuminate placement on the spectrum of environmental ideologies.

Wildlife as Public Trust Resources

The NAMWC classifies wildlife as objects owned by humans and managed for their use. Geist, Mahoney, and Organ (2001) described the transition from individual ownership of wildlife to communal ownership wherein wildlife is seen as a "common resource held in trust for the people" by the state (p. 176). Organ et al. (2012) in a publication for The Wildlife Society builds upon this as they described the challenges to this tenet as "inappropriate claims of ownership of wildlife, ...unregulated commercial sale of wildlife, ...unreasonable restrictions on access to and use of wildlife, and...animal rights doctrine ...antithetical to the premise of public ownership of wildlife" (p. 13).

Elimination of Markets for Wildlife

Here the NAMWC strikes a more traditional conservation tone. The core belief is that market hunting should be eliminated for all but the most populous species in order to minimize wildlife population declines. As Geist, Mahoney, and Organ (2001) state, "Elimination of legal trafficking in meat, parts and products of game animals and nongame birds, while maintaining markets for less vulnerable furbearer species, was critical in halting what would have been a 'tragedy of the commons'" (p. 177). However, the tenet does revert towards instrumentalism as they continue, stating "it has been demonstrated that furbearers can be managed as sustainable resources in a commercial market" (p. 177).

Allocation of Wildlife by Law

Although the ostensible purpose of this tenet is to emphasize that all citizens have a legally protected right to use wildlife, there remains a strong ownership and use refrain. For instance, Geist, Mahoney, and Organ (2001) state that "Surplus wildlife is allocated to the public for consumption by law, not by the market, land ownership or special privileges...This process fosters opportunity for all citizens to become involved in the management of wildlife" (Geist, Mahoney, & Organ, 2001,p. 177-178). Organ et al. (2012) go on to caution that "Application and enforcement of laws to all taxa are inconsistent" (p. ix). Several issues arise with these statements: (1) So-called "surplus wildlife" is often difficult to determine but more importantly this intimates that humans should determine the correct number of wildlife based on ecological, social, or use mores; and (2) Humans are, but also should be, legally protected benefactors of wildlife resources. Wildlife are protected not for intrinsic value but benefit to humans.

Wildlife Can Only be Killed for a Legitimate Purpose

The key is that "wildlife can only be killed for legitimate purposes, such as for food, fur, self-defense or property protection" (Geist, Mahoney, & Organ, 2001, p. 178). From an ethical perspective, the "legitimate" killing of wildlife is far from clear-cut. Obviously, people commonly argue about the ethical legitimacy of wearing animal products such as fur and leather. Further controversy surrounds the legitimacy of hunting and property protection. Certainly, this viewpoint reduces wildlife to products and is opposed by many tenets of animal rights doctrine disavowed by the first tenet.

Wildlife are Considered an International Resource

Geist, Mahoney, and Organ (2001) emphasized that species "transcend boundaries, and one sovereign state's interests can be affected by another's management" and this has "led to cooperative management among such states" (p.178). These have often taken the form of international agreements such as the Migratory Bird Treaty (1916), a treaty between the U.S. and Canada (via Great Britain) to protect migratory birds from unregulated use. Mahoney et al. (2008) articulated 3 overarching goals stemming from this tenet in a paper for the Sporting Conservation Council: (1) "Ensure continuing support for coordinated international management approaches", (2) "Work to remove impediments to the continuing efforts to conserve, manage and hunt migratory species in North America"; and (3) "Apply lessons from international collaboration to safeguard wildlife conservation in North America" (pp. 18-19). The implied goal is to conserve species regardless of borders and with little hint of ownership or use.

Science is the Proper Tool for Discharge of Wildlife Policy

A strong belief that "science should be the determining factor in allocation of uses of natural resources" is strongly linked to the "formation of the wildlife profession in North America" (Geist, Mahoney, & Organ 2001, p. 178). Mahoney et al. (2008) emphasized that "to be effective, relevant science must be utilized and integrated into decision-making" (p. 17). Interestingly, Mahoney et al. (2008) states that this decision-making process must include human dimension aspects including "broader societal input" in the "science base of the decision-making process" (p. 17). A rash of problems undercut this tenet, including "rapid turnover rate of state agency directors, the makeup of boards and commissions, the organizational structure of some agencies, and examples of politics meddling in science" (Organ et al. 2012, p. ix). Geist's first incarnation of this tenet and the further expansion by researchers such as Organ articulate a vision of the NAMWC focused on the broad foundation of science.

Democracy of hunting

The NAMWC requires that "all citizens have the opportunity to participate" in hunting and thereby "everyone is a stakeholder, not just the privileged" (Geist, Mahoney, & Organ 2001, p. 179). Geist (2006) mentioned how efforts to "combat poaching have led to development of programs designed to direct economic returns on hunting fees to the rural indigenous peoples" (p. 8). This is obviously focused squarely on consumptive use values. Even further, this inculcates the practice of hunting into the NAMWC and requires its existence to continue into the future. In essence, a decline or elimination of hunting critically damages wildlife conservation in North America. This tie to hunting requires other important policy stances. For instance, Organ et al. (2012) wade into modern and topical social events (gun control) by stating that "restrictive firearms legislation can act as a barrier hindering participation" (p. ix).

Can the NAMWC Move Beyond Just Hunting?

Our analysis of the NAMWC supports Nelson, Vucetich, Paquet, and Bump's (2011) critique of the model. Though the popular interpretation of North American conservation history is true, it is also incomplete and downplays the importance and role of other environmental ideologies. Certainly, hunters and management for hunters helped define wildlife management in North America (Leopold, 1933). Still, some historians contend that environmental ideals and conservation laws occasionally had roots in contemporary ills such as elitism (e.g., exclusion of poor subsistence hunters), racism (e.g., some game laws in the southern U.S.), and gender inequities (Wellock, 2007). Also, notably missing in this interpretation of conservation history are the very people that many wildlife conservationists, managers, and researchers argue must be educated about the system, convinced to care about conservation, and compelled to contribute to its maintenance for effective future conservation (i.e., general public; Decker, Organ, & Jacobson, 2009). Women's and community groups, scientists and environmentalists, environmental organizations, naturalists, explorers, philosophers, and students and teachers contributed to the philosophical (e.g., deep and shallow ecology, public trust) and practical (e.g., statutory laws) underpinnings of the NAMWC (Nash, 2001; Wellock, 2007). We also know that humans have diverse perceived relationships with and definitions of nature and wilderness (Nash, 2001; Kellert & Smith, 2000) beyond just consumptive use values. For instance, the proposed listing of the polar bear (*Ursus maritimus*; a hunted species) as threatened under the Endangered Species Act 1973 elicited over 600,000 comments, most in support of the action (Inkley, Staudt, & Duda, 2009).

Furthermore, the tenets of the NAMWC are challenged in modern society. Ongoing debates about hunter impact on wildlife populations and human communities (Lewis & Alpert, 1997, Coltman et al. 2003), doubts about hunter commitment to wildlife stewardship (Holsman, 2000; Treves & Martin, 2011), and the costs and obstacles of exporting conservation systems to countries with unique political, social, and cultural structures (Pelusco, 1993; Matveytchuk, 2011; Wilshusen, Brechin, Fortwangler, & West, 2011) raise serious philosophical questions. Now some are questioning the strength of the Public Trust Doctrine as well as the co-existence of private property rights, economics, and wildlife privatization with the concept of public trust (Naughton-Treves & Sanderson, 1995; Blumm, Dunning, & Reed, 1997; Mozumder, Starbuck, Berrens, & Alexander, 2007). Changing demographics (Lopez et al. 2005) and declining participation in hunting (Walter, 2008; Schuett, Scott, & O'Leary, 2009) necessitates a critical analysis of the rhetoric of NAMWC to determine current and future applicability. This public is decidedly non-hunter as only 5-15% of the American public reported hunting in research conducted from 2000-2006 (Kellert & Smith, 2000; Schuett, Scott, & O'Leary, 2009).

A public with low and declining participation in hunting, disinterest in the mechanisms of conservation, and a broad spectrum of ideologies presents a difficult problem for continued success of the NAMWC. The stark reality is that much of the conservation dollars flow from hunting interests but future funding depends on a public who is increasingly estranged from the NAMWC. The NAMWC must attract more public support for conservation including stable and robust funding outside the current consumptive use niche. Even as they often state that the NAMWC must appeal to a greater part of the public, supporters of the currently accepted interpretation of the NAMWC emphasize protecting the right to hunt and increasing the number of hunters. We argue that this hunter-centric view is understandable but limiting. Certainly, we must retain hunting as that is an extant and reliable source of funding and a useful management tool.

Though we do not propose “throwing the baby out with the bathwater,” we do propose the broadening of the model. This can be achieved through a vetting or exploratory process with various stakeholder groups with different environmental ideologies and socioeconomic backgrounds in order to gauge their preferences for ensuring the conservation of wildlife while retaining a shared ownership. Decker, Organ, and Jacobson (2009) touch upon this need, stating that the NAMWC must "engage those who are deeply

interested in wildlife but have felt on the periphery or even excluded from the mainstream of the dominant model" (p. 34). They go on to say that those in the mainstream of the NAMWC "will need to figure out how to engage these potential allies" (p. 34). They argue that two criteria will be critical for future wildlife conservation success: (1) keep wildlife in the public trust; and (2) have all stakeholder groups pay into the system, not just hunters, trappers and anglers. This will require a more involved public. In its current state, the model reflects the dominant voices (i.e., sports hunters and some wildlife professionals and academics), but would benefit from broader input in order to be more representative of the North American populous and its changing demographics.

Building upon Decker, Organ, and Jacobson (2009), we provide the following suggestions for possible steps to broaden the NAMWC for future applicability:

1. Conduct studies and draw from the current literature to gauge where various populations reside on the environmental ideological spectrum including, but not limited to (1) a generalized public; (2) current and future wildlife managers and scientists; (3) non-consumptive wildlife users; and (4) consumptive wildlife users.
2. Expand the tenets and their associated text to include intrinsic values for wildlife beyond the current utilitarian focus.
3. Draw from social movement literature on how to mobilize disaffected publics. Examples include the classic outreach and organization methods used when the Sierra Club and The Wilderness Society combined forces to lead hundreds of organizations in opposition to Echo Park Dam in Dinosaur National Monument in the 1950s (Nash, 2001). A more recent example is the Step-It-Up campaign that pressured the U.S. Congress to pass legislation mandating an 80% reduction in CO_2 emissions by 2050 (successful mobilization, but no resultant legislation as of 2012; Endres, Sprain & Peterson, 2009).
4. Use the mobilized publics to pressure decision-makers to pass legislation on a tax geared toward non-consumptive users structured similar to the Federal Aid in Wildlife Restoration Act 1937 and the Federal Aid in Sport Fish Restoration Act 1950. We acknowledge attempts at such legislation have failed in the past, but believe that future success hinges upon engaging a broad public.

In closing, an appropriate modification of Theodosius Dobzhansky's quote about biology and evolution might state that "nothing in the NAMWC makes sense except in light of public support." As such, the path forward in conservation will require replicating the comprehensive history of the NAMWC by including the vast non-hunting segment of the population.

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ImagineNATIVE 2012: Film Festival Eco-imaginations and Practices

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Much scholarship points to how ecological concerns are never far from indigenous struggles for political sovereignty and public participation. In this paper we turn to the indigenous film festival as a relatively understudied yet rich site to explore such ecological concerns. Specifically, we consider, the Toronto-based ImagineNATIVE, a prominent hub in the indigenous film festival circuit. Through examining the festival's 2012 film selections, we highlight films with explicit and less overt eco-activist messages. While the films themselves speak to eco-imaginations, we also draw from the festival experience to consider how the event itself participates in eco-sensibilities through its performative and embodied presence. In pairing festival analysis of website materials, reviews, and interviews with organizers and participants with ecocritical reading of films, we articulate how indigenous film festivals serve as alternative spheres for ecological partication, and raise ecocritical questions pertinent to film festivals more broadly.

Keywords: Film festivals, Indigenous, Ecocinema, Alternative Public Sphere, ImagineNATIVE

There's no doubt that the land is fundamental to aboriginal identity… it's like a real core, central thing about what it means to be Indigenous. Everything is informed by the land.

--Lisa Jackson (Anishinaabe) (L. Jackson, personal communication, October 19, 2012)

This past October, we attended the thirteenth annual ImagineNATIVE (iN) film festival organized by the Center for Aboriginal Media that takes place annually in Toronto, Canada.[1] The festival prides itself on celebrating "the latest works by Indigenous artists at the forefront of innovation in film, video, radio, and new media" (*ImagineNATIVE,* "Who We Are"). Drawing from artistic Aboriginal talent in Canada and globally, iN does not focus specifically on environmental issues, but as Executive Director Jason Ryle states, environmental themes are "a constant" at the festival (J. Ryle, personal communication, October 19, 2012). He elaborates:

> Like the impacts of residential schools and colonization and not unlike how Jewish filmmakers will consistently talk about the Holocaust and the effects of that, or African filmmakers will talk about civil rights, Indigenous peoples in Canada always have, I think, those connections including environmental issues. (Ryle, 2012)

Ryle's comments lead us to ask the following questions: What are the contours of ecocinema engagements in Indigenous film? What role does the Indigenous festival itself play in forwarding them?

1 *ImagineNATIVE.* Accessed March 21, 2013, http://imaginenative.org/festival2012/SSDI. This is the festival's official website. All subsequent website citations with ImagineNATIVE indicate the same access date. In addition, complete bibliographic information of all films cited in this article can be located through ImagineNATIVE's website and links.

Focusing on questions of environmental concern at an Indigenous film festival, we explore an area of the eco-mediaspace that has been unduly neglected by film, ecocritical, and Indigenous studies scholars alike. As the emerging scholarship of film festival studies indicates, film festivals have gained immense popularity in the last thirty years, and their popularity is in part due to their function as community gathering and activism spaces (Iordanova & Torchin, 2012). At the same time, the twenty-first century turn in ecocritical studies has prompted a sub-field focused on ecocinema. The burgeoning field recognizes "environment" to extend beyond a EuroAmerican focus, which historically privileged the idea of pristine nature/wilderness in opposition to land "defiled" by human presence (LeMenager, Shewry & Hiltner, 2011). As articulated in the introduction to *Ecocinema Theory and Practice*, "from an ecocritical perspective, environment…is the whole habitat that encircles us, the physical world entangled with the cultural" (Rust & Monani, 2012, p. 1). Many Indigenous cultures recognize this entanglement as fundamental to their traditional worldviews, which have often been threatened by EuroAmerican colonialism and capitalism. A rich body of interdisciplinary Indigenous studies scholarship indicates that Aboriginal people have variously responded to these threats, from participation in radical activism like the Oka standoff and Idle No More, to the establishment of self-regulating environmental protection agencies and advocacy groups like the Indigenous Environmental Network (McGovern, 1995; Brady & Antoine, 2012; Brady & Monani, 2012). In the last fifty years, visual expressions--photography, video, film, and now new media--have been central in response to environmental threats and self-representation (Raheja, 2010; Ginsburg et al, 2002).

We suggest that iN, with its mission statement "committed to dispelling stereotypical notions of Indigenous peoples through diverse media presentations from within our communities," is an ideal site to take the pulse of contemporary Indigenous ecocinema engagements (ImagineNATIVE, "Mission"). We explore both the iN2012 festival as a site for showcasing Indigenous artistic expressions *and* also more closely examine the work of individual artists.

Our study is in line with that of many Indigenous film critics who acknowledge that Indigenous film, despite its exciting diversity, speaks to an aesthetic sensibility that is, in Barry Barclay's terms, shot from the perspective of "the shore" rather than the settler ship's decks (Barclay, 2003; Columpar, 2010). Drawing primarily from interviews with filmmakers and the festival's Executive Director, Jason Ryle, published materials (such as the festival website and reviews), and ecocritical analysis of various films showcased, we suggest that iN2012 encompasses a spectrum of eco-engagements. We describe films that range from explicit calls for environmental justice that foreground threats to Aboriginal peoples' traditional lifeways; to implicit testimonies of eco-consciousness as artists figuratively portray environment in their works; and also to a conscious move away from environment-based themes. As eco-themes are centered and de-centered on screen, we see both the diversity of Indigenous eco-expressions and the possibilities of tensions that such diversity can engender. However, we argue that the festival's positioning as a space for active participation, civic discussion, and Indigenous solidarity is a potentially powerful site to move beyond these tensions and also to *re*-center eco-themes in ways that, to borrow a phrase from Lisa Jackson reminds us how "Everything is informed by land." To make sense of our argument, we first, describe the festival content. Next, we describe a topology we developed to situate the breadth of eco-engagements in iN films.

The Festival: Incorporating Environment into a Broader Indigenous Imperative

Founded in 1998, iN's mandate is to accept all types of artistic works—not just film and video, but also prints, radio, and new media works (*ImagineNATIVE,* "Mandate"). Distinguishing between iN and other Indigenous festivals that include non-Indigenous artists in their programming, Jason Ryle, Executive

Director of iN2012 states, “One's not right, nor is one wrong. It’s just that ours was founded to support the artists and give them [a platform for] their creative voice” (Ryle, 2012). Since about the mid-1960s, the Canadian government has supported Aboriginal art as integral to contemporary Indigenous cultures. In the twenty-first century, this support had growing attention (Canadian Council of the Arts, 2008). On the urging of Indigenous artists, iN entered Toronto’s vibrant festival scene.

Today, with local audiences exceeding twelve thousand, and additional audiences as the festival tours across Canada and abroad, it is one of the largest Indigenous festivals in the world. [2] Each year, many Indigenous artists return and new ones are welcomed. Stalwart Canadian artist, Alanis Obomsawin (Abenaki), whose documentary *The People of Kattawapiskak River* premiered as the iN2012 opening screening, articulates: “Festivals are very helpful to get our work screened to the public. And I would say imagineNATIVE is the best,” a sentiment repeated by many filmmakers we interviewed (A. Obomsawin, personal communication, October 20, 2012).

While the festival’s primary imperative is to create a community space for Indigenous artists, since 2005 its audiences have been approximately fifty-five percent non-Indigenous (Ryle, 2012). Strategies to draw non-Indigenous audiences include cultivating a high profile by garnering support statements not only from prominent First Nations but also Canadian government officials (*ImagineNATIVE* Festival program, 2012). The festival also has multiple corporate sponsors, including predominantly visible, Bell Media, one of Canada’s largest broadcasting firms (*ImagineNATIVE* Festival program, 2014). Ryle suggests a successful marketing tactic involved appropriating mainstream pop-culture iconography into iN advertising materials. He highlights good-humored renditions such as the iN2006 posters that featured a scifi-type “attack of a fifty foot woman, but it was a fifty foot Pocahontas” and iN2012’s Big Top theme, a circus motif designed to “be welcoming to all” as well as a space where “you can be amazed by all these different types of creativity” (Ryle, 2012).[3]

As iN works with marketing strategies to attract corporate sponsors and diverse audiences, it certainly does not operate outside of capitalism or troubling environmental practices. Ryle acknowledges that iN is not “exclusively ethical” in its own environmental impact. However, he points to the festival’s past ten years of fund-raising practices. Framed to emphasize social ethics, these often overlap with environmentally friendly principles: “Part of that policy is that we don't accept or seek out fund raising from companies or corporations that directly benefit from the exploitation of Indigenous land. We don’t accept money from oil or gas companies… paper companies, mining companies, logging companies; that type of thing” (Ryle, 2012). Also, because traditional Indigenous cultures and lands are so often threatened by environmental loss, the festival “more often than not” incorporates an environmental program stream. As the festival’s archives indicate, this program stream has been co-sponsored by Toronto’s Planet in Focus Environmental Film Festival since at least 2007.[4]

Rising Tides is this year’s environmental program. It included the feature documentary *My Louisiana Love* (produced by Monique Verdin, a Houma) and two shorts, a music video *Mr. Businessman’s Blues*, produced by and featuring Toronto-based Diem LaFortune (Cree/Metis) and a documentary *Entre Dos Aguas* (*Between Waters*) produced by Tarcila Rivera Zea (Quechua). *My Louisiana Love* and *Entre Dos Aquas* are serious environmental narratives that discuss resource development’s effects on Indigenous

2 Audience numbers are quoted from Ryle’s recollection of iN2011 data. For evidence of travel, see, for example, ImagineNATIVE “News” where press releases such as “ImagineNATIVE at the Berlinale” (4 February 2013) and “Free ImagineNATIVE Sing-Along (and Screenings) at Six Nations” (22 November 2012) appear.

3 See ImagineNATIVE to play the promotional trailer.

4 The iN website lays-out of the festival changes from 2006 to 2007, making sponsorships a little more transparent. Planet in Focus is a popular environmental film festival It was established a year prior to iN, in 1997, and while it too, like iN, includes large corporate sponsors (for example, Discovery World and ING Bank of Canada), its ethical principles include commitment to eco-friendly practices in film and video productions. (*Planet in Focus*, http://planetinfocus.org/.)

homelands. *Mr. Businessman's Blues* provides a more playful commentary. Billed as a "satirical music video that makes a statement on capitalism and greed," this 4-minute piece follows Diem LaFortune, singing in the tent city of Occupy Toronto and along the streets of downtown Toronto's business district.[5] Referring to the video's commentary on capitalism's impact on people *and* places, LaFortune emphatically states, "There's no gap; it's all interrelated" (D. LaFortune & R. Garret, personal communication, October 19, 2012). This sentiment of interconnection is often repeated in the interviews we had with other filmmakers.

Ultimately, because it is difficult to bracket environmental concerns from many of the other political and socio-cultural concerns faced by Indigenous peoples, it is not surprising that *Mr. Businessman's Blues* is part of the Rising Tides program. Nor is it surprising that films in other program streams articulate eco-themes. Ryle notes that though an environmentally branded program attracts audiences seeking such content, "you can also slip other things into other types of programs," suggesting the festival engages audiences with such themes, even when they are not actively seeking an environmental program (Ryle, 2012). Thus, across the festival, the presence of eco-engagements is both discernible and clearly welcomed.

To better gauge the breadth of festival films that speak to such engagements, we outline a simple spectrum that spans from films with explicit eco-statements, to implicit and buried eco-themes, and finally to a sometimes deliberate absence of such themes. In focusing on filmmakers and film texts, we do not discuss how the festival films might be read by audiences other than the filmmakers and ourselves. Acknowledging this, we understand that our spectrum does not force a film into a specific category but is open to differing interpretations. Similarly, our use of a topological system is not meant to typecast films, but rather to demonstrate the ways in which the festival allows for creative variations on a theme in diverse ways.

The Films: A Spectrum of Eco-Engagements

Explicit Eco-engagements in Social Documentaries

iN2012 is replete with social documentaries in the classic sense forwarded by documentary scholars Jack Ellis and Betsy McLane (2006)—"part record of what exists, part argument for why, and in what ways it should be changed" (p. ix). Many such documentaries appear throughout the festival. Below we briefly overview one Rising Tides documentary, *Entre Dos Aquas* to indicate its explicit message of environmental justice and the need for change.

Entre Dos Aguas explores the problems of climate change experienced by Indigenous communities in the South Andes Mountains of Peru. While the film opens with shots of newspaper clips with headlines that cast doubt about human induced climate change--for example, one headline reads, "Tibios acuerdos sobre calentamiento global" ("Lukewarm agreements on global warming")—the film works to confront this doubt. Images of displaced people shoveling mud out of their homes are shown along with first-hand testimonies about the change in environment experienced by community members who have lived closely with these lands for generation. As the viewer is confronted by evidence of flooding caused by the melting of nearby mountain icecaps devastating traditional livelihoods and destroying the crops and homes of Indigenous communities, its message of eco-justice is loud and clear.

5 See video's tagline at *ImagineNATIVE*, *Mr. Businessman's Blues*. The video is also freely accessible at YouTube (Accessed March 22, 2013 http://www.youtube.com/watch?v=rhkPftvyQm0).

Another example is Rising Tides' *My Louisiana Love*, which also explicitly discusses climate change. Structured as Monique Verdin's autobiographical journey to recover her own family and community ties which are connected to Louisiana's Houma tribes, the film's environmental commentary is central to explaining some of this loss. Similarly, documentaries from the Spotlight on the Mapuche Nation *En el Nombre del Progresso* (or *In the Name of Progress*) directly engages issues of toxic waste, and *Wallmapu* discusses timber land grabs. Taken together, these social documentaries explicitly comment on Indigenous environmental problems.

Implied Eco-engagements in Social Documentaries

While eco-statements are explicit in some films, a second category of eco-engagements is articulated in social documentaries where environmental commentary is implied rather than directly stated. Embedded within a different primary focus, eco-themes are nonetheless easily evoked.

Canned Dreams directed by Katja Gauriloff (Sami), which explores factory farming, provides a subtle critique of the transnational, industrialized food complex. Its long takes and slow pans render the ordinariness and ugliness of factory kill-floors in Romania, a mega-tomato farm in Portugal, and an industrial hog farm in Denmark cinematographically stunning. It avoids voice-of-God narration, but engages its many interviewees' voices, by having them speak in voice-over as the camera follows them about their daily work. While eco-concern is not verbalized, the juxtaposition of visual and aural content makes such concerns hard to ignore. For example, one interview features a Romanian worker whose task is to kill swine on an assembly line. The bloody (yet paradoxically always-being-sterilized) conditions where he works and his commentary make apparent both his struggle doing this work and the "efficiency" of this system. The film's lingering observational stance prompts viewers to contemplate the alienation of both worker and consumer from the wholeness and natural ecology of food. Neither a film focused on Indigenous territories, nor Indigenous struggles, *Canned Dreams* nonetheless comments on a world in stark contrast and as threat to Indigenous traditions that recognize the sanctity of food and where it comes from.

Similarly, the festival's opening film, *The People of the Kattawapiskak River*, has no overt message of eco-concern. However, Director Alanis Obomsawin's portrayal of the devastating poverty that plagues the reservation of Attawapiskat First Nation's Cree cannot be disentangled from such concerns. Though specifically about a housing crisis, it is hard to ignore that this crisis of the quality of "where we live, work, and play" is framed by environmental injustices of land and cultural theft. Obomsawin confirms these interpretations when interviewed, stating: "Unfortunately a lot of our communities especially the northern ones, ones that are isolated from big cities, are ignored in a lot of ways and there are a lot of water problems, land and contamination with all the technology that people come with in terms of mining and natural resources" (Obomsawin, 2012). Obomsawin's documentary draws attention to this interweave through testimonies that point to colonization, the violation of treaty rights by the Canadian Government, and the presence of a nearby De Beers mine.

Implied Eco-Engagements in Experimental Film and Video

Bridging the category of social documentaries above and the more experimental films discussed in this section, is Diem LaFortune and Rebecca Garnett's *Mr. Businessman's Blues*. As a music video, in *Mr. Businessman's Blues*, the artistic expression of music takes as much precedence as its social themes. Just as LaFortune plays with music, the filmmakers highlighted in this section engage in artistic experimentation to foreground their aesthetic impulses. However, unlike LaFortune and Garnett who verbalize social injustices, filmmakers such as Caroline Monnet (Algonquin) and Tyler Hagan (Metis), do not explicitly state social themes but instead prefer to use visuals and instrumental music to do the work.

Hagan explained, “I’m not telling you exactly what I want you to think by any means through language,” but he suggests that his iN2012 10-minute, experimental meditation *Estuary* is, of all his films, “the most straightforwardly about an environment” (T. Hagan, personal communication, October 30, 2012).

Estuary features a series of shots of the Fraser River estuary in British Columbia, a significant wildlife sanctuary. Throughout several movements, Hagan sequences close-ups of the estuary’s waters so that they move with the film’s musical accompaniment. As the camera draws back, the viewer begins to recognize the larger ecosystem, which is in the last movement, pictured from a birds-eye perspective.

In picking the estuary as the site where the river meets the ocean, Hagan explains, “Obviously the estuary…is part of the river where there’s the most kind of human interaction, the entire lower mainland surrounding Vancouver is all along the Frasier River.” While he does not overtly feature people, their traces are referenced throughout the film as with the appearance of a rectangular object in the water that resembles a doorway. He says, “…in the second part of the film I try to take a step back and include some of the structures and the kind of landscapes that include people, you know, again, it’s implicit. The structure is not a natural structure, so we’re not just living in a completely uninhabited landscape” (Hagan, 2012).

In addition to the visuals, the sound scape is central. The musical accompaniment composed by Jeff Mettlewsky augments the scenes. Consistent with how Hagan sees different components of an ecosystem as interconnected, sound recorded on location at the Fraser River estuary is used in the last section of the film to enhance a sense of place. As the viewer assumes the perspective of taking flight, looking down at the estuary from above, the music builds.

Caroline Monnet similarly believes that visuals and music can symbolically convey cultural and natural interconnections. Her 2-min *Gephyrophobia* (literally meaning “fear of bridges”) includes shots of the Alexandra Bridge and the Ottawa River flowing beneath it. The bridge connects the cities of Ottawa and Gatineau and the provincial boarders between Ontario and Quebec. As Monnet choreographs her black and white shots to appear washed out and severe, the musical accompaniment matches abrupt visual cuts. Explaining her artistic choices, Monnet states, “I think there’s something really interesting to be explored where rivers are borders, and it becomes this symbol of bigger issues, of bigger systems, of how we implement ourselves on the land, how we live our lives, how we migrate as well” (C. Monnet, personal communication, October 17, 2012). Like with Hagan’s *Estuary*, while humans do not appear on screen or narrate their presence, the film’s focus on landscape clearly imply complex eco-engagements that reflect human-nature relationships.[6]

Oblique Eco-engagements in Experimental and Fictional Film

Though eco-themes are easily recognized by the centrality that the filmmakers place on landscape in the experimental films above, there are yet other films, where the allegorical contours of experiment and fiction requires more concerted mining for the filmmaker’s eco-intent. In effect, we find buried or oblique eco-engagements in this category of film. Lisa Jackson’s *Snare*, which was part of the “Stolen Sisters Digital Initiative,” a series of one-to-two minute shorts commissioned by iN to highlight violence against women is a poignant example.

Jackson, who was raised in the urban Parkdale neighborhood of Toronto, states in her interview, “None of my work is approached as an environmental film.” However, as the epigraph beginning this paper suggests, she emphasizes the importance of establishing a sense of place in her films because, “I do think people are shaped by their environments” (Jackson, 2012). She describes her forthcoming *How Our*

6 Interestingly, the term “ecocinema” was first coined in reference to such landscape films (See Rust & Monani, 2012).

People Live as overtly eco-themed as it documents struggles over the forced relocation of the 'Gwasala-'Nakwaxdda'xw First Nation from traditional territories off the Coast of British Columbia in 1964.

Reading eco-concerns in *Snare* is challenging, as the film lacks audio and is set within a dark blackbox studio. Yet Jackson included "organic" elements like dirt and feathers. The film begins with a medium shot of several women's feet walking through dirt, when one of them steps in a snare. "The snare goes up," and they are shown frozen, upside down, hanging by their legs in white dresses. "Their suspended animation and feathers start to fall like snow and the women are lowered down and we see their faces for the first time." According to Jackson, close-ups humanize the women, and they are then pictured standing in a circle to signify "community." Perhaps the lack of specific location in the film helps Jackson set up the quick associations she wished to convey, "being earthly and grounded but also being down in the dirt and struggling in the dirt," and subsequently then creating a "sense of lightness, and grace and healing." Jackson explains that she will add sound to Snare, to generate a musical soundscape that is evocative of "wind" and "forest" (Jackson, 2012). Other films such as Jules Kootaschin's *Niipii*, or Nanobah Becker's *The 6th World*, while fictional, fall into a similar category of allegorical readings. Their interviews support such readings as each discussed how, though oblique in their eco-engagements, they draw from rich traditions of Indigenous eco-connections (Jules Koostachin, personal communication, October 20, 2012; Nanovah Becker, personal communication, October 19, 2012).

Absent Eco-Intent?

Even as many filmmakers of social documentaries, experimental, and fictional films attest to eco-engagements in their works, it is important to also point to those who chose to avoid these connections. For example, in his interview Jeff Dorn (Ojibway) clearly states that eco-themes were not a factor in his feature documentary, *Smoke Traders*. Exploring political wars between Indian reservations and federal governments over tobacco trade, Dorn's focus is dramatic imperative not place. Dorn indicates that thinking about the environment would have de-tracked from how to convey his primary themes. He states "I guess I've thought about it, but not in the context that you frame it. The conceptual idea is in my mind," but, he admits in a very tertiary sense (J. Dorn, personal communication, October 19, 2012). Other films, such as those from the program, *Unsettling Sex* also seem to make a conscious effort to dissociate from identifying eco-themes.

Unsettling Sex, as articulated by its curator, John Hampton (Chickasaw) is primarily about the "decentering of identity" (Hampton, 2012). In his presentation at the screening, Hampton highlighted how the works he chose to showcase forward a queer aesthetic that highlights questions of identity that have been extensively marginalized both within settler society, with its hegemonic legacy of "heteropatriarichal scripts," and often by Indigenous societies themselves. For example, James Diamond's (Cree/Metis) intensely personal, experimental rendition *I am the art scene starring Woman Polanski* (2010) and Ariel Smith's (Cree/Ojibway/Roma/Jewish) sardonic vaudeville-echo *Target Girls*, reveal "that there is more to identity than identifying with one's culture or standing solidly against it" (*ImagineNATIVE*, "Unsettling Sex," 2012). In their works, these latter two artists resist any sense of Indigenous representation that collude with stereotypes, including that of the oft-used trope of Indigenous peoples being ecologically grounded. [7]

In the following discussion, we consider some of the tensions that arise as filmmakers move away from identifying eco-themes. We also reiterate that while it is important to note filmmaker intent in eco-engagements to help outline our spectrum, all the films discussed so far become less fixed in our topology if we acknowledge that films are polyvocal and that individual audience members can read them in

7 There is plenty written about the trope of Indigenous people in harmony with nature. See for example, Harkin & Rich (2007), which includes essays by Indigenous and non-Indigenous peoples responding to Krech (1999).

different ways. Moreover, we recognize, as ecocinema studies critics generally do, that no matter what the intent, most film is an intensively resource based product, in its production, distribution, and consumption (Bozak, 2012; Rust, Monani & Cubitt, 2012).

Discussion

Decentering Environment: Tensions in Indigenous Representation

As the examples outlined above suggest, the range of eco-engagements represented at iN2012 is diverse. From social documentaries with explicit eco-statements (such as *Entre Dos Aquas*) to those that imply eco-themes (such as *Canned Dreams*), from experimental films that foreground landscape as their focus (such as *Estuary*) to those that draw on traditional Indigenous land-based teachings (such as *Snare*), and finally to films that work to intentionally destabilize Indigenous eco-identity markers (such as *Target Girls*), the festival's offerings are varied and also intensely thought-provoking. Such varied engagements speak to the diverse ways in which contemporary Indigenous peoples, living with the realities of modernity, identify themselves. For many filmmakers, traditional ties to subsistence cultures are essential markers of Indigeneity, for others, especially those more urbanized, or with more First World privileges, social and aesthetic issues of other sorts trump environmental concern and in doing so speak to artistic imperatives that work to dispel common stereotypes.

Jules Koostachin, a filmmaker who does see environmental concerns as central to her work, references a conversation she had with other filmmakers about eco-themes in Indigenous films. Paraphrasing another filmmaker she states, "She said something like, 'Does it always have to be land based?'" (Koostachin, 2012). Koostachin's conversation was about explicit versus oblique themes, as she drew on her own film as well as Nanobah Becker's (Navajo) sci-fi short *The 6th World* to suggest that while Indigenous peoples can be taken off their lands, if they continue their cultural teachings, the land still informs them. However, one can easily extend this same question of eco-consciousness—"does it always have to be land based?"—to films that steer clear of eco-intent. Its articulation serves to draw attention to tensions that surface as Indigenous peoples (dis)engage with environment as an explicit identity marker.

While filmmakers strongly believed that an artist should have the right to choose how s/he represents the world, there are those who see art as primarily a political tool that must communicate injustices explicitly and clearly. This was certainly articulated in the discussions that followed the screenings of the International Spotlight on the Mapuche nation. Filmmakers such as Danko Mariman (*En el Nombre del Progresso*) and Francisco Huichaqueo *Kulül Trawin* (*Reunión del Cuerpo / Reunion of the Body*) clearly state that though their films might lack the aesthetic polish of others at the festival, their main purpose is to raise awareness of the social and environmental injustices perpetuated on the Mapuche people by politicians and local/international industry (Huichaqueo & Mariman, 2012). For them, film works first and foremost as a conduit to showcase contemporary government and corporate brutality.

However, filmmakers such as Caroline Monnet suggest a contrasting viewpoint. Describing her response to festival films, Monnet states, "What I personally enjoy is seeing filmmakers trying to bring those stories in a very different way that's not the victimization or, you know, 'they're cutting our trees, fight for our land'" (Monnet, 2012). As an emerging Canadian-French artist whose livelihood is tied to ways she innovates and plays with the medium, for Monnet, the "artistic point of view" is crucial. In effect, we see a tension in what cinematic representation should privilege—the direct or implied message of social and eco-consciousness. For Monnet, the more subtle, or implied, message can be just as important, if possibly more so, than overt calls to action.

iN accommodates these different eco-perspectives, making room for tension *and* dialogue. For example, despite her artistic preferences, Monnet acknowledges that she appreciates the festival's inclusion of films from other parts of the world, like the Mapuche communities. She states, "What I really enjoy, for an example, is seeing film from the Sami, or from South America, or New Zealand, things that I am not aware of. That is really interesting and that makes the world smaller; we resemble each other as well" (Monnet, 2012). And, by partaking in the festival and attending other screenings, the Mapuche filmmakers also indicate a sense of community; one that is heightened by the festival's showcasing of their work.

Pointing to such nodes of tension as well as the possibilities of moving beyond them speaks powerfully to the potential of the festival space as a type of alternative public sphere, or as articulated by various film festival studies scholars as community "meeting spaces for expanding the spheres of democratic and public engagement" (Monani, 2012, p. 257). iN2012's inclusive welcoming of artists and publics as well as its format of multiple screenings, social events, and workshops invites pluralism, thus exposing difference and its fault lines. However, its tone is of civic discussion. That is, it ideally prompts a respectful and critical exchange of ideas to move forward *together* towards something better for Indigenous expression and realities. Many filmmakers emphasized this sense of congenial camaraderie and articulated how it provided opportunity to grow as an artist and as a member of the Indigenous community.

Such exchange, as we discuss below, is also useful in making visible the eco-tensions that emerge through cinematic production, distribution and reception practices that mark not only Indigenous cinemascapes but all media and festivals. In effect, iN2012 helps us consider the specific potential of festival spaces in re-thinking both the eco-messages on screen and the contexts in which these screens are embedded.

Recentering Environment: Tensions in Ecocinema Representations

As Steve Rust and Salma Monani (2012) write in *Ecocinema Theory and Practice*, cinema, with its "various technologies, from lights and cameras, to DVDs and even the seeming immateriality of the internet, involve the planet's material resources and serve as an indictment of cinema's direct role in transforming and impacting our ecosystems" (p. 2). As they also point out, the ecological repercussions of such resource use has not always been the concern of filmmakers or even film scholars. Recently, however, a number of ecocinema scholars cite a 2006 University of California-Los Angeles report, "Sustainability in the Motion Picture Industry," as evidence that Hollywood, and by extension the global film industry, is notoriously complacent in its abuse of the environment (Murray and Huemann, 2009; Willoquet-Marcondi, 2010; Bozak, 2012). In *The Cinematic Footprint: Lights, Camera, Natural Resources*, Nadia Bozak provides a particularly compelling critique of such abuse by correlating the rise of film technologies to the rise of fossil fuel economies. She writes, "cinema is environmental; it is shot through with an ecological loop…Once this fundamental relationship is recognized, cinema—all cinema—can be constituted as a product of and partner in civilization that is not just industrialized but hydrocarbonized" (2012, p. 4)

While Bozak's book ends with a chapter on Indigenous media, specifically the Nunavut entity, Isuma TV, to suggest that Indigenous film and media is a corrective to the mainstream global film industry, being "by default" of low-resource use, international film festivals such as *ImagineNATIVE* complicate this assessment (2012, p. 15). Housed in downtown Toronto, a thriving center of global commerce, and specifically in the cavernous 5-story multiplex theater, iN2012 attests to its part in the industrialized and hydrocarbonized economy. Also, as an international festival it encourages global participation, welcoming audiences and bringing in filmmakers from locations as far away as the Mapuche Nation in Latin America and the Maori lands of New Zealand. The two authors of this paper, each travelled a day's journey (one by car and one by airplane) to attend. It is also a travelling festival. These are important points, for while the festival makes an effort to be socially responsible, not accepting money from companies that are known

offenders of Indigenous land rights, corporate and industrial entities penetrate into festival activities in other ways. Disentangling from troublesome social and environmental impacts in an economically driven world is not easy.

The presence of economic constraints is sadly present in the worries of emerging artists such as Nanovah Becker (Navajo). Becker's short *The 6th World* blends a Navajo creation myth into a visual narrative that draws from a Star Trek sci-fi style to imply eco-themes. However, Becker discusses the difficulty of following her creative and environmental muses. In reference to working in Los Angeles, she frankly states, "I'm trying to break into the industry. It's really hard not having something mainstream or commercial. You can't get funding for that. So that's the reality that I'm dealing with now as a filmmaker" (Becker, 2012). Others such as Jeff Dorn also articulate these tensions. Referring to an upcoming film adaptation of King Lear that he is working on, he says, "When you talk to broadcasters and say Aboriginal they go deaf in one ear, and say Shakespeare and they go deaf in the other ear. It's a hard road…We basically have no budget" (Dorn, 2012).

Filmmakers such as Dorn often "work with what they have" if they can (Dorn, 2012). However, in doing so, they also often ignore environmental considerations as other priorities take center stage. In making *Smoke Traders*, Dorn's driving imperative was not necessarily economic limitations but the story. Describing how *Smoke Traders* covers territory from Mohawk reservations on the US-Canada border to Las Vegas in Nevada, he states, "Wherever the story is happening is the reason why I will travel there and I will spend whatever I can to get there" (Dorn, 2012). The environmental footprint of such travel is not at the top of Dorn's list of concerns.

Such artistic imperatives also affect filmmakers who do see their work as eco-themed. Specifically, these motives often subordinate environmental concerns in the production process. For example, Lisa Jackson while drawn to the figurative power of organic dirt, had to deal with some very smelly, apparently chemically treated dirt for *Snare's* production. As she stated in a 2012 blog entry for iN, which also features a photo of the truckload of dirt, after two days of "nausea and headaches" for the crew and cast, "It had to go" (Jackson, 2012). The post also alludes to how this decision to not use the dirt was not necessarily easy, both from its two days of use and from the scramble to get another huge truckload delivered. In effect, privileging eco-concern over economics and aesthetics is not always easily reconcilable in practice.

Others such as Nanovah Becker actively reflect on how the eco-themes she articulates on screen can echo in her everyday practices of living. Discussing film production on Navajo homelands, Becker recalls an elder chastising the film crew on their wasteful use of water and other resources. Becker remembers the impact it had on her, "Exactly don't waste. That makes sense on so many levels: environmental sustainability level and monetary level, budget. After that, I definitely take it into consideration. Even on *The Sixth World* [set], at lunch we had so much left over food and I tried to give it away instead of just throwing it away" (Becker, 2012).

Becker's words, and the experiences of Jackson, are valuable as they suggest how environmental impact can be made both visible and also relevant to filmmakers of all stripes—from those who actively respect land and elders as essential markers of Indigenous identity and to those who might be less enamored by such connections yet need to consider their film costs. In effect, they articulate how *all* media, not just media portraying eco-themes, is dependent on the land and its resources.

However, just as it is naive to think that Indigenous identity, eco-based or otherwise, can be easily articulated, it would be foolish to suggest that eco-consciousness can alone counter the complexity of socio-economic constraints on film production, distribution, and reception. Yet, there is something to be said about rendering the invisible visible, of reminding us of the neglected "other" in a space such as a festival that is ideally framed to encourage dialogic and democratic exchange.

Conclusion

We began this article with questions focused on nuances of eco-engagements in Indigenous film as expressed at the iN2012 festival. Drawing primarily from interviews with filmmakers and the festival's Executive Director, Jason Ryle, published materials, and ecocritical analysis of films showcased, we suggest the range of engagements spans from explicit to implicit to oblique to absent presentations of eco-themes. Such diversity attests to the plurality of Indigenous experiences and demonstrates the particular socio-cultural and material histories that individual filmmakers bring with them to the festival. As suggested above, these differences do point to possible tensions; at the same time, importantly, the festival space encourages a productive dialogue through its emphasis on Indigenous solidarity.

We suggest that the positioning of iN as a participatory space for the exchange of ideas also makes it a compelling site to consider how eco-themes, so central to so many filmmakers, can migrate from screen into the practices of media production, distribution, and reception. One can fault iN itself as environmentally troubling positioned as it is in downtown Toronto, and participating in capitalist activities such as marketing, ticket sales, infrastructure use, and other practices of modernity. However, its awareness of its own social ethics (as suggested by its fund-raising policies), and its openness to new and innovative ideas (as suggested both by its mission statement and the repeated praises of our interviewees) is promising. Specifically, such characteristics speak to a critically reflective cultural ethos, which despite being circumscribed by capitalism, indicates a pioneering and adaptive philosophy. In an era coined the Anthropocene, where human impacts on the environment seem to generate more obvious and devastating environmental impacts on both Indigenous and non-Indigenous communities alike, democratic and transnational participatory arenas of Indigenous festivals such as iN are suggestive spaces to productively *re-imagine* our relationships with each other and the more-than-human world, and to borrow a phrase from Lisa Jackson, understand how "everything is informed by land."

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A Contradictory Approach to the Right of Public Access: Exploring Relational Factors in the Case of Agritourism

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Commercialization of public goods is controversial because it challenges democratic values and tacit agreements. In the trend of agritourism, voices are heard that encourage transferring nature values to a monetary system, which would connect to another realm of acknowledgement for the farmer. This paper investigates farmers' perceived possibilities to get paid for services and values that traditionally have been considered being free through the right of public access. Data consists of semi-structured interviews and focus groups within a newly established Biosphere area in Sweden. Drawing on theories of the Commons and recognition, we discuss how agritourism can be considered a way to benefit from the common values to enable the farmer to sustain and develop values further. The study shows that due to the importance of cultivating relations to important others, such as colleagues and neighbors, farmers feel hindered to formalize these relations and put a price on their services.

Keywords: public access, the Commons, recognition, agritourism, nature conservation

Introduction

From society, there is a new assignment to farmers on nature conservation (Bergeå, Martin, & Sahlström, 2008). The agri-environmental schemes within the national rural development programme compensate farmers economically for certain nature conservation measures. However, a significant part of farmers' work in general, including nature conservation management, is unpaid labour (see Wramner & Nygård, 2013). The new assignment has added new branches to the farming enterprises. Different farmer strategies are to be seen, and a frequently described one is entrepreneurship. However, entrepreneurial farmers with a specialisation in nature conservation have not been described that frequently. We have studied different strategies among farmers to work with nature conservation as a business idea, and small-scale agritourism is of the indirect business ideas that contribute with incomes to nature conservation work.

A presumption to this study is that nature conservation is underdeveloped as a resource by farming companies. When striving for new incomes, available resources within the company are usually mapped. Although most farms hold natural and cultural values that could in principle be highlighted and also yield an income, this is not always regarded as a possible line. In focus were farmers within a newly established biosphere reserve in Sweden who already work with nature conservation as business idea. The idea was to investigate what they regard as facilitating and obstructing factors, concerning their own efforts and experiences in developing nature conservation as business idea.

The importance of nature conservation on landscape experience is evident when it comes to landscape view across well-managed pasturelands or shore view across a great lake. The farmstead can also hold value as a nature conservation object. These indirect values can create both incentives for and incomes from nature conservation. Further, attractive farmstead and surroundings are good reasons for visitors to come, and might generate incomes through different aspects of agritourism. Agritourism is in this case used as a broad term including farmyard shops, farm stay, and group events such as guided tours. Closely related to that are also incomes from hiring or selling outdoor equipment (e.g., access to grilling places, shelters, car parks, berths, maps, canoe cards). If farmers would not maintain the agricultural landscape, it is likely that the value of the public access would be reduced (Cederholm, 2004).

The right of public access to private land in Sweden is a customary right since medieval times (Sandell, 2006). It ensures that people have access to nature for outdoor activities and recreation, on condition that respect is shown. This freedom to roam has been important to people in different ways during times. Nowadays it is no less appreciated because it implies opportunities for outdoor recreation (Kaltenborn, Haaland, & Sandell, 2001). The right is not in detail regulated by law, but a freedom that is rather defined as free space between other laws, such as the ownership rights (Sandell, 2006; Kaltenborn et al., 2001). A frequently referred Swedish legal case on the right of public access settled that you are allowed to organize commercial activities (in this case rafting) on someone else's private land, as far as you do not make any damage (Sandell & Svenning, 2011). That means that you can arrange commercial activities there such as renting canoes, but not causing erosion to the shore. During 2012-2013, the Swedish Environmental Protection Agency ran a dialogue process where different actors could have a say in the future development of the public access. The issue of organizing commercial activities on someone else's private land is currently a burning issue and was one of the topics discussed (SEPA, 2013).

Swedes are used to having free access to nature and used to the fact that nature conservation is publicly funded. Commercialization of public goods is a controversial matter not only because it is regarded as difficult to make money on resources that people might expect to access for free, but particularly since it could challenge democratic values. We will discuss commercialization of the right of public access in terms of undermining our common materiality and its consequences to social sustainability.

This paper investigates farmers' perceived possibilities to be paid for services and values that traditionally have been considered being free through the right of public access. Drawing on theories of the Commons and recognition, we discuss how agritourism can be considered as a way to benefit from the common values to enable the farmer to sustain and develop values further. We will examine what relational factors limit or enable farmers to work with nature conservation as a business idea through agritourism, and the consequences for open access.

Methods

This paper presents results based on data mainly from qualitative interviews and focus group interviews performed in 2010. Seven semi structured interviews (see Kvale, 1997) and three focus groups (see Wibeck, 2010) with in total 13 persons were held. These people had in common that they are actively operating in one of the newly established biosphere reserves in Sweden. They were selected because of their interest and engagement in nature conservation as a business idea within agriculture. Several of the people have been supporting the long process of nomination, and finally, appointment of the biosphere reserve. Biosphere areas are established as model areas for sustainable development through combining conservation of biodiversity and sustainable use of ecosystem services (Swedish MAB, 2013). This is to be done through collaboration between stakeholders, by investment in research and education. Key informants were found through internet search, contacts with the biosphere office, and the county

administration. The focus groups were heterogenic in terms of age and sex, but also in terms of profession. All interviews and focus group interviews were sound recorded. The interviews (both single and focus groups) were transcribed to enable a content analysis. In order to facilitate the analysis work and increase the transparency the software Atlas.ti was used, where the entire data set is scanned through looking for different themes/categories. They were then further analysed, applying a traditional hermeneutic methodology.

Before the interviews described above were carried out, data was also collected through a survey conducted in late 2007. A professional survey consultancy conducted extensive telephone interviews with 506 farmers across Sweden. The focus of this survey was farmers' use of and approach to extension services today and tomorrow and several of the questions concerned entrepreneurship within nature conservation. Both quantitative and qualitative data were received.

Theories

Much of the literature on Commons, common property, common-pool resources, and public goods refers to the so-called tragedy of the Commons, a concept established by Hardin (1968). The dilemmas of overuse and misuse of common resources and potential solutions to these have been grandly elaborated by Ostrom (2008). There are two related concepts: common goods (or common-pool resources), which means that a resource is non-excludable but rivalrous; and public goods, which are non-rivalrous and non-excludable. The phenomena of public goods and public commons are often analysed from scholars in economics, focusing on the dilemmas of the Commons. The reverse aspect, i.e. the social values of the Commons, is not as frequently described.

Factors that determine success or failure in governing the Commons are identified by Dietz, Ostrom, and Stern (2003), among others. One of those factors of a community is frequent face-to-face communication and dense social networks, referred to as social capital, which increases the potential for trust (Dietz et al., 2003). Pretty (2003) lists four important features of social capital in the collective management of natural resources: relations of trust; reciprocity and exchanges; common rules, norms and sanctions; and connectedness in networks and groups. Bucht (2006) connects social capital to deliberative democratic processes. Social capital is not only created by informal social processes but can also be supported by institutional arrangements.

The right of public access, which could be labelled as a public good, is not only dependent on that there is a societal norm on common and public goods, but also the other way around: the idea of the right of public access actually forms a common materiality, which constitutes a common base for democratic processes and negotiation. By commercializing this common materiality, the social sustainability could be affected. A local economy might be disturbed by rural tourism, if that implies financial flows turning more external. It could also lead to changed ownership, where prosperous enterprises are transferred to external ownership, causing a distance between rural villagers and urban visitors (who both own and consume the services). Thus, the owners are not always the same people that practically depend on the local conditions of the place. According to Gunnarsdotter (2006), who writes about hunting tourism, it is a question of scale when estimating how the commercialization affects the rural society. She also states that if some local resources are not locally utilized, those will sooner or later be exploited by external forces.

As humans, we are defined through our relations to others (Honneth, 1996) and through the social interaction we engage in. Farmers, just like many professionals and humans in general, are looking for recognition (Nordström Källström, 2008). In today's western society, money is one of the predominating and seldom challenged ways to measure success and thereby achieve recognition. Traditionally, to get a decent price for a high quality product has been the way to gain success (Silvasti, 2003).

There are, however, more things that farmers value. When farmers are asked what they value the most with being a farmer, they mention independence (Emery & Franks, 2012), autonomy (Niska, Vesala, & Vesala, 2012), and freedom (Nitsch, 2008). Burton (2004) argues that due to this, farmers are often unwilling to acknowledge that strong social influence is important for them. He argues that farmers actually on specific conservation behaviors are influenced by other farmers in the close farmer community.

Findings

Ambivalent Approach to Public Access

In our context, the right of public access is treated primarily as a social convention and its legal aspects are hardly mentioned during the interviews. This right is perceived by some informants as a constraint, while others have never question it, because it is largely seen as static prerequisite, as one of the frames in the system. According to the informants, the right of public access is something given that one has to assume. Questioning this convention is unthinkable for some of them.

When it comes to making business out of tourism, the informants rather point out the right of public access as something problematic. In the same time, although less explicitly, the right of public access could also be said to constitute a premise to – at least some of – the agritourism enterprises. Accordingly, the right of public access has multiple meanings and can be interpreted in different lights.

This issue does not only touch on ideological foundations, but holds tensions on different levels. The entrepreneurial farmers interviewed were not optimistic throughout, although one focus during the interviews was to discuss new founding opportunities within nature conservation in agriculture. Trying to understand their perspectives, we have to recognize that these questions are complex and not that often discussed beyond the every-day level. The informants expressed an attitude that it is indecent or provocative to make money on nature in a way that might challenge the right of public access. The farmers are anxious to avoid negative reactions from their surroundings because of challenging the right of public access. But, in the same time as they mention this convention as a constraint, we would also refer to the discussion of public access as a meaningful symbol and arena serving democracy (cf. Hultman & Andersson Cederholm, 2006). Violating the public access would hereby threat our common materiality but also our democratic process. The public access in this context gives reasons to activate local relations. These relations have proved to be central to the way our informants talk about possibilities to work with tourism in order to gain indirectly from their conservation work.

Another reason why rural tourism can be perceived to provoke local sustainability is that economic flows might turn more external, especially if the local ownership of tourism facilities is compromised. However, this opinion is not expressed by all the informants. One of them, representing the tourism sector, argues that income from tourism should be regarded as positive since this, unlike incomes from other industries, actually has good prospects to remain where it is produced, and thereby benefit the local. The value of tourism is always created in the site and remaining there, she says. Ecotourism and integrated rural tourism are approaches where local sustainability is an explicit aim of the activity. The very purpose ensures generation of incomes and jobs to the locals. An additional nuance is that there are degrees of commercialization (Gunnarsdotter, 2006). Then ecotourism and outdoor life is also sometimes argued to be positive for the environmental attitudes and nature relation of urban people (SEPA, 2004; Sandell, 2004, 2006).

Commercialization of values associated with public goods holds yet another tension. On the one hand, commercialization leads to pricing of products and services, i.e. they get visible to the economic system, as a way of confirming values. It also results in local incomes and to maintenance of biological and cultural

values. Additionally, through pricing commercialization can contribute to increase the attractiveness of a product or service that you wish to offer, one informant states. More urban people visiting the countryside, approaching farming and food production could be a positive consequence. On the other hand, the purchasing power of tourism might lead to instrumentalization and objectification of the landscape and rural context (Gunnarsdotter, 2006). Commercialization entails a simplification of values and there are always values that will never be priced. There is also a risk of reducing important aspects to human life because they lack the economic dimension. These risks also comprise reduction of what can be considered as rational and which driving forces that are seen as legitimate.

Through local initiatives, rural entrepreneurs and farmers can make the landscape and nature available to outdoor life, attracting urban people who live in mental and physical distance to nature. Farmers' conservation work could be a factor of reducing this distance. A significant proportion of this work is unpaid, or the payments received do not compensate the time effort (cf. Myrdal, 2001).

According to this argumentation, initiatives that attract people to nature bring possibilities for rural businesses to gain through agritourism. The reverse connection may be as probable, i.e. services connected to nature create stronger attractiveness and allow more people to find their way out to outdoor life. The urban-rural tension is a key factor in this discussion. Ecotourism and rural tourism depend on a distance between the city and the countryside (Hultman & Andersson Cederholm, 2006). A premise for this tourism business is a romanticism regarding rural lifestyles and farming. The informants describe that they as a matter of fact, themselves cherish such a romantic image. They keep the farm tidy because they want people passing by to get the feeling that they would rather like to live there, some of them say. Generally the informants in this way see their work with nature conservation as a prerequisite here, although having varying ideas on what nature conservation is, ranging from grazing on natural grasslands, preserving beautiful flowers, keeping the land nice and tidy to attracting people to get outdoors. One farmer quote illustrates this:

> And I think it's fun when it looks nice, grazing lands where the fences are in order, the pastures look fairly tidy, the farmyard is pretty clean. I want to live nice and tidy. People passing by should wish that this is the place where to live.

On the other hand, there is an intention that ecotourism should have a function to bridge by providing urban people an understanding of rural conditions. The experience of the landscape that visitors to rural areas get is likely affected by (a) the time spent there, (b) the relations linking to people in the place, and (c) the kind of activities they perform (see the ecostrategy model by Sandell [2005] and the landscape relation model by Gustafsson [1993]). Farmers who run agritourism have the potential to transform and elevate the experiences of the visitors by addressing these three aspects. The farmer has a key role in interpreting the landscape and giving access to enriched experiences. This communicative process in the same time makes the rural resources more visible and contributes to recognition of the farmer's reality and merits. Pricing might facilitate this visualization. By commercializing nature experiences and pricing outdoor recreation in agricultural landscape a perceived value is constructed which signals to urban tourists that agritourism is attractive. One of the informants says that by pricing your services the customers will perceive that they get something valuable and that would simply upgrade their experience. Objects or phenomena that are priced are appreciated differently compared to what is accessible for free. These arguments allow us to challenge the conventions about what is chargeable within the frames of public access, without questioning its fundaments.

Potentials and Limiting Versus Enabling Factors

According to the inquiry made to 506 Swedish farmers about business differentiation, nature conservation is regarded as less probable for creating profitability beyond the agri-environmental schemes, compared to

ventures in bio energy, small scale food processing, and machinery contracts (Table 1). Tourism receives rather high scores by the farmers interviewed. Hence, according to this inquiry, there is optimism in tourism.

Venture activity	**Quantitative estimation (average value, where 1=impossible, and 6=fully possible)**
Production of bio energy	3,9
Tourism	4,4
Small scale food processing	3,7
Nature conservation (for example grazing, pasture and meadow maintenance, water management)	3,5
Machinery contract (for example "Farmartjänst" – Farmers' services)	4,7

Table 1: Inquiry result. Do you believe that it is possible for farm enterprises to create profitability on the market, without subsidies, within following business ideas?

The informants mention various factors that limit those who want to develop nature conservation as a business idea. Some problems are associated with the general challenge to start up a new branch. This is a threshold, implying that the initial phase is quite time and effort demanding but does not necessary yield any profit. The informants say that strong interest and commitment are needed and that the first years one needs to invest more time and engagement than one gets in return. In the same time, they are enabled by encouraging factors, which we will return to later.

Something they talk about less explicitly and that we also want to discuss is in which way one's interest and motivation for nature conservation is affected by for whom the farmer imagines that the conservation management is carried out. Both the obstacles and the opportunities that we investigate have in common the importance of local human relations. One observation, somewhat simplified, is that human relations are crucial when deciding on nature conservation as a business idea, while human relations also is a main reason when farmers hesitate doing this. A farmer, or entrepreneur, is not an isolated unit but connected to a local context, a professional, and private environment.

A dominating opinion among the informants is that it is difficult to create incomes from initiatives that aim to bring people outdoors. While some of the farmers might not always have mental preparedness to see the possibilities, the tourism sector counts on these. Still, those informants who have tried to engage in tourism believe that by investing more time and engagement further incomes from nature conservation could be possible through agritourism.

The right of public access might bring unwillingness to pay for services connected to nature and outdoor life. That is one reason why the informants feel that it is difficult to charge people and often remain at that point. In the following we suggest how openings to that could be created, turning to the potential within farmers' roles, relations, and informal networks.

Rural Relations and Challenges of Pricing

One part of this project was to examine the support farmers get from others when deciding to work with nature conservation as a business idea. The informants confirmed our presumption about the crucial importance of different types of relations in constituting supportive frames in farmers' decision making processes. However, unlike our original expectations, they did not emphasize professional, formal, or

institutional relations to e.g. authority officials, farming advisors and bank clerks. Rather they stressed the impact of family, friends, and colleagues. Also, they saw opportunities in receiving advice from unconventional actors such as tourism sector representatives. Since private, informal, or unconventional relations appear to determine the entrepreneurial conditions, we have looked closer to how the informants describe these relations.

The non-institutional, informal, and private relations of importance include family, friends, colleagues, neighbors, local public, customers, consumers, tourists, and a broader public. Several of the informants account for vagueness in their roles towards some of these categories. We interpret them as finding it difficult to distinguish between different relationships, and perhaps they are unaccustomed to do so. The farmers seem to be uncomfortable and unaccustomed to formulate their services in economic terms towards people that are not considered to be in their formal professional networks. In addition, they are afraid to provoke neighbors and local public if they would charge outsiders for what might be seen as unconventional services. One of the officials interviewed describes this as a part of the "amatourism"1 that characterizes the non-professional way of working with tourism that is common among this group of entrepreneurs. One of the farmers describes it as follows:

> We farmers cannot charge. This fact they have repeated on all the tourism courses I have taken. . .But it's the same with me. I think it's really hard to say what it costs. "Give me a hundred," one says. . .A North Swedish horse that we have been running a little bit with a carriage [offering this activity to customers]... My wife has run most of it and thinks it's great fun and after driving them around the roads for an hour they ask: "What does it cost?" Then we just say, "Well, you may give me a couple of hundred-krona notes." And they might be about ten people sitting there – paying 20 kronor each. [Laughter].

The customers might be as uncomfortable as the entrepreneur when it comes to paying or pricing. The customer expects the price to be set in advance and that the entrepreneur takes that responsibility and initiative. Otherwise, it might hint that the entrepreneur does not appraise herself or her own products and services.

The informants laugh or get somewhat embarrassed when asked to give examples on different potential ideas on chargeable activities, such as cow release, display of lambing and group visits. They also show a joking attitude when they describe the kinds of people who visit and enjoy the landscape created by the farmers, such as hobby botanists. That group of external landscape consumers is described in ways that we interpret as odd, eccentric, or alien. They are regarded as funny as they want to live crowdedly in camping areas, spend their holidays in minimal low standard cabins, and watch the ordinary events of the farmer's everyday life. The creative ideas that are on the one hand seen as potential business activities are on the other hand talked about as absurd and hypothetical. The farmers do not feel confident taking these opportunities for serious. When doing so, they appraise neither their customers nor themselves. Another interpretation is that their business intelligence on this area is poor.

Need of Recognition is Fundamental but Restricting

The farmers express that they appreciate the recognition they receive from visitors, tourists and people who settle themselves on the countryside – although they cannot always take the visitors' perspective. There is a distance implying that they do not have knowledge about what the visitors value and their willingness to pay regarding different services. Some of the informants claim that being a salesman is not automatically a role that fits every farmer. Farmers in general might not be used to having this contact with customers and this role only comforts some of them.

1 A wordplay combining "amateurish" and "tourism."

Another source of recognition is the essential relations to colleagues and neighbors. Several of the farmers we have interviewed express avoiding provoking their neighbors. Even if they are good neighbors or colleagues, the farmers often avoid talking money with each other. One farmer, who has invested successfully in conservation, says he is anxious to keep a low profile, not making people envious. You will be ostracized if you succeed too much, he says. Although he knows that his work can sometimes inspire his neighbors, there is no way anyone would ask him for advice. Another informant expresses the need for distance in order to be able to ask for advice. Therefore, we learn, the organized agricultural field trips are held far away in distant regions avoiding the farmers' home district. But while your neighbour is seen as a major threat, one informant says, collaborative interaction many times has proved to be a critical success factor.

Major and minor issues have a potential to provoke neighbors. Reactions usually remain hidden to the person accused and she may not get a chance to explain herself. One farmer tells that there are many persons that are annoyed because of his late sowing of the fields and that they do not see that he might have other plans with his crops than the conventional cultivation. Quiet dissatisfaction is obviously something that affects everyone. It is tough to be an innovator with unconventional businesses within nature conservation, many times being the object of these destructive reactions that do not encourage individuals to realize their ideas. We could also pose the voice of the "who-do-you-think-you-are" attitude the other way. It is hard to express critique when someone in the neighbourhood does not manage his farm in a tidy way. This is also the case sometimes, affecting other farmers' possibilities to invest in tourism:

> Well, there are plans to locate a walk and cycle path between Smalltown and Largeville, but in the middle of the distance there is a scrap collector. It looks as if they just released stuff from an airplane, and it's clear that this people do not feel ready enough for accepting visitors on their farm. And they have said no to locating the track to the existing road. It's a pity. . .But you can't go to this neighbour and ask if you can clean up there.

The neighborhood is important for how you decide to invest. One of the officers interviewed speaks about local effects as an explanation to how rural enterprises decide to develop. There are two alternate phenomena, he says; "Either you take advantage of the fact that others have done successful business and get inspired from them." Sometimes there appear several actors in a certain district doing fairly the same business, such as the artists of the Österlen district in southern Sweden. Jointly a strong local identity is created which favours the tourism. In opposite to this "imitation" phenomenon there is also the differentiation, i.e. that the entrepreneurs try to find their own niche. Local culture might determine whether imitation or differentiation will dominate.

Rural relations are characterized by continuity in time. The informants mention that it takes at least one generation, but sometimes more, for a settler to be accepted among locals. This continuity and the low relocation of people cause a high degree of social control. Those who dare to be different will be noticed. To become a successful entrepreneur you might need to adjust to local norms first. Being socially accepted is a basic prerequisite for being able to run a farm at all, one farmer states.

Although avoiding provoking others is a central argument among the informants, it is apparently nothing that totally paralyses them. If these farmers had been too cautious or conflict avoiding, they would probably not have achieved the present innovative businesses that they do have. The entrepreneurial role requires a certain integrity, independence, and initiative. These innovators with unconventional thinking are assumingly by experience well prepared to handle resistance from a critical environment.

Most of the farmers we have interviewed have proved to have, in some sense, an outsider's perspective on their districts. They have either moved there as adults, or been out training or travelling. Coming into an unfamiliar situation, they have had to retry in a new direction. Being an outsider might be provocative

enough. In that light, it might be particularly difficult to start charging for things that people regard as part of the Commons that no one has had to pay for previously. People might interpret that kind of action as you being mean and arrogant caring more about money than about the neighbourly relations. One farmer said that "you shouldn't do too well, but not too bad either," pointing to that there is a fairly narrow range of success that you should adjust to in order not to provoke. There is a more or less clear norm for what is perceived as moderate.

One way of visualizing the different non-institutional or informal roles that are important for these farmers is to differentiate between commercial and uncommercial situations and between known and unknown people (see Table 2). Social and economic relations are to a high degree intertwined (Nordström Källström, 2008). These interfaces offer potential acknowledgement and recognition. We suggest that the farmers would gain by articulating the borders or extending them in different directions. There might be a benefit for the entrepreneur in categorizing her relations, although the categories are floating – especially in the rural community.

	Familiar	**Unfamiliar**
Non commercial	family, friends, neighbors	the public
Commercial	Customers	tourists, consumers

Table 2. Categories of farmers' informal relations

Farmers act in a life world context where professional and private relations often are integrated (see also Nordström Källström, 2008). According to Habermas, the life world relations are oriented towards understanding, while the system world is characterized by communication through symbols such as money and power (Månson, 2007). Since the borders between the farmers' relations to neighbors and to customers are not explicit, there is a risk of role confusion. The farmers might avoid applying the grammar of the system world on their close relations, since they are dependent on their local community and informal exchange of services. There is a reciprocity featuring rural communities – you are interdependent (see Nordström Källström, 2008). By charging people for your services you would also risk to formalize a relation that you maybe feel a need to keep as informal.

The interdependence might also cause a resistance towards articulating the borders mentioned above, conserving vague roles.

The fear among the entrepreneurs of being distinguished or exposed could also be explained by the need of maintaining a shared local identity. If the farmers mutually identify with their neighbors, then an innovative, independent and different acting could be interpreted as challenging the shared identity, which indirectly implies questioning the others. However, identity couldn't be defined as something static, but is rather complex and a generally accepted view is that individuals have multiple identities (see e.g., Brandth & Haugen, 2011). Being a pluriactive farmer you have several roles, and might not feel as comfortable in all of them. There might be a feeling of insecurity in having multiple identities and parallel roles towards a certain person. According to Brandth and Haugen (2011) the "host identity" presupposes the farmer identity, but in the same time it challenges the farmer identity. They write:

> It may seem like a paradox that in order to attract visitors, they [the farmers] have to perform as professional tourist hosts, but at the same time they need to preserve their identity as farmers as this is the very foundation upon which the business and its product is built. (Brandth & Haugen, 2011, p. 8)

Rural Development in a Biosphere Reserve

The farmers in our study do not relate spontaneously to the concept or process of biosphere reserve during the interviews. They know about it and mean that some farmers might benefit from it, still they mean that it's not something that everyone within the reserve would automatically take notice of. Most of the farmers we talked to relate rather passively to the biosphere process, but a few of them have taken advantage of it and have joined an ecotourism business network coordinated by the biosphere office. Just like a nature reserve could invite people out to nature, a biosphere reserve could work as a label attracting visitors. In addition, biosphere reserves are promoted towards an international audience. Thereby an entrepreneur in the biosphere reserve has greater possibility to target other groups of customers than the local public, which the informants consider as rather unwilling or unable to pay. It might be convenient to hope for external financial inflows through tourism, however, one informant objects, at present the tourists practically seldom come from abroad.

One informant claims that self-confidence and local commitment increase having a nature reserve to show. He believes that business ideas combining availability to valuable nature with services such as Farm stay brings both exciting events to tourists and possibilities for farmers to differentiate their enterprises. Farm stay is a model that seems to have great potential, he means. However, one of the farmers with personal experience of offering this complains that the visitors did not come up to his expectations regarding an interest for the farming activities. This example indicates further the meaning of clarifying relations, roles and expectations.

The biosphere process generates a collaborative potential that might strengthen local relations since it hosts strategies for strengthening existing networks and local relations as well as developing new ones. This process might be one concrete way to address the farmers' need to make their roles explicit and develop their various roles that are included in the entrepreneurship.

Discussion and Further Implications

On a general level, all the farmers interviewed express personal interest for working with nature conservation and agritourism. Some of them are very positive, while others are more ambiguous about it. However, we see that it is linked to the fact that all these farmers in one way or another are successful nature conservation entrepreneurs. Long-lasting and successful work requires personal interest, not only in profit making. The farmer has to be convinced by that his management is efficient and worthwhile in order to make his best. Personal commitment is necessary but not enough when it comes to motivation to formulate one's services in economic terms.

The willingness to try to charge for his services varies irrespective of for whom the farmer does the nature conservation. But if he does not know why he carries out a certain effort, but feels forced or expected to do it by for example the authorities, he might be more in need of financial compensation, compared to if he does something mainly because he finds it nice and interesting himself. The farmers get more dependent on authorities, officers, controllers, and political decisions, having less control, when doing this primarily to please the system.

One way to consider this is to acknowledge that actions constitute the initial part of a communicative act. The farmer does measures that he expects response on and recognition can be one motivating response apart from the measure's result in the materiality. Depending on where the farmer expects the response to come from (who he is communicating with) he will adjust his measures. Many of the farmer's relations exist in the borderland between the life world (his family, friends and neighbors) and the system world (depending on money). The tensions caused by this have been described in the paper as well as the

difficulties this causes for running a business in the field of nature conservation where there are societal norms not to make an individual benefit out of the public goods. On the other hand society's compensation for this is not considered enough by the farmers interviewed.

To some extent a solution could be to reconsider the price (symbolic or pure monetary) of the public goods, the Commons, and accept that farmers and other rural entrepreneurs need to get paid for their management. Agritourism is another way of framing the activities that can have nature conservation and public access as prerequisites. Another potential could be to reformulate these relations and roles that the farmer has. By highlighting the importance of relations and by taking advantage of the potential of networks and collaboration, more farmers could work with nature conservation as business idea.

To enable this, based on our study we would recommend some networking coordinated by an external coordinator. Her role could be to bridge the mental and communicative distance between neighbors, facilitate value challenging discussions, and provide professional help in how to formalize some relations to potential consumers. Testing ideas in the family, which is done to a large extent today, might have a conservative effect. A coordinator with experience in tourism might be an important catalyst to highlight values and confirm the monetary values, which might be taboo to discuss among colleagues.

In a biosphere reserve such as the one studied we think there is great potential to increase the collaboration and self-esteem in the community working with the public goods, since there is a common interest in becoming a model area for sustainable development and attracting tourists interested in nature conservation.

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Struggles for Water in Colombia: Communication and the Participation of Citizens

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Public communication and communication for social change actions have been implemented in struggles for the defence of water in Colombia, to gain citizens' support, and raise their awareness about the water crisis locally and globally. This paper analyses the extent to which these communication practices have influenced participation and the way of doing politics in Colombia. In spite of the 'traditional' political competition in the country and the historical apathy toward political participation, the strength of the unifying message of water as a matter of public concern has connected different social groups. Communication for social change and public communication have pushed many people to engage directly in political and mobilisation actions; the global objective of the defence of water has been locally adapted by citizens according to the relevance of the topic to their regional problems.

Keywords: water struggles, Colombia, communication for social change, public communication

'RP' stands for Research Participant

Introduction

In the first decade of the twenty-first century, Latin America witnessed a crisis of neoliberalism. The water management privatisation policies promoted by the international financial institutions such as the World Bank and the Interamerican Development Bank during the 1990s, led to severe social and economic transformations in the region. Starting in 2000 with the "water war" in Cochabamba, a "new cycle" of collective action emerged throughout the continent against the dominant neoliberal political regimes. "Since the 2000 water war in Cochabamba, water struggles became prominent in Latin America, and highly visible within the WSF - World Social Forum – process" (Perera, 2011, p. 242). In Colombia, the consequences of water privatisation gave way to a civil society campaign in 2006 calling for the defence of water as a human right and public good. The campaign continued with the proposing of a referendum (2007-2010). These initiatives joined other Latin American struggles and became part of a broader movement for water justice formed by local groups and communities that fight for a global universal objective: the protection of water as a common good and the human right to water (Barlow, 2009).

Colombia is a particular case study because it is one of the few Latin American countries where the neoliberal hegemony was not severely affected by the "crisis of neoliberalism" that changed the politics of the continent. As a country full of paradoxes and contrasts, Colombia shifts from political and macro-economic stability to high levels of violence, poverty and exclusion (Archila, 2006; Nieto-López, 2011). Colombia's long history of uninterrupted democracy (Archila, 2006) contrasts with both the militarisation of the land and the criminalisation of protests during the last decade (Modonesi, 2008). Social movements, including the water struggles, have been greatly affected by the armed conflict. They have been victims,

not only of state violence and repression, but also of the abuse of insurgency groups and political parties who take advantage of them to gain popular respect or approval.

The engagement of citizens in defending water and the land, and their communication practices within the struggles, gain enormous importance by reason of the difficult context in which they are carried out and the numerous challenges in diffusing information, mobilising people and raising awareness about the consequences of the water conflicts and the consequences of large-scale development and infrastructure projects. The study of Colombian social movements - their practices and range of actions - is relevant especially in the Latin American socio-political context. These experiences demonstrate the extent to which a conflict relating to water and the environment can provide an opportunity to foster solidarity, community development and participation.

Despite the multiplicity and simultaneity of agendas of Colombian social movements, and the difficulty to build a confluence of interests, the different struggles for the defence of water have made use of a transformed political and social discourse and dynamic forms of interaction and dissemination of information. In recent years, new issues have been put on the agenda of the water struggles in Colombia, with the protection of territory and identity as key elements in their aims and discourses. At present, some of the main water conflicts in Colombia have to do with: mining, hydroelectric dams, the construction of roads, the lack of support to the community-run water systems, privatisation of water provision services and the lack of access to clean water for millions of Colombians. In this article I will be mostly referring to the water referendum campaign (2007-2010) and the protection of community-run water systems. I will first provide a context for each one of the cases, followed by an analysis of their communication practices and a conclusion.

The present paper shares some of the results of my MA Dissertation (MA Communication, University of Westminster 2010-2011) and some preliminary results of the PhD research on Communication Practices and Citizens' Agency in the Water Movement in Colombia (UCD School of Sociology 2011-2014). The theoretical framework for the methodology of my PhD research study has been built upon the Participatory Action Research approach. As expressed by Gaventa and Cornwall (2008) - drawing upon the ideas of Orlando Fals-Borda and Paolo Freire, among others - Participatory Action Research encourages mobilisation and reinforces the alternative forms and categories of knowledge which might have been produced (p.181). This approach is also a process of awareness building and a critical recovery of the history of different communities. Other qualitative methods employed have been Ethnography and Grounded Theory. The collection of data has been through participant observation, semi-structured interviews, field-notes and analysis of secondary data.

Environmentalism, Social Movements and Communication

The defence and protection of the environment, including here water, is now not just a concern commonly shared in post-materialist societies of industrialised countries. In developing countries, the defence and protection of the environment has had to do directly with survival and the defence of livelihoods (Arrojo-Agudo, 2009; Martínez-Alier, 2002). Similar to the cases described by Martínez-Alier (2002) in his report to UNRISD "Environmentalism of the Poor," in Colombia, the agents of environmental conflicts "rarely saw themselves as environmentalists" (p. 5). Many of the conflicts faced by vulnerable people in developing countries deal with an ecological component, "with the poor trying to retain under their control the environmental resources and services they need for livelihood, and which are threatened by state takeover or by the advance of the generalized market system" (Martinez-Alier, 2002, p. 40). The conflicts relating to water in the last decade in Colombia have brought together different actors from civil society such as

environmentalists and local communities concerned with problems regarding water, land and loss of identity.

Environmentalism in Colombia, analysed by Tobasura-Acuña (2007), has brought together a diversity of individuals, groups, organisations and collectives who, from different perspectives, fight for the defence of common goods, natural resources and human quality of life. Through symbolic and political actions, environmentalist movements in Colombia have opposed to and mobilise against large-scale infrastructure projects that put water and natural resources at risk (Tarazona-Pedraza, 2010). With regard to the opposition to water and energy privatisation in developing countries, Hall et al. (2005) express the opinion that this is "based on a strong sense that these sectors should be subject to local decision making, taking account of all public interests, and not left to global, commercial operators and market forces" (p. 292). In Colombia, the claim for sovereignty and participation in the main debates on water issues is important aspects of the water struggles studied for this research.

Social movements in Colombia have facilitated the path to democracy and the participation of citizens within repressive contexts. Their emergence may be a reaction against hegemonic political models or the demand for the inclusion of certain needs of civil society into the public agenda. In any case, social movements have raised questions and put forward proposals about the way society is organised and functions. Social movements facilitate the introduction of new topics, discussions and agendas in the public sphere and their role contributes to the transformation of public space and political decisions (Urán-Arenas, 2003). Environmental movements and struggles in Colombia continue to increase in membership and multiply in number as a response to neoliberal models for the extraction of natural resources (Tarazona-Pedraza, 2010).

Touraine (2008) argues that new social movements, within which environmental movements could be included, are less socio-political and more socio-cultural. The objective of their supporters is not assuming state power but developing other forms of counter-power based in the grassroots, in order to achieve deep transformations in society (Urán-Arenas, 2003). Each water struggle in Colombia has its own demands and interests. However, they often converge in different scenarios, sharing the analysis of the current development model and expressing their alternatives and ideas for solutions to the conflicts. Both in their own and joint spaces, communication and mobilisation actions have been key to the participation, advocacy and involvement of citizens. By making use of local resources and ideas, different communities affected by water conflicts have come to recognise the importance of communication actions in the processes and stages of the struggles. By adapting communication practices to their specific contexts, affected communities have expressed their demands and have shared valuable experiences with other groups suffering similar threats.

The analysis of the water conflicts depicted in this article is set in the context of the literature on communication for social change, participatory and public communication and social movements. The participatory and communication for social change approaches were found useful in examining the water struggles since they stress the appropriation of the communication process by affected communities and the generation of local content (Gumucio-Dagrón, 2011). The communication practices in the water struggles also have in common other characteristics mentioned by Gumucio-Dagrón (2011): language and cultural pertinence; use of appropriate technology; and convergence and networking. By bringing together the analysis of the water struggles in Colombia and the theories and approaches of communication for social change, I intend to provide a framework which can serve to make sense of the citizen practices and the importance of the struggles in the strengthening of democracy, as well as the defence of the environment and water as a matter of public concern.

The participatory model of communication, one of the origins of communication for social change, stresses the value of cultural identity of local communities and of "democratisation and participation at all

levels – international, national, local and individual" (FAO, 2007, p. 4). This participatory model expands the role of the traditional "receivers" from being just "included" to becoming generators of strategies and knowledge (FAO, 2007). Through the encouragement of participation, collective actions, critical thinking and "conscientisation," participatory communication aims to address people's needs and identify their constraints, rather than merely reach some of the outcomes associated with modernisation and progress (Melkote & Steeves, 2001, p,339; Altafin, 1991, cited in Waisbord, 2009, p. 20). Participatory communication has been crucial for the decision-making processes in the water struggles in Colombia, and to facilitate the exchange of knowledge and experiences between affected communities.

Regarding public communication, McQuail (1992) suggests that communication fosters the struggles of individuals and encourages them to intervene in collective issues and in political processes within the public sphere. Creativity and resourcefulness have been key components of the campaigners' communication practices to spread messages about water conflicts and to raise public awareness. Through public communication practices, the water struggles have been able to create spaces for the discussion of the issue of water among different social actors, and to make decisions collectively. The opening of the spaces for deliberation and dialogue between different stakeholders is what Cornwall (2004) called "invited spaces" which also enable public engagement in governance. According to Habermas, "the creation of public spaces outside the domain of the state is held to be an essential pre-condition for citizen engagement that does not simply serve to legitimate the existing political system" (Cornwall, 2004, p79).

The safeguarding of participation and citizen engagement in democracy is also possible through the existence and practice of public communication, the latter of which concerns the social mechanisms that facilitate debates and discussion of public issues (Demers & Lavigne, 2007) such as the Colombian Water Referendum (2007-2010). Public communication comprises the collective representations and shared expressions of people characterising their multiple interactions in society (Galvis-Ortiz, 2005). For Jaramillo et al. (2004), public communication models involve a methodology based on participation, political education, empowerment and dialogue. According to David Merrit (1995, cited in Botero-Montoya, 2006), the aim of public communication is to connect citizens with public life and to enhance their decision-making capacity. These characteristics suggest new forms of participation, of involvement in what is "public" – i.e. what should be visible to everyone – which leaves no place for concealed decisions. Public communication inevitably requires participation and the dynamic of spaces, institutions and a political education to reach the active citizenship in civil society.

The communication practices in the water conflicts studied respond to the different urgent needs in the course of the struggles. These communication practices do not necessarily correspond to a preliminary planning process. The pace of events and demands that affected communities have to deal with in everyday life do not leave much space for preparation. However, the creation of communication committees and the development of communication strategies by affected communities has served to enhance their activities and help achieve their objectives. The following section of the article deals with three case studies which highlight the communication practices in some water struggles for the protection of water and the environment in Colombia.

Water as a Matter of Public Concern: Water Referendum 2007-2010

The water crisis in Colombia worsened in the last decade with the implementation of policies for the privatisation of public services and the different concessions for the indiscriminate exploitation of natural resources. While Colombia has abundant water resources, much of its population suffers water shortages

which, according to the IDEAM (Institute of Hydrology, Meteorology and Environmental Studies of Colombia) will affect 70% of Colombians by 2025 following current trends. According to the 2005 report of the "Defensoría del Pueblo" (national human rights agency), more than twelve million Colombians living in urban centres are not receiving water suitable for human consumption. Sewage coverage in urban areas is 83.6% and in rural areas only 39.8%, in both cases with inefficient water treatment (Source: document of the Colombian Water Campaign calling for the support of the Water Referendum in March 2007).

In 2005, the consequences of water privatisation led to the emergence of a civil society campaign opposing the imposition of these policies. An outcome of this national campaign was the water referendum. This has been one of the most important actions in the recent water struggles in Latin America. In the campaign for this referendum held from 2007 to 2010, the issue of water as a matter of public concern was a key element of the public communication processes. In 2007, a group of civil-society organisations proposed the amendment which would legally protect the fundamental human right to potable water and guarantee a minimum amount of free water to cover basic human needs, look after the public management of water and give recognition and support to community run water systems, and confer special protection to ecosystems essential to the water cycle.

During the Campaign for the Referendum, various strategies (legal, political, communication, educational and mobilisation) were implemented to reach diverse sectors of civil society. The design of the strategies was a work of consensus among the different organisations and supporters of the Water Campaign. The Campaign for the Water Referendum was an exercise in democracy and citizen participation which provided an opportunity for learning about the legal process regulating citizen participation mechanisms and limitations of this process. A National Committee in defence of water and life was formed – Comité Nacional en defensa del agua y de la vida (CNDAV) – taking its name from the movement that ejected the Bechtel Corporation from Bolivia in 2000 (Conant, 2009). Simultaneously, regional committees were established, comprising environmentalist NGOs, schools, trade unions, women's associations, and community aqueducts, among others.

The public and participatory communication strategies of the referendum intended to articulate new and existing actions aiming to diffuse the message and proposal of the referendum in all possible social groups and territories of Colombia. The communication strategy faced different challenges before it could be implemented. According to the National Coordinator of the Water Referendum Campaign, one of the major challenges was the need to decentralise the structure of the Campaign and enhance actions and participation at local level, guaranteeing the flow of information and permanent feedback in different communities. The implementation of communication actions facilitated the preparation of a backdrop upon which public water policies in Colombia could be elaborated.

The design of the communication strategy for the water referendum was an initial participatory exercise with contributions from different partner organisations. The communication strategy provided a general framework of objectives, actions and procedures in terms of the production of information, the support of political education projects and the initiative's widespread diffusion. The support of an external advisor from a renowned university was used in the design and planning phase, in which a diagnosis was made to understand the current state of the on-going communication processes in different regions of Colombia. The outcome of the diagnosis provided data such as communication and media resources available, the type of messages being sent, the main features of the target population, planning in communication activities, and the level of awareness and knowledge of the referendum and its implications.

Colombian social and cultural diversity emerged in the first diagnosis of communication activities. It was found that people were adapting the messages of the campaign to local contexts, reflecting about their own social and water issues. The regions had their own strategies, and were autonomous in the development of campaign actions, but there were unifying guidelines to follow concerning the political

direction of the referendum. The communication strategy was accompanied by communication training, especially in remote places where the spreading of information was difficult. The training sessions allowed capacity-building and increased awareness of the role that different groups play in a democratic initiative such as a referendum.

A central objective was also to enter the agenda of mainstream and alternative media. Media support – especially from national newspapers, television channels and radio stations – would guarantee a higher level of informed citizens regarding the referendum's initiative and the water situation in Colombia. Working hand-in-hand with alternative media was considered a priority, since through them there were more possibilities of disseminating the messages in certain places via in-depth discussions, research, creativity, and the involvement of the community and supporters of the Referendum in the elaboration of media content. The referendum was challenged by mainstream media which at times enriched the debate, while others tried to conceal the popular initiative. Gómez (2009) affirms that, although media have an important role and social responsibility in the building of a pacific, democratic and sovereign nation, the Campaign for the Water Referendum needed to remove the idea that the demands of this initiative were only valid if commercial media broadcasted them.

Various research participants (hereafter referred to as RP) (29, 31, 38, 40, 43)[1] remembered the Colombian Water Referendum (2007-2010) as an example of citizens' participation in decision-making on a common good such as water. In the campaign for this referendum, the issue of water as a matter of public concern was a key element of the public communication processes. To obtain citizens' participation in various actions, it was fundamental to raise the water issue to a higher status in the public sphere. It is in the public sphere that the discourse (in this case 'water as a common good') should look for consensus, in order to convince with valid arguments and to persuade people to take collective action (Galvis-Ortiz, 2005). Making water a central issue in the public sphere provoked a snowball effect on citizen support and response to the initiative.

The connection of water with other important issues such as sanitation, health, housing, education, the economy and different forms of control over natural resources, increased the interest of ordinary citizens in the Water Campaign. The Campaign for the Water Referendum opened up local, regional, national and international linkages with other water struggles; moreover, it pushed citizens to think globally and act locally. In other words, the Campaign for the Water Referendum exemplified what Robertson (1995) calls the process of *Glocalization*; a global aim shared by campaigners across the world was adapted and transformed in local actions which reflected the diversity of approaches and needs.

Despite the water movement submitted more than 3 million signatures asking the Congress for a referendum, the Congress refused to approve the referendum proposal. However, the participation and concern of citizens regarding water and territory has significantly increased since then. This citizen interest is also due to the multiple threats all around the country. The issues raised by the water movement question the development model of some Colombian regions, especially where large-scale water projects, led by foreign private investment (with dramatic environmental and social consequences) are being developed.

1 As mentioned in the introduction, the present paper shares some data from my MA Dissertation (MA Communication, University of Westminster 2010-2011) and some preliminary results of the PhD research on Communication Practices and Citizens' Agency in the Water Movement in Colombia (University College Dublin School of Sociology 2011-2014). The theoretical framework for the methodology of my PhD research study has been built upon the Participatory Action Research approach. Other qualitative methods employed have been Ethnography and Grounded Theory. The collection of data has been through participant observation, semi-structured interviews (30), field-notes and analysis of secondary data. The data was analysed using the Qualitative Data Analysis Software NIVO.

Citizens' embracing of the referendum proposal was possible through the delivery of clear and updated information about water in Colombia. A communication officer of the campaign expressed that it was possible to raise awareness among citizens by making them part of the water situation, and utilising ordinary, inclusive and creative messages. He continued, "It was possible to generate a new discourse, a new language, more positive and proactive. The communication strategy could break an existing conceptual ghetto that these environmental and social issues affect only a part of the population." (Interviewed for MA Thesis, May 2011). Therefore, the participatory and public communication approaches were fundamental in having an impact on citizen agency, to the extent that they inspired actions which reflected each context and the needs of the population.

The Campaign for the Water Referendum carried out different communication and mobilisation actions to inform citizens and get their support and awareness. Some of these actions are referenced below.

The "National Assembly in Defence of Water and Life"

This is a good illustration of the participatory approach adopted by the Campaign for the Water Referendum. Some of the characteristics that, according to Bessette (2006), pertain to participatory communication initiatives were present in the course of the different sessions of the National Assembly; for example, the identification of community groups and other stakeholders, the facilitation and building of partnerships among different organisations and even the collective identification of communication needs and strategies. This participatory governance had a constructive impact on the evolution of the Campaign for the Water Referendum and on how this initiative created internal democratic spaces. Within the National Assembly, citizens could experience the exercise of consensus and of co-existence of different opinions and views about the same topic. The model of the assembly was replicated by the participants in their own regions, linking the local agenda to the national situation.

The national assembly was a preparatory scenario for the performance in the public sphere. However, as in many other collective decision-making spaces, the issue of power and the political interests of some groups have led to harmful consequences in the running of the campaign, especially during parliamentary debates. In his analysis of participation in rural contexts, David Mosse argues that different instances of participation often encounter limitations and constraints set by institutional contexts such as bureaucratic goals to be met (in Cook & Kothari, 2001, p. 8). Cleaver (2001) confirms that even when a community is motivated and organised, it can suffer from a lack of resources or structural barriers that limit the performance of community-based institutions (p. 46).

The Collection of Signatures

The different strategies implemented for the collection of signatures constituted a way of building a renewed sense of citizenship and democratic participation in Colombia. In compliance with the Law 134 of 1994[Mark], there were two phases of collection of signatures in the process of presenting the proposal of the referendum. For the second phase, the water referendum collected more than 2,300,000 signatures, almost a million more than the amount required by law, which was 1,400,000. As I mentioned in my MA Dissertation, multiple group discussions were emerging from the citizens interested in signing or in receiving more information about the water referendum at the collection points in public spaces of the town centres. People were exchanging experiences, concerns and problems about their own issues with water. An activist interviewed at that time affirmed that "there was a positive response because people had the opportunity to fully understand the issue of water through a process of engaging with other citizens." (Male, Interviewed in May 2011). Citizens from the cities and the countryside shared the same concern, and many campaign strategies brought the urban and the rural closer.

Adela Cortina (1995, cited in Graterol-Acevedo, 2010) argues that the exercise of citizenship needs personal awareness of the importance of the respect of rights, a motivation to engage in common projects with other citizens, and a recognition of a responsible participation in the public sphere. Especially in the phase of the collection of signatures, the public and participatory communication strategies in the Campaign for the Water Referendum, pushed citizens to think about their role in deciding the course of vital issues such as the protection and management of water and sanitation services.

Mobilisations

Mobilisations were communication actions combining political, cultural and educational activities in public spaces. But mobilisations also witnessed the reticence of many other citizens, who did not believe in the effectiveness of collective actions and their impact on government authorities. Public mobilisations suffered the consequences of the limitation of spaces for political participation and demonstration in Colombia; participation in public mobilisations implies facing risk. Colombia is the most dangerous country in which to exercise the right of association (Tenorio-Bueno, 2011). The tendency to close public spaces in the name of citizen security has been common in Colombia, along with the militarisation of territories and the criminalisation of social movements (Modonesi, 2008).

River Navigation Expeditions

Besides the collection of more than two million signatures, navigation expeditions through the most important Colombian rivers were some of the most ambitious activities of the Campaign for the Water Referendum. The tours throughout the rivers Magdalena, Amazonas, Atrato, Cauca, Meta, Sinú and Bogotá provided closer encounters with the territories and the needs of the people. The expeditions denounced the poor conditions of the aquatic ecosystems of these rivers and the worrying situation of millions of coastal residents. Lots of the inhabitants of these towns welcomed the Campaign for the Water Referendum and actively participated in the activities proposed, which were previously planned hand-in-hand with focus groups from the local community. After the expeditions, many citizens in the coastal towns created local committees which started to coordinate different types of social and environmental organisations. These committees were not just in charge of promoting the water referendum, but also of analysing the water and sanitation situation in the community/region and developing strategies and alliances seeking solutions.

Defence of Water from Below: Community-Run Water Systems

A community-run water system is a group of community residents organised through an association of users to conserve and improve the quantity and quality of water, and distribute it in a given region. These associations normally named a board of directors who assumes and designates in most of the cases the different necessary roles for the water provision services in a certain population (Peña-Cano, Reyes-Roa, & García-Ruíz, 2007). In Colombia, community-run water systems have provided the water to their communities for decades. As in their name, they are organised communities who have built and managed the water provision services on their own. There are more than 12,000 community run water systems in Colombia with different levels of organisation and consolidation.

At present, there are various challenges and difficulties that the community-run water systems are facing in Colombia. The two main ones are the impact of the legislation which provides for public services and utilities (Law 142 of 1994), as well as the implementation of the Planes Departamentales del Agua - PDAs -

("Departmental Water Plans"). The reform of the public services sector in Colombia from the end of the 20th century came as a strategy to improve the coverage and access to safe drinking water according to the Millennium Development Goals (Guerrero, 2010). The intention to accomplish these goals was accompanied by the privatisation policies introduced in the 90s by the International Monetary Fund (IMF), the World Bank (WB), and the Interamerican Development Bank (IDB) in the form of loans and promotion of programmes for the provision of water supply and public services, particularly in urban centres. The incursion of the water supply services into the logic of the market has caused an increase in water tariffs in many cities as well as the weakening of medium-sized public water service providers and community-run water systems.

Law 142 of 1994 and the "Planes Departamentales del Agua" - PDAs - (Departmental Water Plans), which regulate public services, favour privatisation and modernisation rather than small communitarian organisations. With Law 142, many community run water systems have found themselves in the dilemma of their apparent "illegality," even if in some cases they received financial support from the government. The PDAs promote the consolidation and formation of public-private partnerships for the provision of water services, mainly in urban centres. The creation of new companies for the water provision service in many municipalities has resulted in an absorption of the small community-run water systems arguing that these communal organisations are not able to comply with the technical and modernisation requirements. Community leaders from community-run water systems argue that with Law 142 and the PDAs they tend to lose their autonomy, their identity and their territory. Many community-run water systems are organised and have strong legal and social foundations in their own regions but there are others with precarious resources and limited knowledge about legal and technical requirements.

In response to these issues, community-run water systems in Colombia have explored different strategies and practices to network and learn from each other, but most importantly, to look together for alternatives for strengthening the sector and to work on proper legislation for community-run water systems. Networks at national and regional levels have been created, in addition to the Latin American Platform for Public-Communal Agreements for water provision services, an initiative derived from RED VIDA (Interamerican Network for the Human Right to Water). The current work of the community-run water systems comprises participatory communication practices which demonstrate the engagement of communities in the democratic decision-making processes.

The creation of communication committees has become a primary necessity. Here, the members of the community want to foster internal organisation and empowerment (RP 27). Planning the communication strategy has enabled mistakes to be found in the process of community organisation, and also reinforced the actions of the community-run water systems at local, regional and national level (RP 27). Moreover, networking and the sharing of experiences between organised communities have taken place during the political discussion of the issue of water in the country (RP 28) - for example, preparatory and information meetings for the Bogotá Development Plan (2012-2015) and lobbying and advocacy for the municipal council agreement in support of the community-run water systems in El Carmen de Viboral, Antioquia. These are great achievements considering the political apathy tradition in the country and the limitations on participating due to violence and repression.

In Girardota, Antioquia, the association of community-run water systems carried out a disciplined campaign of lobbying the municipal administration and council in order to propose an agreement in which the council commits to support them technically and financially (RP 35). The agreement between municipal authorities and community-run water systems/civil society was finally approved at the end of a long process of communication and mobilisation campaigns. In this instance, citizen participation played a pivotal role in the decision-making process. The associates and users of the community-run water systems as well as other citizens in Girardota carried out different communication actions to inform the

population about the agreements. A series of workshops were given along with public audiences and panels where the population could hear and propose different positions about the topic. Some community radio stations opened weekly spaces for the community-run water systems to broadcast some programmes about the agreements with the council and also about what they do in the different communities. Posters were displayed in some local stores in the countryside, schools and cultural centres. In some rural areas, a person with a speaker was going around "spreading" the information about meetings and mobilisations. These communication actions changed the political role of the community-run water systems in the municipality. These communal organisations, apart from taking care of the environment and providing drinking water to people, also emphasise local work and solidarity to promote social change and improve living conditions. The community-run water systems exercise democratic practices for decision making and generate a sense of belonging and sovereignty over the land and the water.

The need for the agreements with the town council prompted the organisation of the community-run water systems into an association, with more collaborative work and purposes. The agreement pronounced by the Girardota Council and promoted by the community-run water systems was an important case for the Platform of Public Communal Agreements of the RedVIDA. Members of the association of community-run water systems from Girardota have travelled to different places in Latin America to share the experience and to promote solidarity, knowledge sharing and collaboration.

Another interesting case study is in Bogotá, where the pressure and previous mobilisation of civil society, environmentalists, and community-run water systems led to the inclusion of an important emphasis on water in the local development plan (RP 26). "Without the previous work of lobbying, mobilisation and awareness-raising, this would have never happened in this city" (RP 26). A big lesson learned from these campaigns in defence of water is that legal actions without the backing of communication and mobilisation initiatives do not have any repercussions or influence on the decision-making that goes into water policies (RP 28). The community-run water systems from Bogotá formed their association RETACO in 2010. This association was a product of the mobilisation and political process inherited by the Campaign for the Water Referendum. RETACO managed to put some pressure on the Bogotá local government to discuss the issue of water. The inclusion of water as an element for environmental, urban and land planning was a great achievement for the community-run water systems who carried out communication and mobilisation activities. Assemblies, public audiences and workshops were activities carried out to explain to the population the importance of the inclusion of the issue of water in the local development plan. RETACO has also worked on recovering the memory and history of the community-run water systems in the Bogotá area, by delivering workshops "Chocolatiando la memoria" where women tell stories and share their memories about their role within the community-run water systems.

Conclusion

Water struggles in Colombia studied so far have shown that it is necessary to open spaces of confidence and recognition in the same community. The exchange of experiences, the analysis of their own territory and the awareness of the consequences of local actions in other areas are all factors that determine the processes of communication and information. The different water struggles have demonstrated the importance of a more informed society and strengthened the exercise of citizenship and collective action. The awareness campaigns of the examples referenced (the water referendum and the community-run water systems) have used legal mechanisms for the protection of social and environmental rights.

The social mobilisation and participatory practices in communication have contributed to overcoming the indifference of citizens and apathy towards political participation and the use of democratic and legal

mechanisms in the water struggles in Colombia. The participatory approaches to communication for social change in the Colombian water struggles transcend the model of democracy in their own difficult contexts when implementing decision-making processes based on consensus, consultation and recognition of the different social actors in the debates about the water conflict. The Campaign for the Water Referendum and the organisation process of the community-run water systems highlight a new chapter of environmental social movements in Colombia. Such case studies are also important for what they reveal - a growing opposition to and questioning of the development model promoted by the government. Awareness of the affected communities has been possible through participatory practices of dissemination and sharing of information and experiences.

This new chapter of Colombian environmental social movements is being built by a wide array of actors of civil society who are taking actions resisting the implications of the environmental conflicts through participation, communication practices and mobilisation. Due to the difficult contexts of violence, repression and difference of interests in the conflicts previously mentioned, the communication practices gain enormous importance and become a leading step towards the development of social movements in Colombia and Latin America. The water struggles have been an exercise of democracy, resistance and solidarity in Colombia. They have also raised wider questions about the ownership of other natural resources, common goods and human rights that are now central political issues in the country.

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Flows, Locomotion, and the Wild West: Mobile Participation through North Dakota's Oil Boom

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This paper highlights rhetorical fieldwork on Amtrak's long-distance trains, turning specifically to traveling on the Empire Builder as it passed through North Dakota's oil boom in the summer of 2012. I examine the train as a public modality in which mobile publics engage in the legitimating logics of continued oil extraction's spatial production. This mode of engagement, in which passengers pass over the oil boom and others use it instrumentally to enter in and out of the boom, highlights constitutive aspects of communication and transport. I detail how interactions occurring within the train space nurtures a sense of excitement, where participants treat the externalized landscape outside of the train as an emptied, instrumental backdrop for economic development. After detailing the ontological and economic mobility encouraged in this public modality, I conclude with implications for extending how scholars conceive of public participation in environmental decision-making.

Keywords: Fossil Fuels, Public Participation, Environmental Decision-Making, Modalities, Rhetorical Practices

Introduction

The Bakken formation in the Williston Basin of northwest North Dakota – as well as parts of Saskatchewan and Montana – is the largest source of recoverable oil found in the United States since 1968. Discovering the subsurface formation in the early 1950s, the region has flirted with potential booms, but surpluses stalled in the first round and, though a second boom occurred in 1973 after the OPEC embargo, expectations were higher than output. In that the rock formation is particularly deep and uneven, technological innovations had not yet made oil extraction in the region financially feasible until recently, especially since around 2008, with the widespread implementation of horizontal drilling and hydraulic fracturing. While estimates vary, it is clear that North Dakota has become a major player in energy futures projections and metonymically holds promise for a greater focus on domestic oil production (Konigsberg, 2011). While the state also invests in natural gas and wind, it is oil that has pushed North Dakota into the energy nexus spotlight (Anderson, 2009). Amid the developing oil boom, an influx of labor and capital interests are rushing in to populate the region, which remains on the periphery of the arterial flows of transportation throughout the country. While northwest North Dakota remains a difficult state to get in and out of cheaply, particularly by airplane, Amtrak's long-distance train, the *Empire Builder*, passes straight through and, as such, has developed as a primary site for oil workers to travel in and out of North Dakota (Boyce, 2012).

On the *Empire Builder*, the contemporary traveler passes through North Dakota and its current oil boom. During the summer of 2012, I rode the *Empire Builder* between Milwaukee and Seattle, a trip that lasts close to 48 hours. The spatial practices on a long-distance train, namely in the social spaces such as the

lounge car and dining car in which people sit randomly with others, enables the possibility of engagement between public-strangers. In this essay, I examine the particulars of the train experience, which includes the public engagement within the train, the relationship to the surrounding environment, and the forces at play within relationships between the two. In the public act of moving on the train, these spatial practices validate ongoing oil extraction.

The concept of public modalities, I contend, helps conceive such public settings as a space for civic engagement in which publics legitimate, through their actions, environmentally destructive policies. Brouwer and Asen (2010) promote "modalities" as a metaphor with which we can theorize the abstract concept of publics. A focus on modalities highlights modes of action: both "ways that social actors engage others publicly and…ways that scholars study processes of public engagement" (Brouwer & Asen, 2010, p. 16). That is, part of the modality metaphor is a reflection on metaphors (like spheres and screens) themselves, in that our linguistic choices are modes through which we think and underscores the approaches we take when studying "publics": "different *manners* or *ways* of constituting publics matter" (*Ibid.*, p. 23). For instance, Pezzullo and Depoe (2010) highlight the underutilized modality of oral history to angle their study on nuclear culture and vernacular discourses. The emergent texts of rhetorical field methods (Middleton, Senda-Cook, & Endres, 2011) similarly address blind spots in how social actors engage and how researchers engage with that engagement. The "mobile publics" ephemerally constituted on a train are an unconventional mode through which to engage how citizens authorize processes of environmental decision-making.

An analysis on this moving train highlights people's experience of the oil boom (the tourist traveling through it) as well as those that come to populate that boom, or that legitimate these extractive efforts through their transitory, displaced practices (the migrant laborer). In such touring and migration – in the mobility of the publics engaging in this space – the macro-level context of material, spatial practices and environmental decisions come to the forefront. That is, actions and decisions made in place – within the geographic location of North Dakota – are implicated by and act upon a series of mobile flows, of spatial trajectories that cross-cut, and constitute, such place-based localities. Be it corporate interests flooding into the region, energy discourses legitimating an influx of domestic production, the development of technology, touring practices that highlight surface engagements with places, laborers entering the region from other, often neighboring states, or the economic climate that encourages such workers to relocate, environmental decisions pivot on a series of intersecting interests and movements, and "the public" is often similarly mobile. Expanding the sites we consider as citizen involvement and public participation point to the multiple forces at play that legitimate policy decisions in terms of further environmental destruction.

In this essay, I argue that engaging with the mobility of publics foregrounds the persuasive appeal and perpetuation of oil extraction. To that end, I offer a rhetorical analysis of my own mobile participation traveling through this physical terrain and engaging in these spatial stories, foregrounding, amid multiple flows circulating around oil extraction, those flows specifically prevalent in this modality. I first situate my broader participant observation on Amtrak trains to consider the train as a mode of public engagement. In that "public modalities" also implicates the modes through which researchers examine public engagement, I next turn to rhetorical field methods on the train as a way to engage these "mobile publics". Space, place, and mobile bodies function in terms of legitimating practices: how the moving body's "rhetorical practices" (Senda-Cook, 2012) participate in legitimating an (at least seemingly) mobile, flattened world. The analysis considers the ways in which publics are involved in a mobile ontology, or everyday bodily engagements of moving through spaces, and labor mobility, or the bottom-up flow of labor that sanctions environmental policy decisions. To conclude, I highlight how our metaphorical imaginaries and methodological sites – our modalities – influences how we consider citizen involvement. Studying a mobile space of interactions – Pezzullo's (2007) "mobile theater" – points researchers towards the mobile aspects of all public participation and questions our place-based assumptions.

Train as Public Modality

For two weeks in the summer of 2012, I was a participant observer onboard long-distance Amtrak trains spanning the western half of the country – traveling all of Amtrak's long-distance routes in the American West, save for the *Southwest Chief* and the *Texas Eagle* – noting passenger interactions such as how the shifting landscapes acted as an impetus for conversations. This essay highlights one leg of that trip, specifically my participant observation in the lounge car of the *Empire Builder* from Milwaukee to Seattle. The long-distance rail lounge offers long windows and chairs either facing these windows or turned at a diagonal angle, as well as tables that seat four. Amtrak, through the construction of this space, encourages passengers to leave the isolating architecture of the coach seats and sleeping cars and to enter the lounge car where they might experience enjoyable, transient landscapes and develop conversation. It is in this space that stranger interactions most often occur in long-distance train travel. Here, people engage in a social setting of various publics, and the "internal" interactions on the train are at least partially directed by the "external" landscapes that the train passes through. On the *Empire Builder*, common northwest passengers such as retirees and other tourists interacted with those circulating in and out of northwest North Dakota's oil boom.

The train reflects a world of mobile practices: the flow of resources and commodities, the flow of bodies, the modernist travel via the train (Schivelbush, 1986), and the discourses that legitimate the need for such flows in order to perpetuate economic flows. With the main part of oil development running between Stanley, ND and Williston, ND, two stops along the *Empire Builder*, the Amtrak train is a key pivot point for the flow of people to enter and exit as transient and (semi-)permanent laborers, the only mode of interstate transport that made sense for these passengers. The *Empire Builder* is experiencing increased traffic in and through North Dakota overall, and expects to continue so with the boom (Boyce, 2012). Amtrak, in other words, functions instrumentally as a means for entering a space with jobs available. Those out-of-work and those seeking fortunes are encouraged to travel within the West to a space offering opportunities. North Dakota, in other words, is a persuasive appeal because of the lure of capital, and laborers, as active agents in capital formations (Herod, 1997), flow into the area and enable expanded capital accumulation (Harvey, 2001).

This essay's rhetorical analysis on the *Empire Builder* follows the travel of labor coming in to enact changes in North Dakota. In other words, the train is a key modality from which to observe the world of mobile, infrastructural development around continued oil extraction, and the physically mobile people that legitimate that continued development. In this way, the train as public modality features aspects of other metaphorical constructs of "the public" (Brouwer & Asen, 2010) and opens up the ways we interrogate publics and spaces. "Networks" and "webs" highlight the ways in which multiple publics intersect, with multiple perspectives (*Ibid.*, p. 6); "publicity" highlights "the movements and flows of peoples, technologies, and systems that characterize the contemporary conditions of globalized life" (p. 9). While Brouwer and Asen (2010) critique this view of perpetual movement as masking sedimented norms, an emphasis on networks and circulation also counteracts a concern that "spheres" suggest static notions of publics in contained spaces. Modalities can highlight the spaces or spheres of discourse, but also point to the ways in which modes of action highlight their permeability (Pezzullo & Depoe, 2010), important foci to locate in our methodologies.

A Mobile Method: Embodied Rhetorical Practices

Here I develop a mobile field methods approach, or the ways in which a localized participant observation needs to consider how the spatial practices implicate and are implicated by other points that cross it. My methodological argument is twofold: one, that the mutually constitutive elements of transportation and

communication construct a subjectivity that encourages a particular sense of place among the train passengers; and two, that the space of the train, and utilizing rhetorical field methods for traveling on it, can help us examine one context in which mobile flows implicate place-based actions.

This essay argues that transportation and communication are mutually constitutive elements, evident in the seeming "non-place" (Augé, 1995) of the long-distance train. While Carey (1989), Czitrom (1982), and Schivelbush (1986) highlight the time of the telegraph and railroad as the separation of communication from transportation, Sterne (2006) reminds us of how each constitutes the other, or how the separation of symbolic communication and infrastructural communications is a misleading separation. Wanting us instead to attend to what each *does* instead of what each *is* (p. 126), Sterne (2006) conceptualizes communication "as organized movement and action" (p. 118), transport as highly constitutive (p. 125), and both as an "intertwined process – as a massive assemblage of organized movement in space" (p. 119). A mutually constitutive – as well as mutually instrumental – conception of communication-transport highlights the persuasive function of both in terms of mobility. Namely, the "massive assemblage" of both transportation and communication point to the utopian promise of instantaneous flows of information (Peters, 1999) and the progress narrative of forward movement.

In addition, McGee's (1990) text as context suggests that the traditionally conceived "context" is not mere background but the very *process of constitution*. One discipline's instrumental, abstracted context (transportation, or the environment, for communication; communication for geography) is another discipline's constitutive element. In rhetorical studies, the focus on the function of discourse suggests a need to consider the agentic forces of not simply human actors but also of architecture and of the land, and how power relations between these three "actors" can silence the agency of some people and often of land. I argue that the mode of the train, where social actors engage with the land as instrumental, is rhetorical, encouraging a sense of place *in* the train and an occularcentric relationship to the space *outside* of the train.

The modalities of engaged experience opens the critic to embodied rhetorics. Pezzullo (2007) commendably points beyond the directed movements of touring or mobile spaces, be it walking, busing, or virtual tours, to consider how, in each medium of motion – each modality – we are embodied in numerous, open-ended ways. For example, in her study of toxic tourism in San Francisco, Pezzullo (2007) describes walking as "an inventive effort to create a greater sense of *communitas* and serves as *an act of mobility* [emphasis added] that attempts to negotiate social critique" (p. 135). Indeed, it is through participant observation that a rhetorical critic can examine such embodied means of (mobile) persuasion and the open-ended interpretations that develop when we open up our concept of the text.

Rhetorical field methods (Middleton, Senda-Cook, & Endres, 2011) highlight the importance of this embodied experience for two reasons: one, for the researcher to be attuned to new, otherwise missed, sensorial appeals to emotions (Senda-Cook, 2012) and (democratic) spaces for change (Pezzullo, 2007); and two, to be attuned to "emergent" texts otherwise inaccessible, or, to note "the importance of cultural performances unrecognized by mainstream culture and, in the process of interpretation, [to] offer a record of them" (Pezzullo, 2003, p. 350). My analysis points to the persuasive function of *emptying space* through place-making strategies. That is, on the train that passes through, an embodied sense is shared within the train, an occularcentric relationship to outside the train is nurtured, and that double level of engagement encourages communicative interactions that heighten a particular sense of place among those touring through it, or laboring "through" it, in order to satisfy instrumental, capitalist desires not tied to this particular place. In conversations of capital accumulation, and the visual evidence for that enactment perpetually passing by our lines of sight, North Dakota serves as a mere backdrop for economic activity.

That is, a sense of place occurs from within the train, in relationship to the emptied, spatial, "non-place" reinforcement of the land one passes through. The "non-place," as coined by Augé (1995), describes

places that are constructed to be non-entities, way stations between places endowed with meaning. In de Certeau's (1984) formulation, the commuter train and its "railway incarceration" is the ultimate non-place: "an ethnology of solitude" (Aug**é**, 1995, p. 120) where the commuter experiences a straight line from Point A to Point B without any regard for the landscape passed over or the other commuters traveling along. This incarcerated space acts as a foil for de Certeau's (1984) pedestrian who, constantly mobile, produces meaning in and through her or his creative practices. However, I argue that the space of the *long-distance* train cultivates a sense of place *within* the train. In the public spaces of the lounge and dining car, passengers come to engage in a pleasurable, interactive, constitutive experience in the realm of citizen involvement.

This mode of travel animates public engagement that, in the North Dakota context, encourages actions upon the emptied landscape of the state, ready for capital efforts to inflect meaning upon it: that is, to pump oil for economic gains. An engaged focus on these constructed places of solitude points to the relationship between space and place, and between people and entities, locales, and resources imbued or stripped of meaning. The mode of the train, and the emergent rhetorics that develop in this public modality, incurs an embodied experience in which the passing landscape becomes an opportunity to imbue a mobile meaning to it: either labor entering to imbue economic value or an ontological, mobile detachment from the agency of the land.

Through an Oil Boom

This section offers, as a starting point, a way to engage with a mobile public modality. While staying in the lounge car through North Dakota and Montana, I interacted with a number of passengers involved in the boom, conversing with many, who in turn conversed with many others and would point out who on the train were circulating in and out of North Dakota, and what was their backstory. Analyzing the public modality of the long-distance train highlights two aspects related to environmental decision-making and citizen involvement. First, the ontological sense of place in a world of mobile flows heightens both the naturalization of oil development for the tourist and the excitement of that development for the mobile worker. Second, labor mobility grates up against place-based assumptions when conceiving of citizen involvement. I offer an analysis using rhetorical field methods to illustrate these two mobile concerns for those interested in environmental decision-making and a move away from a fossil fuel economy.

Ontological Mobility: Train Rhythms

When Lepecki (2006) argues that mobility is modernity's ontology, he in part suggests that economic necessities construct a mobile subject into its processes of production. The ontological sense of being in a mobile, oil-dependent world is now often taken as a given and underscores many people's daily rhetorical practices. Technologies of mobility (cars, mobile phones) are part of the everyday, mundane practices of subjects embedded in this fossil fuel culture. The train experience, while not in itself an everyday experience, extends the mobile rhythms of the everyday that reproduces social space (Lefebvre, 1991). In addition, the train as public modality brings together a mobile public. This public interacts in an agentic context, in which the moving train constitutes the form of conversations and reinforces the mobile subject as detached from the agency of the land outside.

Riding through North Dakota brought together multiple people, many strangers, into close proximity in which the oil boom provided the context for interactions. Oil derricks, mobile home encampments, and other signs of infrastructural development suddenly came into view against the largely flat region of the North Dakota plains. These rolling plains offered an expansive sense to the general visual scene that highlighted more clearly the sudden image of an oil derrick, or the passing of a mobile home park. Moving

with the rhythms of this mode of travel and social engagement clarified the constitutive role of rail transport today, particularly as it relates to environmental and capital interests around resource development in that trains often pass through not simply the backyards of homes but the "backyard" of industrial capital. How were particular interests engaged, and what sorts of things were perpetuated and encouraged in potential contrast to environmental issues?

While passing through the Stanley-Williston corridor at a table in the lounge car, I was joined by two Canadian men traveling to Williston for a real estate offer, as well as a third, elderly man who was not entering North Dakota but had experience in the oil business. The two Canadians worked at an insurance company in eastern Canada, but were traveling out to North Dakota on a separate investment. They boarded the train in Chicago after driving overnight from Easter Canada. The elderly man sitting next to us had spoken with the two Canadians before. He had experience in real estate and oil development in California, New Zealand, and the Texas-Oklahoma region, and shared these stories as a way to relate to what we were seeing outside the train, and what the Canadians were about to experience for the first time. Such spatial stories reflect upon travelers' past experiences with oil. On long-distance train travel in general, these heighten the feeling of "authenticity" provided, or the original experience that hearing –and sharing – such stories provides (see Senda-Cook, 2012). These narratives also include a sense of agency, in which people share their own past experiences in a contemporary setting that reflects the further development of similar actions.

As we passed through visual markers of the developing oil boom, the three men shared their projections of the current boom, in relation to what we passed by. Passing through northwest North Dakota, a viewing passenger would take in a perpetual film roll of moving images: the great plains of North Dakota passed by, and suddenly newly constructed homes crossed into view. Once we passed housing projects, often referred to as "man camps" in that they are mobile home encampments housing mostly male oil rig workers, the elder gentleman stated, "Oh, here's some of the glamorous housing, we haven't seen the housing yet." The three began to discuss the state of housing in relation to seeing it and projecting its future growth. One Canadian commented on how the new developments were little boxes, while the two of them were getting in on the ground floor of more developed, and profitable, arrangements. The temporal and spatial rhythm of the train, passing right by the developing infrastructure of mobile homes, was not merely the backdrop of the conversation, but both dictated its progression and stood in as an argument for each of the men's excitement.

And the two Canadians grew increasingly excited over the persuasive appeal of the developing landscape. When I began to take pictures, they too expressed a desire to capture pictures so that they could document visual proof of the boom to people back home. This emphasis on documenting visual proof reflects the history of boom cultures as well as general appeals to western travel and settlement (see, for instance, DeLuca & Demo, 2000). In traveling through the space of North Dakota, the Canadians wished to capture its rhythms, or put in place visual evidence that things were happening. Specifically, they were drawn, not to the beauty of the landscape, but to the infrastructure popping up throughout the landscape. As one documented the landscape, dotted with oil derricks and other signs of infrastructural development, the other, smile beaming, lyricized along with the rhythm of the locomotion: "oil oil oil oil oil!" he chanted. The turn of the wheels, passing through this landscape of oil development, matched the perception of a temporal progression. Like our movements through the landscape, the two men projected the progression of the industrial development of North Dakota and, hence, of making money off of it.

The table behind us also conversed about the passing landscape, especially the tankers, trucks, and piping we passed by, discussing how such infrastructure transported the oil, stored the amount that cannot get transported because of the lack of infrastructure, and stored the tremendous amount of frack water (hydraulic fracturing) that accumulates through the process. One such conversational prompt,

around the process of developing infrastructure, occurred when the train traveled between Stanley and Williston and we passed by a couple dozen tankers in nearly a full circle. One traveler commented on how their idling is a necessity, as there is just not enough infrastructure to move the oil. The Canadians asked me if I got a picture of the idling, semi-circle tankers and were disappointed when I said no. They expressed excitement over the tankers as a symbol of *excess*: that if we were seeing more oil extracted than could currently be moved, it was merely a matter of time before more people like them came into North Dakota to develop it, investments becoming increasingly profitable. Their talk about the passing landscape, as well as their desire to document its development, pointed to how the train travel moved us through the proof, and desire, of a mobile economy developing. In the next section, I consider how migrant, mobile laborers, boarding the train, enacted this mobile economic development.

Labor Mobility: The Circulation of Interested Publics

The promise of "making it" was palpable all along the train ride. In response to the look of one of the housing encampments, the following discussion took place:

> Elderly Man: [Joking] Well, that's as close to prefab as you're going to get, let's throw them on a trailer, and-
>
> Younger Canadian 1: That's exactly what they're doing here. The houses themselves don't really have value, it's just the crazy yields.
>
> Elderly Man: Well, I tell ya, make it while you can.

As elaborated in the previous section, the Canadians were encouraged by the bird's eye overview of the housing layout juxtaposed with the oil development. In it, they saw justification for their own investment in a land they had never seen previously. Spurred on by the lure of capital wealth, the traveling through the landscape, before ever stepping foot onto it, excited them in terms of the justified potential of investing this spatial horizon with capital time: a projection of wealth accumulation into the future. For the elderly man, who had been down similar roads before in the real estate-oil development nexus, also saw in the landscape a projection of *kairos*: now is the time, so "make it while you can." This exchange highlighted the labor mobility entering North Dakota. The mobile publics on this route, without a sense of North Dakota as a place imbued with non-economic value, entered into this space as a means towards enriching their lives outside of North Dakota. While the previous section considered how the mobile modality of the train reinforced a mobile ontology, this section explores examples in which mobile laborers enter into a place and enact its changes around an economic imperative.

The train brought together capital-seeking adventurers and the touring practice of returning to a (sense of) home (Pezzullo, 2007), or temporarily leaving one behind. Perhaps the most interesting aspect of traveling the *Empire Builder* was sitting at one of the tables that seats four with a Washington State entrepreneur doing a phone interview for a national news outlet, talking about his experience opening up a business in the Williston Basin area. The reporter seemingly asked the entrepreneur about his long-term plans. The entrepreneur responded, "What's the definition of 'staying'?" and followed up by explaining how this move into North Dakota was decidedly not permanent. While thinking of staying for a few years, and then either passing on the business to a relative, a managing partner, or relocating it back to Washington, his home was in Washington. It is where he grew up, where his permanent business was located, and where his family – his wife and children – were and would remain. Indeed, he was taking the train for his first home visit since he left seven weeks prior, mainly because his wife was feeling overwhelmed taking care of the children and requested his (brief) return. Pezzullo (2004) defines the tourist as, in part, one that has a home to return to, and later complicates this perception as including a *sense* of a home: "home is what we construct through practices and conversations" (Pezzullo, 2007, p. 34).

However, even in this more nuanced understanding of the concept of "home", it is clear that the entrepreneur defined his home as *not North Dakota*. In this way, the entrepreneur was taking an extended tour of North Dakota, similarly taking advantage of the kairotic moment and expanding his business opportunities "while [he] can." In this way, North Dakota acts as the backdrop, the canvas on which he enacted his role in capitalism, blurring the line between tourist and laborer invested in a place.

The Canadians' plans were not necessarily long-term but, as the elderly man advised them, they were trying to "make it while [they] can." They discussed how their investment in property involved a four-year guaranteed lease, something they needed to sign to encourage the stability of efforts at building the housing development in the area. That is, a timetable was placed on their investment: an investment in the land's monetary valuation, not in a place. Furthermore, when the Canadians hoped to document proof of the boom, we see the efforts of these displaced nomads, enthralled in capital flows, wanting to entice others to uproot themselves from one location, no matter how far, and make their way into a new place, and to contribute to its development. The visual proof was an argument to invest the area, open for business, with their own dreams, manifest in the potential of North Dakota: in investing it with a sense of place.

Others in the lounge discussed the allure of the housing market, but especially the Canadians. One of them identified means of protection as a reason for wanting to document videos. In relation to the potential concern for not making money off of their real estate investment, they wanted to document that this boom was real so that people would desire to populate it – that it was really happening and there was money to be made – and, by asking me to send them pictures, they would have their protective cover. Before I could answer if I would send them any pictures, one of them cried, "You're hired! We'll pay you in oil!" In this instance, he mobilized the land to equate oil with wealth and value, and the projection of constituting the landscape around this newfound wealth.

The entrepreneur who was on a phone interview pointed to the numerous points of allure for nomadic workers as well as discussed the other flows developing around this influx of people. Coming out to North Dakota after hearing "there was a pretty large need out there" for general services, he discussed everything from the lack of food services – in relation to the influx of workers – to the infrastructural work booming in Minot (the largest city in the area, about 50 miles east of Stanley), to describing Williston as the "Wild West." He also described people who thought they could come through with a trailer and make a million bucks, versus those like himself who were more legitimate; quick bucks, though, were echoed by the elderly man engaging with the Canadians. He offered that, if you simply have the assets or the equipment, you could make decent sales in Williston. Many talked about the hiring signs in all restaurants and the money to be had oil rigging or trucking, and I either briefly spoke with some of these workers or spoke with others who pointed out the conversations they had with these men. In this context, the Wild West is in North Dakota.

Developing somewhat on the train, and popularly, is a perception, in the least, of "the dark side of the boom" (Collin, 2012; also see Ellis, 2011) by way of an influx of lawlessness into North Dakota. This feeling offers two points of interest: one, the sense of increased violence and unruly behavior from outsider influences; and two, that the train space highlighted this aspect: of "external" flows acting on the "internal" cohesion of North Dakota by bringing in single young men and the violence and prostitution that has followed their circulation. Collin's (2012) article, writing on North Dakota's "dark side" from the vantage point of Minnesota, points to how people and commodity flows that constitute all places are not simply tied to a singular location, and in the North Dakota oil boom, many are coming from nearby states like Minnesota. The boom attracts family men who define their sense of home in these other states. On my train, for instance, an Oregon man was visiting home to see his son in a sporting event. It also attracts migrant laborers that do not have a sense of community in North Dakota – if have a general sense of dis-

placement – and, while I only saw men entering and exiting North Dakota, bused-in strippers (Collin, 2012) and relocating families (Boyce, 2012).

One passenger, temporarily leaving North Dakota to visit family before going back to work, admitted to an increase in purported "debauchery" when a female theological student expressed concern that evening while traveling through western Montana. However, he added that he was not about to place judgment, reasoning that, while there were occurrences with suspect morality, he was not invested in their implications. He stated bluntly, "I'm a capitalist." His reasons for spending time in North Dakota were justified as merely instrumental, and in that divestment from his surroundings, felt that others were to do what they wished and, though there was exploitation among the women in the area, he fell back on the rationale that they were also there to make money. The presence of religious passengers – the theological student, a young man heading to Alaska before summer work began at a Christian camp, a woman praying to God to know if she should move in with her grandmother –was readily apparent over the course of the *Empire Builder* route. Tellingly, a discussion between potentially competing values of economy and spiritual morality did not develop until evening after we passed over North Dakota, leaving behind the visual excitement of the boom, or the mode through which a moving train envelops a passenger into the spatial stories as they relate to the passing visual landscape. Public modalities are never static nor universal (Brouwer & Asen, 2010, p. 19), but certain discourses may be heightened amid particular modes of visibility.

Conclusion

In the summer of 2012, I spent a day engaged in the interactions occurring on Amtrak's *Empire Builder* as it passed through the outside land of North Dakota, constructed as an outside. That is, within the logics of capital mobility, people move, enacting a politics of displacement and its implications. There was an excitement that I could palpably feel, not just from the people who were looking to make money off of oil, but also from myself. North Dakota offered its own excitement as reflected in the act of touring via trains in general; on each route, it is fun to engage with people tied to the landscape in their own mobile encounters. The train's experience with the landscape instills a sense of the "place" of the train, and so the "space" of the landscape. The migrant laborer passenger reflects in orientation if not in scale the "passing through" character of the tourists passing *over* North Dakota. While I have been on trains with people coming from or going to North Dakota, the influx in traffic could primarily be attributed to those that pause in North Dakota, briefly in my documentation and perhaps more permanently in others (Boyce, 2012), to imbue its "empty space" with valuation: meaning, money, extraction. The tourist between North Dakota passes over; the migrant laborer passes through; the train constitutes its spatial stories.

The future of energy and its implications is not simply publicly deliberated in traditional forums, but also manifests in public discussions and actions in places like North Dakota, in contexts where the allure of continued oil extraction outweighs its dissent. Davies and Selin (2012), looking to competing normativities in public deliberations on the future impacts of energy technologies, ask: "What happens when –as was frequently asserted in the data – publics simply do not wish to respond to the threat of climate change or to change their behaviors around energy?" (p. 130). The lure of a job, the pleasures of commercial touring, the differential relationships to a sense of place and a sense of time: each constitutes part of the context in which policies develop and are accepted. In the chaotic participatory nature of an oil boom, the train joins a collection of people that come together, not to further the dictates of sustainability but, in effect, to sustain the dictates of capital accumulation.

Such modalities of public participation, where "publics" are neither singular nor all of like-mind, adds to the general research area on public participation in environmental decision making. That is, if the *emphasis* in

public participation is not the institutional site as much as it is the process of environmental decision making as it involves publics (Delicath, 2004), then we must also consider how "the public" is a multiplicity, and includes those that come to a place in order to enact a policy decision, as well as those peripheral citizens that tour through such places. In considering the macro-level shifts of global flows, of capital interests in particular, and of mobility in general, we might better contextualize the process of citizen-based, environmental decision making within a world of material, spatial practices.

Like the space of the train, most public participation venues are detached from the land that is implicated in policy decisions. Callister (2013) argues for the inclusion of the land ethic into public deliberation spaces, and to include the land's agency –such as its temporal rhythms – into the decision-making process and actors' embodied experiences. The train space highlights how places – that which the public participation process is removed from, but also that which is privileged by an environmental standpoint, seeking ways to recreate a sense of place – are implicated, and indeed constituted, in and through the circulation of spatial vectors. It also points to detachment from how the land itself moves, albeit on different rhythms (Abram, 2010), and assumes the sharing of "a democratic politics of space" and the availability of public time (Pezzullo, 2007, p. 23) among a localized group of individuals. While it is important to analyze these spaces – and their constraining proxemics (Senecah, 2004) – this essay suggests that other modes are also important to consider the broader context in which publics are engaged in citizen involvement. The public is not a singular entity, and importantly, the publics that are impacted by policy decisions are not simply place-based; in turn, the locality itself is caught up in a multitude of contextual forces, and not simply the top-down influence of global capitalism. From the bottom-up, mobile stakeholders enact environmental degradation. If energy futures projections are already at five times the level of "safe" carbon output into the atmosphere (McKibben, 2012), such continued dictates have tremendous implications for environmental communication and activism. In other words, for those of us interested in changing course – for the health of lands and those negatively impacted by such capital extraction – we have an imperative to seek out a multiplicity of such emergent texts, and the multiplicity of contexts in which publics reinforce the fossil economy that fuels jobs and mobile lives.

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Hydrofracking in the News: How Media Coverage of Hydraulic Fracturing Shapes Public Discourse About Emerging Energy Technologies in the U.S.

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The news media often serve as a necessary bridge between emerging technologies and the general public. The form and language used by media outlets can significantly impact the public's interpretation of those technologies and how each individual may be directly and indirectly affected. In this project, we investigate the role that print media – namely regional newspaper publications in four states (Texas, Pennsylvania, New York, and Michigan) across the U.S. where hydraulic fracturing (HF) technology is present at varying levels of development in both the technical and political realms – play in shaping public conversations. Using social function system theory operationalized through the Socio-Political Evaluation of Energy Deployment (SPEED) framework, we examine the economic, social, and political context surrounding HF as depicted through print news media to potentially illuminate why public conversation has been shaped the way it has, and why public perceptions can dramatically differ between states.

Keywords: hydraulic fracturing, shale drilling, risk perception, media analysis, technology deployment

Introduction

With energy availability and geo-political concerns over energy security ramping up in the United States, the development and deployment of emerging energy technologies have taken center stage. A modern extraction technology, hydraulic fracturing (also known as fracking or hydrofracking) has allowed natural gas to surface as a potential solution for meeting increasing U.S. energy demands while gaining energy independence, as well as moving away from the most hazardous and harmful fossil fuels, mainly coal and oil. Hydraulic fracturing (HF) is not a new technology; it has been widely used by the energy industry for more than 60 years to extract natural gas and oil from shale rock (Willie, 2011). What is new, however, is the practice of high-volume HF, coupled with horizontal drilling. During this process vast amounts of water, combined with sand and chemicals, are injected thousands of feet into the earth at high pressures to fracture rock in the oil- and gas-producing formations. Sand, or another "proppant," keeps the fractures open and allows the oil or gas to rise to the wellhead (U.S. Environmental Protection Agency [EPA], 2012, p. 5). This technology has provided access to deep, abundant natural gas deposits in formations like the Barnett Shale play in northern Texas and the Marcellus Shale in the Northeast. Moving forward, we will focus specifically on high-volume HF in direct relation to natural gas extraction.

In recent years, controversy has erupted around HF, especially in the Northeast. Deployment of the technology has offered economic stimulus for struggling, rural areas (ie. Pennsylvania) and brought heavy industrial activity to urban areas (ie. Fort Worth, Texas). These conflicting impacts have captured the attention of researchers interested in public perceptions of HF (Theodori, 2009; Brasier et al., 2011) finding mixed reactions relative to location, degree of HF development and a region's past experience with extraction technologies. HF has also piqued the interest of news media outlets. In this project, we investigate the role that print media – namely newspaper – plays in shaping public conversations.

In many regions, related environmental hazards have sparked public concern and, in some cases, vehement opposition to HF and the natural gas industry. Claims of well contamination, fish kills, and even earthquakes have been linked to HF activity in several U.S. states. In response, calls for strict regulations have been echoed across the country. What was once an activity solely regulated by the states, is now being examined by the federal government (Willie, 2011).

The ongoing controversy around hydrofracking has fueled a surge of media coverage over the past few years. That coverage serves to shape emerging conversations surrounding the HF debate. Presently, shale gas accounts for approximately 16% of natural gas production in the United States (U.S. Department of Energy [DOE], 2012). That figure is expected to rise substantially in the coming decades (Davis, 2012, p. 179); it is critical to identify and understand public attitudes and actions that can affect policy and regulation. This study addresses how the news media's coverage of HF has shaped public discourse in several states. We characterize the pubic conversations about this unconventional drilling technology by analyzing HF coverage in newspapers from four states (Texas, Pennsylvania, New York, and Michigan) where HF technology is present at varying levels of deployment. Our analysis identifies 1) the frequency of HF coverage and differences between newspapers within a state and between states, with respect to their proximity to HF activity or political centers, 2) the presence of social systems dialogue and their perceived risks and benefits related to HF deployment, and 3) the dominant social systems dialogue presented in the news. We begin by briefly reviewing the literature on media analysis studies, especially in relation to risk perception. Then, we outline the theoretical framework that guides this analysis of HF news coverage. Third, we describe our methods. Fourth, we provide the results of our analysis. Lastly, we discuss our findings in relation to the current literature.

Literature Review

Hydrofracking is a little-studied area of media analysis in relation to the communication of risks. Climate change and the conflicting energy demands of this world however have triggered a swell in related coverage. Expectedly, a great deal of research has been conducted with regards to how that coverage has shaped, and been shaped by, public conversations. Corbett and Durfee (2004) tested public opinion and understanding of climate change in relation to language and content presented by the news media. Gordon, Deines, and Havice (2010) examined volume and intensity of global warming media coverage in a Mexico City newspaper.

The other aspect examined in this study, which is predominant in current media analysis literature, is risk perception. Climate change has found a home in this niche of social science. Some researchers have conducted surveys and interviews to establish perceived risks (Cuevas, 2011; Ford et al., 2010). Others have focused on the framing effects of climate change coverage (Boykoff & Boykoff, 2007; Trumbo, 1996), though this paper focuses on the social systems presented in newspapers rather than on how the news media frames the HF issue. Mass media coverage has been explored in relation to technological risk and how it impacts public opinion (Dunwoody & Peters, 1992; Peters, 1994). However, Tyler and Cook (1984) offer their impersonal impact hypothesis, suggesting that media coverage tends to influence people's

perceptions of risk at the societal level but not at the personal level. Wahlberg and Sjoberg (2000) also argue that media are likely not causal factors of personal risk perceptions, but assert that risk perception may be heightened by increased exposure or availability to the media.

Theoretical Framework

Stephens, Wilson, and Peterson (2008) developed a comprehensive framework to approach socio-political evaluations of energy deployment (SPEED) systems. It was developed with the awareness that there is an increasing need for a "transition in society's energy infrastructure" (p.169) and, despite a growing urgency; the implementation of new energy technologies has been slow. It acknowledges that existing energy systems and emerging technologies are linked and public perceptions influence deployment decisions.

These concepts resonate strongly with Luhmann's theory of social systems, which provides a useful structure for analyzing and categorizing the risks and benefits present in public discourse (Stephens, Rand, & Melnick, 2009). Luhmann (1989) argues that modern industrialized society is constructed of functional subsystems that dictate potential societal responses to the environment. Subsystems include, but are not limited to economy, science, law, politics, religion, and education. Luhmann asserts that society communicates through these subsystems in response to environmental stresses or conflicts (Luhmann, 1989) such as anthropogenic climate change.

Stephens et al. (2008) adapted Luhmann's (1989) subsystems for empirical research in order to examine the social-economic factors involved with the process of energy technology deployment. The revised system categories include technical, economic, environmental, health/safety, political, legal, and aesthetic. Within each of those systems categories are indicators of risks or benefits related to the deployment of an energy technology, such as HF. SPEED offers three possible approaches to apply the framework: (1) policy review and analysis, (2) media analysis, or (3) focus groups and structured interviews with key stakeholders.

To date, the framework has been applied in a relatively limited capacity. Feldpausch-Parker et al. (2013) conducted a multi-state comparative media analysis with respect to carbon capture storage (CCS) technology and assessed media tendency to connect its deployment with climate change mitigation. Fischlein et al. (2010) lead semi-structured interviews with policy stakeholders to provide a comparative assessment of wind energy deployment across four states. Stephens et al. (2009) examined wind technology through media analysis in three states, including Texas, finding a correlation between frequency of newspaper articles focused on wind energy in a state and the degree of controversy around the technology. This observation is supported by Allan Mazur's (1981; 1990) argument that the amount of media coverage surrounding a specific scientific technology is directly related to the level of public opposition against that technology.

As Stephens et al. (2009) assert, patterns of deployment "cannot be explained simply by resource availability and location" (p.169). By using newspaper articles to examine public and political discourse, we can develop a better understanding of the driving forces behind technology deployment trends. It is then possible to pragmatically apply such insight to future deployment and policy implementation (Weaver, Lively & Bimber, 2009).

Methods

The conversations surrounding hydrofracking were investigated by analyzing three newspapers published within each state. Articles were selected from the (1) largest regional outlet based on circulation; (2) state capital's newspaper; and (3) newspaper in region most affected by HF. Under these criteria, we selected

The New York Times, *The Times-Union* (Albany, capital) and *The Post-Standard* (Syracuse, regional) in New York; *The Philadelphia Inquirer*, *The Patriot News* (Harrisburg, capital) and *The Times-Tribune* (Scranton, regional) in Pennsylvania; the *Houston Chronicle*, *American-Statesman* (Austin, capital) and *The Dallas Morning News* (Dallas, regional) in Texas; and the *Detroit Free Press*, *Lansing State Journal* (Lansing, capital) and *Hillsdale Daily News* (Hillsdale, regional) in Michigan. Three academic databases were used to collect newspaper articles: ProQuest, LexisNexis, and Access News Bank. While every effort was taken to ensure the most complete inclusion of articles possible, we were limited by access through our academic institution and while there are no overt gaps in coverage, it is possible that certain articles were not made available.

Coverage was analyzed during a five-year period from January 1, 2008 through December 31, 2012. The start date corresponds with the emergence of the HF discussion in New York State. Articles were retrieved based on searches using a combination of the following keywords: “hydraulic fracturing,” “hydrofracking,” “fracking,” and “shale drilling.” In order to qualify for inclusion, one or more of these keywords had to appear in either the headline or first 200 words of an article. This was in an attempt to ensure that all articles were directly focused on HF technology or a closely related issue (ie. disposal of wastewater or chemical disclosure). If an article merely mentioned a keyword in passing and did not relate to the topic of study, it was eliminated from consideration. All main news articles, features, editorials, op-eds and letters to the editor were included. Articles were downloaded from each database and saved as word documents according to publication name, year, and month.

Content analysis identified the presence or absence of perceived indicators of risk and benefit associated with HF. The core of the coding included the codification of the social systems described by the SPEED framework. A codebook was developed in order to ensure accurate and consistent coding throughout the project. The codebook outlines the seven categories defined in the SPEED framework and sets out clear guidelines establishing appropriate indicators within each category. For example, reference to a HF lawsuit would qualify as a legal risk, whereas if HF is referred to as a “bridge fuel,” that statement would be coded as a technical benefit. Multiple categories were usually present in a single article; a dominant category was also recorded. By doing so, we identified both the scope of discourse through presence and absence, as well as the most heavily emphasized themes in the HF discussion. All articles in this study were coded by the primary author.

Results

Results are organized into five sub-sections: 1) publication frequency; 2) presence/absence of categories; 3) presence/absence of risks and benefits; 4) dominant categories; and 5) dominant risks and benefits.

Publication Frequency

While publication frequency varied greatly, all 12 newspapers reported on HF technology at some point during the five-year period from 2008-2013, resulting in a total of 1,815 articles. Newspapers in New York (774) had the highest frequency, followed by Pennsylvania (590) and Texas (430) and finally Michigan (21) (Figure 1). Differences in frequency also existed within states, where regional newspapers close to HF activity in New York (*The Post-Standard*) and Pennsylvania (*The Times-Tribune*) presented the most articles. In Texas and Michigan, the highest circulating newspapers (*Houston Chronicle* and *Detroit Free Press*, respectively) reported most on HF in the state. In New York, the capital newspaper (*The Times-Union*) published fewer articles (359) than the regional paper, but still contained more than double the coverage of *The New York Times* (171). This distinction was not apparent in any other state.

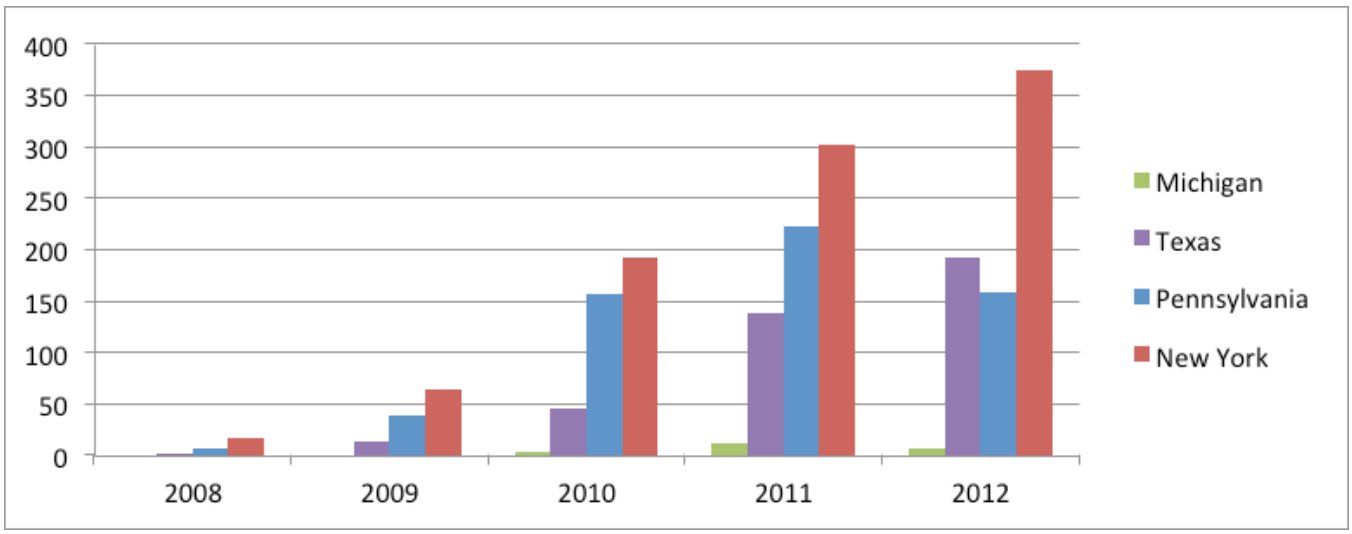


Figure 1. Number of articles reporting on HF from January 1, 2008 to December 31, 2012 by state

As Figure 1 illustrates, coverage was low and inconsistent across all states during 2008 and 2009. New York continued to show the highest rates of reporting throughout the entire five-year period. This is largely attributed to the number of letters published in the state (Figure 2), most especially in the regional and capital newspapers.

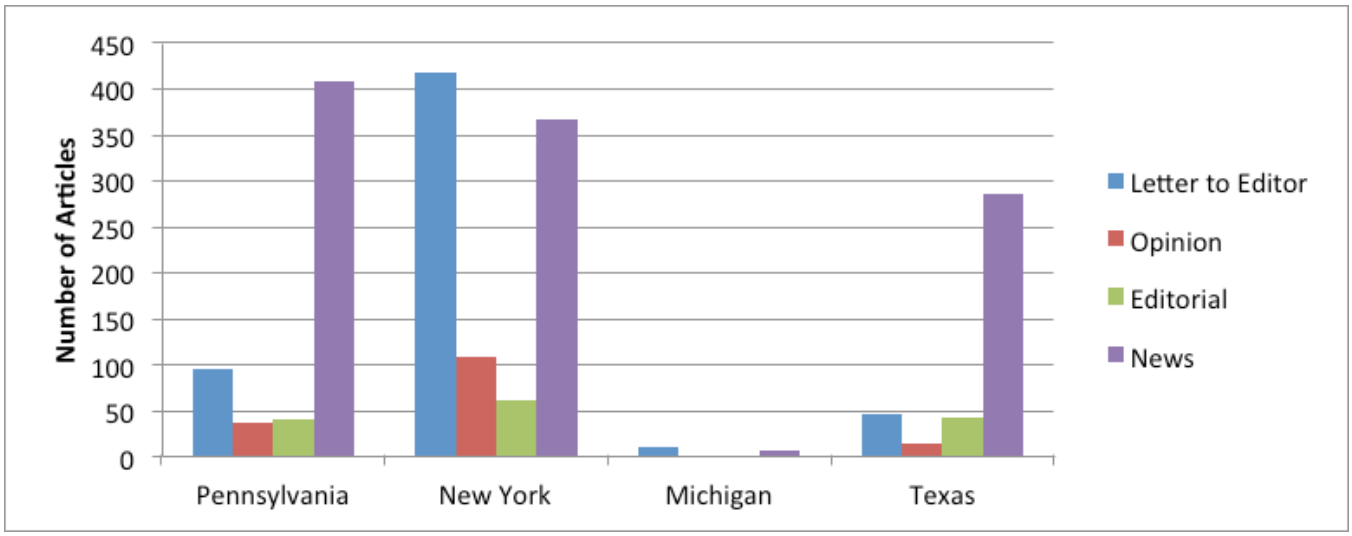


Figure 2. Breakdown of published HF articles by state, reported as number of articles of each article type

Presence/Absence of Categories

Legal discourse appeared most frequently in publications from Pennsylvania and Michigan (23.5% and 21%, respectively) (Figure 3). Indicators in this category included calls for stricter regulation of HF or the drilling industry (including proposed or passed legislation), and also any incidents of drillers being fined for violations. This became increasingly common discourse in Pennsylvania as skeptical newspapers began closely monitoring any HF mishaps.

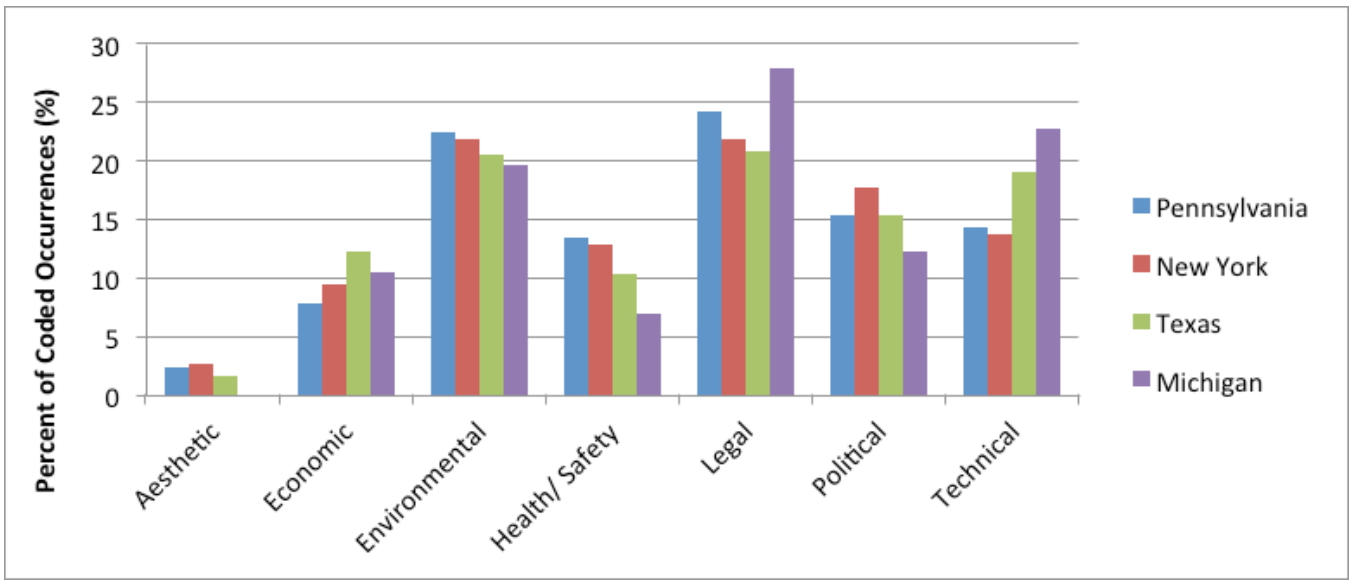


Figure 3. Comparative breakdown of present function systems by state, reported as percent of coded occurrences

Environmental indicators were the second most frequently coded category in Pennsylvania and Michigan. Reference to the threat (or a specific case) of water contamination appeared in the majority of those articles. Wastewater disposal was also an especially common topic in Pennsylvania where the state's geologic profile prevented construction of injection wells.

In New York and Texas, environmental and legal discussions appeared equally accounting for approximately 20% of coded occurrences. In New York there was significant coverage of HF moratoriums and bans – and especially whether bans instituted by towns could supersede a state ruling on allowing high-volume HF to move forward in the state. Discussions about banning HF was virtually absent in Texas coverage. Instead, Texas focused on potential regulatory oversight from the Environmental Protection Agency (EPA). In New York, a great deal of the environmental discourse involved calls for further scientific inquiry into HF and its potential effects. In Texas, media coverage focused on events in the Northeast with frequent references to public water concerns. Air pollution was also a major issue in Texas especially in areas of urban drilling.

Political reporting concentrated on political support or opposition to HF activity and was the third most represented category in New York and Pennsylvania.

In Texas and Michigan however coverage of technical aspects of HF was the third most frequently reported. Often, Texas reports appeared about HF technology being "safe," but also emphasized that poor well construction was more likely to lead to water contamination than HF activity itself (both occurrences would be coded as technical discussions).

Health/Safety issues followed in degree of coverage for all states. This category appeared most frequently in Pennsylvania (14%) and least frequently in Michigan (7%). By far the most common health/safety-related issue was contamination of drinking water.

Aesthetic discourse was consistently the least represented category. Most of the aesthetic conversation that did surface involved concerns about HF noise and fears that rural towns would be turned into "industrial zones" by HF activity. Aesthetic considerations were completely absent from Michigan newspapers.

Presence/Absence of Risks and Benefits

Analysis of the risks and benefits presented in HF discourse in each state reveal mixed sentiment over HF technology, but also consistent trends. There are substantially more instances of coded risks than benefits in the legal, political, environmental, health/safety, and aesthetic categories (Figure 4).

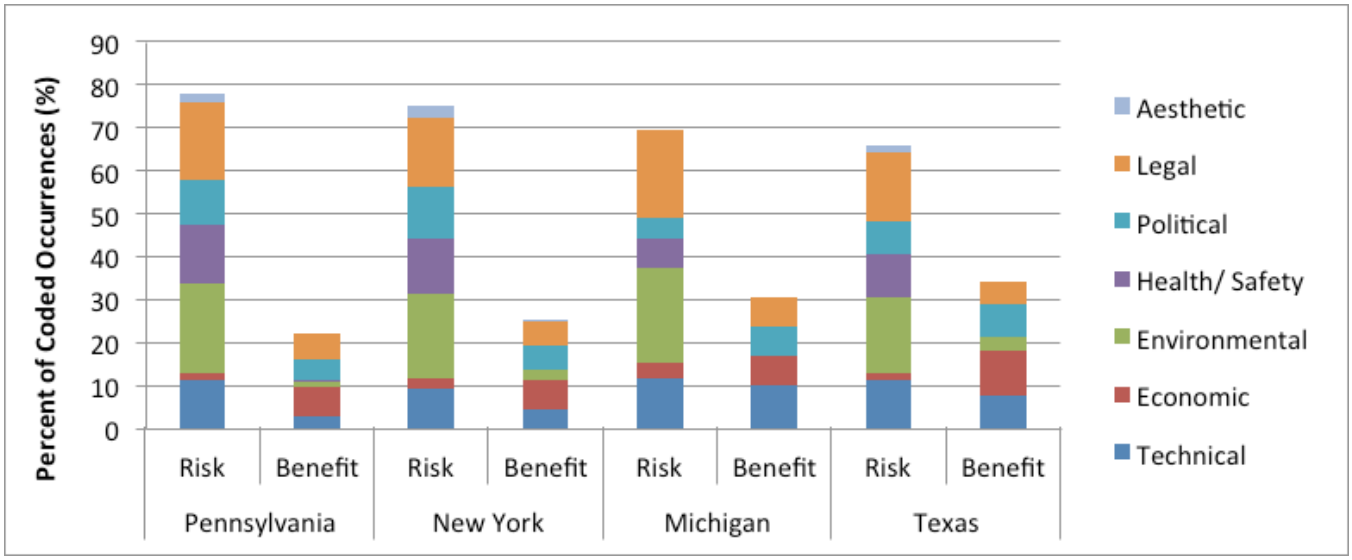


Figure 4. Comparative breakdown of dominant risks and benefits by state, reported as percent of coded occurrences

While coded legal and political risks far outnumbered the coded benefits, these two categories saw the most discussion overall. In all four states there were approximately three occurrences of legal risk for every one occurrence of legal benefit. Again, these risks were predominately focused on HF regulations or oversight. The political category was more varied. New York and Pennsylvania consistently reported more risks (68% and 67%, respectively) such as backlash against lawmakers supporting HF activity and reporting of anti-fracking protests. In Michigan however, political benefits actually outweighed risks. This finding is the result of reporting on drillers' lobbying efforts and connections made between HF and achieving energy independence in the U.S. Political coverage was evenly divided in Texas.

The technical discourse in Texas is also more closely divided between risk and benefit coverage. Conversations included frequent assurances about HF technology being reliable and "safe." HF was also associated with providing a "bridge fuel" for future renewable energies. Alternatively, poor well construction and especially the volume of water required in HF were regularly coded technological risks.

The economic category is the only function system that consistently had a higher occurrence of coded benefits than of risks (Figure 4). Texas had the strongest coverage of economic benefits from HF of the four states. Related coverage included job creation and especially reinvigoration of supporting and surrounding businesses including steel manufacturers and hauling companies, as well as restaurants and hotels. Job creation was by far the most often reported economic benefit in New York, in which the majority of any future HF drilling would take place in economically depressed counties along the Pennsylvania border. In Pennsylvania, while jobs were often reported, improved business opportunities and increased revenue accompanying Marcellus Shale development was the focus of significant coverage, especially in the regional paper, *The Patriot News*.

Economic risks however had a higher occurrence in Michigan and New York, where concerns about diminished property values and repair costs for roads worn down by industry trucks were common fodder for discussion. Again, data was extremely limited in Michigan and only two articles presented economic risks. One article concentrated on the "bust" aspect of the natural gas industry and the other mentioned the decline of property values if groundwater in the area became contaminated.

What little aesthetic coverage did exist was entirely focused on the associated risks. In fact, out of the 1,815 articles, one single occurrence of aesthetic benefit was recorded in *The Times-Union*, quoting a Chinese immigrant who viewed imposing a HF ban as a communist act. "'Even if my house doesn't have shale, I would still enjoy a much improved community environment,'" (Santo, 2012).

Dominant Categories

The legal category tended to dominate coverage across all four states, with the highest rate in Pennsylvania where 35% of coded articles focused on legal issues (Figure 5). At least 27% or more of coverage in the other states was also concentrated on legal topics, such as calls for stricter regulations or chemical disclosure. In Pennsylvania, a substantial segment of articles were dedicated to the regulatory decisions of the Delaware River Basin Commission (DRBC) which set a moratorium on HF drilling in the basin region in 2010. In contrast, New York coverage highlighted policy-driven conversations often calling for a total ban on HF technology. Both governorships instituted moratoriums on HF that were supported and argued against in hundreds of letters, opinion pieces, and editorials. In Texas, the legal focus was aimed much more significantly at potential federal regulations. Michigan's data set was so limited that no strong trend was observable, but reporting included the institution of new chemical disclosure requirements in the state, as well as EPA oversight.

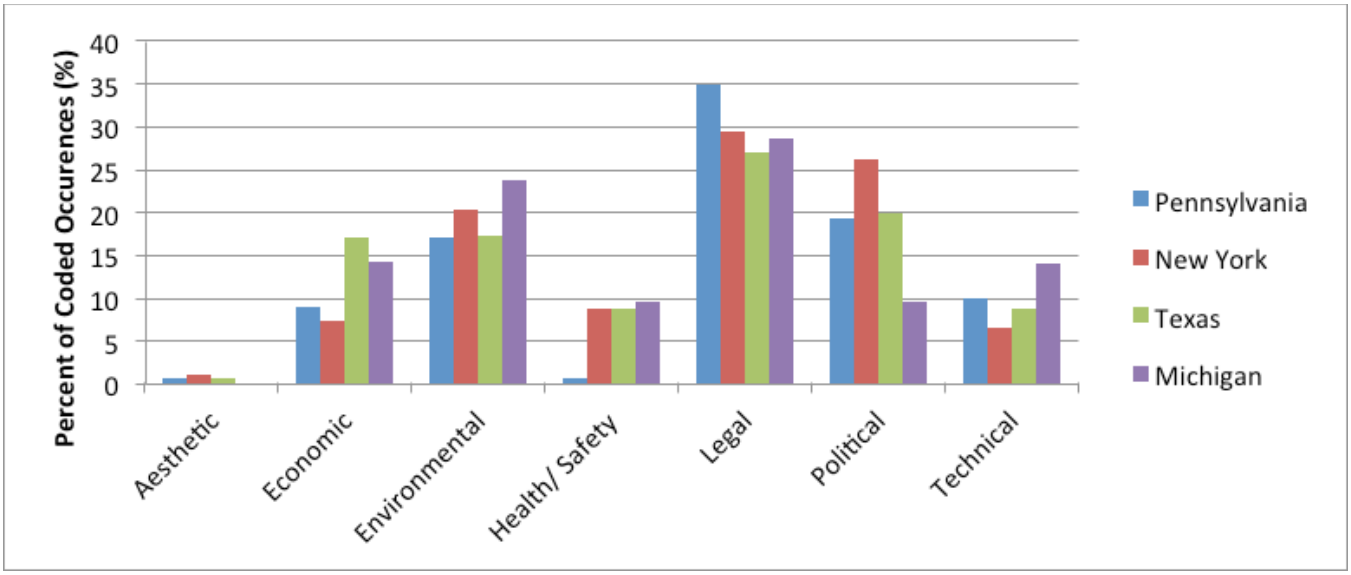


Figure 5. Comparative breakdown of dominant function systems by state, reported as percent of coded occurrences

Political issues were the second most dominant category across New York, Pennsylvania and Texas. Political issues often coincided with legal issues especially in reference to supporting, introducing, or denouncing HF legislation. In New York, a substantial amount of coverage was focused in later years on the lack of progress by state leaders to come to a decision on HF. Letters often indicated New Yorkers skepticism that Gov. Andrew Cuomo would actually rely solely on scientific data to make a decision, as he

repeatedly vowed in interviews. Two governors held office in Pennsylvania during the time period studied. While Gov. Ed Rendell was often touted as a proponent of HF and the natural gas industry, he was not subjected to the same level of disapproval as his successor. Gov. Tom Corbett, who was often labeled a “friend” of the natural gas industry, as the following exert from *The Times-Tribune* demonstrates. "Just like we predicted, Tom Corbett is going to do everything he can for his friends in the gas industry," said Gene Stilp, who led anti-drilling protests during Corbett's inauguration” (Gilliland, 2011). In Texas, coverage was always clear about the position of the state’s administration with respect to HF and energy production. Gov. Rick Perry was often quoted declaring support for the unconventional drilling technique and confidence in its safe operation.

The environmental category received the next highest coverage in three out of the four states. Much of the environmental coverage was supported through letters, yet specific concerns varied to some degree between states. For instance, the disposal of HF wastewater was a major talking point in Pennsylvania, as well as the ramifications of improper disposal in streams and rivers. Those reports were echoed in New York, as were more general concerns about overall environmental degradation and impacts on wildlife. In Texas however, environmental issues centered on water usage concerns. Reporting from *The Dallas Morning News* also included ample coverage of air pollution issues in relation to urban drilling activity.

Health/Safety discourse dominated the most coverage in New York and Michigan. It was most substantially centered on the threat of contamination of drinking water. In Texas, air pollution concerns were often related to health effects and in Pennsylvania, coverage occasionally highlighted a “doctor gag rule” which was meant to resolve chemical disclosure demands while not infringing on industry proprietary rights. Doctors however argued that the law prevented them from being able to divulge necessary information to their patients.

Again, aesthetic coverage received the least amount of reporting and was present in less than 3% of articles in any state. Truck traffic and industrialization of rural towns were the most frequently reported topics. Only 17 articles across all states were coded as having aesthetic dominance.

Dominant Risks and Benefits

There were few dramatic differences when examining presence of risks and benefits versus dominant risk and benefits, with the exception of a few noteworthy findings. In New York, the dominant legal discussions were more profoundly focused on risks rather than benefits, whereas in Michigan, there were no articles addressing any legal benefits of HF, or technical risks for that matter. In Texas, environmental risks were actually emphasized more significantly, accounting for 91% of environmentally dominant articles (Figure 6). Dominant political coverage in Texas shifted as well, with 57% focused on political benefits. There were no significant changes to risks and benefits in Pennsylvania when comparing dominant coverage versus presence.

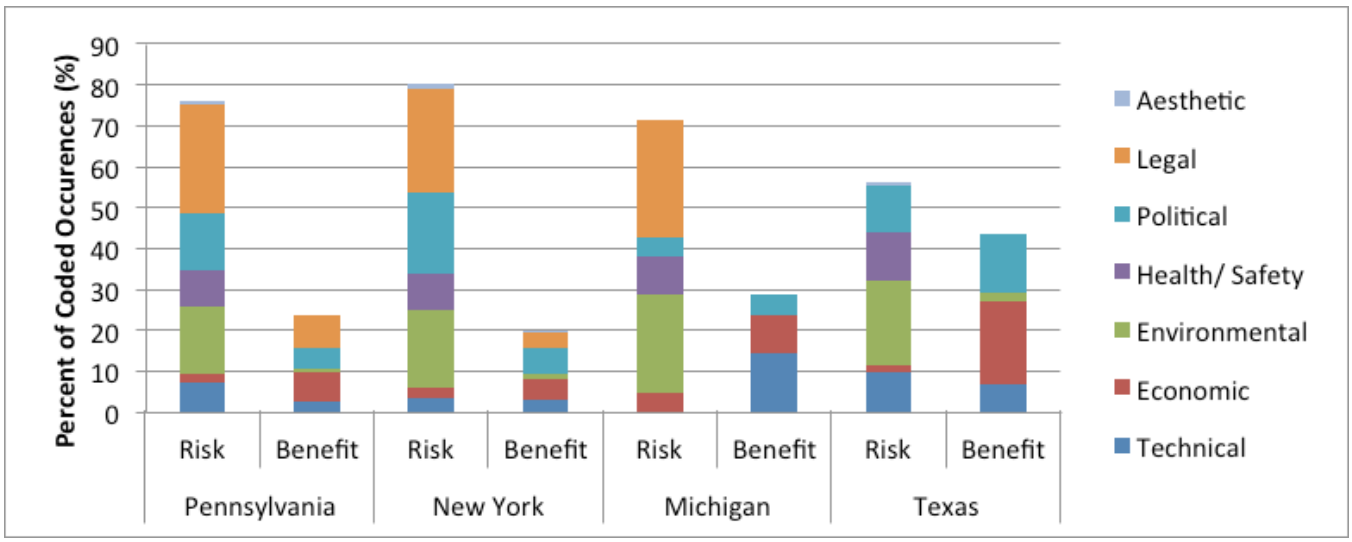


Figure 6. Comparative breakdown of dominant risks and benefits by state, reported as percent of coded occurrences of each category

Discussion

This content analysis allowed for a clearer understanding of the many complex and conflicting discussions that have dominated the hydrofracking debate in several states. However, certain findings raise further questions about how media coverage within states with different energy production histories are focused on many of the same HF-related issues, or at least focused more on perceived risks of HF technology than on perceived benefits.

Publication Frequency

Three out of the four states examined in this study presented high – though varied – levels of HF media coverage. Applying Allan Mazur's (1990) quantity of coverage theory, which argues that the amount of media coverage surrounding a specific technology is directly related to the level of public opposition against that technology, we would be justified in claiming that there is a substantial amount of opposition to HF in New York, Pennsylvania, and even Texas. Such claims are supported by our coded findings which show that in all four states, and in every category (with the exception of economic), reporting focused much more heavily on the perceived risks of HF than on perceived benefits.

Michigan's lack of HF coverage would suggest that there is extremely limited controversy in the state. HF in Michigan is regarded as a well-established technology and high-volume HF has not been distinguished from the conventional, vertical technique. This accounts for the high occurrence of coded technical benefits within the state. The state demonstrates how rhetoric can be misrepresentative of the facts of an energy technology.

Texas has been developing the Barnett Shale play for natural gas since 2001 (Texas Commission on Environmental Quality [TCEQ], 2012) and yet there was only one article published on HF in 2008 and 13 the following year. In fact, the degree of coverage in Texas – most especially from the *Houston Chronicle* – seemed to be closely linked to publication frequency in New York and Pennsylvania. This could suggest that the public was not aware of the expanded HF activity in Texas prior to events in the Northeast, or had

not associated the negative health effects with HF technology, until linkages were made in the Northeast and were heavily circulated throughout news media.

With regard to states' energy production history, it is worth noting that Pennsylvania also has an extensive history. The state has been a long-time producer of coal, a fossil fuel that comes with its own set of risks. Occasionally, opinion articles and letters made reference to the environmental damage caused by coal mining in the past and demonstrated a desire to avoid a similar fate with regard to HF drilling. This finding resonates with Brasier et al.'s (2011) study of risk perceptions of HF in the Marcellus Shale. They also found a strong tendency for interview subjects to draw parallels between the two extraction technologies. New York has a fairly limited energy production history, though natural gas is not new to the state. It also has a rather tumultuous history with nuclear power, though there were no references to nuclear technology in any of the coded articles nor did Brasier et al.'s (2011) research identify a perceived link in New York case studies.

Presence/Absence of Categories

We examined presence/absence independently from dominant categories because, while the two data sets are closely correlated, these presence/absence findings are representative of the broader scope of the HF discourse. In contrast, identification of dominant categories allows for a more focused analysis of the topics that drive news coverage in each state.

Discussion of legal matters accounted for more coverage than any other category across all states. This is not unexpected, especially in the Northeast where high-volume HF was new and uncertain and articles supported the idea that establishing sufficient regulations for HF was the states' highest priority. It was the subject of intense controversy in Pennsylvania and even more so in New York.

Environmental indicators were the second most commonly focused area of coverage for Pennsylvania and Michigan, and equally as frequent as legal occurrences in New York and Texas. When Stephens et al. (2009) examined wind technology deployment in Texas they found a lack of emphasis on environmental issues. They believed that trend was at least partly due to the state's long history of energy production as a prominent economic driver. The same tendency was not reflected in our HF findings. In fact, Texas newspapers reported significantly on environmental issues related to HF. In our results, we mentioned that a substantial amount of environmental discussion in the Marcellus Shale region involved concerns about water contamination and references to specific cases of well contamination. The most prominent of such cases occurred in Dimock, PA where a group of residents claimed that rampant HF activity led to their wells being contaminated (McKay, Johnson & Salita, 2011). The news media jumped at the story, as did a local filmmaker, whose documentary *Gasland* has further fueled HF opposition. Reviews of the film, coverage of public viewings and reaction to its contents (which includes one Dimock resident lighting his tap water on fire) accounted for a sizeable portion of the environmental discussion in the Northeast. *Gasland* hype appeared in Texas newspapers, though not nearly as persistently.

The aesthetic category consistently received the least coverage by every newspaper in every state. Interestingly, when Stephens et al. (2009) analyzed media coverage of wind power technologies, aesthetic discourse widely varied. In the case of HF, aesthetic considerations were far less pressing than subjects classified in other categories of the SPEED framework.

Presence/Absence of Risks and Benefits

The potential risks of HF activity are more apparent in media coverage, and therefor arguably more apparent to the engaged public, than the technology's perceived benefits. This is true in all four states.

There are also some intriguing contradictions when comparing risks and benefits within certain categories, most notably the environmental and economic function systems.

Reports of environmental risk were prolific in news articles, as well as letters and opinion articles by HF opponents. As described in earlier sections, environmental risks included reference to water/air pollution, wastewater disposal, earthquakes, and impacts to wildlife. In addition, findings by Howarth & Santoro (2011) were often cited in articles and letters which supported the argument that HF actually contributed to natural gas having a larger carbon footprint than coal. This study's findings were reported in 8 of the 12 newspapers analyzed. Before and after this report was released however, many HF supporters utilized the argument that natural gas is a much cleaner burning fuel and its expanded use could help the country lower its levels of greenhouse gases, thus improving overall environmental quality. In this unique case, HF is a fossil fuel-driven technology that is being marketed as simultaneously environmentally harmful and environmentally helpful.

The economic category also presented an interesting juxtaposition. While most often this coverage focused on perceived benefits, it also included economic drawbacks (especially in the Northeast). In New York many articles cited the extensive job opportunities that the industry has made available. In contrast, dissenting articles suggested these were exaggerated claims and most jobs would be filled by experienced, out-of-state workers. Reporting in New York and Pennsylvania also included the frequent mention of indirect costs to communities that experience HF directly. Those costs include road repairs, increased housing rates, decreased property values and the additional cost to support expanded law enforcement. Many opinion articles and letters in New York also presented concerns that the "boom" phase of natural gas production would quickly shift to a "bust," leaving once quaint, rural towns as gutted industrial zones, devoid of the people or industry necessary to support the new infrastructure. Texas newspapers were much less likely to emphasize this "bust" phase or other economic risks, with the exception of road repair costs.

In Fischlein et al.'s (2010) wind power study, Texas discourse included more of both positive and negative political aspects than other states examined. The same holds true in this case. As reported in our results, the occurrence of political risks and benefits in Texas was divided evenly. While coverage in Michigan – another state where HF has been seemingly less controversial – is also balanced, coverage in the Marcellus Shale states profoundly emphasized political *risks*. The majority of these coded occurrences involved dissatisfaction with pro-HF policy makers and also frustration or distrust with the legislative process or the ability of state agencies to sufficiently regulate the drilling industry.

Dominant Categories

We found that the majority of articles in every state presented HF predominately as a legal issue. This result corresponds with Feldpausch-Parker et al.'s (2013) CCS study. The legal HF conversations however shifted focus from state to state.

In Pennsylvania, legal reporting concentrated on regulating the drilling industry, but with conscientiousness that regulating HF activity too rigidly might discourage further energy development within the state. Two of the major issues presented in the state's news coverage were the needs to regulate HF wastewater disposal and to require the disclosure of chemicals included in HF fluids. An attempt at regulatory balance was also reflected in reports about instituting a severance tax on drilling companies. Many letters – and editorials from *The Philadelphia Inquirer* in particular – called for the state to institute a tax to ensure that towns and counties, where HF was taking place, would have some insurance when drilling companies pulled out of the area and left costly damage behind. Newspapers reported that many state republicans, including Gov. Corbett were strongly opposed to any tax that would alienate the industry. In 2012,

however the state legislator approved the institution of an impact fee to function in the same regard (Pennsylvania Public Utility Commission [PPUC], 2013).

New York discourse did not include any serious debate about a drilling tax. In fact, the state has yet to reach a decision on whether or not to allow high-volume HF to proceed. News coverage suggests that hesitation is in part due to the environmental and legal challenges that Pennsylvania has faced in recent years. That sentiment has been felt in Pennsylvania where resentment is growing with the idea that New York is eager to purchase the state's natural gas, but less willing to assume its own share of negative HF impacts.

Texas, with its current conservative leaning, focused legal articles most especially on the "threat" of federal EPA regulations governing HF activity. While there were a few intrastate regulation issues (a chemical disclosure bill passed in 2011), news outlets kept a keen eye on regulatory developments in the Marcellus shale region and at the federal level, usually including quotes from a state or industry leader stressing that state-level regulation is most appropriate. In contrast, opinion articles and letters in Michigan viewed EPA oversight as a welcome improvement to reign in industry activities that had gone unchecked for too long.

The close relationship between legal issues and politics explains why the political category was the next most dominant function system. Occurrences from both categories were often coded in the same articles. In an effort to explain this tendency, Feldpausch-Parker et al. (2013) point to Luhmann's (1989) argument that "whatever the economy does not bring about on its own has to be accomplished by politics with the help of its legal instrument" (p. 63).

Environmental and health/safety categories were less likely to be the dominant focus of articles however these issues arguably fueled the HF debate most significantly. While environmental concerns were referenced more frequently, a common relationship was established that groundwater pollution (an environmental risk) would lead to drinking water contamination (a health/safety risk). This resulted in the two categories often (though not exclusively) being coded together. In Texas the health/safety category most regularly involved air pollution concerns and incidents of respiratory illness in urban areas close to HF activity. There were no HF reports from Michigan newspapers about environmental damage or health incidents in the state.

The most common sentences appearing in *The Times-Union* (Albany, NY) were, "Opponents cite potential risks of pollution by fracking chemicals to water and air. The industry says the practice is safe when done properly" (Nearing, 2012). The claim that HF is a safe practice was often emphasized by the industry and HF supporters. It contributed to a great deal of the coded occurrences of technical benefits whereas reporting of the chemicals and the volume of water required to conduct high-volume HF were coded as common technical risks. Interestingly, the technical considerations of HF seemed to broaden as the years went on. Meaning that while in 2008 and 2009, scientists and industry representatives attempted to distinguish HF separately from the rest of the drilling process, by 2010 lawmakers and the public tended to associate the entire shale gas extraction process with HF. This tendency reflects the public's minimal level of understanding of HF as an emerging energy technology. It also points to the limitations of modern print news media to thoroughly communicate complicated technological processes to the public given space and time constraints.

Conclusion

Media analysis of HF coverage exposes the most prominent conversations surrounding the controversial issue. It also reveals inconsistencies in coverage that have potentially fueled pubic wariness of the technology. HF presents a unique dichotomy to the study of public perceptions of energy technologies. While it is a technique designed for the extraction of fossil fuels, it has also been framed as a method that

allows for greenhouse gas emission reductions. However, the vast amount of media coverage focused on the perceived risks of the technology suggests that it does not fit the standard model of other climate change mitigating technologies such as wind power and CCS. Public engagement in energy-related discussions is promising although the one discussion that is largely missing from HF discourse is not the pursuit of energy security but rather the reduction of overall energy consumption. If the news media is responsible, in part, for shaping public conversations, perhaps it would be to the public's benefit for news media to incorporate the possibility of lowering energy demands, rather than striving to meet growing demands, in future HF coverage.

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Re-imaging the Commons as "the Green Economy"

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The United Nations' green economy programme radically re-imagines the commons as a space where ecosystems services will be quantified and managed by market based mechanisms. This paper will examine issues with this version of the green economy for environmental communicators. It will review the etymology of the concept, examine contested ideas on what a green economy would entail and situate these proposals in relation to different economic approaches to the environment. It will suggest strategies for communicating the contested nature of the proposals and exposing obfuscations. This paper will argue that in stark opposition to green economics with its focus on participation and democratic processes, the UN's GEP will close deliberations on the commons by privatizing "ecosystem services" – thereby taking environmental decision-making out of a political sphere and into the marketplace.

Key words: green economy, commons, ecological economics, natural capital, neoliberalism

Introduction

The United Nations Environment Programme's (UNEP) (2011) flagship document titled "Towards a green economy: Pathways to sustainable development and poverty eradication" and accompanying UNEP reports at the Rio+20 in June 2012 launched the green economy project. The reports use strong environmental language as a means of presenting their version of green economy as a far-reaching programme of reform to address environmental problems on a global scale. While the rhetoric suggests that the UN is serious about addressing the biodiversity crisis, green economists and a wide variety of social movements are less convinced by the proposed policy mechanisms. Civil society responded at Rio+20 with a plethora of critical responses: condemning what they claimed amounted to the corporate capture of the United Nations (Joint Civil Society Statement, 2012); condemning the UN's "Natural Capital Declaration" (Banktrack, 2012); condemning 20 years of Greenwash (Bruno, 2012); and indeed, condemning the entire green economy project (Nadal, 2012; Brand, 2012a; Patel & Crook, 2012). The Indigenous People's Global Conference on Rio+20 and Mother Earth (2012) issued a strongly worded "Kari-Oca 2 Declaration" (2012) describing the UNEP's green economy as "a continuation of colonialism" (p. 1) firmly rejecting market-based solutions, REDD, and intellectual property rights over genetic resources and traditional knowledge. In the wake of the polarized positions at Rio+20, the conference ended with both civil society and the United Nations unimpressed with the outcomes. *The New York Times* claimed Rio+20 "ended here as it began, under a shroud of withering criticism" (Romero & Broder, 2012); *The Guardian's* headline read: "Rio+20 outcome a focal point for frustration among campaigners" (Ford, 2012); and London's *Financial Times* announced "Rio+20 lacks ambition, says UN chief" (Clark, 2012). The conference failed to achieve binding targets, but more significantly the conference launched the UNEP's green economy programme, which aims to redesign the processes through which the global commons will be managed. Clearly the green economy is a fiercely contested idea and the UNEP's version is strongly

opposed by a wide variety social movements concerned with both ecological conservation and environmental justice.

In naming its programme the green economy, the UNEP implies a reframing of the entire economy along green lines. The language even suggests a connection to a particular school of economic thought concerned with the environment, that of green economics. However, the programme itself is largely concerned with attempting to protect the environment by establishing policies that will quantify and trade "ecosystem services". This will be done in ways that reflect specific policy prescriptions of different schools of economic thinking on the environment, namely environmental economics and ecological economics. Since green economics is a field with radically different policy prescriptions to what is proposed, the naming of the new project creates severe confusion with contested definitions of the "green economy". In this paper, the UNEP's green economy programme will be referred to as "UN's GEP" to avoid confusion with what green economists have been describing as "green economics" for over a decade.

The UN's GEP aims to protect nature by accounting for externalities of environmental damage. According to this logic, once nature's processes are given a financial value, prices of goods and services will reflect ecological costs and it will no longer make economic sense to produce ecologically harmful products. The assumption that nature's processes can be safely disaggregated and effectively managed using market-based mechanisms is embedded in this new project. This paper will focus on the market-making policy prescriptions of the UN's GEP due to problems and political tensions associated with this agenda. While there are other elements of the UN's GEP, the financial valuation and marketisation policies are the most significant aspect of the programme, since other proposals will be subordinated to the economic logic of market-based modes of governance. The central dynamic in the UN's GEP is that it relies on the private sector for investment to fund the programme, and in exchange for capital investment; ownership and control over ecosystems services will be granted to private corporations. Expectations of profits will drive the new markets so other values will only exist as vague ideals and convenient green marketing and public relations messaging to conceal continued, and indeed amplified unsustainable development.

For environmental communicators, the UN's GEP creates a condition of discursive confusion caused by opposing definitions of "green economy". This paper will examine contested ideas on what a green economy would entail, the etymology of the concept, and situate these new proposals in relation to different economic approaches to the environment. It will compare ideas of what "green economy" means and how the UN's GEP blurs these distinctions. In an attempt to clarify competing discourses, this paper will examine specific philosophical, methodological, and political issues in regards to the UN's GEP. The paper will end by reflecting on risks and suggesting strategies for communicating the contested nature of the proposals and exposing obfuscations. While the UN's GEP is quickly becoming hegemonic, "there is as yet no agreed definition of what constitutes a green economy" (Stakeholders Forum, 2012, paragraph 1). Since the green economy is still being defined, environmental communicators have a key role in drawing attention to power dynamics, motivations, and economic interests of institutional actors.

In stark opposition to what green economists have traditionally conceived of as the green economy (with its emphasis on democratic decision-making on environmental issues), the UN's GEP will close deliberations on the commons by using market-based mechanisms to address environmental problems. These new processes will exclude those without financial capacities from decision-making regarding the management of nature – now "ecosystem services". While scientists and environmentalists involved with this project aim to find a means of enabling political and economic policies to acknowledge the value of the environment, submitting nature to the logic of the market is an extraordinarily dangerous enterprise. Instead, green economic theory argues that the economic system must submit to the logic of the ecological systems that provides the geophysical context for economic systems to exist in the first place.

Etymology of the idea of a "green economy"

The term "green economy" was first coined in the "Blueprint for a green economy" (1989) report by Pearce, Markandya, and Barbier (Allen & Clouth, 2012, p. 7). In a paper titled "Green economy – The next oxymoron? No lessons learned from failures of implementing sustainable development", Brand (2012b) claims that "the concept of a green economy is, like sustainable development, rather an oxymoron which intends to bundle different, partly contradictory, interests and strategies and gives them a certain legitimacy and coherence" (p. 2). The project is an amalgamation of conflicting agendas. On one hand, it is a desperate attempt by scientists and environmentalists to convince industrialists and politicians to acknowledge environmental concerns. On the other, it is the recognition by business interests of opportunities for profit in the creation of new green markets. The first section of the UNEP's "Toward a green economy" report is titled "From crisis to opportunity". Subsequently the word "opportunity" is used 86 times throughout the document. In the context of the UN's GEP, the notion of new business "opportunities" refers to new profits derived, to a substantial degree, from a new model of private ownership of the commons.

The UN's GEP project is the result of the development of the two foundational concepts: "natural capital" and "ecosystem services". While "natural capital" emerged from environmental theory and "ecosystem services" from ecology, the way that each concept has been developed enables these ideas to function as significant "opportunities" for profitable activities by the financial and corporate sectors. These two ideas are examined briefly below.

Natural capital

The concept of natural capital was first used by Schumacher in his book *Small Is Beautiful* (1973, p. 2). Sullivan (2013b) describes the current meaning of the concept of natural capital as having its origins in the formation of the World Business Council for Sustainable Development (WBCSD) at the first Rio United Nations Conference on Environment and Development (UNCED) Earth Summit in 1992. The WBCSD was led by Maurice Strong who, in popular 1994 speech stated; "addressing the challenge of achieving global sustainability, we must apply the basic principles of business. This means running 'Earth Incorporated' with a depreciation, amortization and maintenance account" (Strong, paragraph 42). The concept of natural capital gained popularity in business circles as a way of thinking about environmental governance and was encouraged by environmentalists such as Paul Hawken, Amory Lovins, Hunter Lovins and Jonathan Porritt. Now, four decades since the concept was first coined, the idea has metamorphosed. The notion of nature as natural capital, and as equivalent to capital in the bank, is being adopted by national governments. In 2011, UK Environment Minister Caroline Spelman launched the report "The natural choice: Securing the value of nature" with the statement, "…if we withdraw something from Mother Nature's Bank, we've got to put something back to ensure that the environment has a healthy balance and a secure future" (2011, paragraph 8). By 2012, the UK established a Natural Capital Committee and economists began "preparing to include a value for 'natural capital' in Britain's GDP calculations by 2020, a move that promises to be the greatest change in national accounting practices since their creation 70 years ago" (Whipple 2012 online). Meanwhile, at an international level, the Bank of Natural Capital website was launched in 2011 by The Economics of Ecosystems and Biodiversity (TEEB) project, a programme supported by the United Nations (UN) and European Union (EU). Within the Bank of Natural Capital, Sullivan explains that 'nature's stocks and flows are depicted such that they accord with the format of a standard online current bank account" (2013b, paragraph 13). Herein nature's processes are reduced to numbers that can be traded like other financial instruments.

This conceptualisation of the natural world as natural capital has deep reaching implications. Sullivan (2013b) describes natural capital as involving four types of shifts: a discursive shift, a material shift, a calculative and accounting shift and an institutional shift. Thus the concept of natural capital works at multiple levels simultaneously. This kind of comprehensive treatment would be commendable if the management of economic affairs was to be changed in keeping with the needs and logic of natural processes. Instead, the management of environmental issues will be conducted using economic logic and financial instruments.

Ecosystem services

While the concept of an ecosystem was first used in 1935 by Arthur Tansley, the theory of ecosystem services was formalised much later with the publication of the United Nations 2005 Millennium Ecosystem Assessment (MA). Today, applications of the concept "include its use as a communication tool, for policy guidance and priority setting, and for designing economic instruments for conservation" (Luck et al., 2012, p.1020). There are four types of ecosystem services: provisioning services (producing food, fuel, and fibre), regulation services (the maintenance of the climate, regulation of floods and diseases, biological control of pest populations, pollination of crops, and filtration and purification of water), cultural services (benefits to science such as pharmaceutical products or spiritual, educational, and recreational benefits), and supporting services enabling all the above (nutrient cycling and the creation of soil, etc.) (DEFRA, 2007; Beecher, 2012). The concept of ecosystem services is a powerful idea that attempts to cover all kinds of natural processes.

While the idea can be a useful learning tool, its reduction of ecology into services that are helpful to humans instrumentalises ecological relations. This becomes a problem especially when ecosystem services are used as a component of market processes as opposed to the context in which markets are enabled to exist. For example, today's largest ecosystem services market is a cluster of climate services markets established under the Kyoto Protocol and the EU Emissions Trading Scheme (EU ETS). Lohmann (2011) describes how the ecosystem service concept has been used; "As with all ecosystem services markets, the first step was to simplify and quantify the ecological functions in question, so that standardized increments of 'environmental improvement' could be traded for standardized bits of 'environmental destruction'" (p. 2). Gross carbon emissions have not been reduced by the project, although the scheme has worked to enable polluting industries to profit from selling permits (Gilbertson & Reyes, 2009). The concept of ecosystem services functions to facilitate the creation of markets for a wide variety of ecological processes – but the example of the EU ETS does not bode well for the use of market mechanisms as a means of protecting the rest of the natural world.

Varieties of economic approaches to the environment

A familiarity with the variety of economic approaches to dealing with the environment is necessary to understand the nature of the contested definitions of the green economy. Environmental economics, ecological economics, eco-socialist economics, and green economics are all distinct discourses with different conceptualizations of the relationship between the environment and the economy. They all have very different policy prescriptions that relate especially to the degree to which they believe market mechanisms can help with the management of environmental problems. The UN's GEP follows the theory of environmental economists such as David Pearce, and ecological economists such as Robert Costanza. It attempts to preserve biodiversity by factoring ecological externalities into economics and creating processes for valuation and trading of two particular externalities: destruction and pollution. Environmental economics uses market mechanisms and valuation as a corollary of "normal" economics and only values

things in monetary terms. Ecological economics conceptualises the economy as within the ecology system and attempts to account for the geophysical context. Ecological economics uses economic mechanisms as a means of decision-making for the environment with the assumption that economic theories provide an adequate means of managing nature. Other schools of green economic thought see this commitment to allowing the marketplace to determine environmental priorities as deeply problematic.

The green economy proposed by green economists is distinct from both environmental economics and ecological economics. Green economists such as Molly Scott Cato, Mary Mellor, Hazel Henderson, Richard Douthwaite, James Robertson, and Andrew Simms take an integrated approach to environmental, social, and political issues. They treat the environment as the overarching system and one that is best understood as a commons. In *Green economics: An introduction to theory, policy and practice*, Cato (2009) explains that while "green economists accept many of the theoretical conclusions of the ecological economists, especially the importance of ending economic growth and developing a steady-state economy" (p. 206), they reject the neoclassical/environmental economics concept of an “externality”. Green economics is committed to the primacy of intrinsic value and quality in organizing economic relations, where the primary objective is the meeting of need rather than generating profit. This holism and engagement with a broader range of perspectives than evident neo-classical economics contrasts sharply with the UN’s GEP which promotes the expansion of markets-based mechanisms to manage the ecological commons.

Problems for environmental communicators

These radically divergent definitions of “green economy” create a serious dilemma for environmental communicators. The task of communicating a set of policy initiatives proposed by the UNEP that is closely related to the neoliberal market liberalization agenda of the World Bank and other institutions under the banner of the “green economy” creates debilitating confusion within environmental discourse. For the general public, the terrain appears as confusing and inaccessible as the financial innovations that allowed the financial sector, with the blessing of neoliberal governments (who relaxed financial regulation), to develop financial mechanisms (largely outside of public scrutiny) resulting in rampant speculation and the financial crisis that began in 2007.

The confusion resulting from the obscuring rhetoric of UN’s GEP serves the interests of those who want continued free-markets without the interference of environmental regulations or democratic processes to protect the ecological commons. The predicament for environmental communicators is profound. On one hand, there is a need to refer to the UN’s GEP by its name – yet the name itself can be seen as appropriating the language of green economists, thereby establishing a discursive obfuscation of the actual policy agenda. Green economists aim to reclaim the concept of a green economy, but in doing so they face the challenge of appearing to support the UN’s GEP. Meanwhile scientists and social scientists are busy helping develop the conceptual, scientific, and institutional infrastructure that will support the transition to the UN’s GEP with research to build consensus on the legitimacy of this new agenda. This section will look at philosophical, methodological and political issues associated with the UN’s GEP.

Philosophical issues

The UN’s GEP re-imagines the global commons in a manner that betrays a misunderstanding of levels in ecological theory. While environmental and ecological economics hold that natural capital brings the environment onto the balance books of industry, there remains a fundamental error in this new conceptualization of the relationship between the environment and the economy. For environmental

economists, "the environment's first role… is as a supplier of resources" (Hanley, Shogren & White, 2007, p. 3). Yet the environment is not only a supplier of resources, but it is the geophysical context that makes the idea of resources even possible. Ecological economists recognize this concept in theory, but in practice they reduce the environment to part of the economic system. This error is manifested throughout the new project. The global ecological commons are the source of life and the basis for all activities – economic and non-economic. Economics is a human construct made possible by ecological processes. Ecological processes are simply too complex to be captured absolutely through financial valuation processes because they are the *context* of economics, not a *subsystem* of economics. The UN's GEP is premised on the epistemological error that assumes the economic system is of greater importance than the ecological system on which the economy depends. It is no small thing to bring nature into the space where everything must prove its financial worth (which is not possible for methodological and political reasons described below). Ecological systems are not fragmented, but are complex webs of interconnected and interdependent relations that cannot be effectively understood, much less managed in isolation. Reducing the value of nature to financial terms is an epistemological shift that facilitates exploitation in a material realm. Conceptions of the natural world as subject to the logic of the market are a prelude to the sale of those environments that are desired by industry for development.

Methodological issues

Philosophical errors spawn further methodological problems in the quantification and marketisation of nature's processes. Methodological problems include the limits of scientific capacities to value nature's various processes, the issue of substitutability, and issues of motivation. Humankind simply does not have the scientific capacity to measure all of the life-sustaining services provided by nature but what is obvious (to those with even basic ecological literacy) is that there will be no financial system to create wealth without the benefit of a stable climate, clean water, and healthy local ecosystems. When scientists do fix a price for nature, these values are often absurdly low. "The economics of ecosystems and biodiversity (TEEB)" (2010) report uses the estimate of €153 billion ($205 USD) as the total economic value of insect pollination worldwide (p. 8). It is a high number, but does this number actually reflect the value of pollinating insects? Considering that our existence is entirely dependent on ecosystem services – and pollinating insects that are a vital part of these ecosystems – it follows that insects are worth more than a small percentage of the value of total production. Since our survival depends on their survival, it is illogical and even irrational to value pollinating insects with such a diminutive number. In the book *Risk,* Adams (1996) claims that environmental economists reduce reason to calculation despite the fact that there are good reasons to doubt that the numbers involved will ever be a sensible means of making decisions (p. 94). The numbers lend an aura of authority, but betray serious logical errors.

The low valuation of ecosystem services is endemic as can be seen in other prominent examples. The Prince's Foundation Accounting for Sustainability Project (2011) published an image that inverts the hierarchy of the relationship between the economy and ecology in a particularly unhelpful manner (see Figure 1). Here the global gross domestic product (GGDP) is illustrated as $63,000bn ($63 trillion) and the value provided by the Earth to the global economy is $50,800bn ($50 trillion) (Accounting for Sustainability, 2012). These numbers misrepresent reality. We will not have an economy without stable ecological system in which the economy is based; therefore, it is illogical to value ecosystem services as less than the total GGDP.

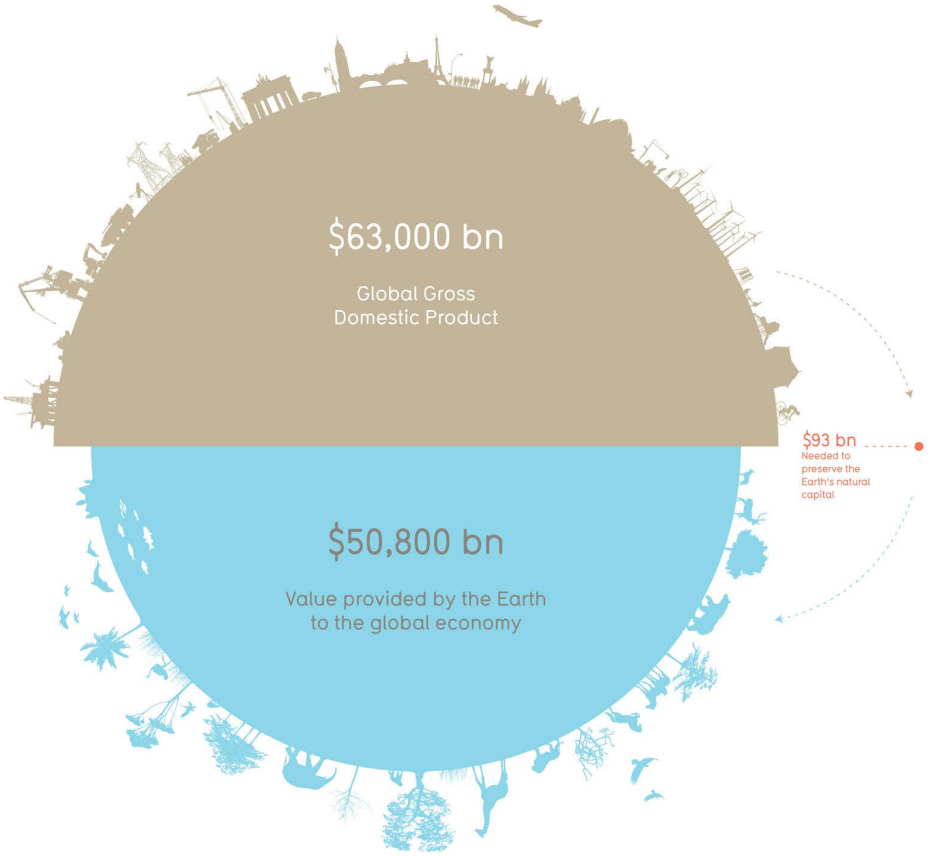


Figure 1. *Costing the Earth* by Information is Beautiful Studio (2011). London: The Prince's Accounting for Sustainability.

Similarly, when Friends of the Earth UK designed their campaign to protect bees, they used the figure of £1.8 billion ($2.8 bn USD) as the financial value of bees in the UK. This amount referred specifically to how much it would cost the UK economy to replace the services bees provide with hand pollination (Bell & Golledge, 2012, p. 2). Again the numbers represent a reduction of complexity in complex ecosystems that depend on bees. The numbers fail to account for the fact that ecological systems have tipping points that trigger abrupt changes and even collapse; therefore, pollination for the food we eat is only one aspect of the value of bees. The low valuation exposes an over-reliance on abstract economic theory and the undervaluation of risk.

Even if the financial valuation processes were to give ecosystem services high monetary value, market-making processes remains inherently problematic due to the assumption of substitutability. In permitting ecosystem services to be traded, the UN's GEP assumes the substitutability of one ecosystem service for another. The act of creating markets generates the conditions for development and ruin individual ecosystem services (i.e. species and spaces) as a pretext to conserve other spaces. With this formulation, the UN's GEP assumes that forests, species, stable climates, etc. are somehow replaceable by the wizardry of financial markets. This new conceptualization of the natural world creates sets of financial commodities that will be conserved in order in order to provide ecosystem services, or traded (i.e. sold) to enable development (and ensuing ecological degradation). This project will undoubtedly create

opportunities for business at first, but one destroyed ecosystem cannot be saved by other preserved ecosystems elsewhere. Market processes give the "impression that humankind can control nature as 'assets' so as to have the possibility to 'bail out' earth systems when they break down" (Fioramonti, 2013, p. 118), but once ecological thresholds are past, money cannot fix extinct species, collapsed ecosystems, climate change, etc.. While proponents of the UN's GEP with environmental concerns expect the programme to conserve nature, instead it will simply serve priorities and interests of those with greater capacity to pay for the maintenance, or destruction, of various ecosystem services. Adams (1996) explains that the financial valuation processes reward ignorance on issues of risk since knowledge and value have a corollary relationship – the higher the level of knowledge of the risks of ecologically damaging activity, the higher the value assigned in cost-benefit analysis (p.108). Thus financial valuation methodology actually encourages greater ecologically illiteracy as it rewards the denial of risks. Ultimately, the numbers have far more to do with politics than the intrinsic value of a particular ecosystem service.

Beyond the absurdly low valuation and the problems of substitutability, another set of methodological problems emerges from communication in regards to identity and psychological motivations. Motivational crowding out theory (Vatn, 2000, 2010) describes how motivations for environmental conservation are impacted by utilitarian logic and are at "risk of eroding noneconomic incentives for environmental stewardship" (Luck et al., 2012, p. 1024). Similarly, Crompton and Kasser's (2009) and Crompton's (2010) work on values and motivation in strategies for change is significant for its description of the ways in which human identity and values are encouraged or discouraged through social practices and communication. Crompton and Kasser (2009) describe how recent psychological research has demonstrated that practices that encourage extrinsic values negatively impact intrinsic values (p. 35). This research suggests that the financial valuation of nature will encourage extrinsic ways of understanding the natural world, resulting in a simultaneous erosion of intrinsic valuation. Cognitive scientists, including George Lakoff (2009), have demonstrated the limitation of quantitative, utilitarian, and exclusively rational modes of reasoning in motivation on politicized issues. This research on campaigning strategies suggests the utilitarian mindset established by quantification processes pushes out more intrinsic values and strong attachments to nature which have traditionally driven pro-environmental behaviour.

Political issues

The political problems with the UN's GEP are its ruin of democratic participation in environmental decision-making, its denial of historical context, and its failure to recognize the expansive dynamics of capitalism. Social movements at Rio+20 objected to the exclusion of their voices from the UN's GEP policy-making processes. With new ecosystem services markets, democratic control of development agendas will be even more difficult (if not impossible) as markets become the spaces where environmental decisions are made. Those making decisions will be those with the financial capacities to participate (i.e. corporations and the financial sector). The creation of ecosystem services markets is tantamount to a privatization of the commons, wherein the conservation of nature moves from a political sphere to the market place. Nadal (2012) explains the error in this approach:

> …the notion of "global commons" is synonymous of the *res nullius* property regime of Classical Roman law. *Res nullius* means that a thing has no owner and, therefore, if a thing is *res nullius,* anyone can appropriate it. But if a thing is part of the commons, then it is under the regime of *res communis*. And as such, it cannot be the object of private appropriation. (p. 27)

The ecological commons provide livelihood for all of humanity for free. The UN's GEP threatens to transform our relationship to the natural world by asserting that clean air, water, and habitats for

endangered species are “privileges for which people are expected to pay out of limited budgets” (Adams, 1996, p.100). Obviously, once ecosystem services are transformed into commodities that can be sold, this provides significant opportunities for those who are able to convince the rest of us that they own the global commons.

In a market driven system, the market-creating work of ecological and environmental economists creates opportunities to extract greater profit from the management of nature. This is especially true in situations where governance processes that are weaker than market forces. Profit-seeking corporations and financial institutions support the establishment of new financial markets to extract the remaining wealth from of the natural world because it is a financial opportunity. The act of creating markets establishes conditions for natural spaces and species to be sold. The basic provisions of the natural world will be quantified, financialised, and traded. Adams (1996) explains that the cost-benefit analysis is used, in most cases, “to justify decisions that have already been made” (p. 107). The work of environmental scientists supporting the UN’s GEP will give scientific authority to the project, but the important decisions will have already been made.

The project is a deepening commitment to neoliberal markets liberalization policies. On a macroeconomic level, “the subordination of social and environmental considerations to macroeconomic policy imperatives” (Nadal, 2012, p.15) is the fundamental basis of neoliberalism. Once “macroeconomic objectives are determined, every other policy target is chiseled in accordance” (*Ibid.,* p. 15). The lessons of the recent economic crisis in regards to the fallibility of the financial sector are entirely ignored. Despite claims by the UNEP, the UN’s GEP is not policy neutral (*Ibid.,* p. 23). The relationships and parallels between the on-going global economic and financial crisis and the emerging UN’s GEP have been described in depth by Lohmann (2011), Sullivan (2012), and Nadal (2012). According to these authors, the UN’s GEP is supported by the financial and corporate sectors because they recognize the programme as a continuation of the neoliberal model, an expansion of the scope of market, and also an exceptional opportunity to create entirely new financial instruments. Similarly to the financial deregulation that set up conditions for the dramatic plunder of public wealth during the recent economic crisis, the UN’s GEP establishes new markets that will lead to new avenues for financial speculation. The speculative bubble during the 2008-2009 period has been estimated to cost governments globally at least $12 trillion, leaving several bankrupt national governments and severe economic austerity in its wake (Conway, 2009). This is the context in which the UN’s GEP is operating. The designers of the project have closely aligned themselves to the same financial institutions that played leading roles in the economic crisis.

Meanwhile, scientific institutions, environmental NGOs, and government agencies are working to build institutional infrastructure to give scientific authority to the UN’s GEP. These communities must extend the scope of their political analysis and recognize the obfuscations that are taking place. The historical critique of capitalism presented by Foster (2002) and others describe the appropriation of the commons as an integral aspect of capitalism. Capitalism is always looking for new means of producing profit from activities that were otherwise not managed through commodity relationships. Klein’s (2008) theory of disaster capitalism describes a situation wherein state and corporate powers have merged to the extent that the two sectors now use crisis conditions to develop policies that appropriate public wealth and increase the political and economic power of corporate and financial elites. The dynamics of the UN’s GEP can only be effectively understood by examining the political context in which it is situated.

Strategies for Environmental Communicators

Green economist Cato (2012) calls on environmental movements to resist the appropriation and redefinition of the term “green economy”. The problem then becomes: how do environmental

communicators even describe the UN's GEP project? The United Nations is attempting to define a financial valuation and market-making programme as the green economy. Clearly the UN has greater resources to establish cultural legitimacy than relatively marginalized green economists without such significant institutional support. The confusion is already leading to incoherent public discourses. An example of this misunderstanding can be seen in a recent blog by Cato (2012) referring to a report by the Rosa Luxemburg Foundation critiquing the green economy of the UNEP. The rhetorical devices environmental communicators have at their disposal have now become contaminated with contradictory meanings. The results are very confusing even for seasoned professionals. It is difficult to talk about a green economy when this expression is used to refer to two entirely different types of deliberations on the commons and projects with contradictory policy proposals. This paper has tactically refused to call the UN's GEP the green economy as a means of differentiating two different discourses. Environmental communicators in sympathy with the green economists can clumsily deal with this problem by adding "false" or "so-called" in front of every instance of the term UN's G.E.P – but this is a defensive tactic rather than a long-term strategy.

In response to the problems described in this paper, environmental communicators should attempt to clarify the competing discourses, support democratic processes, and expose ill-informed marketing and public relations that misrepresent proposed policies and the associated risks. Recommended short-term strategies are listed below:

- clarify the different policy agendas of the UN's GEP and those of green economics
- expose the dangers of prioritizing economic profit over environmental conservation
- expose mechanisms which create opportunities for profit, but have ecological risks
- expose closures of deliberations and encourage democratic processes
- expose obfuscation tactics and challenge greenwashing
- expose the appropriation of the language of environmental movements
- engage with a critical political analysis of neoliberalism in regard to the environment
- support social movements in their work to build a viable alternatives
- support ecological literacy in formal and informal education

While these communication responses can be taken presently, we must also work towards longer-term strategies.

Building capacity for greater critical ecological literacy will enable more profound analysis of environmental problems and the politics that perpetuate weak approaches to sustainable development. Communicators can ask questions that enable analysis of some of the assumptions that reproduce the status quo. Solón (2012) asks these types of questions in "At the crossroads between green economy and rights of nature", published for Rio+20. He asks: "Why do we judge the life of human beings with parameters different from those that guide the life of the system as a whole if all of us, absolutely all of us, rely on the life of the Earth System?" (p.12) Dialogue exploring human/nature relations opens possibilities for deeper ecological learning. Critical thinking in regard to the environment enables a better understanding of the political systems that enable ecological destructive political systems and activities.

Sullivan (2013b) advises that we must create new "world-making myths…in contrast to the transcendental disembedding abstractions favoured by the Natural Capital Myth Machine" (paragraph 35). There are many other ways of conceiving of our relationship with the natural world and managing the ecological commons

evident in the traditions of other cultures and described in the work of green economists and social movements. The BankTrack (2012) statement released at Rio+20 proposed:

> instead of expanding the scope of markets to every domain of nature, creating a true green economy would start from the opposite; reversing the tide of commo-dification and financialisation, reducing the role of markets and the financial sector, acknowledging the limits of business versus other spheres of life, and recognizing the collective responsibility of all people for, and strengthening the democratic control over the worlds' ecological commons. (p.1)

The UN's GEP suits the priorities of neoliberal institutions – but there are alternatives. Environmental communicators have an important role in clarifying the competing discourses and describing effective measures for protecting the ecological commons.

Conclusion

None of the above should be read to imply that scientists, ecological economists, or even environmental economists and those working at or collaboration with the UN are anything but sincere in their intentions use the UN's GEP to protect the environment. Unfortunately, their analysis is flawed. The UN's GEP is an intensification of neoliberalism. It is a new phase in the long trajectory of the enclosures of the commons. New markets in ecosystem services will not create effective mechanisms to protect biodiversity or other ecological spaces, but they will serve the financial sector in creating new opportunities for profit. The project will also serve industrialists by closing deliberations on the commons, making unsustainable development easier than ever by excluding most everyone from the decision-making processes. The Indigenous People's Kari-Oca 2 Declaration (2012) describes the UN's GEP as a "continuation of colonialism… a perverse attempt by corporations, extractive industries and governments to cash in on Creation by privatizing, commodifying and selling off the Sacred and all forms of life and the sky" (p.1-2). The programme of re-envisioning the commons as sets of commodities ripe for exploitation is diametrically contrary to the environmental rhetoric used to sell the project.

The man who first coined the idea of natural capital had strong ideas in regards to the use of financial valuation approaches to protect nature. Forty years ago, in the same book where the term natural capital was first published, Schumaher (1973) wrote:

> To press non-economic values into the framework of the economic Calculus… it is a procedure by which the higher is reduced to the level of the lower and the priceless is given a price. It can therefore never serve to clarify the situation and lead to an enlightened decision. All it can do is lead to self-deception or the deception of others; for to undertake to measure the immeasurable is absurd and constitutes but an elaborate method of moving from preconceived notions to foregone conclusions…The logical absurdity, however, is not the greatest fault of the undertaking: what is worse, and destructive of civilisation, is the pretence that everything has a price or, in other words, that money is the highest of all values. (p. 27)

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Can Stakeholders Hold the Commons? English as the Global Language of Capitalism and that of Sustainability: Contradictions and Potentials

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This paper investigates the role of English as a Lingua Franca in the international communication concerning environmental issues. The case studies analysed focus on Anglicisms in Italian texts dealing with environment-related issues. Contrasting hypotheses are presented in order to investigate their respective validity, to understand how they coexist, and what can be done in terms of discourse strategies in order to improve environment-friendly communication. A taxonomy of four strategies is proposed – International, Creative, Oppositional, Professional – in the attempt to pin down the different goals communicators are pursuing when they insert Anglicisms in their texts. This is then applied to the analysis of environmental communication in general and its framing, hypothesising two main communicative approaches: one targeted at citizens, the other at consumers and stakeholders.

Key words: English as a Lingua Franca, Anglicisms in Italian, Green Marketing, Commons, Framing

Introduction

The aim of the present paper is to investigate the role of English as a *Lingua Franca* in international communication concerning environmental issues. The analysis concentrates both on the use of Anglicisms in other languages (focusing on Anglicisms in Italian) and the use of English as the common language for international environment-related communication. In order to do so, it is necessary to start from a reflection on the role played by English in the world of global marketing and business communication.

It is a fact that in history no other language has ever been as widespread as English is nowadays: this can either be welcomed as a new possibility for humanity or as proof of dangerous linguistic imperialism. These antithetical views have been the object of study by many scholars: this paper refers to the works of Crystal (2003) — as representative of a mainly positive attitude towards English as a global language — and those of Phillipson (1992), who argues against the mechanisms of power hidden in the concept of a Lingua Franca.

Crystal (2003) identifies the main historical reasons that made and conserved English as the global language: in the nineteenth century the supremacy of Britain as "the world's leading industrial and trading country" (p. 10), and its political imperialism, and later the economic hegemony of the new American superpower in the twentieth century. Hence, industrial growth and the stock market are the elements that have helped English establish its supremacy. It has been argued that English is the language of capitalism (Block, Gray, & Holborow, 2012; Fairclough, 2006) and, as a consequence, one could analyse it as the language of power and the cultural symbol that represents the approaching environmental breakdown. But

this view would prove simplistic, and this paper aims to investigate other and antithetical cultural symbolisms associated with the English language.

The same clash of views appears to be present in the use of Anglicisms in Italian; hence, contrasting hypotheses are presented here in order to investigate their respective validity and to understand how they coexist and what can be done in terms of discourse strategies in order to improve environment-friendly communication.

The first hypothesis is that in some cases the presence of Anglicisms can be considered as an alert to greenwashing strategies, or at least some non-totally transparent green marketing strategy (see Caimotto & Molino, 2011). In other cases, the use of English is a strategy that helps companies promoting their business activities that really are environmentally friendly (Caimotto, forthcoming). We must remember the older symbolisms of English as the language of political liberty; hence, the second hypothesis takes into account the positive communication potential of Anglicisms (Crystal, 2003). Meanwhile, it is also important to bear in mind that in some cases the use of English is dictated by a general identification of English as the language of business and marketing, without prior planning or ideological goals (Stubbs, 2001). This kind of usage, though, is also likely to engender implications and specific framing (Lakoff, 2010); it is the aim of this work to identify and analyse such implications together with their effects and to elaborate strategies that might lead to a more conscious and focused use of Anglicisms and of English as a global language, as far as green communication is concerned.

In order to achieve this result, several communicative situations are taken into account and analysed, starting from the observation of the use of Anglicisms in different Italian contexts. Drawing on previous research (Caimotto & Molino, 2011; Caimotto, forthcoming) the aim here is to create a taxonomy of environment-related communicative practices in order to identify their characteristics and establish what works and what does not in terms of both effectiveness and transparency.

The first case study focuses on various companies that took part in a national fair held yearly in Milan, “Fa’ la cosa giusta” (“Do the right thing”), which describes itself as the fair “of critical consumption and sustainable lifestyles” at its tenth annual in 2013. Then another case study is presented: that of Termoindustriale, a company based in Northern Italy operating in the business of cogenerators, also known as CHP (combined heat and power). All these situations involve the contradictions discussed above, as they require marketing strategies, raise environment-related issues, and imply various degrees of economic interest.

The Myths of English

The implications of the use of English as the language of communication are engendered by the narratives associated with the language and to the cultures forming the Inner Circle (Kachru, 1988). To these, we must add the culture of globalization and the concept of English as a Lingua Franca. Depending on which narrative we are referring to, the English language can represent either a symbol of environmental and ecological destruction or a symbol of rural idyll and democratic ideals. In order to understand how such contrasting narratives can coexist in a whole, Lakoff’s (2010) work on framing the environment can prove useful.

According to Lakoff (2010), the ways in which we conceive the environment suffer from severe hypocognition (p. 76), i.e. we lack the ideas we need in order to communicate environment-related issues effectively. In Lakoff’s (2010) words, “The economic and ecological meltdowns have the same cause, namely, the unregulated free market with the idea that greed is good and that the natural world is a resource for short-term private enrichment” (p. 77). A company that foregrounds its economic interests to the detriment of its environmental impact is to be considered on the wrong side in terms of green

credentials. But a company cannot be entirely oblivious of the economic sustainability of any of its projects. Hence, what a critical consumer needs to do is to understand whether the company's economic interest will be placed before the environmental issues or not. Unfortunately, this requires good technical knowledge that most lay people do not have. Thus, people who care about the environment sometimes make the mistake of judging a company negatively simply because it will earn good money from its environmentally friendly business.

Lakoff (2010) writes about the new frame of The Regulated Commons as a possible solution to improve the issue of hypocognition. The Regulated Commons consist of "the idea of common, non-transferable ownership of aspects of the natural world, such as the atmosphere, the airwaves, the waterways, the oceans, and so on" (Lakoff, 2010, p. 78). As the idea of the Commons was an important aspect of the Magna Carta (Linebaugh, 2008), we see a further connection to English-speaking culture.

Still, we are also well aware of the cultural role played by the United States as the country of capitalism, which – as explained by Lakoff (2010) – is directly connected to environmental issues. English is considered the language of international business communication and several scholars point out the negativity associated to this language. Among the most well-known we find Phillipson (2008), who argues that English is a *lingua frankensteinia* (a language of power, elitism, exclusion, and a killer of other languages) rather than a *lingua franca*, and certainly not what the adjective *franca* appears to suggest, i.e. "a language of international un- derstanding, human rights, development, progress, etc." (Phillipson, 2008, p. 251). Likewise, Dieter (2004, p. 140) argues that the language of marketing is what he labels as BSE – Bad Simple English – the culturally destructive language employed for international business communication.

In her analysis of International Marketing Textbooks, Kelly-Holmes (2010) demonstrates how these manuals, which are supposed to argue in favour of international communication and cultural exchange, often imply that "multilingualism is perceived as a chaotic, dangerous and bewildering prospect", while English is often described as the norm, the rescuer that "brings harmony to the world" (p. 196). The manuals also imply that English is the best language of choice when communicating abroad. Moreover, Kelly-Holmes (2010) shows a general tendency to judge language professionals negatively and to expect non-native speakers to be unable to understand jargon or complex sentences. Her observations are relevant to our purposes because the positivity towards monolingualism contributes to the image of English as a destructive, *frankensteinian* language.

One more element that needs to be brought into the picture is that of the spread of corporate discourse to other social domains, illustrated by Mautner (2010) who theorises that "the more powerful the agents behind a text or text type are, the more likely they are to be emulated through accommodative acts" (p. 223). As corporate discourse is associated to the English language, it is easy to see how the two are related and tend to influence spheres that do not appear to benefit from a corporate-like approach. Mautner (2010) analyses the examples of higher education, public administration, religion, and the personal sphere, and shows how discourse in these domains has been influenced by a corporate and business approach, thus creating hybrid discourse that at times is at odds with the domain itself.

In a similar fashion, we can add environmentalism to the list. The first environmentalist movements in the '60s and '70s were characterised by a kind of typical oppositional discourse. Nowadays, environmentalism is growing increasingly institutionalised, and the discourse changes accordingly. Environmentally-friendly activities seek legitimization and attempt to achieve it also through discourse strategies influenced by the corporate realm. This attitude generates contradictions that hinder communication, as activities that can be considered genuinely environment-friendly may present themselves as excessively business-oriented and thus might be perceived as environmentally dangerous.

The Myth of English as the Language of Freedom, Rebellion, and Modernism

As Crystal (2003) points out, English has played a prominent role as the language of the quality press (p. 91), of BBC radio – "inform, educate and entertain" (p. 96) – and the language of protesters all over the world, using English to address a global audience. Moreover, he argues, as the lyrics of Bob Dylan, Bob Marley, John Lennon, Joan Baez and others spread around the world, English became a symbol of freedom, rebellion, and modernism for the younger generation in many countries (Crystal, 2003, p. 103).

It is possible to find examples of this use of English on the Italian websites of environmental movements such as Greenpeace. The Anglicisms employed convey a feeling of modernity and remind the reader of young people's jargon. They can thus be considered part of a persuasion strategy and their analysis aims to focus better on the use of Anglicisms in such texts, bearing in mind the evident contrast with the role played by Anglicisms in the business-oriented communications described above.

Moreover, it was in Britain that the Magna Carta – the historical document still celebrated as the first example of the recognition of human rights – was drawn up. The Magna Carta was accompanied by another much less celebrated, but also extremely important, document known as "The Charter of the Forest". As Linebaugh (2008) explains:

> Whereas the first charter concerned, for the most part, political and juridical rights, the second charter dealt with economic survival. Historians have always known the Charter of the Forest existed but many of its terms - for example estovers, or subsistence wood products - seem strange and archaic, and have prevented the general public from recognizing its existence and understanding its importance. (p. 6)

According to Cowell (2012), "affinity for the landscape, especially in its 'traditional' forms, runs deep in British collective culture and psyche" and a "new commons" approach potentially offers solutions to today's environmental problems (para. 2). Danny Boyle's opening ceremony for the 2012 Olympic games in London foregrounded the ancient love of British people towards the countryside and the cultural clash brought by industrialization; the success that his show obtained proved that this contrast is still extremely relevant.

Illegitimate Greenwashing and Legitimate Green Marketing

The economic system of the so-called Western countries has been the object of considerable discussion in recent years, especially after the collapse of Lehman Brothers in 2008, which is considered the event that triggered the current economic crisis; the capitalist system has often been criticized and considered "unsustainable" in the long run. Given the central role of capitalism and of the globalization of the economy, marketing techniques have often been accused of maintaining and promoting the capitalist *status quo*, and hence have been identified as anti-environmental (el-Ojeili & Hayden, 2006).

Linguists know that the same communication strategy can be employed both for a specific goal and for its opposite (Conoscenti, 2011, p. 73-91). As unlimited consumption and the creation of superfluous needs are by definition in conflict with real sustainability – which aims to reduce needs and consumption to the minimum – any business activity seems doomed to some degree of contradiction (See also Poli, 2011 for a critique of the concept of "sustainable development").

Following van Dijk's (2006) work on persuasion and manipulation, this paper hypothesises a continuum between illegitimate greenwash and legitimate green marketing (see also Caimotto & Molino, 2011). The OED definition for "greenwash" is:

> Misleading publicity or propaganda disseminated by an organization, etc., so as to present an environmentally responsible public image; a public image of environmental responsibility promulgated by or for an organization, etc., regarded as being unfounded or intentionally misleading.

If we were to consider any marketing strategy as unfriendly towards the environment, analysis would hardly be able to enrich the debate. On the contrary, if we agree that some kinds of marketing persuasion can be accepted and sometimes even welcomed by environmentalists, we can then establish with greater clarity which ones can be considered environment-friendly strategies (Grant, 2007).

Green(wash)ing Anglicization

In the last few years it has been possible to observe, on the one hand, a growth in the public's awareness of and sensitivity towards environmental problems while, on the other hand, a growth in the amount of business activities that try to capitalize on this new sensitivity by marketing themselves as green. Consumers thus need critical tools to distinguish reliable companies from those who are greenwashing. The hypothesis presented here is that the observation of the use of Anglicisms in corporate communication in countries where English is not the first language (L1) – namely, countries included in Kachru's (1988) outer circle – can be employed as a critical tool to help the public establish what are the company's green credentials. Such findings can also be employed to observe the discourse strategies enacted and to draw conclusions to be employed also for the observation of green discourse in texts where English is the L1.

The first aspect that needs to be assessed is what is meant by Anglicism and Anglicization. Furiassi, Pulcini, and Rodríguez González (2012, p. 5-10) provide a complete overview of the various possible interpretations and state that "what counts as an Anglicism may be tailored to the scope of the research" (p. 5). Gottlieb's inclusive definition is probably the best suited for our purposes: "any individual or systemic language feature adapted or adopted from English, or inspired or boosted by English models, used in intralingual communication in a language other than English" (as cited in Furiassi et al., 2012, p. 5). According to Kelly-Holmes (2000):

> The use of English in intercultural advertising is quite a unique case, since the English language has meaning, use and significance independent of the countries in which it is spoken. Thus, we see its use as a symbol of a national identity, of globalism, of youth, of progress and modernity; at one and the same time, it can bear the properties of pan-Europeanness/Americanness/globalism. (p. 76)

Given the wide array of explanations for the use of English in marketing and advertising, Kuppens' (2010, p. 116) categorization provides a good starting point: she explains that reasons can be grouped under three sets: the larger marketing strategy of using the same slogan worldwide in order to have a consistent brand image and cut costs; the creative-linguistic reasons that allow copywriters to create puns, fill lexical gaps and soften taboos; and, thirdly, the reasons related to cultural connotations. On this last point, Kuppens (2010) agrees with Kelly-Holmes' (2000) observation that, in intercultural advertising today, "the use value of languages has come to be obscured by their exchange or symbolic value" (Kelly-Holmes, 2000,p. 71) and works "even (or perhaps especially) because it is not understood" (p. 73).

But Kuppens (2010) also adds a new dimension to the analysis, taking into account case studies in which the choice for English cannot be explained by the three sets of reasons reported above, but rather in terms of intertextual reference to specific American and British media genres (p. 129). Among her findings, the most relevant to our purposes concerns the demands these advertisements make on their public: while slogans which are not meant to be understood by their target imply that the consumer will be uncritically attracted by the "luxury value" associated with English, the TV ads analysed by Kuppens (2010) draw on their public's ability to link certain features to specific media genres (p. 131). Kuppens (2010) also points out that advertisers adopting English do not necessarily celebrate or admire the cultural values associated with it.

In a similar fashion, Piller (2001) takes into account the case of a non-profit advertisement that is implicitly critical of the use of English in German advertising; the message was created by a non-profit organization lobbying for the interests of bicyclist and the headline was based on a pun: *Rush hour* = *Rasch aua*. Piller's (2001) explanation deserves to be quoted in full:

> The German homophone of rush hour translates literally as 'quick ouch', so that the whole sequence may be read as 'The rush hour quickly leads to injuries'. […] The ADFC, which promotes bicycle use as an environmentally friendly alternative to automobile use [is] necessarily critical of the wasteful lifestyle of the rich capitalist market economies and consumer societies. […] The use of the English term intertextually alludes to commercial advertising in which English is used precisely to endorse the values of capitalist market economies and consumer societies. […] The use of English in the ADFC advertisement manages to point out the harmful consequences of such a lifestyle without specifying them in so many words. (p. 174)

This oppositional use of English is particularly relevant for our purposes, as it is linked precisely to the kind of capitalistic values that tend to be associated to the English language, but at the same time it exemplifies the apparent contradiction of using the English language in order to criticize the values it is associated with. Coming back to our overall purpose of establishing ways to detect greenwashing through the observation of Anglicization, the studies quoted above appear to confirm the dichotomy between the choice of using English to exploit its "use value", i.e. the propositional meaning of the message, and that of exploiting its "exchange or symbolic value" (Kelly-Holmes, 2000, p. 71), thus capitalizing on the consumers' admiration towards English and the fact they are unlikely to understand the message.

Previous research into how English is employed in Italian green marketing has highlighted two relevant characteristics that require further investigation in order to establish their validity as warning bells against greenwashing: one is the presence of English and Italian together to refer to the same concept, when Italian would suffice, the other one is the use of opaque terminology that does not have a specific semantic equivalent in Italian and is already characterised by opacity in the source language. As explained in Caimotto and Molino (2011), this is often the case with *stakeholder*.

One way of verifying these hypotheses is to observe how English is employed by companies that can actually be considered environmentally-friendly as they offer products or services that are not superfluous and their production methods are not highly polluting. In order to carry out this task, companies who took part in the tenth annual of the Italian fair of sustainable lifestyles were observed. These companies are expected to represent a good selection of business activities whose green credentials are reliable, as the fair is organized by Terre di Mezzo – a non-profit association active in the realm of critical consumption – and the exhibitors had to conform to a long list of requirements published on the fair's website (Falacosagiusta, 2013).

The Italian Fair for Sustainable Lifestyles: A Case Study

According to previous findings (Caimotto, forthcoming), a higher prominence of Anglicisms on companies' websites corresponds to a stronger positive attitude towards capitalism and consumption, which, as explained, is in contrast with a genuinely environment-friendly approach. Thus, the level of prominence of English in the actual fair in Milan and on the websites of the exhibitors can be considered indicative both of the companies' reliability and of the validity of the hypothesis.

During a one-day visit to the fair on March 17th 2013, a qualitative observation of the stands, leaflets, posters, and catalogues was implemented in order to gather the required information and verify the hypothesis presented above. No cases of opaque use of English were detected, nor examples of an overwhelming amount or prominence of Anglicisms. The same can be said about the observation of the fair's catalogue. Cases of warning bells against greenwashing were not found: no cases of English and Italian together to express the same concept and no use of significantly opaque terms. On a general level, though, the presence of English was certainly evident, and many examples of Anglicization were detected, especially when looking at the titles, logos, and company names. In fact, drawing on the various works on Anglicisms quoted above, it was possible to establish four categories to which the Anglicisms detected belong: International, Creative, Oppositional, Professional.

As Kuppens (2010 p. 116) points out, brands often use English in their communication in order to cut costs and be understood beyond their national boundaries. Among the companies that were present at the fair, the Danish furniture company Flexa can be considered an example; their brand name evokes the English "flexibility": a particularly apt association as the company produces furniture items for children that can be modified following the new requirements of a child as s/he grows up. This kind of usage is here labelled "International": the goal of this strategy can either focus on the need to save money or that of influencing the consumer's identity as cosmopolitan.

The Creative category includes Anglicisms that employ English because of the possibilities it opens in terms of bilingual word puns and rhyming: an example is a shop called "SAVE, ScarpeAccessoriVEg", whose website address is www.saveshop.it. The shop sells shoes and accessories that look like leather ones but are not made out of animal hide. Reference to the English language is found in the acronym SAVE, the choice of the symbol "" and that of employing the shortened version of the word "vegan". The adjectives "vegano/a/i/e" exist in Italian, but the English "vegan" is also employed.

We see here a mix of choices in terms of word order: "ScarpeAccessoriVEg" respects the Italian rule of the adjective following the noun and it is this word order that allows the creation of the acronym. On the contrary, the website address respects the English word order with "save shop". "Shop" though is not the only word they employ, as they also repeatedly refer to the Italian pun "neg-ozio" on their Facebook page ("negozio" is the Italian for "shop" and "ozio" for "leisure").

The most interesting example of Oppositional use of English is found on the website of a communication agency called "Smarketing": an opposition that starts from their company name through the addition of the privative affix –s. The number of Anglicisms on their website is very low, yet on their home page we find an example of Oppositional use:

> Un processo di liberazione: dall'immaginario dell'advertising, dal consumismo coatto, verso la felicità della decrescita, per la comunicazione come bene comune. (www.smarketing.it)
>
> [A liberation process: from the imagery of advertising, from compulsory consumerism, towards the happiness of de-growth, for communication as a common good. (Translations are mine unless otherwise specified)] (para. 1)

Here, “advertising” is clearly employed to attach a negative connotation to the notion by preferring the English to its Italian correspondent “pubblicità”, thus evoking a world where the presence of English is excessive. One of the members has also published a book and, in its online presentation, he states explicitly that it is necessary to avoid using words in English just for the sake of it. Another example is found in their “Courses” section:

> Se usi la parola *target*, non c’è verso, cominci a ragionare come un cecchino. (Smarketing.it – italics in the original)
>
> [If you use the word *target*, no way, you start thinking like a sniper.] (para. 4)

After the above observations, it might be surprising to discover that another prominent Anglicism on Smarketing’s website is “stakeholder”. In the “Skills” section the sub headline states:

> Invece di lavorare *per* il cliente, preferiamo lavorare *con* lui per i suoi clienti e i suoi stakeholder. (Smarketing.it – italics in the original)
>
> [Instead of working *for* our client, we’d rather work *with* him (sic) for his clients and his stakeholders.]

The explanation for this apparently surprising choice confirms what the present work is trying to demonstrate: the issue of English in green communication is far from simple and it is certainly not possible to identify some specific Anglicisms – like stakeholder – and state they are more likely to signal cases of greenwashing. On the contrary, what is possible is to identify discursive strategies and tools to recognize these. In this case, the syntax of the message does not exploit the advantages of opacity that the term stakeholder offers; here it is not necessary to pin down who the stakeholders actually are, as we do not even know who the agency’s customer is. Hence these stakeholders are simply hypothetical and the insertion of the Anglicism can rather be considered a way to share a certain kind of business identity with the potential customers, who are likely to recognize this term as typical of texts concerning their communication strategies.

In fact, this last example may rather be included under the label “Professional,” i.e. the insertion of an Anglicism as a strategy of identity formation (Piller, 2001, p. 180). In terms of green credentials, the Professional use of Anglicisms is likely to correspond to the most controversial examples of green marketing, as what companies are trying to achieve in this case is the construction of a business-oriented brand image, which – as explained above – clashes with the notion of degrowth. In order to observe these kinds of strategies and their consequences, another company that was present in the fair is analysed.

A mainly Professional use of Anglicisms was detected on the website “l’Ecolaio.” The company comprises two points of sale in Italy, selling various goods made from recycled materials such as stationery items, inkjet cartridges, and toys. The aim of their website is to sell their products, to advertise for their shops, but also to promote the possibility of opening a new point of sale as a partner. In the section presenting the latter possibility, many examples of Anglicisms can be found; this is likely due to their attempt to establish their identity as reliable business partners. Under the section “Apri il tuo store” (“open your store”), consisting of 485 words, the following English words/phrases can be found: business (4), format (3), Concept Store (2), start-up (2), store (2), partner (2), green (1), online (1), network (1), web (1), software (1).

The fact the company was at the fair is considered here an element of guarantee of its green credentials. In terms of communicative strategies, “format” is an Anglicism that deserves to be analysed. Here are the relevant occurrences within the section addressed at potential partners:

> Non vi proponiamo un format, ma soluzioni flessibili.
>
> [We do not offer a format, but flexible solutions]. (“Perché sceglierci,” para. 1)

> Scarica il documento completo del Format con tutti gli elementi d'arredo.
>
> [download the full document of the Format with all the furniture elements]. ("A modo tuo," para. 3)

The reasons why this Anglicism appears significant is that "format" is first employed with a negative connotation, like "advertising" in the case analysed above, and later employed to designate the project offered. Once the website visitors open the "Format" document, they may notice that the slogan running under the logo is "qualche cosa in più di un semplice format" [something more than a simple format]; still, the title of the Italian brochure is "format stores 2013", where again we notice a mixture of English words and Italian word order. We have here an example of poor framing (Lakoff, 2010), in which different communicative strategies related to Anglicisms have been employed within the same document and for the same word, thus engendering confusion.

This section has demonstrated that companies which can be considered environmentally-friendly tend to avoid an excessive use of Anglicisms and they do not take advantage of the potential opacity an English expression may offer. We must also bear in mind that nowadays the typical target of this kind of company is a "critical consumer," which means that most of these people in Italy are likely to know English quite well, as they tend to be better off and more educated than the average consumer. In fact, this could prove to be a negative element as it might transform itself in a counterproductive strategy of exclusion of those potential consumers that do not belong to the elite niche.

This analysis has also shown that the influence of corporate discourse can be detected in this business sector too, especially when financial matters are being discussed. This use, that we have labelled Professional, is the most controversial one, and it is likely to hinder the effectiveness of a company's green credentials as a consequence of its closer connection to a capitalist approach, as argued in the section that follows.

Citizens, Consumers, Stakeholders

In her abstract, Pillar (2001) states:

> A shift from political identities based on citizenship to economic ones based on participation in a global consumer market can be observed, together with a concomitant shift from monolingual practices to multilingual and English-dominant ones. (p. 153)

This concept touches upon what links environment-related marketing strategies to the issue of English as a global language. Looking at the way English is employed in environment-related communication in Italian, we have identified two main tendencies, confirmed by previous studies about the use of Anglicisms in advertising. The trend which has been witnessed for a longer time and has been the object of a greater number of investigation is the one that sees English as a language devoid of its use value and employed only for its symbolic value. Kelly-Holmes (2000, p. 70) links this to Marx's concept of the fetishization of commodities. The connection is very apt, as this use of English is representative of a capitalist approach and is found mainly in the marketing of businesses that favour a capitalistic logic.

The other trend concerning Anglicisms goes in the opposite direction: the English employed is meant to be understood by the public, not only for its symbolic value, but also for its communicative potential. On this side of the continuum we also find an oppositional use of Anglicisms in which the English language is employed to evoke and criticize the ideologies associated to the other trend, namely the use of English as an obfuscating strategy.

We can thus identify the first trend as mainly targeted at consumers – not required to understand but rather to accept the companies' marketing a-critically, thus favouring consumption – and the second trend as mainly targeted at citizens – responsible, critical, active interlocutors. This brings us to the connection between these two approaches and the concepts of Commons and Stakeholders.

The notion of the stakeholder has notably been the object of study and debate in the realms of Economics, Politics, and Environmentalism. The word itself engenders confusion and, in some cases, has been employed as an obfuscation strategy (Fairclough, 2000). It is a term that belongs to the logic of capitalism and private property, even if its novelty consists in taking into account advantages that can hardly be valued in monetary terms. On the contrary, the concept of common goods refers to citizens and is not meant to be limited to a specific group of people.

In terms of environmental framing, the concept of common goods is much more effective. If we think of a company polluting the territory where its industrial plants are, the local inhabitants will be considered part of the group of stakeholders. If the company follows a stakeholder logic, it will offer the inhabitants something to compensate for the loss of a non-polluted territory (jobs, investments in local infrastructures such as new roads, etc). The inhabitants will probably lack the necessary level of knowledge to contrast the power advantage of the company critically and will find themselves trapped in the no-win choice between health and economic survival.

A logic based on the concept of Commons, on the contrary, will require the company to avoid pollution anyway, as it removes the approach to the territory based on the concept of private property. As the environment is a complex and interconnected system, it is not possible to pollute a limited part of it, respecting the boundaries of private property, and that is why the framing on which environmental communication is based needs to be grounded on a commons logic. As Lakoff (2010) explains, a change in framing requires a long time and a complex process of reframing, but it appears to be the only long-term solution available.

It's the Common Good, Stupid!

This section aims to demonstrate the theory in the previous one by analysing another case, which has been the object of recent debate in Italy. The case is that of Termoindustriale, a company based in Northern Italy and operating in the business of cogenerators, also know as CHP (Combined heat and power). The company was attacked together with one of its clients, Citterio, for the construction of a cogenerator in Felino, near Parma, in an area known for its long-established producers of hams and salami. In simple words, a cogenerator generates heat and power and can be fuelled by burning the production rejects on site, which in this case consist of animal oil. While the system is not zero-emission, the fact the rejects are employed to some end rather than wasted and the fact they do not need to be transported elsewhere by oil-consuming motor vehicles results in a lower impact from the environmental point of view.

But the local population and the other producers started a protest against Citterio in the attempt to impede the construction of the cogenerator. The documents of the local associations lobbying against the construction focus on two aspects: on the one hand, they present unreferenced theories about the dangers of the system without comparing them to the current state of things; on the other hand, they foreground the fact that Citterio would receive EU incentives for building the plant.

Italy is a country where the familiarity of the population with science-related issues remains too low (Corbellini, 2011), and the level of freedom of information is very problematic (RSF, 2013); thus, the population is ill-at-ease with the introduction of technological innovations, as lay people lack both the knowledge they would need in order to judge them as well as the possibility of trusting independent and

reliable sources of information. As explained by van Dijk, (2006, p. 361), this negative consequence of manipulative discourse typically occurs when the recipients are unable to understand the real intentions or to see the full consequences of the beliefs or actions advocated by the manipulator. This means that a company that wants to introduce technical innovations that impact the environment will need to frame its communication in terms of public benefit for the common good and downplay the economic advantages.

In the case analysed here, the response of the company was to send technical experts to the public debates to explain the technical advantages of the cogenerator, thus falling into what Lakoff (2010) labels "the trap of the Enlightment Reason" (p. 72). The detractors, on the contrary, followed an approach which appealed mainly to people's emotions, misnaming the cogenerator by calling it an "incinerator" and stating that "it burns the corpses of animals." In terms of communication, Termoindustriale's website clearly follows a business-oriented approach and addresses potential customers. As a consequence, the economic advantages of cutting energy costs and receiving EU incentives are foregrounded: they are likely to have inspired part of the criticisms.

The observation of the use of Anglicisms on their website confirms the previous hypotheses: the English words employed belong to the business realm (e.g. partner, business, know-how, business plan, mission, problem solver, trading) and to the relevant technical jargon (e.g. Concentrated Solar Power, High Temperature, Medium Temperature, Organic Rankine Cycle).

The website does not try to present the advantages of their technologies from a more emotional point of view. Cases of blatant obfuscation of facts were not detected, but their pages are clearly addressed at potential customers and it is also very clear that they expect their public to be interested in the economic advantages first. This communicative approach is likely to trigger negative reactions in environmentally-minded citizens. Given the difficulties the company has had to face due to the negative reactions of local citizens, this case demonstrates that attention to framing, and improved communication strategies may prove more apt than economic advantages when it comes to building an ecological, sustainable economy.

Conclusions

The overall purpose of this work is not to promote more or less use of English in environment-related discourse, but rather to provide greater knowledge and awareness of its implications. When observing the presence of Anglicisms in Italian texts that deal with sustainability-related topics, two main trends can be recognized: on the one hand Anglicisms appear to be playing an obfuscating role, distancing the target public from the message; on the other hand, the presence of words in English can be considered an involving strategy, as those who recognise the language or understand its meaning feel included in the elite.

While the obfuscating strategy is likely to signal cases of greenwashing, i.e. texts that promote as environmentally-friendly products and services which are not, the involving strategy is also likely to be found in those texts where marketing strategies are employed in order to render the communication more effective. It would probably be impossible to draw a neat line to divide potentially manipulative cases of greenwashing from genuine cases of reliable environment-friendly communication. And it is certainly impossible to establish a list of "dangerous words" signalling greenwashing. As a consequence, what appears as the most reliable strategy to distinguish greenwashing-oriented Anglicisms from inclusive ones is to observe how they are employed in different communications and establish the degree of friendliness towards the environment through non-linguistic methods.

Thanks to this approach, a taxonomy of four strategies was proposed -- International, Creative, Oppositional, Professional – in the attempt to pin down the different goals communicators are pursuing when they insert Anglicisms in their texts. The Professional one was found to be the most controversial,

the one that companies should be more wary of using. As argued by Lakoff (2010), the whole issue requires complete reframing. Still, greater awareness of the implications of using English as a Lingua Franca in environment-related communication can only help to improve the way in which messages are created and transmitted. As this will influence the general perception of ecological issues and the consequent policies, the result will not be limited to efficient communication but will prove vital for our survival.

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Revisiting Participation: Who Matters

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In this paper we focus on "who" participates in environmental decision-making. We are concerned that participatory processes in the US may be moving toward stakeholder as opposed to citizen involvement. We use the key elements of access, standing, and influence to evaluate the relative effectiveness of these processes involving a narrower stakeholder representation or direct public involvement. Effective participatory processes have the potential to build community capacity which can be important in subsequent issues. We use empirical examples from the energy sector, water policy, and endangered species management to examine the potential success of participatory processes in the US. We suggest that in order to address pressing environmental issues in a timely manner, applied scientists need to move toward greater citizen involvement that insures access, standing and influence.

Keywords: Stakeholders, Public, Trinity of Voice

Background

The 1970 signing of the National Environmental Policy Act (NEPA) provided the framework to bring citizen input into environmental decision-making processes that lead to government policy and land use decisions (Hendry, 2004; Walker, 2004; Webler & Tuler, 2006). Early models of citizen engagement often failed to meet their goals: the ineffectiveness of public comment and meetings leading to increased conflict (Innes & Booher, 2004), the lack of decision space (Schwarze, 2004), the exclusion or marginalization of important voices (T. R. Peterson & Horton, 1995), and the failure to build trust (Parkins & Mitchell, 2005; M. N. Peterson, Peterson, & Peterson, 2007; Walker, 2004). Despite these obstacles, strong arguments remain for greater public participation to facilitate decisions and environmental policy that meet diverse needs (Charnley & Engelbert, 2005) and maximize public support (T. R. Peterson, Peterson, Peterson, Allison, & Gore, 2006). Yet, the means to effectively engage a broader audience in public participation is not clear, even after 40 years of research (Booth & Halseth, 2011).

In this paper we contend that effective participation processes are characterized by meaningful participation of a diverse group of participants. We further suggest that broadening the discussion from stakeholders to public is vital to success. Booth and Halseth (2011) argue that participation processes fail if the public and their needs are incorrectly defined. In other words, it is important to understand who is and should be involved so that the outcomes meet the goals of individuals and groups.

We will first examine the nuances of the terms "stakeholders" and "citizen" (using the term "public" interchangeably with "citizen") and how this distinction may affect participation processes. We will then discuss the context of complexity that characterizes environmental issues, decisions, and policy. Finally, we will examine empirical examples from our research in the energy sector, water policy, and endangered species conservation to illustrate the relative merits associated with stakeholder or citizen involvement in US participatory environmental initiatives. This analysis will be based on Senecah's (2004) theoretical approach to essential components of access, standing, and influence that serve as "an effective

benchmark against which to plan or evaluate participatory processes regarding contentious environmental issues" (p. 13).

Stakeholder or Citizen

Definitions of and distinctions between the terms "stakeholder" and "public" can be found throughout the public participation literature, but with little consensus. A broad definition of stakeholders includes anyone whose health, economic well-being, or quality of life is affected by an issue. A narrow definition limits stakeholders to those who have legal and presumed claims in an issue (van den Belt, 2004). The term stakeholder often has the added nuance of including those who have some legal, oversight, or representative responsibility regarding the issue (Kessler & Center, 2004). In the literature on public participation, the public is less likely to have immediate access via support opportunities, knowledge, and information; and is therefore more likely to join the process as ill-informed reactionaries (T. R. Peterson, Kenimer, & Grant, 2004; Senecah, 2004). If narrowly defined stakeholders are preferentially included, the process from the outset is often restricted in structure and in normative values which narrows possible outcomes. With greater citizen participation, there is likely to be a longer time of rule-establishment and possibly a greater need for learning, but the variety of input may lead to more creative approaches to the issue.

A common phrasing is "stakeholders and other members of the public"; failing to distinguish the critical dimensions that separate the two in a process. Stakeholders are often recognized as formalized groups that have structured validity. This is in contrast to the looser assemblage of citizenry that while affected as resource users may not be engaged or actively involved with the issue. A stakeholder emphasis tends to shape the issues around ecosystem services (M. J. Peterson, Hall, Feldpausch-Parker, & Peterson, 2010). This can shift the power balance to those with larger stakes in the issue, i.e. more investment in the issue. As an example, this might privilege large corporations over small land owners, simply because the corporation represents a larger monetary investment (M. J. Peterson et al., 2010). Stakeholders will often bring knowledge, structure, and power to the process while the public may be poorly informed and operate with little organization. Citizens offer the possibility of fresh ideas, unique experiential knowledge, and a creative perspective. In this paper, we will use a broad definition of the term stakeholder but will try to move towards other, more inclusive terms. Our intention is that a broad public or citizen voice is needed.

There are several challenges to broad participation. One of those is public apathy. This has been studied extensively but there is no simple solution. Attracting people into active participation is also a challenge. Institutional representatives may be paid to participate, but citizen participation often requires a large time commitment without remuneration. This is both a source of pride and burden for citizen participants. Processes must function such that participation does not become a significant burden in the form of excessive time or monetary commitment for participants.

Context of Complexity

As public participation in environmental issues and policy making has increased, so has the recognition that the issues are complex. It is unlikely that complexity has increased, rather our understanding and recognition of the complexity has increased. Complex environmental problems have social, political, economic, cultural, biological, and biophysical aspects that are best addressed via a broad perspective (Booth & Halseth, 2011). Complexity requires a wide array of processes to meet the challenges of different goals. This can involve science-centered stakeholder consultation that is streamlined and task oriented or

it may be an egalitarian deliberation that emphasizes empowerment of participants as a reaction against a dominant other (Webler & Tuler, 2006). Another model that has been used involves processes where the purpose is to make recommendations to decision-making agencies. Regardless, participatory processes may have various goals and methods to satisfying those goals. This diversity only compounds the task of determining what leads to successful participatory processes.

Trinity of Voice Framework

Participatory processes have been evaluated in multiple ways as have the common denominators for success. Table 1 presents the conclusions of Webler and Tuler's (2006) points of consensus among factors, Ostrom's (1990) design principles of institutions for successful common pool resource management, Norton's (2007) structuration of public participation, and Daniels et al. (2009) negotiating framework for environmental policy discourse. The relationships between the four frameworks are complicated because each has a unique focus. Yet, each adds richness to the conversation of how to evaluate participatory decision processes. Comparative analysis has also been used (Booth & Halseth, 2011) to examine effectiveness of participatory processes.

<table>
<tr><th>Webler & Tuler (2006)</th><th>Norton (2007)</th><th>Ostrom (1990)</th><th>Daniels et al. (2009)</th></tr>
<tr><td rowspan="2">good processes reach out to all stakeholders</td><td rowspan="3">Agency:
Security – risk, trust
Competence – for all parties</td><td rowspan="2">Clear boundaries and membership</td><td>Discourse</td></tr>
<tr><td>Knowledge</td></tr>
<tr><td rowspan="2">Information is shared openly and readily</td><td>Congruent rules</td><td>Communication</td></tr>
<tr><td rowspan="3">Social Systems:
Social domains
Communication as force, factor</td><td>Monitoring</td><td>Culture</td></tr>
<tr><td rowspan="2">Participants meaningfully engaged</td><td>Graduated sanctions</td><td>Institutions</td></tr>
<tr><td rowspan="2">Conflict resolution mechanisms</td><td>Agency</td></tr>
<tr><td rowspan="3">Attempt to satisfy multiple interest positions</td><td rowspan="3">Duality of Structure:
Participation – rules, resources
Control – power, influence</td><td>Incentives</td></tr>
<tr><td>Recognized rights to organize</td><td>Cognition</td></tr>
<tr><td>Nested units of organization</td><td>Actor orientation, experience</td></tr>
</table>

Table I. Summary of key factors in successful participatory natural resource processes according to different perspectives

We propose to use the key elements of Senecah's (2004) Trinity of Voice (ToV), namely access, standing, and influence, to evaluate participatory processes regarding contentious environmental issues. Senecah posits that if these elements are present, then the processes are more likely to be effective, and have the potential to build community capacity important in subsequent issues. We chose Senecah's (2004) framework as it encompasses many of the categories seen in other analyses (see Table 1 above).

The first element, access, refers to individuals having the opportunity and potential for safe self-expression. Individuals and groups are able to participate because the design allows access to knowledge and the process. Access is critical to meaningful involvement by a broad participant base. If access is limited, then

certain groups or individuals become marginalized and may become obstacles to policy implementation (T. R. Peterson, Kenimer, & Grant, 2004; Senecah, 2004).

Standing is the second element in ToV, referring to legitimacy or standing in the process. This may refer to openness of dialogue with a genuine empathy for other perspectives; active listening and courtesy; early and ongoing voice, meaningful decision space, and clear parameters in the process (Senecah, 2004). Note that these reflect key factors in other author's analyses of successful participatory processes (Table 1). Standing must come from access; therefore it cannot be present on its own. Stakeholders as defined as members of established groups are at an immediate advantage because they already have established standing. The relatively newly involved public are at an initial disadvantage in standing as they may not have immediate empathy, are unlikely to be included in the eventual decision space, and rarely have a history (early and ongoing) of voice in the process. Despite these initial differences, effective processes do establish standing for all participants. This has also been described as 'leveling' the playing field (Booth & Halseth, 2011).

The final component of ToV, influence, is a synergistic outgrowth of access and standing that involves the ability to have participant's ideas taken into consideration in the process. Senecah (2004) makes the distinction that influence is not dependent on whether or not the ideas are incorporated, but requires that ideas are respectfully considered in the formation of the final design (Senecah, 2004); again a factor in analyses presented in Table 1. This distinction is crucial to Senecah's argument because it involves acknowledgement rather than power. Those that have power going into a process are likely to retain power and occupy greater decision space, but if participant's ideas are part of the design, then this represents effective influence and builds social capacity.

A primary difficulty of the ToV framework is that the components - access, standing and influence – are greatly intertwined and may not function independently. This means that all three elements are required for an effective process, but the boundaries of how to define each separately are perhaps blurred. If all elements are present, then the process is likely to build social capacity. With established social capacity, future issues may be dealt with more efficiently and creatively, which addresses the criticism of participatory processes of increased time needed to involve the public.

Practical Examples

The following case studies of public participation processes are each different in terms of the issue as well as the goals of the project, and all are still in progress. We will examine each one in terms of how well the benchmarks of access, standing, and influence are addressed within each project.

Smart Grid (hereafter SG), a suite of technologies designed to update antiquated electric grid infrastructure, is a tool that has the potential to facilitate a paradigm shift in how increased public participation will conserve energy. Traditional electric grids are molded out of the concept that power is a one-way flow from producer of electricity to the consumer. Mirroring the advancements in digital technology where consumers of information are becoming more participatory (Fischer, 2011; Fischer & Hermann, 2011), this digitization of the grid encourages two-way communication between the electrical provider and the consumer (Mah, van der Vleuten, Chi-man Ip, & Ronald Hills, 2012). In power generation, the electricity providers must maintain a large capacity to meet energy demands at all times. Unfortunately, this becomes both environmentally and economically costly (Mosko & Bellotti, 2012). By providing the public with access to real-time energy costs via SG, the electricity providers not only encourage participation from all electricity consumers but facilitate a shift toward a participatory culture (Fischer, 2011).

Despite the opportunity of access, minimal public engagement and acceptance challenges SG projects across the globe. One difficulty is the dynamic pricing of electricity at different times of day which is not understood well by consumers accustomed to flat-rate pricing. This generates mistrust by consumers (Mah, van der Vleuten, Chi-man Ip, et al., 2012; Mah, van der Vleuten, Hills, & Tao, 2012). Another difficulty is public apathy, an issue seen in other democratic processes (Senecah, 2004). The success of SG lies in a shift to an engaged, participatory culture as broad participation is the only way that SG deployment is cost effective (Levinson, 2011). Historically, electric consumers have had a hands-off approach to energy management; the extent of participation was in receiving and paying an electric bill at the end of every month. If electric providers need consumer participation in order for SG to be successful, they must entertain the possibilities of consumer standing and influence. Access, by itself, is not enough. Consumers need to see themselves as acknowledged participants with legitimate considerations in order to move today's energy infrastructure forward.

Recovery of the endangered Whooping Cranes in their wintering grounds on the Texas gulf coast has been a persistent issue since the 1930s. Crane numbers have risen from a low of 16 to their current level of almost 300 in the single wild flock. Despite protection under the Endangered Species Act in 1967 (Udall, 1967) cranes still faces threats from loss of habitat, increased pressure from development and human interaction, violent Gulf storms, rising sea levels, lack of freshwater inflow to the wintering ground estuaries, and more. Even should they recover, they are likely to remain dependent on a wide array of management strategies (Scott, Goble, Haines, Wiens, & Neel, 2010). Our research involved an analysis of the capacity for community involvement in conservation of this species. Much of the public is either economically involved in tourism around the birds or has a historical relationship with the cranes. We conducted semi-structured interviews of diverse community members and a public workshop to gauge opinions and input from a broader group. The process was constrained by a lack of agency commitment to allow ongoing citizen participation, essentially shutting down community access to future decisions. Citizens were given access to knowledge but were never allowed standing in management design nor were they acknowledged for their input. Participants were disappointed that the process failed to move forward.

The final case study involves ongoing efforts by the state of Texas to address critical freshwater inflows to bay ecosystems. The state of Texas mandated a stakeholder process to recommend freshwater inflow guidelines in the last three sessions. Our research follows this initial recommendation process with a mediated modeling process that engages local citizens in learning about system properties and modeling potential management scenarios (http://www.missionaransas.org/post_science_sciencecollaborative.html). Thus far, the joint learning process has provided access for diverse members of the public who were excluded from the initial recommendation process. The process builds legitimacy and opens communication through workshops that engage scientists, citizens, and established stakeholder groups in designing a model to address specific questions raised by the group. This does not change the fact that decisions regarding freshwater inflows are still made by a state agency; but the voice that is heard has become larger, better informed, and more confident. It remains to be seen if this establishes credible influence of the group in the larger framework of water policy.

Conclusions

In this paper we propose that who is involved in participatory processes matters. We distinguish between stakeholder and citizen participation and suggest that greater citizen participation is critical to more robust outcomes. Criticisms of public inclusion include increased time involved in decision-making and the difficulty of overcoming apathy. The advantage of public participation is that it builds community capacity,

increases the likelihood of public acceptance, and facilitates public engagement in future processes (Norton, 2007; Senecah, 2004; Thompson, Forster, Werner, & Peterson, 2010).

In the first case study, Smart Grid technology development has potential to shift energy production from a one-way product delivery to an interactive process of ongoing adaptation by both producer and consumer. The public, however, has had little opportunity to the knowledge that it critical to establish this new paradigm. The process is therefore not perceived as legitimate and creates conflict by maintaining the image of the all-powerful producer making all decisions without input from the consumer. The case of Whooping Crane conservation already presents wide support that is recognized as crucial to management, but again, the agency in charge is unwilling to allow access and grant standing to facilitate broader involvement. The final case study involving mediated modeling about freshwater inflows into vital bays and estuaries shows promise as a successful participatory process. The primary challenge facing this endeavor is finding a means to establish legitimacy within the larger efforts of state water management.

Access, standing, and influence are essential components of democratic processes, supporting multiple voices and the potential to move forward through conflict. Citizen participation, as direct democracy, provides a diverse platform to address complex debates. Using the Trinity of Voice framework, our analysis suggests that more public engagement is needed in US participatory processes. Effective processes must provide access, standing, and influence to all participants. As applied scientists and facilitators, we need to be cognizant of the advantages of greater citizen participation.

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Participation in Environmental Communication: Culture, Nature, and Literature

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This paper focuses on the issue of environmental communication and the entailed participation. In addition to the humans' participation the study suggests the co-presence of culture and nature in environmental communication, highlighting nature's voice(lessness). An ecocritical stance is taken by proposing, first, some possible models of humans' inclusion in such communication; particularly the recent bioregional way of thinking is introduced. Second and most importantly, the article takes into account the voice of nature, communication from the seemingly mute physical environment. Of special interest is therefore the question whether nature is really silent in environmental communication as well as what counts as speech and participation. Drawing on the ecocritical framework and its premise, nature-culture relations, the representation of environmental communication in literature is finally considered as a new direction in literary studies.

Keywords: environmental communication, ecocriticism, nature in literature, Monique Roffey, contemporary British literature

In the present-day environmentally fragile world the issue of the environment has become one of the foremost and urgent concerns of mankind. This topic, otherwise characteristic mostly to natural sciences, has also found its way into literary studies in the form of ecocriticism, environmentally oriented literary criticism, which affords an interesting insight into the representation and significance of environmental issues, nature, and place in literary texts. In the current article, the issue of environmental communication is explored within the topical ecocritical framework, adding to the presence of culture in such a communication the aspect of the environment.

It is the position of nature which, with reference to environmental communication, has been largely overlooked and commonly assumed to be a silent object. The problem of this research consists in establishing whether the natural environment *is* indeed silent in point of environmental communication and what counts as speech and participation as such. The current inquiry assumes nature to be instead a noteworthy presence in the communication, which is to be heard and taken seriously. The paper aims at considering the possibility of participation from the angle of the environment, rather than that of culture, i.e. humans. In what follows, first, the participation of humans in environmental communication is discussed, proposing some topical models of participation drawing on ecocritical theory. Second, the focus lies on nature as a participant in the communication, considering the issue of nature's agency that has already spurned many heated debates. Finally, in the framework of ecocriticism, the aspect how environmental communication could be understood in literature is tackled, providing at the same time a practical application of the relevant concepts.

Environmental Communication and Culture: Ecocritical Models

Environmental literary criticism, serving as the theoretical background of the study, concentrates on the relationship between literature and the physical environment. More specifically, it takes as its premise nature and culture, the nonhuman and the human, especially the idea that culture is connected to the physical world, affecting it and affected by it (Glotfelty, 1996, p. xviii-xix). It is of importance that the prefix "eco" in the term ecocriticism is favoured over "enviro," for the latter is anthropocentric, viewing humans as the centre and the environment as a mere background; "eco" implies instead constituent parts, dependent on each other (ibid., p. xx). As it has begun to transpire, ecocriticism suggests an ethics of participation or the mutual co-presence of humans and the environment.

Contrary to the dualistic essence of nature-culture dichotomy, attempts are made to transcend the hierarchical relations, suggesting an understanding that *both* the human *and* the nonhuman form the unity of life. Herein lies the first possible model for culture's participation in environmental communication: the non-hierarchical interrelatedness of nature and culture. Significance is therefore attributed to contextualism; not man's superiority but nature's presence gains in importance. The relatedness is significant not only for crossing hierarchical differences, but even more for being a way of inclusion in which people might be more engaged with the environment. The unity and co-presence of nature and culture have been termed in environmental discourse as "postmodern ecocriticism," distinguishable for its emphasis on multiplicity, contextuality, and subversions of master narratives (Oppermann, 2010, p. 19-20). This, in turn, is combined with the interconnectedness and diversity of the ecological approach, emphasising the mutual relations between nature and culture (Oppermann, 2006, p. 116). Such a combination, in other words, stresses movement from the idea of authority to that of relationality (Oppermann, 2010, p. 19-20). Further support to the aspect of nature-culture mutuality has been amply provided by ecocritic William Rueckert, whose statement "everything is connected to everything else" has been even established as the "the first Law of Ecology" (Rueckert, 1996, p. 108). Finally, the definition of ecology as "the study of the Earth Household" (Capra, 1997, p. 32) and how all the members belonging to it are interlinked is particularly pertinent, providing a metaphor of the Earth as a house with living beings inside it, to be taken into account.

In addition to the interconnectedness, another probable model of inclusion from the perspective of humans could be that of dialogics. This understanding of multivocality and the mutuality of nature and culture function also as a characteristic trait of postmodern ecocriticism (Oppermann, 2006, p. 118). The concept of dialogue, central to ecocriticism, has been most succinctly established by Mikhail Bakhtin, who emphasises the importance of a plurality of interacting voices, for monoglossia is locked into itself (Holquist, 2004, p. 17). In particular, languages "throw light on each other: one language can, after all, see itself only in the light of another language" (Holquist, 2004, p. 12). This is, indeed, true of the language of culture and nature, too, as of any communication.

Another useful reference is the concept of symbiosis, as proposed by Estonian literary critic Jüri Talvet in the context of Cultural Studies. He points out the term "symbiotic dialogue" (Talvet, 2005, p. 30), into which peripheral cultures should be synthesised, instead of the "unicultural monologue" (Talvet, 2005, p. 26) of Western mainstream. Similarly, ecocritical dialogue has to involve so-called marginalised nature. Therefore, dialogics, with the entailed ideas of symbiosis, mutuality and synthesis, is an essential way of understanding participation and a vital component in environmental communication, indicating the two-sidedness of the communication: it is not only about culture having a say in environmental matters, but taking the environment into account as an equal and significant participant.

The third way of participation as seen through the ecocritical lens is the rather recent and unexplored bioregional way of thinking. In the definition suggested by Californian environmentalists, Berg and Dasmann, the term bioregion refers, first, to a geographical terrain with its own physiography, climate, watershed, animals, and plants (Buell, 2005, p. 83, 88). Even more importantly, it is understood as a "terrain of consciousness" (Buell, 2005, p. 83); in Buell's hope, bioregion may come to substitute "a nationalist vision of the globe and of interstate relations" (Buell, 2005, p. 82). Bioregionalists namely criticise nation-state borders, and suggest bioregion instead of national and political divisions as a method of erasing boundaries – at least in imagination. In the view of leading ecocritic, Greg Garrard, bioregion as an eco-political unit respects natural boundaries as well as the boundaries of indigenous societies (Garrard, 2012, p. 127). Bioregion, then, as a terrain of consciousness is a specific view to the world, which instead of restrictive boundaries views the region as one inclusive community.

It is therefore a noteworthy method of participation, inclusion and belonging, whereas the participation could be also understood to occur on the level of imagination. That is, the oneness with the environment or inclusion suggested by bioregionalism points to the fact that participation does not necessarily have to be physically perceivable; the idea starts particularly on the mental level, in thinking about an object in a certain way. Also, biological region shifts the focus from different nations inhabiting a place to the place itself, including also the environment. This, above all, highlights ecosystem as a *whole*, comprising both the human (different nations) and the nonhuman – crossing thus the centeredness around either culture or nature.

Nature in Environmental Communication: Approaching the Voices of the Voiceless

Following from the idea of interrelatedness, dialogics and the concept of communication, an essential component to be considered is nature or the physical environment. This, in turn, suggests more profound questioning of such topical issues as voice and voicelessness, nature's agency, and objectification. Contrary to the usual focus on humans, ecocriticism recognises namely biocentrism, a non-anthropocentric view to the world, which includes nonhumans. In the ecocriticial discourse, a specific way of referring to anthropocentrism and biocentrism has emerged: as proposed by Lawrence Buell: "humankind-first ethics" and "ecosystem-first ethics" (Buell, 2005, p. 227) or, according to Christopher Manes, "second nature" and "first nature" (Manes, 1996, p. 23). Both the concepts are instrumental in this study.

Let us now, however, focus on the presence and participation of the environment in environmental communication. That is, among the aspects that engage scholars across the area of ecocriticism is especially the question of nature's agency and voice. For years, the debate has been waging: does nature have agency? What counts as speech? According to leading ecocritic Manes, "nature *is* silent in our culture [as] … the status of being a speaking subject is jealously guarded as an exclusively human prerogative" (Manes, 1996, p. 15). Nature is hence not a privileged voice but tends to be regarded as silent, just as the voices of women, minorities, and children have been – "meaningless" and silenced. Manes rightfully observes that humans have been the centre of conversation and communication, leaving nature therein voiceless and subjectless. The one-sided communication stems, then, very much from the fact that humans are considered the only creatures with something to say: "no one really expects nature to answer" (Manes, 1996, p. 22); the speech and answers are expected to reside in texts and cultural utterances, not in the phenomenal world. Another ecocritic Scott Russell Sanders (1996, p. 194) has pertinently observed that though we are part of nature – we are dependent on the planet for food, energy, etc, and our bodies decay – it has only become an intellectual, not an emotional commonplace.

One could thus generalise and ask: cannot nature speak at all? Is the environment, indeed, silent in environmental communication? If usually nature is anthropocentrically spoken for (via environmental congresses, demonstrations, and protocols), then the loud environmental concerns and catastrophes, such as earthquakes, floods, and tornadoes, one could claim, suggest that nature still speaks for itself, at least metaphorically. Therefore, nature could be still rightfully viewed as a participant of its own in environmental communication, as well as a voice and agency. It is just a different indirect voice that does nevertheless speak and act out, in its own way, different from that of the humans, producing articulated reactions to human action and causing change. Consequently, it is essential to acknowledge that there are different possibilities of participation and speaking; human and nonhuman languages understandably differ, requiring probably reconsideration of the very concept of speech and agency. The difference in speech, however alien it might be, does not necessarily mean absence of speech.

Attempts are more particularly apt to be made in ecocriticism so as to transcend the hierarchical nature-culture duality, in which nature tends to be eclipsed, by including biocentrism, nature as a voice of its own – considering the fact that there are many other species besides humans and the voices of birds, animals, and natural phenomena. Christopher Manes in particular has declared that besides the privileged human language "there is also the language of birds, the wind, earthworms, wolves, and waterfalls – a world of autonomous speakers whose intents … one ignores at one's peril" (Manes, 1996, p. 15). If the environment were taken more seriously, its relationship with culture as well as the respective communication is thus likely to be more of mutual essence.

In approaching the aspect of nature's voice, it is also important to consider the issue of constructedness. That is, the commonly supposed silence and inferiority of nature is not an inherent trait of the environment but rather a characteristic that is generally assumed as such or attributed more or less voluntarily to the environment (for humanity's gain, self-interest, for instance). As nature could be said to be speaking and acting out in its own way, it appears to be not essentially silent but supposed to be as such or, even more, constructed as such, entailing thus power. Drawing on the latter, it is especially relevant to understand that by approaching culture as the (sole) speaker, the very norm, and nature as the mute Other, a whole worldview is built and eventually naturalised so that nature is, indeed, approached as a silent passive object. In the background of such a general attitude, the nature-culture dichotomy as the voiceless and the voiced becomes so fossilised and deeply ingrained in the general thought and minds that it is, indeed, regarded as self-evident.

With reference to environmental communication as well as nature-culture relations, it is consequently important to consider the environment as an equal participant, raising it from the position of the excluded Other and a passive object to that of a "self-articulating subject" (Oppermann, 1999, p. 4). The phrasing of Jim Cheney casts especially pertinent light to environmental communication and the part of nature in it: "For a genuinely contextualist ethic to include the land, the land must *speak* to us; we must stand in *relation* to it; it must *define* us, and not we it" (as cited in Clark, 2011, p. 131; emphasis in the original). In other words, the communication requires also the participation of the environment, its voice, however differently it might be represented, and the mutuality from the perspective of culture, not dominance.

It is this complex dialectics of nature, its voices, bioregionalism, and communication that I shall now explore in the framework of two literary texts.

Environmental Communication in Literature

The White Woman on the Green Bicycle: Symbolism, Power Relations, and Voices

The analytical ground for the representation of environmental communication in literature is two contemporary novels by British-Caribbean woman writer Monique Roffey (b. 1965), who resorts to magic realist literary convention and focuses on the issue of identity, using environment for the problematisation. In particular, Roffey's recent novel *The White Woman on the Green Bicycle* (2010) recounts the story of the couple George and Sabine Harwood, who migrate from England to Trinidad in the 1950s, problematising several clashes and especially the issue of identity. However, it is the natural environment that constitutes a unique meaningful presence of the novel, being certainly more than a mere framing backdrop for the unfolding events.

The green environment, namely, tends to overshadow the narrative. The mountain hills of Trinidad form a noteworthy element of the novel, being boisterously green, self-contained, and marching "straight down the steep hills to the sea. No beach or strip of land in between, just the wild green and the black sea" (Roffey, 2010, pp. 192, 197). The description of the environment as self-contained, immense, and mighty is noteworthy in conveying the ecosystem-first ethics. Even the sky is said to be "staring," so that the protagonist wants to get out of the way (Roffey, 2010, p 197); herein, the environment appears as an over-character and a looming presence. Nature constitutes clearly one of the novel's characters, for the hills are furthermore referred to as she, a woman, attributed with bodily characteristics (hips, breasts, belly, curves) and therefore emerging as a real flesh-and-blood person.

Also, the narrative displays a strong visual and auditory quality, whereas the language abounds in nature-determined imagery. The following description is a particularly good instance:

> Midnight. A clamorous hour in the house beneath the hip of the green woman. The temperature had dropped causing the cicadas to make a sound like constantly shaking maracas. Tiny tree frogs croaked, brassy. Crickets shouted, trying to compete. The house groaned shifting with the coolness of the night's shade. (Roffey, 2010, p. 43)

The number of sounds herein vividly conveys the auditory quality of the environment, adding to the ecological layer of the text. The latter is complemented by colours, "vermilion, saffron, ochre, scarlet" (Roffey, 2010, p. 113), as well as tropical flora and fauna that serve as a competition to Sabine, who is withering and suffering in the magically beautiful surroundings (Roffey, p. 114). The environmental level of the text is therefore not just present for the sake of local colour but functions as juxtaposition to the characters, providing a parallel dimension to the human world.

Particularly, the protagonist's husband George feels topophilia, an immediate pull for the female environment, the sun, the temperature, the ravishing land: "It had been an immediate, a strong physical attraction. He had fallen … head over heels with the sounds and smells, with the smiles and shapes, with all the bewitching qualities of another woman called Trinidad" (Roffey, 2010, p. 73). More specifically, George's reaction had been topophilic already before having been to the place physically: he had murmured about the magical nature in his dreams even. The protagonist Sabine, on the contrary, clashes with the green woman. Her first conversation with the hills, "I hate you. My husband loves you" (Roffey, 2010, p. 262), is symbolic of jealousy. Or rather, if for George Trinidad becomes the very place to be and England just a dot on the world map, then Sabine feels completely placeless, stuck in the place, the culture and beauty of which she does not understand: the weather is too warm, the people too black, and the nature too green.

Having been deprived of her place, her past, and identity, the woman develops topophobic feelings for the environment, or, more precisely, a hate relationship (Roffey, 2010, p. 47-48). The sad observation, "always something big somewhere else" (Roffey, 2010, p. 25), suggests the woman's desperate wish to leave, whereas her husband is determined to stay. The significance of the environment, as it thus transpires, lies not only on the level of representation, but it pertains to the novel's overall conflict: the couple has migrated from England to Trinidad, whereas it is the new environment which causes the disintegration of their marriage and gives rise to the circle of events. George namely starts to love another woman – not white or black but the green woman. He becomes more attached to the nonhuman surroundings than his own wife, who is such a sight in Trinidad that, when riding on her green bicycle, the woman causes cars behind her to crash.

The lush nature, then, becomes highly symbolic of the tumultuous emotions of the characters (love *vs.* hate). Especially the heat, troubling Sabine, has a clear metaphoric quality. To adduce only some examples, the heat is said to chase down the woman (Roffey, 2010, p. 197) and punish her with the sun rays beating down (Roffey, 2010, p. 297). Interestingly, Sabine observes that the omnipotent Trinidad sun, just as the mosquitoes, treat her with contempt, whereas her black servant never complains and hardly perspires (Roffey, 2010, p. 304). The heat as a distinctive feature of the environment provokes a postcolonial reading, for it could be said to function very much as a punishment to the white colonizers – chasing, punishing, and beating them down. Sabine is further annoyed by the "ferocious insects" of Trinidad, who, when blocking their path, tramped around one's trap (Roffey, p. 305). Though the woman mashes the creatures to death, nature still remains the presence to be looked out for and taken seriously. On a more general level, the environmental communication in literature manifests itself, thus, in communicating the novel's overall themes and concerns by way of natural imagery and environmental symbols.

Apart from the oppressive heat, the luxurious environment could be further symbolic of the intense conflicts between people in Trinidad – blacks, whites, and Creoles, highlighting again the postcolonial layer of the text. Postcolonial ecocriticism, more specifically, takes as its ground both anthropocentrism and Eurocentrism, investigating the interlinked oppression of nature and people (see Huggan & Tiffin, 2010). The natural environment is namely owned and named by the male protagonist, making it possible to be seen as the colonized. Trinidad is, however, marked not only by the colour green (nature) but also by black (ethnicity). A distinctive feature of the novel is, in particular, the communication of borders and differences symbolically through colour. For instance, a husband of an Indian, being not of right colour, is denied access to the Country Club of Trinidad: "*Everywhere* has a colour bar. There are places for you and places for everyone else" (Roffey, 2010, p. 227). The white women, specifically, gather at the club, their hiding place, whereas if the whites play at the club, blacks work and the conversation between them is scarce. Sabine, though, remarks that "these people weren't wordless, quite the opposite" (Roffey, 2010, p. 212); they chattered with each other. The aspect of voice is, then, particularly relevant in the novel: the fact that a (black) voice is marginal does not mean absence of a voice; it merely is a different voice.

Following from the power positions central to the postcolonial vein of the narrative, the natural environment, encircling the characters with its sights, sounds, and smells, is still the very presence, the central trait of which is also its constant gaze. The green woman, namely, is noted not just to watch Sabine but to peer down at her "from her immensity" (Roffey, 2010, p. 363). The black birds, characteristic of Trinidad, sit also hunched and watchful. In Sabine's remark, "their red-rimmed eyes were speculative, watching me" (Roffey, 2010, p. 192); "they've been staring at me" (Roffey, 2010, p. 193). The position of being stared from above by the environment, whether hills or birds, indicates herein the inferior position of Sabine, whereas it is nature that possesses a superior presence, directing the gaze from above. In particular, words, such as peering and staring, create memorably the impression of the human character as an intruder to the environment, not an inherent part of it.

The agentic quality of nature, indicating it to be a powerful subject of its own, becomes further visible at the seaside, where it seems as if the environment wants to take the characters in its grip: “the sea fell more silent and a blanket of white cloud pinned us down. A brown dried-up coconut floated past. Grizzled pelicans perched on the marker buoys, regarding our entrance with indifference” (Roffey, 2010, p. 196). The example communicates well the power position of nature, pinning the characters down, who are furthermore approached with indifference. The superiority of nature is even more powerfully conveyed by the mountain woman: “she encircled us. She laughed at us when it rained, shaking her hair. Birds stopped their chatter. The roar was deafening. The rain, when it came like this, was a lashing, a bombing” (Roffey, 2010, p. 262). The image of nature is herein far from meek and silent – instead, it creates the impression as if it would like to bomb out the whites from Trinidad.

Further on, the environment itself is also gazed by a technological formation in the air. According to the local lore, an American spy ship sent to the region by President Bush, in fear of Chávez as well as in the wish for the region’s oil, surveying the rain forests (Roffey, 2010, p. 133). Strikingly, then, the environment could be seen as an object, too, intended to be used for humanity’s gain and surveyed technologically from above – communicating not only a poetic layer but also a contemporary political power dimension. More than the technological or nonhuman gaze, Sabine, however, experiences the constant influence of human gaze. On her green bicycle and in her white skin, she becomes a well-recognised sight in the black population of Trinidad. As a white Englishwoman, she is not wanted in Trinidad and the gaze conveys the fact memorably: while shopping, Sabine is also “adjusting to the stark gaze of those around me. It bored holes through my back. Worse, far worse than the sun ... People stared but I couldn’t stare back. It wasn’t dangerous or menacing; somehow it was worse, an ancient consideration” (Roffey, 2010, p. 302). The gaze of the locals is, then, more menacing than that of the environment, probably because it is partly an implicit gaze that one is aware of and which functions as a psychological instrument of causing fear.

An entire circle of gazes is thus memorably evoked, so that the female protagonist has to adjust both to the gaze of the locals and the environment, whereas the latter, in its turn, is surveyed by a technological eye. The constant surveillance reveals itself to be an act of assuming power: from the subject, who watches, to the watched object. In this network of power relations, Sabine’s observation that “all the women on the island were made to be looked at” (Roffey, 2010, p. 337) is to be lastly considered, highlighting the ecofeminist layer of the narrative, that is, the treatment of nature and women (see Garrard, 2012, p. 26). These parallels communicate namely further power relations and objectification, for the environment itself is constantly stared by George, who, in his blind admiration, starts purchasing the land and naming it his own, thus allocating it an identity (Roffey, 2010, p. 297). Though not applying violence as such, it is George who is in power to own, approaching the land as a passive object. Like nature, Sabine becomes a female object that patriarchy uses for its own gain, leaving the object finally without any rights, for George sells their England house, claiming it his. Identity is therefore constructed *for* the woman, so that George is in the superior position to decide for them both, positioning Sabine to the place where she feels herself utterly placeless.

What adds to the subject-object play of nature (nature’s all-powerful gaze vs. George’s behaviour) is the fact that the environment is attributed with speaking ability. Furthermore, the fact that it is the green woman that is attributed with a voice is particularly interesting, for the aspect of voice is a quality that has not always been associated with women. Above all, the direct voicing of nature is a significant novelty, highlighting the biocentric perspective. In moment of crisis, Sabine stares at the hills and talks to them, having her moment of peace, while George also talks with the hills and trees (Roffey, 2010, pp. 70, 331), indicating the problem of mutual communication. Sabine’s son even turns the voiced mountains into a topic of conversation, noting to his mother that there is a specific word for talking to the hills: “starts with talking to plants. Then trees. Then, you know, hills, mountains ... [then] the hill starts talking back. Then you’re in trouble” (Roffey, 2010, p. 97). The hills do, indeed, have an ability to talk back.

Generally, the aspect of nature being voiced is a significant novelty even in the literary ecological discourse, resulting together with the bodily presentation in a defamiliarising effect so that nature *is* being seen and heard, not regarded almost automatically as a scenic backdrop of the text. Also, this aspect is significant in terms of nature-culture dichotomy, for via such a presentation nature is not the commonly supposed silent inferior object but a self-articulating subject. Emerging as a voiced participant in the human action, nature not just speaks out but also acts out, displaying an agentic quality and becoming even more visible as the protagonist. It is this power, the menacing sounds and actions of an earthquake (Roffey, 2010, p. 173), that for a moment unite the human protagonists. Hence, the aspect of voice is particularly illustrative of environmental communication, highlighting the novel's central theme, problematic mutual communication, as well as the respective power positions of humans and nonhumans.

Sun Dog: Nature-Culture Relatedness, Inclusion, and Participation

Monique Roffey's first novel *Sun Dog* (2002) is also characterised by a unique environmental orientation, challenging established understandings of humanism and problematising interrelations of the human and natural world. The novel recounts namely the story of the protagonist August Chalmin and his search for identity, accompanied vividly by the seasonal changes from winter to autumn. Already the sun dog of the title, a meteorological phenomenon of mock sun, is central to the novel's thematic, communicating symbolically the protagonist's fake identity – he has been lied to who his father is. That is, just like the sun dog is a trick of nature, only looking like the sun behind the cloud (Roffey, 2002, p. 176), August's life is characterised by a mock identity, an illusion of who he really is. The parallels between the human characters and the nonhuman phenomena are even more visibly present in August's personality, for he is characterised by ultimate orangeness. With his bodily colours of carrot, pumpkin, and marmalade, the protagonist looks like an unearthly being and even his very name August is suggestive of a difference.

The protagonist can be sure only of the environmental changes happening to his body. In winter his body is covered with frost, resembling a rash, but also with icicles, dangling from his armpits and ears. With the arrival of spring, in turn, buds emerge and with rain, water seeps from his body. In summer his skin cracks and lilies start to blossom on his body, whereas in autumn, his hair, eyelashes, and fingernails fall off. These changes are indicative not only of the parallels between the human and the nonhuman but their very closeness. In particular, the cyclical changes are representative of nature-culture interrelatedness and bioregional inclusion; the protagonist is in other words one with the environment and there is no border: "trapped in the ice was himself: his sweat, his own body fluid" (Roffey, 2002, p. 91). The idea of bioregionalism, as communicated herein, suggests a blend of the physical and imaginative, whereas the territory where the human and the nonhuman unite is interestingly the body.

The environmental markers merging with the human protagonist communicate well the borderless co-presence of nature and culture, an inclusive unity. It is of further significance that the environmental changes serve as a comfort to August, both frightening and delighting him. The effect of balance and solace is of specific importance, being illustrative of the bioregional sense of belonging and inclusiveness. Highly symbolic of such a relation is the fact that August regards the bud on his body "with something akin to love, feeling a kinship, an unspeakable alliance. The bud resembled a small, exposed heart" (Roffey 2002, p. 107). The environmental happenings and the respective feelings are thus communicative of the uniquely portrayed human-nonhuman unity.

The bioregional inclusion is further complemented by the portrayal of the environment itself as a person, a body with an ability to see, move, and feel. Namely, August observes that the plane tree with its slim belly rises from the pavement, leaning into the road, above the traffic with its ten arms stretched out above it as if to dance a salsa. One arm was shorter and stumpy. August decided it was its head, mossy Afro, thrown

back in a laugh. The laugh rustled high above them, rattling him, making him feel suddenly, unaccountably watched (Roffey, 2002, p. 17).

The quotation is particularly indicative of the depiction of the environment in human terms, being attributed with a belly, arms, and head and therefore emerging as one of the novel's characters. A character, who is furthermore attributed with a personified voice, laughing and appearing to start dancing. Moreover, the spatial position is of great communicative value, for the superior position *above* traffic, arms spread and directing a gaze is again implicative of the power position of the environment. The depiction of not only the person in environmental terms but the environment as well in human terms appears consequently very much symbolic of the nature-culture relationality, the mutuality which could be almost characterised as oneness.

Above all, the environment becomes a participant in the protagonist's search for his identity, for it is through the environmental changes that August gradually discovers the truth about his father. Namely, August comes to understand that December 11 is the date when his true father had died – the date when the bodily changes commenced. Finding the answer, the circle closes and with it also August's doubts, so that he starts regaining his lost hair and feel as a whole. The protagonist's *bildung* could be therefore summarised as uniquely environmental – he reaches an understanding of who he is through the environment, rather than society.

More specifically, digging into the earth of his father's final resting place, August simultaneously digs into his own past, so that rubbing the earth over himself (Roffey, 2002, p. 387) and becoming one with the environment, the protagonist becomes also one with his father. The looming presence of the trees intertwining with the human action serves as the foremost motif, for the revelation that August's father had chosen trees to guard his grave is likely to explain the trees' powerful presence in the novel as the indirect presence of August's father. The fact that the environment exhibits thus a key role for August to find his true identity; and August, in turn, is intensely aware of the nonhuman gaze and seasonal changes communicates the mutual participation of the human and nonhuman in each other's lives.

Conclusion

The article has explored the issue of environmental communication, considering, first, the ecocritical ideas of interrelatedness, dialogics, and bioregionalism with reference to culture's participation in such a communication. The three models, implicative respectively of relationality, plurality of voices, and inclusion, highlight an ethics of participation and mutuality. Second, the aspect of the environment itself has been taken into consideration, challenging the aspect of constructedness, for the environment is not only spoken for, but it tends to speak for itself in its own way, emerging as a relevant participant – suggesting the questioning of such topical issues as nature's voice and agency. It is this questioning that emerges in literary texts, too, in which environmental communication is especially vividly illustrated, indicating ecosystem-first ethics and thus a new relevant direction in literature. The environmental communication in literary texts manifests itself more specifically as indirect, metaphoric communication via symbols of nature and imagery, highlighting the central concerns and thematic of the texts.

Namely, in Monique Roffey's *The White Woman on the Green Bicycle*, the natural environment tends to overshadow the narrative, pertaining to the novel's problematic. The environmental elements of lushness, wilderness, and heat function as important symbolic instances, foregrounding the characters' emotions, conflicts, as well as power positions. The latter, in its turn, suggests via postcolonial and ecofeminist lens the topic of objectification. If the aspect of voice is one of the foremost traits of this novel, implicating the characters' problematic mutual communication, then *Sun Dog* is particularly illustrative the boundary-challenging bioregional ethic, for the protagonist merges with the environment and the environment, in

turn, is portrayed in human terms. The environmental phenomena of this novel also highlight the topic of identity. Besides the natural imagery, indicating the novels' concerns, the spatial positions are of further communicative value, visualising the power positions of humans and nonhumans. Above all, the prevalent biocentric perspective, suggested in the literary texts as well as in the ecocritical discourse, is likely to be indicative of the participation of the seemingly voiceless and insignificant in communication – both on metaphoric and real life level.

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Your Place, My Place, or Some Place More Exciting: Pro-Creative Possibilities for Environmental Communication Scholarship

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For more than 40 years, scholars have been investigating the psychological and communicative implications for the concept of place. During that time, a variety of quantitative and qualitative methods have been employed, often without obvious concern for the extent to which empirical conclusions match those held by respondents who originally generated data the analyses relied upon. This paper explores various threats to such representational validity, argues that an expanded view of what constitutes "public participation" offers a novel approach to understanding the dialogic development of place-based perceptions, and suggests ways in which communication researchers are uniquely positioned to advance the study of place in the environmental public sphere.

Key Words: Place, Representational Validity, Etic and Emic Perspectives, Research Methods

Introduction

Conventional wisdom regarding the environmental milieu is that related communication takes place on specific sites and within bounded historical epochs. Arguably, one the more important *topoi* related to public participation in the "drama of the commons" (Dietz, Dolšak, Ostrom, & Stern, 2000) revolves around the construction of and contest over what constitutes the meaning of social and physical landscapes as they relate to environmental conditions. Both scholars and laypersons often frame such contested sites by reference to valued places they hold in their hearts and minds. Indeed, the very concept of *place* and allied constructs (e.g., place identity, place attachment, place dependence, sense of place) has become one of the principle foci for contemporary studies concerning the relationship between humans and their environment. Since 2011 alone, more than 1000 different scholars have indexed a *sense of place* in a range of academic journals; Lewicka's (2011) review of *place attachment* research suggests an even greater reach. A scan of the flagship publication *Environmental Communication: A Journal of Nature and Culture* reveals that, since its inception in 2007, more than 45% of the articles have more-or-less centered on places in the public sphere, either as venues for interaction or focal aspects for empirical investigation. Yes, communication concerning landscapes *does* take place and such discourse often mediates the quality and kind of public participation needed to foment a sound environmental consensus.

Since the mid-1970s (e.g., Relph, 1976; Tuan, 1977), researchers in various disciplines have used the idea of place to explore a considerable range of subjects related to conservation advocacy and environmental perception (for reviews, see: Bott, Cantrill, & Meyers, 2003; Cresswell, 2004; Williams, 2008). In this expansive literature, "places" are typically seen as representing the affective and cognitive manifestations people have for the landscapes they experience as well as locations in which people embed their lives (Van Patten & Williams, 2008). And, just as the meanings individuals ascribe to places vary along several dimensions (e.g., Jorgensen & Stedman, 2001; Manzo, 2005; Scannell & Gifford, 2010), so too have the

analytic tools used by scholars differed as we have attempted to map the abstract and grounded elements of place. For many, such methodological diversity in studying the concept has been indicative of a maturing discipline; for others, it has posed a bit of an ontological quandary. How should we go about tapping into the perception of places so that our empiricism truly reflects the richness of what, say, stakeholders think and feel when they encounter valued landscapes, try to articulate the complexity of their experiences, and contribute to the public sphere? Or, more pointedly, whose take on the meaning of places matters most: What we academics think our informants mean (an "observer-privileged" or anthropologically *etic* perspective) or what they think they mean (a "subject-privileged" or *emic* stance) or something that is communally created, owned, and evolves primarily in the social construction process *per se* (cf. Poole, Folger, & Hewes, 1987)?

The question of how we should properly go about studying beliefs regarding place is not a new puzzle and others have previously contested various methodological virtues (e.g., Morgan, 2010; Patterson & Williams, 2005; Stedman, 2003; Williams & Patterson, 2007). I intend to join that debate by encouraging those who study place in the context of anthropology, communication, critical studies, psychology, sociology, or any one of several other disciplines to consider just how limiting our traditional approaches have thus far been. That accomplished, I will suggest environmental communication scholars are uniquely positioned to proactively champion an even more productive understanding of the mechanisms by which people mentally appropriate spaces and landscapes when they engage one another and places in the world.

Representing Places and the Choice of Methods to Do So

One of the fundamental truisms of post-modern scholarship is that is that any given subject can be viewed from a number of different perspectives, each of which might produce divergent claims to knowledge (Evely, Fazey, Pinard, & Lambin, 2008). In the case of place-based research, there seems to be at least three relevant meta-perspectives one could bring to bear when considering what places *are*, how they emerge in the mind, and what implications that process has for managing the interface between society and natural resources. First, we might assume that a person's understanding of place can be meaningfully reduced to what a *researcher* can extract from observable behavior or other tangible artifacts (e.g., a text). In this deductive and positivist perspective, we can assume that quantitative data or critical textual analysis can illustrate the more-or-less plasmatic qualities of one's meanings for place. Second, we might alternatively ask an *informant* what she or he thinks about their surroundings and subjectively draw-out of that narrative various themes that capture the essence of the beliefs and feelings people have for the places they encounter. Or, third, we could presume that the meaning of a place is found by interrogating the *relationship* between individuals in society and the landscapes they interact upon. This last perspective, reminiscent of the Chicago School of Symbolic Interactionism (Blumer, 1969; cf. Altman & Roggoff, 1987; Patterson, Williams, & Schrel, 1994), maintains that places are socially constituted and can only be re-constructed by observing associations between person's testaments to what they experience, how they behave *vis´ a vis´* that voiced perception, and their interactions among themselves relative to the surrounding sensible spaces.

Of course, at a more concrete level, the first two perspectives noted above seem reflective of either quantitative or qualitative methods traditionally applied in the ongoing study of place. To date, human geographers (e.g., Peet, 1998), rhetorical scholars (e.g., Schwarze, 2006), and communication or cultural ethnographers (e.g., Carbaugh, 1996) have taken up the yoke of qualitatively deconstructing written, oral, or visual texts to map a person's or community's sense of place or place attachments. Such embodies a phenomenological approach advanced by Seamon (2000) and represents a naturalistic effort after retaining the wholeness that characterizes the way individuals experience place. It is intended to

foreground an informant's or text's privilege in the process of telling researchers what a place means without our imposing *a priori* assumptions. In contrast, those more inclined to the use of quantitative methods in the fields such as environmental or conservation psychology and sociology have used attitude scales and surveys as tools through which place-based meanings might be revealed (e.g., Giuliani, 2003; Williams & Vaske, 2003). In this case, the meaning of place is essentially reduced and sometimes manipulated further via factor analysis, leaving the researcher in the ultimate position of reporting a second-order interpretation based upon psychometric proxies for what is going on in a respondent's mind. And some have employed a mixed-methodology to map qualitative data onto quantitative measurements in an effort to capture the best of both approaches (e.g., Cantrill, Thompson, Garrett, & Rochester, 2007; Devine-Wright & Howes, 2010).

Although studying the concept of place through the lens of either quantitative or qualitative methods has produced a large body of useful research findings, scholars often eschew an obvious concern for the issue of *representational validity* (cf. Williams & Patterson, 2007). Representational validity deals with the extent to which the meaning researchers assign to a stimulus such as a painting, a pattern of behavior, or body of discourse matches the relatively pedestrian meanings laypersons have for what they see, do, or say (Feinstein & Cannon, 2001; Foster & Cone, 1995; Poole & Folger, 1981). When the analytic focus is upon whether or not a tangible attribute of space is or is not present in a text or salient to a respondent (e.g., a mountain or smokestack), there is hardly a need to question if researchers and their subjects are on the same page. In contrast, if one is interested in cognitions about far more complex phenomena such places (which arise in the mind at the nexus between cognitive and affective perceptions of spaces), there clearly is a need to insure compatibility between *etic* and *emic* perspectives. In the latter case, research must establish at least a modicum of consistency between the assumed nature of person-place relations interpreted by a scholar using the data at hand and what the progenitors of that data think and feel. If the representational validity of empirical conclusions is not established, then the explanatory power of a study for natural resource managers or those who wish to cultivate more inclusive place-relevant interaction in the public sphere is severely diminished.

The issue of representational validity is compounded in much place-oriented research by researchers' tendencies to over-extrapolate beyond the phenomenological cages of specific times or particular locations through the use of mere examples in qualitative studies or demonstrably static psychometric devices. All qualitative analyses of place-related phenomena rely upon some form of textual inspection, be it an interview, pre-existing symbolic artifact (e.g., a book or picture), pattern of behavior, or a transcript of discourse. As such, unless the researcher engages an intensive ethnographic immersion into the social waters of people-in-place (i.e., a rarity in place-based research; though see, for example: Carbaugh, 1999), the data is inherently limited by how articulate or transparent an informant or text might be at that specific point in time. Usually, the consumers of qualitative research are presented with a series of prototypical examples of discourse intended to establish claims related to the perception of place which is, nonetheless, "susceptible to a selection bias (Jacobs, 1988) that can only be reduced to acceptable limits through procedures which take the selection of confirmatory cases out of the hands of the interpreter of the example" (Cappella, 1990, p. 239). Alternatively, the selection, arrangement, and use of stimuli and scales in quantitative research (sometimes imported from other studies that were designed to explore something other than, say, place attachment, e.g., Brehm, Eisenhauer, & Stedman, 2012) is also problematic insofar as researchers have little way of knowing if the terms *they* chose to index place have the same symbolic meaning as those of their respondents (cf. Cantrill, 2010). Just because a respondent understands a question's meaning, *that* meaning does not necessarily mean the same thing as it does to a researcher. Such stimuli and response options are also akin to static examples drawn from a dynamic universe of symbolic referents and I suspect that any given respondent would likely choose a different set of terms or measures when coming to grips with her or his perceptions of what a place personally means.

Any study could avoid the traps noted above — and much place-based research has done so — but it is incumbent upon researchers to show it. Certainly, each of us is more-or-less trapped by the practicalities of the research endeavor; we are free to adopt either an *etic* or an *emic* stance as long as we can demonstrate and defend our choices within the limits of credulity. But, even then, what does this buy us in terms of appreciating the social dynamics by which places take to life in policy making and collective deliberation? True, we might reliably trust that we know what is valued in one location or another in terms of salience and potency and, perhaps, we might use those themes and features as tropes and triggers for advocacy campaigns and the like. But, after all this time, I suspect most of the place-oriented research community has, at best, been susceptible to methodological determinism or has chosen relatively instant gratification over long-term enlightenment in the study of the subject. As Lewicka (2011) concedes:

> Despite hundreds of pages covered with various definitions of place attachment, sense of place, or place identity, and despite the already existing plethora of studies of correlates and predictors of place attachment, we still know very little about the *processes* through which people become attached to places. (p. 224)

Perhaps our choices of where to empirically bed-down, including a bevy of my own design, have been somewhat blinded by a desire to get on with the rapture of scholarship rather than critically evaluate and predict where the best *genus loci* for pro-creatively studying the public role of place might be found.

Places, Public Participation, and the Dialogic Turn

I have attempted to highlight in this commentary a common set of problems that researchers face in studying place given the dominant methodological orientations in our field. Yet, there is perhaps a more fundamental challenge we should confront beyond the axis of the researcher- versus informant-based meanings for place. What if the most viable and functional approach to understanding person-place relations is not to be found in either what researchers or informants perceive at any point in time? What if, instead, places only arise and become meaningful in the context of human transactions? Or, as I outlined earlier, perhaps a better way to empirically view and provide practical advice regarding the role of place in the context of environmental deliberation is to expand what we mean by "public participation" (cf. Graham, 2004; Norton, 2007) and to cultivate a research tradition based on the *relationship* approach to meaning.

The act of environmental public participation is commonly associated with democratic liberalism and the involvement of citizens in those decisions that impact their lives (e.g., Cox, 2013). Traditional institutional forums for such stakeholder engagement regarding environmental affairs range from public meetings and hearings to formal advisory committees, to community collaboration initiatives, all of which are usually associated with a hopefully-transparent public sphere. From time to time, critics of current participatory processes (e.g., Killingsworth & Palmer, 1992; Kraft & Vig, 2002; Norton, 2007; Senecah, 2004) have indicted such practices as being, to various degrees, ineffective or merely window-dressing for deep-seated command and control norms operating at a structural level in society. Still, the stakeholder model of environmental decision making persists and environmental communication scholarship has a long history of focusing on public participation *qua* citizens and policy makers interacting on the commons (e.g., Depoe, 2004; Dietz & Stern, 2008). As with others (e.g., DeLuca, 2005), I question the relatively narrow institutional confines of our conventional view regarding public participation and want to expand the analytic reach of environmental communication research to include not only symbolic forms of direct action, but also smaller, more interpersonal circles that reference and act upon the meanings of place.

So, in practice, how *do* people engage the public sphere, and what resources do they naively draw upon to do so? Certainly, traditional venues for stakeholder involvement constitute a range of sites in which citizens and agencies interact and manipulate one another's environmental stances. But must public

participation only take place within institutional structures? Is not, say, an informal gathering of ranchers over coffee discussing water rights a microcosm of the same dynamics (e.g., power relations, normative constraints, vested self-interests) that attend a formal scoping process administered by the U.S. Environmental Protection Agency? I have argued elsewhere (Cantrill, 2011, 2012) that such informal interactions make up a significant resource interlocutors bring to institutionalized discourse if for no other reason than the fact that such secondary interpersonal networks are the dialogic *sin qua non* of environmental specialists serving as gatekeepers of information at the boundary between the public and private spheres (Grunig, 1989). It is also reasonable to assume that discussions in primary and secondary social networks can provide an impetus for citizens to engage even broader discursive arenas; a lengthy history of research in the social sciences (e.g., Clayton & Opotow, 2003; Wals, 2007) suggests that what gets discussed in interpersonal settings often becomes the basis for acting upon cultivated beliefs and values regarding the environment. In other words, as Berger and Luckmann (1967) observed, "the most important vehicle of reality-maintenance is conversation" (p. 152; cf. Shotter & Gergen, 1994).

If we assume that interactions in the private sphere both inform as well as induce broader participation in the public sphere, we can equally assume that dialogic tensions related to the meaning of place that intersect in daily discourse could also influence the manner in which place attachment or a sense of place influence public participation in both sequestered and institutionalized venues. Clearly, there exist a well-known suite of physical elements that attend the perception of landscapes (e.g., Kaplan & Kaplan, 1989), but the transformation of those characteristics into the gestalt of place-based meanings pivots on *what* people feature in describing a setting, *how* they talk about the land, and *who* they engage in that dialogic process. Furthermore, the extent to which such social constructions resonate with the interpretations of others in the interpersonal realm ultimately determines the structuration of place-meaning in daily life (Bruner, 1990; cf. Giuliani, 2003). In turn, those meanings that are consensually shared (albeit tacitly) among people at increasing levels of social interaction (e.g., families to neighborhoods, co-workers to organizations) become inducements and rhetorical common places for traditional patterns of public participation. And some scholars have already approached the issue of place from such a perspective. For example, both Frouws (1998) and Halfacree (1993) use the analysis of publically expressed comments to interrogate divergent meanings for "rural" places (cf. Manzo, 2005; Peterson, 1991; Peterson & Horton, 1995; Scannell & Gifford, 2011).

Just as Carvalho and Peterson (2009) called for "research that looks beyond traditionally defined texts [and] into how they are embedded in social life and are subject to varying processes of interpretation" (p. 132) in the context of discursively constructing climate change, the project I envision asks us to consider the extent to which people forge, share, and maintain the mental landscapes we imbue with place-based meanings. Alternatively, Van Patten and Williams (2008) argue that places arise in the context of people selecting and enacting discursive frames that "are not so much *preformed* . . . but *performed*" in daily conversations (p. 452). Although some empirical moves have previously been made along the lines suggested here (e.g., Dixon & Durrheim, 2000; Dryzek, 2005; Kurz, Donaghue, Rapley, & Walker, 2005; Milstein, Anguiano, Sandoval, Chen, & Dickinson, 2011; Samuelson, Peterson, & Putnam, 2003), most efforts have adopted text-based arguments akin to those employed in critical discourse analysis and the like. To compliment that body of literature — to better track the socially constructed and contested nature of place-meaning — I believe more scholars should also engage something akin to *conversation analytic approaches* (e.g., Hutchby & Wooffitt, 2008; Myers, 2006) to reveal more granular levels of the relational dynamics in which place-making chains-out in the interpersonal milieu, especially the stories people share in reference to landscapes they hold dear. Of particular note in this regard, consider the importance of childhood in coming to know "primal landscapes" via direct experiences that are interpreted through social interactions with caregivers and others (Measham, 2007; cf. Bixler, Floyd, & Hammitt, 2002; Derr, 2002). Though discourses of place *may* be detected in texts that stand on their own (e.g., interview responses,

paintings), it is only on the relatively private stage of dialogic encounters we are likely to see the most salient interplay between culture and cognition in the social drama of place making. Or, as Relph (1976) long ago observed, one's sense of place is inherently tied to the mundane interactions we have with others who share a setting or landscape (cf. Aitken & Campelo, 2011).

Positioning Ourselves in a Place to Meet the Challenges Ahead

About the time we were beginning to seriously study person-place relations, there was a rising chorus in the social sciences regarding the relationship between empirical conceptualization and methodology. In his indictment of conventional practice, Hewes (1978) noted:

> . . . Kurt Lewin coined the phrase "law of the hammer" . . . the tendency of social scientists to inflict an available methodology on phenomena regardless of the appropriateness of that methodology. The consequences of this "law" were distorted descriptions of social life and ambiguous links between theorizing and data. (p. 155)

I believe we face a parallel situation today in the study of place. Though we certainly have a wide range of quantitative and qualitative methods available to us to hammer-out the nuances of place perception *qua* an expanded view of public participation, we risk having those tools, rather than ideas, rule our analyses unless we carefully account for differences between what we simply see, what our informants complexly believe, and the dynamic meanings for place that follow the shifting blueprints of social interaction.

Following Giddens (1984), future place-based scholarship could focus on the daily dialogic routines that serve to replicate and reinforce social structures that mediate communal perceptions regarding what a place means and how that social construction interfaces with natural resource or environmental policy deliberations. As Norton (2007) concludes,

> If environmental communication aims to meet Cox's (2004) call to remain suspicious of how broader structures like economic logic gain sway across civic domains, we need to more thoroughly engage and critique how this occurs within the domain of micro-practices. (p. 162)

In turn, I suggest that one potent private sphere activity that warrants inspection is the manner in which people maintain or modify their perception of place through everyday interaction as a prelude to engaging more formal, institutional mechanisms of public participation (cf. Myers, 2006). To thus research the link between place-directed interaction schemes and place-based perceptions requires more than mere *description* of turns at talk, patterns of interaction, and evolving references to place. Such compels scholars to consider the cognitive underpinning for *why* "actors" dialogically engage places as they do, *how* that interlocution is dynamically represented in the mind, and *what* interaction goals are implicated in the process (Hewes, 1995). It is also a move that both Hewes (1978) and Norton (2007) explicitly recognize as especially "challenging" (Hewes, 1978, p. 164) precisely because theory and method must simultaneously take into account dialectic feedback and the nuances of what occurs in the mind when mentally reconstructing places as discourse glides along (cf. Waldron, 1995). Such challenges notwithstanding, the hammers we are now comfortable using should not shape our prospective scholarly hands.

In all the fields of study associated with the transformation of space into place, environmental communication scholars would seem the best equipped to tackle the puzzle of investigating how everyday interaction practices serve to manifest and reinforce individuals' perceptions of place. Although the field

continues to be dominated by qualitative, text-oriented research, most environmental communication scholars can develop more than a passing familiarity with the study of interpersonal relationships and the methods scholars deploy to better understand the give-and-take of social constructions. The dual challenge for upcoming scholars and we who mentor them, then, is to both identify accessible sites in which references to place populate interaction and to master techniques for analyzing the discursive dynamics and evolving mental representations of those heartfelt locations.

The primary puzzle in the dialogic study of place is to identify accessible venues in which people converse about place and how we might obtain useful data ensconced in those sites. A pro-creative scholarship embodying the relationship approach to place-meaning development and maintenance could involve observing and interacting with people in relatively mundane conversational encounters. Such would be quite the ethnographic turn for many scholars in our field, but models for doing so are sundry (e.g., Rock, 2001). For example, adapting conversation analytic approaches to the data generation conventions of ethnography, scholars could gain access to interaction settings at various levels of social structure (e.g., record for transcription dialogue growing out of and extending over time in dyadic workplace relationships, family units, secondary groups in various discursive arenas, casual conversations in taverns and restaurants). In such contexts, a researcher would want to alternate her or his perspective along the *etic-emic* continuum, at times observing and recording interactions regarding the nature of place or otherwise being a relatively passive observer of the ways in which informants use a range of speech acts in reference to the more-or-less dynamic features that make places affectively salient (cf. Carbaugh, 1990; Hymes, 1972; Wynveen, Kyle, Absher, & Theodori, 2011). Certainly, preconceptions as to *what* might be crucial to focus upon in acting and observing could pose many of the same problems noted earlier in this analysis, but not necessarily so. By carefully tracking exchanges and insuring that the conversational data being generated in interaction (e.g., lexical markers and topic shifts), as well as the interpretive subtleties of place-based meanings arising out of the analysis are sufficiently longitudinal in scope and detail, one's experience-bound biases might be held in check. The key would be to follow and record repeated instances of place-oriented conversations, comparing those references over time across both locutionary settings and interactants.

It seems to me that the sorts of practical foci we traditionally associate with action research (e.g., Ballard & Belsky, 2010), such as community land-use decision making epochs that often last for a period of years, might provide researchers with a treasure trove of dialogue. In turn, communication practices rooted in dyadic and small group interactions could be mapped onto systemically more conventional public participation media through the use of formative co-orientation protocols (e.g., Leong, McComas, & Decker, 2008) to examine perspectives and meta-perspectives regarding place embraced by individuals that wax and wane in a community. Similarly, if researchers have access to archives of recorded interaction within a community (e.g., blogs, twitter feeds), they might also adapt rapid issue tracking procedures (e.g., Bengston, Fan, Reed, & Goldhor-Wilcock, 2009), revealing patterns in the development of place meanings and sentiments. I suspect that the use of social media would increase references to place and further amplify its power in ongoing interpersonal networks. Such ripples of amplification regarding what a place means to a larger community could be modeled and inspected using a variety of stochastic tools — many of which the current generation of environmental communication scholars lack familiarity — including linear, markov, or lag-sequential analysis (e.g., Bakeman & Quera, 1995; Raudenbush & Bryk, 2002), perhaps even applying connectionist architectural schemes to plot-out temporal changes in the perception and symbolizing of place (e.g., Elman, 1990). The ultimate goal would be to both quantitatively and qualitatively describe patterns in place-based meanings lodged in the relationships that make up a community of practice regarding how we act in the spaces we hold dear.

In urging that our field begin exploring the relationship-rooted nature of place in environmental communication research, I do not wish to argue that one *must* explore the cognitive spaces of place

through *only* a dialogic turn. My experience leads me to believe there are many well-privileged studies of place in our literature that off-set other research where the mysteries of meaning are seemingly possessed only by interpreters behind the curtain instead of by those assembled on landscapes writ large. But I do hope my critique and prospectus encourages each of us to avoid some of the instant gratification that often accompanies both reductionism and holism in the study of place. Precisely because it can be so illuminating and practical, we should not expect our emergent knowledge of place to be easily gained nor expediently sought, as if our practice was ever intended to be a simple passion. In the end, and as with affairs of the heart in general, we researchers need to do a lot of courting to understand what the objects of our desire think about in response to the places they have grown rather fond of and to which they are so often attached in rapture.

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Mountains and Handrails: Risk, Meaning, and Responsibility in Three National Parks

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Where we live, the relationships we maintain, or the political views we hold can tell us about the way we perceive risk and the responsibility for its management. Perceptions of risk and responsibility are particularly relevant in U.S. national parks, where unintentional injury is prevalent, yet support exists for allowing risk exposure. If experiencing risk may be both desirable (e.g., self-affirming) and undesirable (e.g., injury-causing), what is its role in a national park? Moreover, what are the expectations for visitors to encounter or to avoid it? In-depth interviews with National Park Service (NPS) employees suggest that desired risk is contingent on the circumstances in which it is encountered, and the values and prior experience of individuals. Employees perceive visitors as responsible for avoiding undesirable risk through information seeking and awareness, but also recognize considerable barriers to doing so. Theoretical and practical implications and avenues for future research are presented.

Keywords: attribution of responsibility; risk perception; national parks; risk communication

Whether the chance of being injured or the victim of crime, we evaluate the risks we may encounter in everyday life, in part, on our past experiences, beliefs, and associations (Lupton, 1999). While injury and crime, like the threat of nuclear radiation or a severe storm, garner considerable attention in popular and academic realms as risks to be avoided, in certain cases, risk can also be desired (Machlis & Rosa, 1990). To the skydiver or mountaineer, for instance, risk of injury may not be simply an unfortunate consequence of the activity, but rather an attraction to the activity in itself (e.g., Lyng, 1990). When it comes to managing risk in public spaces, such perceptions are also tied to normative attributions of responsibility for how individuals should avoid or encounter risk, and the subsequent allocation of blame (e.g., Douglas, 1992; Green, 1997).

Perceptions of risk and responsibility are particularly relevant in the context of U.S. national parks, places where recreational activity often results in unintentional injuries, despite the considerable efforts of the National Park Service (NPS). At the same time, strong sentiment exists for managing parks as places that encourage voluntary risk-taking. In the seminal *Mountains without Handrails*, Sax (1980) argues that parks should provide the opportunity for experiences not encountered in everyday life: "reflective recreation" that is "challenging and demanding" (p. 61). If risk exposure may be both desirable (e.g., self-affirming) and undesirable (e.g., injury-causing), how do we ultimately evaluate its role in a park? Likewise, what are the expectations for visitors to encounter or to avoid park-related risk? Through interviews with NPS employees, this study examines the relationship between risk perception, meaning, and attribution of responsibility in three national parks.

Risk and Responsibility

Risk Perception and Sociocultural Context

Early research in risk perception focused heavily on how the perceived attributes of a given risk (e.g., known or unknown, controllable or uncontrollable) influence whether they are "dreaded" beyond their "objective" evaluation by area experts (e.g., Slovic, 1987). Sociologists (e.g., Lupton, 1999) and cultural anthropologists (e.g., Douglas, 1992), meanwhile, have emphasized sociocultural context, arguing that one's community memberships, values, and lived experiences shape understandings of risks, and that risk perception reflects normative opinions of how society *should* operate (e.g., Tansey & O'Riordan, 1999). More recently, the cultural cognition thesis has married psychometric and cultural theory approaches by characterizing risk perceptions as stemming from values and belief systems, individual characteristics, and attributes of the risk. That is, we evaluate risks not only with respect to their "dreaded" qualities, and our individual preferences, but also in light of how we value them culturally, including how they fit into our conception of the "ideal society" (Kahan, Braman, Slovic, Gastil, & Cohen, 2009). For instance, those who identify as "individualistic" and "hierarchical" in worldview may feel motivated to dismiss claims of environmental risk "…because acknowledging such hazards would threaten the autonomy of the markets and the authority of social elites" (Kahan et al., 2009, p. 87).

Risk perceptions may also emanate from the meaning ascribed to a physical setting (Bickerstaff, 2004). Exploring public reactions to a proposed industrial park in Canada, Masuda and Garvin (2006, p. 447) argue that risk perceptions, "manifested as threats to shared 'ways of life' that included people's sense of belonging and well-being in the community at large" (see also Hugh-Jones & Madill, 2009). Likewise, the acceptability of a given risk may be based on individuals' relationship with and proximity to its source, as Baxter and Lee (2004) demonstrate among a community living adjacent to a hazardous waste facility. Similarly, in a study of Israelis living in a violence-prone region of the West Bank, Billig (2006) illustrates that strength of place attachment and religious ideology predicted respondents' tendency to downplay the "riskiness" of their home.

The risk perceptions stemming from a shared sense of place or place attachment may also serve to delineate "insiders" from "outsiders." In a qualitative study exploring reactions to the 2001 Foot and Mouth Disease outbreak in the United Kingdom, Bickerstaff, Simmons, and Pidgeon (2006) find that the individuals' recollections of the event (re)produced a cultural identity that separated the "local insiders" from "outsiders who do not share the knowledge and experience of living in rural communities" (p. 853). At the same time, these relationships with place mobilized particular responses to government-led risk management strategies. Describing the citing of a waste facility, Baxter (2009) explains how place meanings and attachments motivated particular risk concern and the seeking of information from specific sources, whether "insiders" (i.e., local media, local family and friends) or "outsiders" (i.e., national media or family and friends outside of the geographical area).

Attributing Responsibility for Risk

Risk perceptions may also influence institutional risk management and notions of accountability. As seminal work in anthropology and sociology has shown, beliefs about managing risk reflect normative conceptions of "proper" social identities and responsibilities (e.g., Douglas, 1992; Freudenberg, 1993; Hilgartner, 1992), as well as the perception of the risk as "collective" or "individual" (Bickerstaff et al., 2008; Bickerstaff & Walker, 2002; Petts, 2005). With respect to two health risk issues, the Measles-Mumps-Rubella (MMR) vaccination and air pollution, Petts (2005) shows how British citizens tended to view themselves as having individual responsibility for preventing MMR transmission (i.e., parents' responsibility

to get children vaccinated), but not for abating air pollution. Bickerstaff et al. (2008) reach a similar conclusion: that different "representations of the problem" (p. 1317) conjure distinct notions of responsibility. With respect to using mobile devices, for instance, focus group participants viewed themselves as "sovereign consumers," able to control their exposure to (un)acceptable health risk through purchasing and use decisions. Such research underlines the importance of knowing how individuals evaluate risks in order to predict how they will understand their (and others') responsibility to respond to them (e.g., Hinchliffe, 1997).

Seeking Desired Risk

While risk is often portrayed as something to be avoided, under certain circumstances, individuals may choose to encounter it. Coining the term "desired risk," Machlis and Rosa (1990) propose that, in the context of outdoor recreational activities such as mountaineering, the potential for injury (or other harm) may not be a deterrent, but rather a draw; indeed, "uncertainties are an essential, sought component of the behavior" (p. 162). Lyng's (1990) "edgework" concept further explores the sociological basis of voluntarily risk-taking. His ethnographic analysis of skydivers brings to light, importantly, the dialectic between spontaneity and constraint, and participants' feelings of self-actualization and "oneness" with the environment (see also Ewert & Hollenhorst, 1989; Pomfret, 2006). Similarly, Csikszentmihalyi (1975) applies the concept of "flow" to explain the alignment of mind and body through rock climbing, from confronting challenge, to engaging in deep concentration, to experiencing competence and control. Thus, the draw of voluntary risk-taking often centers on the interplay of engaged satisfaction and possible peril: the participant's perception of the "manageable challenge" of the experience (Davidson, 2012).

Managing Undesirable Risk: The Case of the National Park Service

Studying risk is particularly fitting in the context of U.S. national parks, places with inherent environmental risk, opportunities for voluntary risk-taking, and annual injuries and fatalities despite the considerable risk management efforts of the NPS. Data indicate that on average three visitors die in parks every week due to unintentional injuries and 14 people are seriously injured every day (PMDS, 1998-2011). To prevent these incidents, the NPS has adopted engineering (i.e., modifying the environment), enforcement (i.e., implementing regulations), and education (i.e., increasing knowledge and changing behaviors) strategies (Baker, 1973). According to the NPS, combining these strategies can enhance their effectiveness, and visitor safety is a responsibility shared between park staff, partners (e.g., concessions personnel), and visitors (U.S. DOI, 2010).

But how is this institutional commitment to managing risk interpreted on the ground? In a survey of park managers (e.g., superintendents, chief rangers), Newman (2009) found that employees tended to attribute responsibility for visitor injury to the visitor, and viewed park facilities as appropriate for ensuring safe visits. For instance, more than half of respondents agreed that visitors' inattention to their surroundings, health conditions, lack of awareness, and/or lack of preparedness contributed to injuries and fatalities. Employees' attributions of responsibility for visitors' mishaps has also reached the popular press, with several volumes documenting death at iconic national parks, including Yellowstone (Whittlesey, 1995), Yosemite (Ghiglieri & Farabee, 2007), and Grand Canyon (Ghiglieri & Myers, 2001). A former Yellowstone ranger, Whittlesey (1995), for example, portrays victims as ignorant and irrational, in that they foolishly believe:

> … That [Yellowstone National Park] surely is a lot like a city park, with swings, horseshoe pits, golf courses, swimming pools, and total safety—a place where lawns are watered and mowed regularly and fallen tree branches are picked up and carted away, all nicely managed, nicely sanitized. But national parks are not like that; they are places where nature and history are preserved intact. And intact nature includes dangers (Whittlesey, 1995, p. xii).

Interestingly, this characterization of the visitor as unaware of "risky" surroundings and the related responsibility to avoid such dangers conflicts with more recent empirical work. For instance, Rickard, Scherer, and Newman (2011) report that the majority of Mount Rainier National Park visitors surveyed viewed themselves as responsible for ensuring their own safety while at the park.

Visitor perception notwithstanding, whether national parks *should* resemble country clubs or wildlife sanctuaries is a question addressed by legal scholar Joseph Sax (1980) in his treatise exploring the philosophy underlying the founding of the NPS and its contemporary management. Sax (1980) questions whether parks are, or should be, "recreational commodities" or "temples of nature worship" and whether a modern-day preservationist ethic can be sustained within them. For Sax, the "intensity" of experiences available to visitors, such as traveling in undeveloped terrain, contrasts with pre-packaged tourist activities, such as bus tours, that are less unique to park settings. Describing these as "contemplative" vs. "conventional" park experiences, Sax advises park managers to cultivate opportunities for the former. Though Sax presents federally protected land as a valuable resource for the entire U.S. public, he attends less explicitly to how risk in such settings may be perceived by diverse audiences, or to beliefs audiences may hold about its management. If risk may be both positive (e.g., self-affirming) and negative (e.g., injury-causing), how do we ultimately view its role in a national park? Likewise, what are (or should be) the expectations for visitors to encounter, or, in other cases, to avoid park-related risk? Focusing specifically on NPS employees, individuals who interact with visitors and contribute to visitor risk management efforts on a daily basis, this study explores the following questions:

- In the context of a national park, what constitutes desired risk?
- What is the responsibility of visitors to manage undesirable risk?

Methods

Study Context

Between January and August 2011, on-site data collection took place in Mount Rainier National Park (MORA), Olympic National Park (OLYM), and Delaware Water Gap National Recreation Area (DEWA).[1] MORA is a 236,381-acre park on the west side of the Cascade Mountains in Washington. A volcanic mountain, MORA (14,410 ft) boasts the most extensive single-peak glacial system in the U.S. Also in Washington, OLYM comprises 922,650 acres of the Olympic Peninsula, and is an International Biosphere Reserve and a World Heritage Site, including alpine zones, temperate rain forests, and coastline. Straddling New Jersey and Pennsylvania, DEWA is a 70,000 park on a 40-mile section of the Middle Delaware River, the "gap" a portion of ridgeline carved out by the river over thousands of years. Each park reports annual visitor injuries and fatalities, often associated with recreational activities.

Interviews

Interviews involved a purposive sample of NPS employees (N = 53) and ranged from 14 to 85 minutes (M = 39 minutes). After interviewing the individuals in management (e.g., superintendent, chief ranger), I asked

for recommendations of individuals whose positions and/or tenure with the agency would allow them to comment on risk management, comprising a "snowball sampling" approach (Lofland, Snow, Anderson, & Lofland, 2006). The resulting participants represented an assortment of positions, and tenure with the NPS ranged from one to over 40 years (M = 17 years). (Hereafter, I refer to participants by number and first letter of the park in which they worked).

Interviews were conducted until themes repeated across interviews, so-called "theoretical saturation" (Glaser & Strauss, 1967). To ensure that themes were not simply a product of a certain "type" of respondent, I sought "disconfirming cases," i.e., individuals who might have reason to express different opinions. Searching for disconfirming cases strengthens the validity of a qualitative study by allowing the researcher to "assess whether it is more plausible to retain or modify the conclusion, being aware of all of the pressures to ignore data that do not fit [the] conclusions" (Maxwell, 1996, p. 93). Following a semi-structured format, the interviews allowed for targeting the discussion towards particular topics while remaining flexible enough to respond to participants' interests. I obtained voluntary informed consent to record each interview to ensure accurate data collection.

Analysis

Following the "constant comparative method," I analyzed the data throughout the research period, refining the interview guide to follow emerging areas of interest. Transcripts were analyzed line-by-line (Charmaz, 2001) using Atlas.ti, which allowed for merging and compiling of quotations pertaining to each code. Since the study involved prolonged engagement (i.e., 3-6 months) in each site, many opportunities arose to discuss emergent findings informally with park staff. This feedback, in turn, helped improve the credibility of the results (e.g., Creswell & Miller, 2000).

Results

Defining Desired Risk

Employees tended to envision desired risk within certain parts of national parks, rather than across these settings universally. Moreover, they saw risk as desired only under circumstances in which personal tolerance and expertise allow for a truly "voluntary" risk-taking experience.

Context-dependent. Though asked whether risk could be beneficial in national parks—as a broad, undifferentiated category of place—most participants answered with respect to a specific designation within some parks: wilderness. National parks, including portions of DEWA, OLYM, and MORA, conserve over half of the nation's wilderness, parcels designated by the 1964 Wilderness Act as areas where "earth and its community of life are untrammeled by man" (16 U.S. C. 1131-1136). Lacking "permanent improvements or human habitation," wilderness is, by law, deliberately primitive, allowing an "unconfined type of recreation." Since visitors are often corralled from park entrances to visitor centers and popular "frontcountry" recreation spots on the few roads circumnavigating a park, wilderness can be, in many parks, less easily accessible. Because visitors make a deliberate *choice* to find wilderness, employees seemed to reason, risk and risk-taking should be expected and even sought-after. Thus, from a management perspective, risk is desired only to the extent that it can be chosen by certain visitors, rather than thrust upon all of them, as an employee explained:

> I don't think it's desirable that we have risk on a *road* because that's not really the *point*. As a place for people to take risks, and challenge themselves and have an adventure, climb

> the mountain, where there are certain objective hazards—absolutely totally appropriate for the national parks (M7).

Risk in wilderness may be desirable, in part, because it creates opportunities for the type of physical and psychological challenges that intensify an outdoor experience, a belief underlying many participants' comments and much of the "adventure recreation" literature (e.g., Ewert & Hollenhorst, 1989). As one employee noted:

> … Being able to go out and experience this naturalness, like crossing a stream versus on a bridge. Not having a bridge there—that would make it more natural, so your experience as a result would have higher risk and challenge… (O13).

Exposure to risk is thus valued in its ability to confer the authenticity ("naturalness") that generates a superior experience. Examples like this suggest that, for participants, voluntary risk-taking is a positive element of the park experience not in spite of, but *because of* the "uncertainties" (Machlis & Rosa, 1990) it poses; making it to the opposite stream bank can be at once thrilling and deeply satisfying. At the same time, uncertainty signifies the possibility of unwanted outcomes—slipping and twisting an ankle, for instance—which participants saw as likewise important. In fact, some participants suggested that the heightened salience of possible injury provides a unique opportunity to consider one's mortality, a kind of existential moment rarely encountered in "everyday" settings or routines. Comparing national parks to other recreational settings, an employee suggested:

> …There aren't many places left in this country or even in this world, where you can be out hiking and you'll see a mountain lion or a bear, which could hurt you… I think that raises that experience to a level that you can't get when you go to a zoo… And, in an amusement park-type setting, things have been so engineered that, unless you *try* to get hurt or try to do something really risky, you're not going to suffer consequences… (M5).

While participants did not wish injury upon visitors, they did suggest that "suffering consequences" from recreating in wilderness constituted part of the uncertain gamble of visiting these special places. One cannot necessarily have the breathtaking scenery, participants reasoned, without also accepting the bug bites, the occasional broken bone, or in extreme cases, the possibility of death. Importantly, employees' comments implied their conviction that visitors, too, recognized and evaluated these trade-offs similarly: that potential injury is a reasonable risk to accept for the promise of unconfined recreation.

Tolerance. From avalanches to inclement weather, participants were quick to point out that dynamic, uncertain physical conditions made national parks inherently "risky" places where even the most involved engineering strategies cannot guarantee safety. Referring to Mount Rainier, one employee exclaimed, "You can't take a volcano and make it safe!" (M4). At the same time, however, in describing their daily work and leisure in the park, participants saw themselves as capable of choosing to seek out *certain* risks while limiting their exposure to others. In the course of explaining how risk can be desired, one employee referred to the highly publicized story of Aron Ralston, a solo hiker forced to amputate his arm to free himself from beneath a boulder in a Utah canyon in 2003. (Ralston's experience was popularized further in the 2010 film *127 Hours*):

> Some people would say what [Ralston] was doing was stupid. He was on a cross-country backcountry hike by himself. He didn't tell anyone where he was going, etc. *But*, many people, myself included, I've hiked slot canyons by myself. And I tend to be careful when I do that, to think more about it, but I guess my take on that is what he was doing in some people's world was perfectly reasonable… (O3).

One can imagine that identifying with Ralston, a fellow canyoneering buff, allowed the ranger to evaluate the case quite differently than might any given individual tuning in to the story on the 6 o'clock news, or

through a screening of *127 Hours*. Projecting his ability and expertise ("I tend to be careful when I do that") onto Ralston's, in turn, may have influenced judgments about responsibility for the incident, a perceptual bias explored at length in the attribution theory literature (e.g., Shaver, 1970; Walster, 1966).

Because they play a critical role in managing the park experience, participants did recognize their responsibility to acknowledge the variability of risk tolerance among their clientele; what is (in the words of the OLYM employee above) "perfectly reasonable" to a park ranger could be "perfectly horrifying" to an inexperienced visitor; however, managing such areas according to the wishes of a diverse visiting public, and for the sustainability of the physical and cultural landscape, becomes understandably complex. Citing differences in skill and experience, participants conceded that their assessment and acceptance of a given risk might differ markedly from that of visitors. Consequently, the distinction between risk that is acceptable or unacceptable, desired or undesirable is contingent, not absolute, and their comments made clear that making management decisions that prescribe (or proscribe) certain activities can be controversial. As a DEWA employee explained, in the case of the Delaware River:

> If we took the rapids out, it wouldn't be as fun … A certain element of the population likes that thrill … Our mission says that we'll provide these opportunities, but who are we to judge what one person's recreation is compared to another's [?] (D11).

Implicit in this comment is Sax's (1980) caveat that prescribing policies within parks can, at the same time, indicate a normative way of enjoying them. Paternalism aside, the idea that parks must be managed to allow opportunities for visitors to engage with risk just as they provide interventions to protect them from it presents a critical management quandary—one in which attribution of responsibility plays a central role.

Managing Undesirable Risk

Whereas exposure to park-related risk, under certain conditions, could confer benefits, participants were quick to note that the same risk posed innumerable possibilities for malady. Upon entering parks, visitors, then, are responsible for limiting opportunities to encounter "undesirable risk" through seeking information and maintaining vigilance, all the while ascribing to certain expectations of the "type of place" parks represent.

Seeking information. Whether brochures, signs, or interpretive programs, NPS communication serves to demarcate "known" park risks, such as geological hazards at MORA that, as one employee noted, "might not be apparent to an average person" (M17). In pointing out particular risks, e.g., an active volcano, and not others, e.g., a steep slope, these forms of communication illustrate the process Hilgartner (1992) refers to as defining risk "objects." From an institutional perspective, such definitions are hitched to particular notions of responsibility, in that they can, "…determine who has the right—and who has the obligation—to 'do something' about hazards" (Hilgartner, 1992, p. 47). Importantly, participants understood visitors' central responsibility as seeking these forms of park communication prior to, and during, a visit. On more than one occasion, a participant explained this responsibility to seek information as what he or she would expect to do when traveling to an unfamiliar location, national park or otherwise. For one employee, a visit to Death Valley National Park meant scouring multiple sources about the park's conditions:

> …You get the brochures, you get the pamphlets, you talk to the people at the visitor center, you try to educate yourself as much about, OK, 'Where should we not be going this time of year? What is a better area to go? What are the dangers we face?' (D7)

But while park managers can, and do, make certain information about avoiding risk available in face-to-face, print, and online channels (e.g., weather conditions, trail guides, avalanche reports, etc.), they cannot guarantee that individuals are aware of its existence. Moreover, they have limited control over whether visitors know how (or where) to find it. One employee summed up this dilemma as, "…The information's

provided to them; it's there if they go looking for it. But how do you get them to actually see it?" (M15). Describing an information impasse, another employee suggested that individuals who most need information about the park are often those least likely to seek it:

> People who read the trailhead sign and recognize the cues that we're putting out there don't need the trailhead sign, for the most part, because they know what they're getting into. And the people who *don't* [know what they're getting into] don't read the sign… (M7).

This employee's comment also implies that the inexperienced visitor may "ignore" signs because of his or her unfamiliarity with the physical setting or the recreational activity. Though an unwarranted sense of self-confidence may persuade some visitors that seeking information is unnecessary, at the same time, individuals may have little idea of what information they do *not* know, and what they might *need* to know to recreate safely in the park. Complicating matters, in some parks, such as OLYM, regulations vary by location, such that visitors familiar with camping in alpine regions, for instance, might be unaware of the different safety precautions necessary for camping on the coast. As one OLYM employee who supervises a popular hiking area saw it, "…There isn't a huge group of people who's intentionally trying to break the rules. There's just a lot of people who, in good faith, didn't get it" (O9). Likewise, rules for appropriate visitor behavior can also vary by park, leading to potential confusion for those traveling between parks. One employee offered the example of the procedure for securing food items while traveling in bear habitats:

> …You go to Yosemite, and they say don't leave your food in the car. And if you're in Yellowstone or even here, or Olympic, we say *leave your food in the car*… People who are hitting all of the different parks… and they've kept their food in the car, and all of a sudden they get to Yosemite and it's kind of like, '*Why do I have to take it out of the car?*' (M20).

This instance suggests that managing parks for localized ecological conditions, while central to the NPS mission, can result in inconsistent risk communication. As a result, visitors may, unintentionally or not, abdicate their responsibility to be informed about avoiding risk deemed undesirable.

Situational awareness. In addition to seeking information, visitors should be responsible, according to participants, for exercising "situational awareness," a term used in military and law enforcement circles to describe the need to know, as one employee put it, "everything that's going on around you all the time" (M21). Exercising situational awareness as a park visitor could be as simple as, "[paying] attention to where they are and how to get back" (D4). Though employees strive to maintain many park areas, weather conditions can affect park infrastructure and, in turn, risk communication; a rotted sign or flooded trail is not uncommon. Consequently, visitors have a responsibility to:

> …Pay attention to what [they're] doing. That's difficult in a national park because you came to the national park to look at things, and to enjoy the great outdoors … you're not on a sidewalk walking downtown, you're on a trail (O10).

An awareness of one's surroundings, and receptivity to park information, thus, provides a foundation for visitors to make informed choices about how to behave in the park. According to some participants, this responsibility to make decisions about, for instance, where to recreate, made up a critical part of the visitor experience; a second, and equally important, part was accepting responsibility for the consequences of these decisions. One employee described this interplay between informing visitors and allowing them the space to make their own choices, a responsibility he saw as landmark of the park experience:

> … It's not that you throw people to the wolves… I think we have to highlight the obvious risk and try to communicate those as best we can. But people have to make their choices (M19).

The tension apparent in this comment is representative of employees' challenge to manage risk while allowing visitors the freedom to experience the park on their own terms: a foundation of contemplative recreation, and, perhaps, "shared" responsibility for managing undesirable risk.

Expectations. In practice, the responsibility to practice situational awareness and informed decision-making may hinge on expectations of the kinds of places national parks are. Many employees expressed frustration with what they perceived as visitors' inaccurate assumptions about the availability of services:

> I find a lot of people don't really quite make that connection of—that it's not safe, it's not like if you turn around the corner and you forget your food, there's a Subway. And if you don't decide to gas your vehicle up, there's going to be one around the next corner. There's all that stuff that in our normal, civilized lives that there's a lot of safety and back-ups built in (M3).

Following Sax's (1980) observation that the "margin of error" for maintaining safety differs between recreating in national parks and in more developed areas, comments such as these also suggest that variations in available amenities may not be immediately obvious to the uninitiated park visitor. Some employees hypothesized that these unrealistic expectations may develop based on markers in the built landscape; the paved roads, gift shops, and snack bars dotting many national parks may contribute to visitors' expectations of being in a setting akin to a forested shopping center. Traveling to the park from an urban area, many visitors, "…see [the road is] black and it's asphalt. And they drive it like they can drive modern roads" (M1), paying limited attention to the road's narrowness or curves, or the often treacherous weather. Just as the expectation of "routine" driving conditions may discourage visitors' vigilance, ubiquitous signage throughout the park may also encourage distraction. Referring to the wording of MORA's numerous interpretive displays, illustrated signs alerting visitors to natural or cultural points of interest, one employee argued:

> …We definitely put up cues that take people out of … the immediacy of their surroundings… It's like, "*imagine this, picture this*," and we have all these viewpoints and overlooks and places that we—*we* bring people to. And whenever people are told to go somewhere, they sort of abdicate the responsibility for their decision-making. So I think the cues are definitely there to be *distracted* (M7).

Paradoxically, as this employee suggests, communication that attempts to engage and inspire visitors to think about the larger issues surrounding parks may interfere with managers' expectations that visitors remain alert to their surroundings.

Still other employees, without referring to a particular attribute of the built landscape, argued that national parks may connote "safety," and visiting them may even encourage an optimistic bias—a perceived invincibility that, as employee put it, "I'm in a park and I can't get hurt" (D1). According to some employees, this perception of safety stemmed from visitors' expectation that a national park was a different *kind* of park, one with a different set of appropriate behaviors. Frustrated by some visitors' inability to distinguish DEWA from the tourist trappings of the surrounding Pocono Mountain resorts, and mirroring the comments of Whittlesey (1995), one employee explained:

> …. [Visitors] come in, they ask you where the rides are, do you have a playground, where's the pool?... They complain that we don't have sand on our beaches, and it's like, 'It's a natural river beach. We don't enhance it. It's gravel, rocks, grass, soil…!' (D3).

Interestingly, physical landscapes deliberately modified to manage risk can also be mistaken for "natural" attributes of the park, as one employee noted: "…there's a fair number of people who see trail steps and stuff and think that that stuff's *natural*" (D17). These comments bring to light the idea that parks comprise

both biophysical and human-made elements, contributing to "cultural landscapes" (Youngs, White, & Wodrich, 2008) that complicate expectations about risk and responsibility for its management.

Discussion

Theoretical Implications

In explaining whether (and which) risk in national parks is desired, participants' comments suggested that perceptions are both highly contextual and contingent upon the geographical location (e.g., wilderness areas) and circumstances (e.g., experience level of the participant) in which the risk was encountered. Indeed, participants readily conceded that their idea of a valuable risk experience—or even what constituted a park-related risk in the first place—could differ markedly from some visitors'; at the same time, however, in the context of wilderness, their comments implied that they assumed visitors to determine and weigh the trade-offs of unconfined recreation (e.g., spectacular scenery vs. potential injury) similarly. To the extent that employees experience the park on a daily basis, not just as workplace, but also as home, it is likely that their perceptions of its risks—as well as their perceived ability to encounter or avoid them, as necessary—were not shared with most visitors. As Bickerstaff (2004) and others suggest, familiarity with, and attachment to place may account for certain perceptions and evaluations of risk; in the case of NPS employees, these may be valuing risk-taking in wilderness areas as beneficial, an example of Sax's (1980) "contemplative" recreation, given appropriate competence and expertise.

In describing situations in which risk becomes undesirable, participants also indicated that differences in risk perceptions between visitors and employees, including those stemming from the perceived character of a national park, might challenge assumptions of individual responsibility for avoiding risk. One the one hand, employees' expectation that visitors seek information and maintain "situational awareness" conveys the impression that unintentional injury is an "individual" risk (Bickerstaff et al., 2008): avoidable through prescribed personal behavior. On the other hand, and in contrast to the findings of Newman (2009) and even Rickard et al. (2011b), employees pointed out challenges to assuming safety to be the sole responsibility of the visitor, such as the difficulties of relaying consistent recreational safety information within and between parks given dynamic and idiosyncratic ecological conditions. Stemming from perceptions of risk, attributions of responsibility for avoiding risk, thus, may contribute to a division between "insiders" (i.e., NPS employees) and "outsiders" (i.e., park visitors). NPS staff sharing similar perceptions of risk, place meanings and attachments, affinity for risk-taking, and attributions of responsibility for risk management, for instance, may perceive themselves as separate from visitors who may differ in these respects. Such feelings may contribute to subtle, perhaps unconscious, judgment on the part of park staff as they evaluate visitors whom they perceive as not sharing similar preferences for experiencing the park or assumptions of personal responsibility (see Rickard et al, 2011a). Further research is necessary to determine whether such perceptions exist, and whether (and how) they might influence the carrying out of risk management efforts, on the part of the NPS, or the acceptance of such efforts, on the part of visitors (see also Rickard et al, 2011b).

Results from this study also suggest that how audiences attribute responsibility for managing risk may be founded, in part, on cues in the built and biophysical environment. When developed areas in parks can include trails, and wilderness areas can feature primitive structures, the designation between areas that are "park-maintained" (and, presumably, managed to limit undesirable risk) and "visitor on his/her own" (and, presumably, open to voluntary risk-taking) may be less than black-and-white. Instead, a national park might be better characterized as "liminal" (Van Gennep, 1960): a transitional space, straddling the developed and the undeveloped, where responsibility is likewise in flux. For sociologists and geographers,

liminality offers a way to conceptualize people's experiences in places, both familiar and foreign (e.g., Shields, 1991), by focusing on the transition from one developmental state to another, such as during a "rite of passage" (Van Gennep, 1960). Likewise, leisure studies scholars have used liminality to describe the tourist experience, including engaging in activities one might eschew at home (e.g., Currie, 1997; Phipps, 1999).

In a national park, we can apply the concept of liminality on at least two levels. First, visitors, as tourists, may be "in between" their accustomed habits and activities of home and the varied new opportunities and experiences that a national park represents, which may lead them to feel, "temporarily allowed to create their own rules within which to operate" (Currie, 1997, p. 894). At the same time, attributes of the physical environment visitors enter may construct the appearance of a place straddling the boundary of managed and unmanaged, civilized and wild. Thus, visitors' attributions of responsibility may vary geographically, based on physical cues, whether steep slopes, picnic tables, or handrails. Future research should explore how communication strategies might convey this sense of transition from one "zone" to another, where expected responsibilities for avoiding—or invitations to encounter—risk might differ.

Management Implications

With President Obama's signature of the America's Great Outdoors Initiative, and the initiation of the NPS' *Healthy Parks, Health People*[2] program, increasing attention has focused on the value of open space to the U.S. public. At the same time, the NPS and other federal land management agencies have continued their efforts to attract traditionally under-served populations to parks and forests, as well as to document and encourage unique usage (e.g., Chavez, Winter, & Absher, 2008). With growing attention to attracting first-time visitors to national parks, greater discussion is warranted to explore how the goals of federal initiatives align with relevant beliefs among park staff, such as the extent to which visitors should assume responsibility for their safety. If national parks "belong" to the U.S. public, then they should be places where ways of experiencing the place are likewise diverse and supported.

Limitations and Future Research

While the study considered three parks that vary on several dimensions (e.g., physical size, geographical location, etc.), they cannot stand for all of the sites included in the National Park System; thus, findings are unlikely to be generalizable to all parks or park employees. Due to scheduling constraints, participants were sampled during the winter/spring at MORA and OLYM, and the summer at DEWA. Differences in staff during these seasons may have influenced the data; future research should attempt to access a more diverse group throughout the year, and also at parks in which primary visitor activities occur in more urban settings (e.g., historical sites).

Building on the current study, future research should examine park visitors' perspectives on risk management with respect to the idea that parks may be experienced as liminal spaces "betwixt and between" developed and the undeveloped settings. Do material "cues" (e.g., handrails) imply certain attributions of responsibility for safety? How might park-produced communication in these areas, including signs, brochures, or face-to-face conversations with employees, support (or challenge) these notions? Interventions that present visitors with journals or mobile devices upon entering the park, for instance, would allow researchers to measure perceptions at pre-determined landmarks. In addition, researchers might ask recent visitors to reflect on their trip with respect to other, day-to-day contexts; for instance, who (or what) is responsible for your safety in your workplace, versus when you were in the park? Finally, longitudinal study of visitors would help determine whether perceptions of park-related risks and the responsibility to seek or avoid them vary over time, or lead to changes in beliefs or behaviors in contexts outside of national parks.

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Notes

1 Parks were selected on the basis of their similarities in biophysical environment and recreational opportunities (i.e., MORA and OLYM) as well as differences (i.e., DEWA and the Washington parks) (Yin, 1994). Officials from all three parks had demonstrated an ongoing interest in risk management research, thus making accessing these parks' visitors and employees somewhat easier than those at other parks.

2 For an overview of *Healthy Parks, Healthy People*, a federal initiative to promote human health and environmental sustainability in national parks, see: http://www.nps.gov/public_health/hp/hphp.htm

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Apocalyptic Framing and Conservative Action: Discourses of Climate Change Communicated in Swedish Mass Media, 2006–2009

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In the early 2000s, global warming and sustainability were put high up on the political agenda. During the second half of the decade, these became issues that were seen to affect all of human civilization. The Swedish Conservative Prime Minister Fredrik Reinfeldt said during this period that climate change was one of mankind's greatest problems and that it was Sweden's task to take the lead on this issue. Editorials in Dagens Nyheter, Sydsvenska Dagbladet, and several other major Swedish newspapers noted that 2006 would be remembered as the time when the greenhouse effect was recognized both nationally and internationally as a major crisis in human history. The focus of this paper is on how different cultural modes of sustainability were communicated in the climate change debate in Sweden between the years 2006 and 2009. It examines how sustainability was announced by leading politicians and commentators in approximately 3,500 editorials, opinion pieces, political commentaries, and major feature articles and what actions these documents said were required to address these environmental problems. Our results show how actors constructed the climate change as an environmental problem through four different discourses during this period, all with very different actions to be taken to achieve sustainability. The dominating Ecomodern discourse communicated the situation in apocalyptic terms, but only required conservative actions to be taken.

Keywords: Sustainability; Climate change; Mass media; Discourse; Ecomodern; Green Keynesianism; Green socialism; Climate skeptics; Sweden

Introduction

Sweden is seen throughout the world as a leader in tackling environmental issues, and this is an image that Swedish governments, both right wing and left wing, have tried to maintain (Sarasini, 2009). Concerns that increasing carbon dioxide emissions, particularly from industry, transportation, and the production of electricity and heat, can lead to profound climate change has been an increasing part of the Swedish political debate since at least the late 1960s (Martinsson, 2007; Hultman, 2010). The term "climate change" that has permeated the public debate in the 2000s has, therefore, an almost four decades-long history in Sweden. However, climate change has been handled by the majority of politicians as just one of several environmental issues and as something to keep an eye on in the future. This is despite grave warnings from environmental organizations, individual researchers, and the Intergovernmental Panel on Climate Change (IPCC) (Knaggård, 2009). From the autumn of 2006 through 2009, the issue of global

climate change was thus communicated as a matter of apocalyptic dimensions, but only conservative action was recommended in connection with such dire predictions. In this article we will show how climate change was debated in Sweden during those years.

Background

Editorials in Dagens Nyheter, Sydsvenska Dagbladet, and several other major newspapers noted at the beginning of 2007 that 2006 would be remembered as the year when the greenhouse effect was recognized both nationally and internationally as a major crisis in human history. Climate change was said to be the most important word in 2006 in Sweden and, therefore, something that was no longer solely a concern for scientists and environmentalists but also for the general public, politicians, businesses, and the mass media (Avellan, 2006; Ekdal, 2007). The two environmental debaters Stefan Edman (Social democrat) and Anders Wijkman (Christ democrat) exclaimed that climate change "finally got the place in the debate it deserves" (Wijkman & Edman, 2007). Like several other environmental commentators, they pointed out three crucial events that were keys to the dramatic change in environmental consciousness that they believed had taken place. These were the economist Nicolas Stern's report on climate change costs, the launch of politician Al Gore's film "An Inconvenient Truth," and the publication of the IPCC's fourth report on global climate change. These events garnered much attention in the Swedish public debate.

When Nicolas Stern, an established and world-renowned economist, published a voluminous report, *The Economics of Climate Change,* at the end of October 2006, this gave rise to widespread attention in the Swedish media. The *Dagens Nyheter* and *Sydsvenska Dagbladet* editorial pages stated, in reference to Stern's report, that it was time to break the link between greenhouse gas emissions and economic growth (Ekdal, 2006; Ohlsson, 2006). The basic argument in Stern's report was that strong action against climate change needed to be taken immediately and that this was the only possible way to stabilize carbon dioxide emissions at an acceptable level by 2050. Unless drastic action was taken, floods and droughts would afflict many of the world's countries and nearly 200 million people would be turned into climate refugees around the middle of the 21st century. This apocalyptic scenario led the authors of the report to argue that one per cent of global gross domestic product needed to be spent as soon as possible on measures for stabilizing carbon emissions. New technologies, economic and policy instruments, and green growth were suggested as solutions (Stern, 2006).

While Stern's report was discussed in the newspaper editorials and debate pages, Al Gore's film "An Inconvenient Truth," which premiered in Sweden on 8 September 2006, left a significant impression on the Swedish public (see for example, Wennö, 2006; Kinn, 2006). Gore, who toured as an established and, in many respects, conservative statesman dressed in a suit and tie could hardly be suspected to represent some subversive interests. He was described in the media as someone who had come with the knowledge of the issues that could, and should, be addressed by industrial capitalist society (see for example, Bennet, Ekman & Johansson-Hedberg, 2006). In early February of 2007, the IPCC's fourth climate report further educated the Swedish public about global warming, and it issued a sharper warning than ever before. Over 2,000 scientists from more than 100 countries concluded that climate change is probably accelerating faster than previously assumed. This change was expected to result in temperature increases of between 2 and 4.5 degrees Celsius over the next hundred years, a sea-level rise of between 2 and 6 meters in the same period, the sea ice over the Arctic in danger of disappearing in the summer, the Greenland ice sheet melting faster than expected, and a weakening of the Gulf Stream. The droughts and floods in many parts of the world were predicted to become even worse. These and similar scenarios had been described in earlier UN climate reports, but what was new in 2007 was that the IPCC considered that they could state with 90% certainty that these changes were due to human emissions of carbon

dioxide and other greenhouse gases. Virtually all major Swedish newspapers commented on the report in editorials, and these were accompanied by extensive debate and news articles. A consensus pervading these articles, with only some exceptions, was that it was no longer responsible or justifiable to continue the discussion on whether or not climate change was taking place or whether such change was anthropogenic. In light of the IPCC's fourth report, these discussions gave way to profound discussions and constructive suggestions about which solutions should be sought. Everybody across the board asked for powerful and morally responsible political action. Thus, the IPCC report contributed greatly to establishing climate change as the most important environmental issue in contemporary public discourse (Anshelm, 2012).

This newfound focus on climate change was reflected in the general news reporting in the first months of 2007, where a recurrent theme in foreign stories was the consequences of climate change for people and cultures. A quarter of Bangladesh was reported by *Dagens Nyheter* to become submerged in a hundred years and the current population's difficult struggle against climate-related flooding was described in detail (Holmgren, 2007). The Swedish newspaper *Svenska Dagbladet (SD)* stated in turn that alpine glaciers would melt within 40 years, and *Aftonbladet* simultaneously wrote about how Australia was experiencing the worst drought in a thousand years as a result of climate change (von Hall, 2007; Kadhammar, 2007). Reports of melting Greenland ice caps, rapidly disappearing glaciers in the Andes, and the shrinking ice caps in the Arctic followed in quick succession during the first months of 2007. Record summer heat in Southern Europe was also interpreted as an effect of global warming. Common to all of these stories was the apocalyptic mood that pervaded them. It was not a question of whether these phenomena could occur or what impact they might have, but that the disasters were occurring right now. The newspapers displayed a profound concern for the future, and it is significant that *Dagens Nyheter* portrayed this in a long series of articles entitled "Climate anxiety" (Anshelm, 2012). *Aftonbladet*, in turn, called upon its readers to sign a petition to stop climate change and regularly announced how many people followed the call (Bjurman, 2006). From the autumn of 2006 until the end of December 2009, when the UN conference on climate change was held in Copenhagen, climate change took a central place in public political debate in Sweden. All of the parliamentary parties, as well as interest groups ranging from the Swedish Enterprise Organization to the Swedish Church, identified ambitious climate actions as a prerequisite for the survival of industrial civilization (Anshelm, 2012). But the solutions were not the same, and we have found that four main discourses were developed along politically divergent paths.

The increasing tensions and disagreements were largely based upon fundamental social questions: What was a good society? Was economic growth part of the solution or a part of the problem? What did an ecologically healthy relationship between politics and the market look like? Had significant changes in lifestyles and consumption patterns in the wealthier part of the world become ecologically necessary, or was it enough to simply have environmental labelling of consumer goods? What was a globally equitable distribution of the earth's resources, and who was responsible for promoting such a scheme? What roles should technology and science play in the development of measures to address the problem of climate change and the value-based and epistemological problems that were associated with it? What kind of relationship between nature and industrial society should be the basis for the design of climate action that ensured the long-term survival of contemporary civilization?

In this article, we describe four discourses that attempted to answer the above questions. Environmental policy was a political subject matter that resulted in an ideological battle between concrete, fundamental, and long-term social values. The question of how the future of Swedish society could be organized seemed, for a few years at least, very open to various interpretations.

Method

To answer our research questions regarding the discourses of climate change, a comprehensive collection of about 3,500 newspaper and magazine articles from 2006 to 2009 was put together using the Artikelsök database. The database contains information about what is published in Sweden in all national newspapers and all major regional newspapers as well as the vast majority of the magazines that are relevant in this context. It is important to emphasize that the material does not include newspaper articles, but only editorials, opinion pieces, political commentaries, and major signed feature articles. News reports are not included in the survey. Our data does, however, also include about 20 debate books that were located using the Libris database. The keywords used in all searches were climate change*, *greenhouse effect, global warming*, climate policy *, *climate negotiations, climate action*, *climate, climate adaptation*, carbon*, carbon reduction*, and related synonyms. The asterisks represent wild card search terms.

Once the material was compiled and arranged chronologically, we repeatedly read through it to sort out the parts that we considered were relevant to the climate policy debate in Sweden. We then read the selected individual texts closely to identify their central premise and coded them accordingly. Thus, for example, one hundred articles that suggest the flexible mechanisms of carbon taxes and personal allowances as solutions to the climate problem have been identified. Such important focal points were identified for all of the articles in the collection and these have been related to each other to reveal regular and consistent patterns.

The focal points of the articles have been interpreted to represent specific and coherent discourses that struggle to give meaning to a particular part of the world, or to stake out a specific territory in the debate on climate change. Each discourse represents about 20–30 interconnected formations. Although the individual discourses have been established based on the analysis of both individual and large groups of texts, they do not represent composites of ideas nor are they a product of chance. They are based, instead, on the repeated and systematic readings of a very extensive empirical material and each observation of discursive patterns and the repeated use of various examples. In other words, a discourse is identified by the particular metaphors and catch phrases that are habitually deployed (Gamson & Modigliani, 1989). A discourse is not limited to simply “talk” but is also viewed as a socially constitutive phenomenon (Fairclough,1992) that influence and structure social conduct and social perception. After the first analysis was carried out and we were able to produce an overview of the material, we found the following four areas that were of particular interest for our study: a description of the fundamental problem; the historical construction of the relationship between industrial, economic, political, and atmospheric conditions; proposals for action; and responsibility (see Anshelm, 2012 for more details).

Results

In our analysis we have found four discourses that we call Ecomodern, Green Keynesianism, Climate skepticism, and Green Socialist.

The Ecomodern Discourse

During the years 2006 to 2009, one image of Sweden as competitive, courageous, and a frontrunner country in competitive global environmental politics dominated. Sweden was a country that was said to show international leadership by leading by example, and this was permeated by a fundamental belief that international agreements between states would make it possible to regulate emissions of greenhouse gases and, therefore, manage the risks of climate change. This conviction was based on the idea that all

nations have a common interest in combating climate change, despite their diverse cultural and economic conditions, and on the idea that scientific consensus allows for a rational political handling of the problem. Law, economics, science, and technology would solve the problem and this meant that only marginal changes to industrial capitalist society's fundamental economic and technical structures would be needed. Thus it would not be necessary to make any significant changes to industrial society's way of life, economic growth, use of natural resources, production of energy and goods, transportation, flow of materials, or any other aspect of industrial society's "metabolism" (Anshelm, 2012).

Climate change was described as a new crisis phenomenon because it was a global, irreversible, and long-term problem that required a complicated coordination of international efforts that had never been seen before. International negotiation was portrayed as being critical for the world to be saved from global climate collapse and its devastating consequences. Nevertheless, the proposed solutions were the same as had been actualized in the context of other environmental problems and were articulated in unilaterally optimistic terms. In this discourse, Sweden was seen as a frontrunner and was likened to a participant in an international competition that had come to "take the lead" (Malmström & Carlgren, 2006; Mellgren, 2009; Bergman, 2009; Reinfeldt, 2006).

This image was created both by claims about Sweden itself and by creating images of other countries. Already in November 2006, the environmentalist Andreas Carlgren was using the following words to describe the Swedish government's ambitions: "With a wide collaboration, we can develop Sweden into a leading model for a modern society based on renewable resources and in harmony with the Earth's climatic conditions" (Carlgren, 2006). The discourse at this time was suggesting that more and better adapted technology, technology exports, intensified research, economic growth, the use of market mechanisms, better informed consumer choices, and internationally coordinated regulatory frameworks would solve the problem, but there was absolutely no need to reconsider industrial civilization's basic relationship with the natural world. Within this discourse it was understood that climate crisis was merely a temporary disturbance in civilization's progress. Right-wing leaders Fredrik Reinfeldt, Andreas Carlgren, Minister Maud Olofsson, Jan Björklund, and Göran Hägglund all declared on numerous occasions that Sweden would be a "pioneer" and a "role model", would "show leadership and take the lead," and would contribute to "best practices" (Reinfeldt, Olofsson, Björklund, and Hägglund, 2007; Reinfeldt, 2007; Schlingmann, 2007; Reinfeldt, 2008; Olofsson, Borg, and Carlgren, 2009).

In many parts of the world, Sweden is still thought of as a social democratic utopia (Tranter, 2011). This image prevails despite three decades of neo-liberalism and ecomodernisation in a similar manner to that seen in many other countries. Our analysis of the climate change debate how the ecological modernization discourse dominate in Sweden.

The Green Keynesianism Discourse

The influential, but not dominating, Green Keynesianism discourse was in some respects a very different discourse than the Ecomodern discourse even though they both shared a core belief in market mechanisms. The proponents of this discourse felt that the threat of climate change was not an isolated management problem, but was a symptom of a self-generated institutional crisis in the rich industrialized world's economic system. This crisis could not be met solely with a "business as usual" attitude, i.e., a reliance on new technologies, market mechanisms, enlightened consumer choices, and international negotiations. Green Keynesianism took a rather profound reflection on the industrial capitalist mode of action. System changes, behavioural changes, and fundamental value changes were reported to be necessary to meet the threat of climate change. Such changes clarified that the economic models must be reformed, growth concepts reclassified, ecological considerations internalized, a gentler approach to

nature developed, and that demands for global justice be respected. Changes of this kind could not be left to the market, which is why policies responsible for promoting these changes were of great important in the Green Keynesianism discourse.

The policies suggested in the Green Keynesianism discourse imposed a number of specific tasks, such as atoning for the rich world's ecological debt to poor countries by making extensive cuts in carbon emissions in rich countries while providing aid to poor countries to help them develop without excessive carbon emissions. In Sweden, this required comprehensive changes in energy, transport, and production systems to sources of renewable energy, rail mass transit, and energy efficiency benefits while taxes and bans discouraged carbon emissions. The Green Keynesianism discourse emphasized the importance of binding international agreements, but the difficulties in achieving such agreements were instead used as an argument for accelerating domestic climate adaptation in order to demonstrate its feasibility. In the Green Keynesianism discourse, Sweden needed to implement its own policy of action before it would possible to make demands on other countries (Anshelm, 2012).

In 2007, the Social Democrats presented 127 suggestions for reducing greenhouse gas emissions in Sweden without jeopardizing employment (Hulthén and Messing, 2007). This Keynesianism was also favoured by individual environmental debaters. If handled correctly, market mechanisms could be utilized by the state to create the dynamics that would foster the large-scale climate-friendly transition that was at the core of the Green Keynesianism discourse. One example of this in our empirical material is how professors Christian Berggren and Staffan Laestadius declared, "There are strong reasons to suggest that the Green Keynesianism we advocate is a more vigorous policy against the crisis than general tax cuts. This Keynesianism is to create growth and consumption in general. It is a policy to address the deepening economic crisis with long-term measures focusing on putting the Swedish economy on a climatically sustainable (Berggren, Jacobsson & Laestadius, 2007a; Berggren, Jacobsson & Laestadius, 2007b; Laestadius, 2007).

In the Green Keynesianism discourse, Sweden was consistently identified as a country that was exceptionally well situated to implement a shift in its approach to climate change, not least because coal and oil had already been mostly phased out of the country's energy supply. Thus it followed that Sweden had a special moral obligation to use its position to demonstrate the possibility for radical cuts in carbon emissions and not to use it as an argument that the country had already done what was reasonable to expect. Sweden should fight the economic recession through green innovation and Green Keynesianism, which in the long term were assumed to provide the country economic benefits and export earnings. The proponents of the discourse also declared that reductions in Swedish emissions, for example by setting up new transportation, energy efficiency, and consumption patterns, must be implemented in the long run and that it was better to start early and make the reductions gradually rather than pushing for change at the last minute and being forced to implement these changes hastily (Anshelm, 2012).

The Green Keynesianism discourse was the second most influential discourse that we found, and it has a long tradition in Sweden that built upon the Social Democratic idea of the green welfare state from the mid-1990s. It contained the classic Social Democratic confidence in the liberal market as the engine of wealth creation, but only if the market is properly regulated by strong government enforcement to reduce the market's inherent dysfunctions. This discourse was nourished by a belief that a fundamental restructuring of society in a climate-friendly direction by political decision-making was possible and that the economic system could be kept intact. Actors here also felt that it was Sweden's duty to concretely and practically demonstrate that this was the case.

Climate Skeptics

In Sweden there has been an increasingly overwhelming parliamentary and public sphere consensus that anthropogenic climate change is real and that society needs to take responsibility for lowering greenhouse gas emissions. There was, however, a small group of climate skeptics that did not agree with the majority of the scientists regarding the anthropogenic cause of climate change, nor the need to enact drastic changes in the organization of Western society. This small group consisted, with only one exception, of elderly men with elite positions in society either in academia or in large private companies.

The 2006 release of Al Gore's film and Nicholas Stern's report aroused great interest but also gave rise to strong reactions among those who remained skeptical as to whether anthropogenic global warming was taking place. The most important and most characteristic feature of the climate skeptic discourse was, of course, that it completely dismissed the existence of anthropogenic climate change. Doubt was the primary focus of this discourse, which explains why it can be understood as the expression of an ideologically based 'denial' rather than just skepticism. It is usually the case that arguments made from those in a variety of academic disciplines carry extra weight. In relation to climate science, however, a constructivist position was adopted. The climate science statements were said to be the product of a mixture of science and politics that had become so intimately associated that they could no longer be distinguished from each other.

Several industry-related think tanks such as Timbro, Captus, and Eudoxa described anthropogenic climate change as "speculative alarmism" and Peter Stilbs, a professor of physical chemistry, claimed that such a concept was "disgusting" (Carlbom, 2006). According to the climate skeptics, the fact that global temperatures are increasing is nothing more than an indication that a new phase has started in a natural temperature cycle. It was possible to grow grapes in southern Sweden during the Middle Ages during a warmer period in Earth's history, and during the Little Ice Age a few hundred years later Karl X Gustav's army was able to march across the ocean between Denmark and Sweden (e.g., Bränfeldt, 2006). In early June of 2008, Per-Olof Eriksson, former director of Volvo and former president of Sandvik, wrote an article in *Veckans Affärer* where he declared his doubts that carbon emissions affect the climate and explained that the Earth's average temperature has risen due to natural variations. Eriksson said he was told that many in the business world and academia shared his opinion but dared not admit it publicly for fear of reprisals (Eriksson, 2008). Eriksson was supported by SCA's chairman, Sverker Martin-Löf, who claimed that there was no real evidence that mankind created the climate change and who expressed his sympathy for the United States government's decision not to sign the Kyoto Protocol. He argued that much scientific work indicated that the problem of global warming was exaggerated (Karlsson, 2008). At the end of June of 2008, the Stockholm Initiative network, consisting almost exclusively of elderly men, was formed. The new network, in which Per-Olof Eriksson came to be active, stated that its mission was "to critically examine the issue of climate change and highlight its political and economic consequences." (Ahlgren et. al., 2008; Fagerström, 2009).

The climate skeptic discourse was created primarily by conservative think tanks and by a group of elderly men who had had successful careers in academia or the corporate world, with one female being the only exception. This group had strong beliefs in a free-market society and a great mistrust of government regulation (Hultman & Anshelm, in review). The climate skeptics had very little association with parliamentary politics or the environmental movement, but they did have connections with the Royal Swedish Academy of Engineering Sciences (IVA) and similar associations where representatives of business and scientific and technological research met. A few voices returned again and again with virtually the same allegations. This discourse was notable for its use of religious metaphors. The climate skeptics accused climate scientists and politicians of being eco-terrorists who were driven by religious fervour to attempt to destroy civilization. But at the same time the climate skeptics proclaimed their own

salvation from their proclaimed apocalypse. One apocalyptic scenario was met with another, that of the demise of industrial society.

The proponents of the climate skeptic discourse described themselves as marginalized, banned, and oppressed dissidents who felt compelled to speak up against what they saw to be a faith-based belief in climate science. They appealed to citizens' mistrust of the state and the establishment in a populist way. This group tended to use terms such as "elite" and "the fancy people" to create an image that climate policy makers were an exclusive group with no contact with the general population and who were completely alien to ordinary people's everyday lives. In this way, the climate skeptics quite paradoxically were trying to shape a conflict between the people and the decision makers; between concrete, short-term, and individual everyday problems on one hand and long-term, abstract, and global issues on the other. It was paradoxical, if not hypocritical, because these men themselves were part of the elite, having been part of the ruling class their whole lives with successful careers in modern industrial society. They also found many spaces to speak out and their arguments were disseminated through various types of media (Anshelm and Hultman, in review).

The Green Socialist Discourse

The fourth discourse in Sweden in regards to climate change took the position that the research regarding climate change was valid and that radical action was required. Because of the apocalyptic framework of the climate change debate, this could have been the moment in time in which an alternative green socialism would have been able to define the future. But the consensus in Sweden regarding climate change research was not to engage in radical political action; here the ecomodern discourse still prevailed with solutions such as green technology, carbon dioxide markets, technological innovations, taxes, and new infrastructure. What, then, did the Green Socialists argue from their side-lined position?

In 2007, several writers and political commentators started to question the climate change debate and how the mass media reported on climate change. The mass media, they argued, had a tendency to deal specifically with individual consumption patterns and very little reference was made to the economic system. These green socialists argued that it was somewhat absurd to discuss changes in individual consumption patterns while no attention at all was paid to the capitalist system that demanded increased consumption. Göran Greider argued that it was vital that the question was asked if capitalism, in the long run, was even possible to reconcile with sustainable development (Greider, 2007). In left wing journals such as *Arbetaren*, *Clarté*, *ETC*, and *Ordfront Magasin*, a green socialist discourse was developed that focused on the conflict between capitalism's short-term profit motive and the need for long-term sustainable development and, at the same time, the need for immediate climate action. Climate change was thought of as the clearest sign of capitalism's inherent self-destructiveness. The green socialism discourse was based on the assumption that climate change is a productive force that allows a change in the pathological growth ideology of the industrial capitalist society and the unjust global exchange relationships that derive from capitalism's profit motive. The possibility for change grew from a global non-parliamentary grass-roots movement that, to some extent, affirmed the use of civil disobedience and direct action. The green socialist discourse described the outline of an alternative society, not just an alternative technology. This discourse was supported by a small crew of journalists, writers, and commentators who were linked to small and independent magazines and newspapers, new climate activist organisations such as Climate Action and Climax, some environmental organisations, and individual researchers and politicians. This discourse could be found primarily in alternative magazines, in books from alternative publishers, and in articles in the cultural pages of major Swedish newspapers. Throughout the entire climate change debate between 2006 and 2009, the green socialist discourse was marginalized by the

media and was rarely even mentioned in the context of the dominating Ecomodern and Green Keynesianism discourses in Sweden.

The men and women around thirty years old who conjured up this discourse argued that the threat of climate collapse necessitated the development of political policy based on the findings of climate scientists. For them, another world was not only possible, but was a necessity. They believed that political systems and regulations must be changed as soon as possible and politicians forced to make decisions that are collectively beneficial. Only policies such as those could save humanity from destruction, and that necessarily meant major limitations to the market economy (Wilhelmson, 2007; Josefsson, 2007; Froster, 2007, Berggren & Palmaer, 2007; Ehrenberg, 2007; Lundberg, 2006; Larsson, 2007; Grenholm, 2008; Nuottaniemi, 2008). The central idea for green socialists in Sweden was that the problem of climate change could not be resolved without fundamental changes in the current economic system. The critique was directed primarily at efforts by those who promoted the Ecomodern discourse who saw climate change as something that could be dealt with through technological innovation, economic instruments, and international negotiations between heads of state (Anshelm, 2012). The Green Socialism discourse also directed harsh criticism towards the proponents of Green Keynesianism because their ideas for reducing greenhouse emissions were still predicated on maintaining the industrial capitalist economic system as a source of economic growth.

Discussion

In this article we have looked at how climate change was interpreted and conceptualized within four different discourses with special attention to the historical construction of the relationship between industrial, economic, political, and atmospheric conditions; proposals for action, measures, and solutions; and statements about the distribution of responsibility and what efforts Sweden and other nations should undertake.

An interesting pattern has emerged from in debate. When market liberalism became the state ideology and hegemonic in almost all areas of political life in Sweden, and the right-wing government could rule without being seriously challenged, the environmental and climate policy debate made it possible once again to include strong ideological conflicts in regards to the issue of living conditions in the future climate-friendly society, both in Sweden and in "developing" countries. It was a time of apocalyptic framing. The environmental and climate policy debate was filled with both dystopian and utopian imagery, and the strongest ideological contradictions appeared for a few years to be concentrated precisely in this policy area. These disagreements meant that the modern ecological philosophy that had dominated Swedish environmental policy since the 1990s, and turned it into a simple technocratic search for the most effective solutions, was in question. Environmental and climate policies were once again possible to be understood as issues of human civilization during these years, and climate change was interpreted as an invitation to rethink the basics of contemporary society's organization. But as we have shown, the ecological modern discourse hegemony in Sweden embedded in the Ecomodern as well as the Green Keynesianism discourse did not lose any ground and it may even be argued that it was strengthened as the only way to deal with climate change.

The climate policy debate studied here can be understood as an expression of the growing social and political conflicts that result from the self-defeating process of industrialization. The Ecomodern discourse defined, understood, and addressed climate change with more and better technology, in-depth research, established market mechanisms, and political agreements on emission reductions, but made absolutely no recommendations for changes to the current economic system. This discourse was based on the assumption that climate change could be monitored through the IPCC and controlled through carbon

markets and international agreements in the UN. Best of all, according to this discourse, Sweden was already at the front of the desired changes so Sweden could simply continue doing what it had always done.

The increased amount of worry coming from the Green Keynesianism discourse grew out of the conviction that industrial civilization may well be about to destroy itself. In relation to the approaching disaster, this discourse found industrial society's knee-jerk belief in research, new technology, and more market control as counterproductive, irresponsible, and reckless. What was understood as an urgent need was, instead, the self-criticism and self-reformation of contemporary industrial society. The Green Keynesianism discourse claimed that if carbon emissions were to be reduced immediately, this must be forced by political regulation. Failure to enforce such policies, and a failure of international politics to tame the market, would mean that industrialized society would have sealed its own fate. This discourse drew its political strength from the realization that the transition had already started and that the operational logic of industrial society had become obsolete. This discourse assured the public that the transition would not be shocking and that major structural changes in society could be implemented within the framework of the market economy without requiring radical changes in living patterns. This was, of course, based on the provision that already discernible climate changes could be swiftly reversed by strong, binding international rules and through planned national efforts to reduce carbon emissions.

The climate skeptics had even more faith in the economic system and technological developments, and they believed that the IPCC calculations and the accusations of the market system were unfounded. Their position, therefore, became that of climate change denial. This discourse was created by conservative think tanks and by a group of predominantly older men with successful careers in academia or the corporate world who had very little association with parliamentary politics or the environmental movement. They voiced strong beliefs in a free-market society, large-scale technologies, and a great mistrust of government regulation. They appealed to citizens' mistrust of the government and the establishment in a populist manner.

The Green Socialist discourse was articulated entirely as a critique of industrial society. Climate change was understood to be neither calculable nor controllable, even though their critique in many aspects was based on climate science. This discourse claimed that IPCC projections were merely extrapolations of trends and that there was no guarantee that the already on-going climate catastrophe was not accelerating in an unpredictable and exponential manner. The proponents of the Green socialism discourse believed that nobody had the right to play with the existence of mankind, yet it is precisely what was happening. The whole industrial system that was premised on expansion through the exploitation of fossil fuels must be abandoned as soon as possible if the planet's survival were to be ensured. This group believed that this could not be done within the framework of a capitalist economy, so the transition to a democratic socialism or a localized self-sufficient economy had become inevitable. Only then could the necessary downscaling of production and consumption systems be achieved and the conditions for a levelling of global resource allocation be created. This discourse held out no hope that the industrial capitalist system, whether through international carbon markets or negotiations, would be capable of modifying itself to the extent that the global risks required. This group thought that the climate crisis would force a policy for a more viable future society and believed that a fundamental system change was the only way to escape global climate collapse.

Climate change has forced all citizens of the world to ask the most fundamental political questions, including what a good society is, if economic growth is part of the solution or part of the problem, what is an ecologically healthy relationship between politics and the market, what the needs are for changing lifestyles and consumption patterns in the rich part of the world, and of the necessity of a global

equalization of resource allocation. But still, it seems as if our capitalist world ecological system stay the same.

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Climate News Across Media Platforms: A Comparative Analysis of Climate Change Communication on Different News Platforms

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In a changing media landscape marked by technological, institutional and cultural convergence, comparative and cross-media content analysis represents a valuable analytical tool in mapping the diverse channels of climate change communication. This paper presents a comparative study of climate change news on five different media platforms: newspapers, television, radio, web-news and mobile news. It investigates the themes and actors represented in public climate change communication as well as the diverse possibilities of participating in public debates and information sharing. By combining quantitative and qualitative content analysis the paper documents and explores the extent and character of climate change news across different media platforms. The study aims at contributing to the on-going assessment of how news media are addressing climate change at a time when old and new media are increasingly competing for attention.

Keywords: Climate change, media platforms, comparative study, content analysis

Climate News and Media Formats

Over the years, the number of studies on climate change news has increased considerably. These studies have contributed significantly to understanding the opportunities and challenges facing climate change communication in the current media landscape. The majority of studies have focused on specific media pointing out particular affordances and constraints of e.g. newspapers, news programs or Internet news. Occasionally, news media have been related to broader social structures and conditions such as ideology or political economy.

Comparative studies of climate change communication across different media platforms has been less common, although general textbooks on environmental communication typically includes chapters devoted to different media formats or media platforms (M. T. Boykoff, 2011; Cox, 2013; Hansen, 2010; Lester, 2010). However, in a rapidly changing media landscape marked by technological, institutional and cultural convergence (Fagerjord & Stosul, 2007; Jenkins, 2008), comparative studies and cross-media analysis of climate change communication provides an important analytical tool in mapping the diverse channels of climate change communication. It is a means to document the different sources and actors represented in public climate change communication as well as the diverse possibilities of participating in public debates and information sharing.

Today, climate change news is distributed and consumed on several media platforms reflecting technological developments, institutional practices and demographic preferences. This dispersed climate change communication raises questions concerning the public knowledge-base on climate change; the

possibilities and extent of public participation in climate change communication; the character of public climate change debate on various media platforms; levels of public engagement and mobilization across platforms; who gets to speak in different media; and whether certain media platforms favour or ignore particular sources and actors (human and non-human).

Changes in patterns of media consumption suggest that online news platform (web-news and mobile news) will increasingly become an important site for exposure to environmental news. What is less clear is how environmental matters are communicated on these new platforms. Do we find more or less environmental news in new media compared to traditional media? Do we find the same type of information on different media platforms in terms of visuals, graphics, links and references? How much do new media facilitate user-generated comments? Or how much do online news media resemble traditional mass media?

In other words, there is a shortage of comparative studies that investigate to what extent there are substantial differences between the way the environment – including questions of climate change – is presented and communicated on the diverse news platforms that make up the present media landscape.

This paper presents a comparative study of climate change news on five different media platforms: newspaper, radio, television, web-news and mobile news. By combining quantitative and qualitative content analysis the paper intends to document and explore the extent and character of climate change news across different media platforms. This way, the study aims at contributing to the on-going assessment of how news media are addressing climate change at a time when old media and new media are increasingly competing for attention.

News Media and New Media

The importance of mediated climate change communication has been widely acknowledged (Beck, 2000, 2007; Giddens, 2009; UNDP, 2007; Urry, 2011). While the emergence of new media platforms have radically altered the traditional news landscape, it is yet to be seen whether this development has diminished or augmented the importance of news media in general. Cox argues that environmental journalism has increasingly "migrated online" (Cox, 2013, p. 178), suggesting that it is the distribution (on different media platforms) rather than the amount of environmental communication that has changed.

Former studies of climate change news have primarily looked at the role and function of particular media such as newspapers or television (Boykoff & Roberts, 2007; Carvalho & Burgess, 2005; Cottle & Lester, 2009). Or related climate change communication to questions of ideological orientations (Carvalho, 2007), journalistic norms (M. Boykoff & Boykoff, 2004, 2007), issue-attention cycles (Brossard, Shanahan, & McComas, 2004; McComas & Shanahan, 1999), or regional media systems (Eskjær, 2013). In contrast, the relation between new media and environmental communication has primarily been studied in terms of possibilities of information sharing, mobilization, citizen engagement (Cox, 2013) or as a new tool for environmental activism (Lester, 2011).

However, as more people migrate online for daily news or news updates, there will be an increasing number of media users that utilise new media as traditional mass media. Today, media users are increasingly browsing through the daily news on the Internet or on smart phones (usually delivered by the major TV stations and media houses) the same way they used to flick through printed newspapers. Some studies suggest, that the reason people switch to online or mobile news is less because they are actively seeking specialized news (subscribing to news list or getting RSS feeds), but rather due to the convenience that new media offer when commuting, on holiday, or simply at home (Broeck, Lievens, & Pierson, 2009). Other studies have presented a typology of cross-media news consumption, arguing that media users combine news media to fulfil individual and functional needs (Schrøder & Kobbernagel, 2010).

Thus, the dynamics between digitalization and mass media (Küng, Picard, & Towse, 2008) still remains a growing research field.

Comparing Media Platforms: Data and Methodology

The aim of this study is to investigate different news platforms with regards to how they present climate change information. The overall research question is:

> *How are climate change news presented on different media platforms in terms of frequency and content variables?*

These content variables primarily concern news categories, themes, geographical orientation and climate change actors.

The research design aims at capturing variations between news platforms and their presentation of climate change news. It is, however, a rather difficult task. Comparing media platforms is to some extent a comparison of quite different phenomena in terms of content, distribution and consumption. Some media products are physical (newspapers) while others are electronically distributed. Some media platforms provide news once a day, while others transmit news on a continuously basis. Radio typically offers news updates every hour, whereas mainstream TV contain a handful of news programmes each day. Newspapers are distributed once a day, whereas web-news and mobile news can be accessed uninterruptedly.

These differences cause methodological challenges in terms of both sampling procedures and analytical strategies. For instance, how many news programmes from radio and television should be selected when comparing electronic news with printed news? Should repetitious news be included or excluded? To what extent can we compare frequencies of news items between printed media and broadcast media; or between free-for-all media and subscription-only media?

Due to these methodological challenges this study should be considered an *explorative investigation*. It is seeking to detect general differences and overall patterns of variations in how different news platforms communicate climate change.

The investigation rests on a comparison of five different and partly independent media platforms: newspapers, web-news, mobile news, radio and television. In each case three national news providers have been selected. News providers, however, typically operate on more than one media platforms. The sample frame therefore consists of three major media houses producing print, web and mobile news, and two public service stations providing radio and/or television news (see Table 1).

The sample frame is furthermore based on a principle of (maximum) variation. The three media houses consist of a quality/broadsheet paper, a tabloid and a business paper. Denmark's Radio (DR) and TV2 represent radio and television. Both operate several television and radio channels catering to a rather diverse audience. Thus, the sample frame includes the largest broadsheet and business paper (Politiken and Børsen, respectively) and the two most popular radio and television channels.

The sampling strategy is based on a probability sampling using a constructed week procedure. In media studies (where the population distribution is known to be non-normal) a stratified sample of one constructed week is more efficient than a simple random sample or consecutive week sample (Riffe, Aust, & Lacy, 2009). This constructed week is drawn from a sampling period that spans four months from mid-November 2012 to mid-February 2013.

All relevant news items referring to climate change has been selected. Data concerning newspapers, radio and television has been obtained by searching a national database of news media (*Infomedia*). Four search

words related to climatic change have been used: climate change, CO2, global warming and greenhouse gas. One of the drawbacks of relying on this database is that unlike newspaper articles – which the database provides direct access to – coding of radio and television news is based on a written resumes rather than the actual news programme. For the same reason, the analysis is mainly concerned with manifest content categories and less with formal devices. All newscasts during the day have been included in the sample. While such a sampling strategy might be expected to result in a certain redundancy, in reality this has not been the case.

Media platform	News provider	News type	Share/rank*	Combined share
Newspaper	Politiken	Broadsheet paper	19 %	43%
	BT	Tabloid	11,4 %	
	Børsen	Business	12,6%	
Web-news	Politiken.dk	Do.	9	n/a
	BT.dk		8	
	Børsen.dk		29	
Mobil news	Do.	Do.	n/a	n/a
Radio	P4	Mainstream	42,5 %	69,4 %
	P3	Mainstream (Young)	20,8 %	
	P1	Highbrow	6,1 %	
Television	DR1	Mainstream	19,4%	47,6 %
	DR2	Highbrow	4,2%	
	TV2	Mainstream	24,0 %	

Sources: (DR, 2012), (DST, 2013), (FDIM, 2013)
*** Rank of websites refers to Danish web sites only**
Table 1. Sample frame

As there are yet no standard procedures for obtaining data from the Internet or from mobile devices, this study has scanned the relevant websites and mobile sites at approximately 12:00 am at the specific day in the constructed week sample. Nevertheless, despite protocols and efforts of systematisation, it has to be admitted that sampling from dynamic content sites easily entail irregularities and risks of sampling errors.

At the core of the analysis stands a quantitative content analysis (Krippendorff, 2004; Riffe, Lacy, & Fico, 2005). It provides the basis for comparing differences and similarities between news platforms. Thus, the coding scheme consists of formal categories (e.g. media platform, news/views, producer) as well as content categories (themes, focus, actors).

In order to further explore cross-media differences of climate change reporting a more qualitative approach has also been added. Qualitative media analysis is concerned with readings rather than frequencies and quantification. Its units of analysis, however, remain multiple media text rather than single-document analysis (Altheide, 1987, 1996). The aim is to relate documents to contexts and to detect emerging patterns across time through a more theory-driven and reflexive content analysis based on a repeating comparison as well as a mixture of theoretical and cluster sampling. This study, however, primarily employs qualitative content analysis to explain, contextualise and exemplify quantitative findings. In addition, it expands the analysis by looking at patterns of content and meaning constructions across news platforms.

Scope and Limitations

For practical reasons the scope of the study is restricted to Danish news media. Results may therefore primarily be expected to illustrate conditions in a Northern European media landscape. Contrary to other media systems, the so-called Democratic Corporatist media system (Hallin & Mancini, 2004) has experienced a less dramatic audience decline in traditional news media such as newspapers and public-service television (Curran, Iyengar, Lund, & Salovaara-Moring, 2009). This may result in a different pattern of climate change reporting across news platforms compared with other media systems.

At the same time, however, Denmark and most other Nordic countries rank within the top-5 on ITU's ICT development index (ITU, 2011). This in turn may indicate that some of the patterns of ICT in these countries are pointing towards a broader and more general development.

Climate Change Reporting Across Media Platforms

Although based on limited data (n=53), the investigation points at noteworthy differences in how climate change information is presented on different media platforms. This section presents the results of the study by looking at (i) frequency, (ii) thematic orientations, (iii) scope, (iv) actors and (v) news/views.

Each topic will be analysed by referring to quantitative findings as well as qualitative elaborations. A later section will discuss the results in a more general manner.

Ad i) Frequency

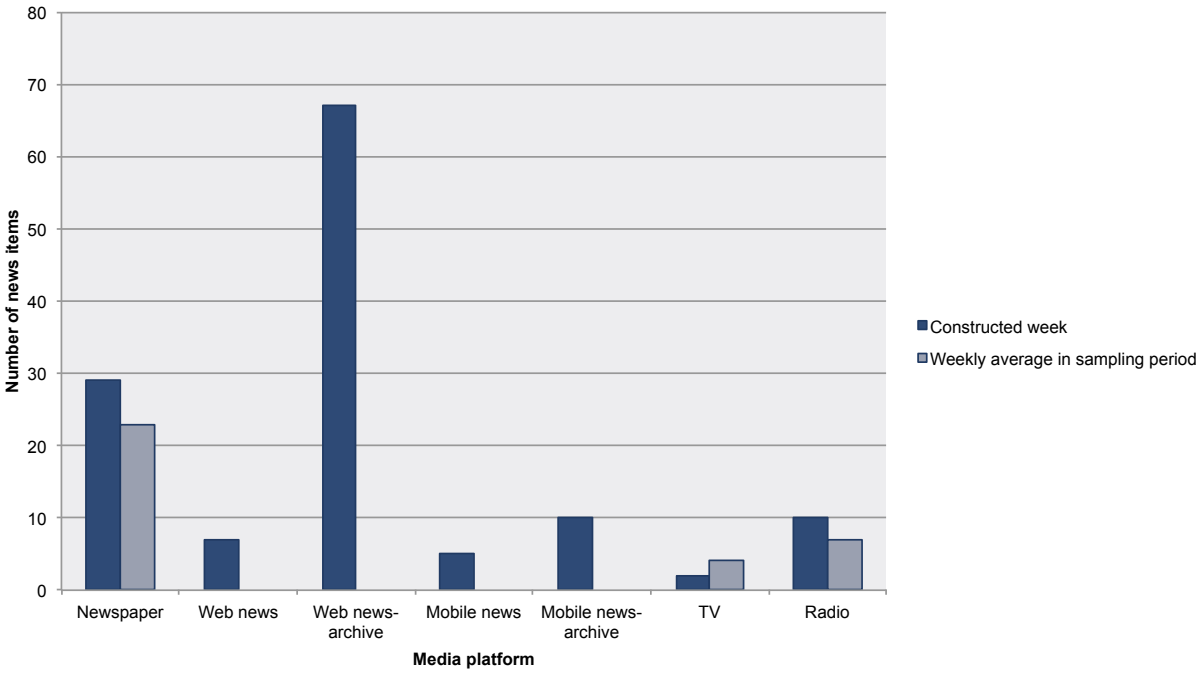
As already mentioned, comparing media platforms poses several challenges. News media differ in terms of audience, popularity, distribution channels, communicative modalities etc. To get a sense of how news platforms influence climate change information, a relative simple strategy has been employed as described in the former section. The main intention has been to compare an equal number of news providers (three), representing a somewhat comparable share of the audience (40-60%) as well as a similar pattern of variation (a mixture of mainstream and elite media).

Figure 1 shows the numbers of news item during a constructed week compared with the weekly average during the entire sampling period (when possible). It shows that the sample differs slightly from the sample population. However, when looking at frequency distributions only, we may take the whole sample population into consideration and not only coded data.

In pure quantitative terms newspapers carry most news items on climate change. This is hardly surprising given that the total output of news stories in newspapers outnumber those in broadcast news, which typically is limited to a few feature stories and a handful of news updates.

Thus, the principal dividing line in climate change news is between print media and broadcast media in both absolute numbers and discursive variation (see next section). Regarding the former, Table 2 shows that the difference is almost statistically significant.

Fig. 1 Number of news items pr. media platform



Media type	Number of news provides	n
Print media (not including web/mobile news)	3	298
Broadcast media	6	148

(p=0.067, FET) Table 2. News items in newspapers and broadcast news (entire sample period)

This picture is further confirmed when including new media platforms such as web-news and mobile news. First and foremost because these platforms provide access to previously published articles on climate change (news-archives). As indicated in Figure 1, it is impossible to measure the weekly average of news stories on web-news and mobile news during the entire sample period. Unlike newspaper and broadcast news, data on web and mobile news is not accessible through a central database. Online and mobile news are presented on dynamic news sites that constantly change. As a consequence, the study is based on a daily snapshot of these sites to get an impression of how climate change is communicated on dynamic media platforms.

Figure 1 reveals a number of important information about web and mobile news. (a) There are considerably fewer web and mobile stories on climate change compared with printed news. (b) There is slightly more web-news than mobile news. (c) The web news-archive is approximately ten times larger than the mobile ditto. (d) Websites offer access to news archives that equals the sum of several weeks of printed climate change news.

Web archives thus typically contains news stories that are between a few days and a month old. However, in certain cases the web archive links to considerably older news items, in rare cases going back several years. This is primarily the case when linking to feature stories, photo essays or interactive graphics. In contrast, mobile news offers access to a more limited news archive, typically between 0 – 3 climate change stories.

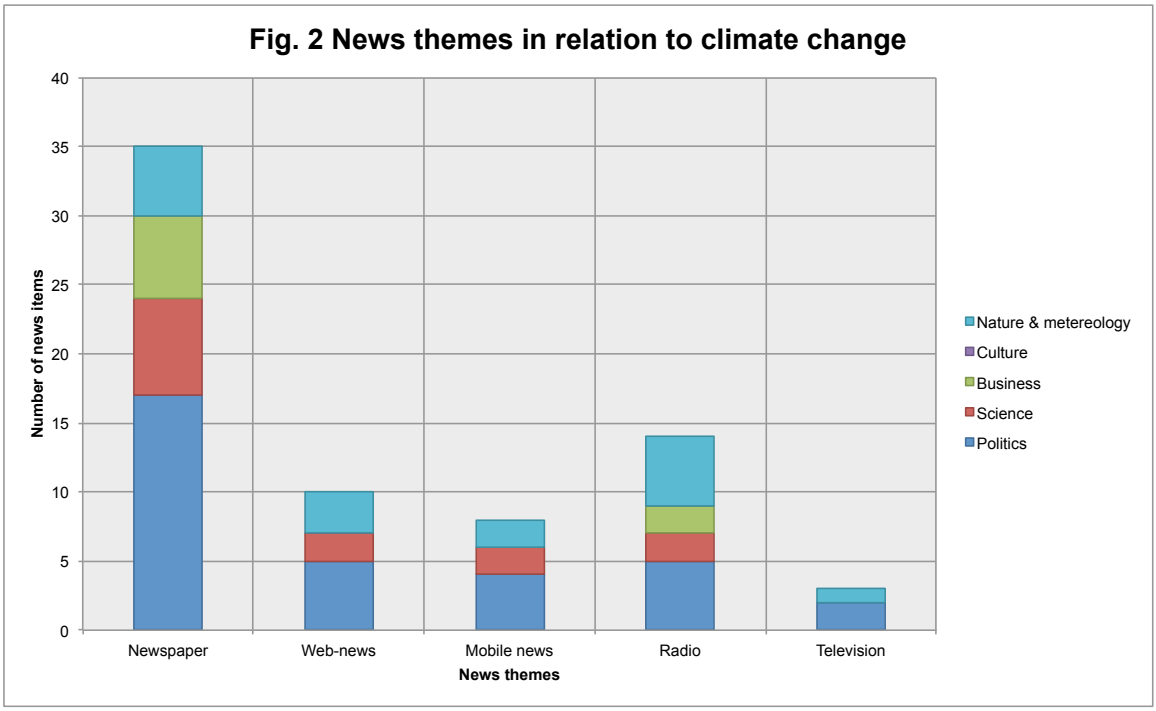
It should be noticed, however, that there are major differences between news providers. The above picture primarily corresponds to the broadsheet paper *Politiken*. The tabloid *BT* has an equal number of print and online archive stories, while the business paper *Børsen* appears to publish fewer online articles (including archived stories) than printed articles.

Nevertheless, as we are witnessing an increasing integration of news platforms, the same news reports tend to be reproduced across print, web and mobile platforms. The tendency, however, is most pronounced in relation to broadsheet papers and less so when looking at tabloids. The primary exception is that web and mobile news contain no letters-to-the-editor although both feature elaborated debate sites.

As indicated in Table 1, the sample contains mainstream, highbrow and tabloid media. Thus, a potential important dividing line is between mainstream and elite media. However, this difference turns out to be not statistically significant. It suggests that climate change information is a news topic, which is relatively evenly distributed across different types of media. Thus, although the tabloid paper in the sample period contains ¼ of articles (n=44) compared to the broadsheet paper (n=182), it matches the number of news stories broadcasted by the largest mainstream radio (n=45) and that of the two mainstream television channels combined (n=41).

Ad ii) Thematic Orientations

Climate change information is always presented within some broader context. Drawing on previous research this study has coded climate change news in relation to politics, sciences, business, culture, nature & meteorology. Articles may refer to more than one category. Figure 2 shows the distribution of categories across media platforms. Each category constitutes an important dimension in mediated climate change reporting.



Climate change reporting is dominated by political news. It reflects the general concern (and function) of the press. However, it also illustrates that in public communication, climate change is not primarily a scientific or environmental matter, but first and foremost a political problem that requires political solutions. Consequently political news dominates all media platforms. Not least during so-called trigger events like COP18, which generated 8 news reports on 4 platforms. Another example is presentations of national legislation. A law aiming at adapting to future cloudburst caused by climate change became subject to 9 news reports and updates on print, web and radio.

Despite this political orientation, media reports still pay attention to the science surrounding climate change. As a complex and evolving phenomenon climate change results in a steady flow of scientific reports. Most of these reports rarely match traditional news criteria like sensation, identification, conflict or personification. There are, however, exceptions to this general observation.

First, in a few instances climate change science actually manages to live up to traditional news criteria, primarily in relation to actuality and quantification. Prior to COP18, IGO's like UNEP, IEA and The World Bank published climate change reports documenting how the target of a maximum increase in global warming of two degrees Celsius appears increasingly unrealistic. News coverage of these reports was presented as timely warnings to the politicians participating at COP18, urging them to take immediate action. One news report spoke of a "string of scientific reports in the run-up to COP18" (*Børsen* web-news and mobile news 25.11.2012), while another referred to how "three reports this week have raised warnings about the negative consequences of increasing temperatures" (*Politiken*, printed article 15.12.2012). This call for action was underlined by a focus on the two degrees Celsius target, functioning as a rather concrete measure of success/failure. One news report explained that: "The world has already become 0,8 degrees warmer since pre-industrial time, and 2 degrees is the most likely tipping point" (*Politiken*, printed article 15.12.2012, p. 8). Another article made a similar point: "The planet has already become 0.8 degrees warmer since then [pre-industrial time]. So, in reality the rest of this century should only be 1,2 degrees warmer than it is today" (*Politiken*, printed article 15.12.2012, p. 9). In such cases, the complexity of global warming and its political implications is communicated by means of simple quantitative figures.

Second, written news (print, web and mobile news) regularly includes a sciences section, reflecting the general social status ascribed to (hard) science in contemporary societies. Such a section is governed by the general news criteria of composition, requiring different topics to be covered equally or regularly. Science sections typically include news on health, technology, archaeology and other topics of social prestige and public concern. Lately this includes climate change.

Business has become another stabile theme in climate change news. The complexity of climate change means that it has become subject to a number of environmental discourses, including economic discourses such as economic rationality, sustainable development and ecological modernization (Dryzek, 2005). Solving climate change by means of economic models has long been a favourite argument among politicians. As the Danish climate and environmental minister argued prior to COP18: "we must (…) convince both politicians and the public that there is no contradiction between [economic] growth and climate action" (*Politiken*, printed article 15.12.2012, p. 9).

Economic discourses on climate change has been particular prominent in the Danish press. One reason is that Danish industries have a long tradition of research and development in energy saving technologies (going back to the 1970s oil crisis). Subsequently, climate change technology has been perceived as an opportunity for Danish export just as climate change regulations may give Danish industries a competitive advantage on expert markets. It explains why the business paper *Børsen* (included in this sample) has generally been rather receptive to the subject of climate change and the idea of international climate change regulations.

Radio and television, on the other hand, pays less attention to economic issues. As public service media they are less likely to deal with specific companies, but rather deal with climate change economy in relation to entire branches or the general economy. Consequently, an economic take on climate change happens occasionally rather than on a regular basis in broadcast media.

Climate change manifests itself as observable changes in weather and nature. Or at least that is the tacit assumption. Although some politicians warn about linking climate change and weather (*Børsen* 25.11.2012), in reality that often happens; for instance when it is suggested that the storm Sandy may help Obama re-vitalise American climate change policy (P4; *Børsen* 25.11.2012). Or when a Danish law is introduced to prevent future cloudbursts caused by climate change.

Thus, climate change is made concrete in reports about weather phenomena from both home and abroad. One example is connecting climate change with recent examples of Danish "monster-rain" (P1; P4; *Politiken* 13.12.2012). Another report describes changing weather patterns in poor countries like Myanmar and Bangladesh as signs of an emerging "climate catastrophe" (*Politiken*, print and web, 25.12.2012).

Somewhat surprisingly, there are no mentions of climate change in relation to culture. When climate change reporting was peaking in 2009 (especially in the lead-up to COP15) there were several news stories on culturally related climate change activities, such as art installations, theatre performances, book reviews etc. (Eskjær, In print). This kind of news story seems to have all but vanished from the press. However, as the media continue to pay attention to climate change in most other areas, despite a general decline in climate change reporting (cf. figure 2 and 3), this situation might reflect changes in the art world as much as inattentive media.

Ad iii & iv) Foreign/Domestic Orientation and Actors

In terms of national/international orientation news platforms are remarkably alike. Domestic news dominate foreign affairs in approximately a 1:2 ratio, a pattern also found in previously research (Eskjær, 2013). On the one hand, it indicates that climate has become an integral part of domestic politics and deemed

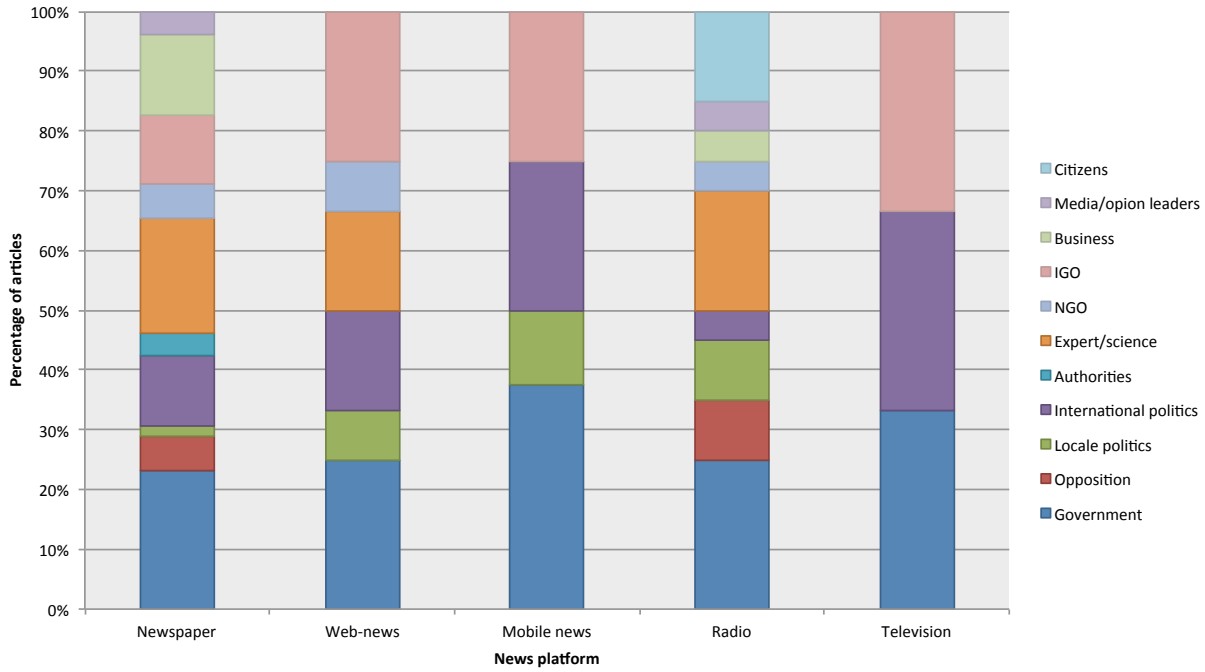
relevant in relation to a number of domestic issues. On the other hand, it may restrict the global view on climate change. A large majority of international news stories are referring to the West or the developed world. Despite being a genuinely global risk, climate change therefore tends to be presented from a predominantly western perspective. The only exceptions are articles on COP18 in Qatar (which can hardly be considered part of the global south) and a single news story on Myanmar.

A somewhat similar conclusion must be drawn in relation to the distribution of actors in climate change reporting. No significant difference between news platforms can be detected as indicated in Figure 3.

The figure, however, is interesting for another reason. It points out the leading actors in climate change reporting. At least three important aspects can be inferred from Figure 3.

First, at the present time, climate change appears to be a politically uncontested area. It is an issue left to the government to administrate. Thus, the political opposition is rarely mentioned and never seems to mount a direct critique of the government's climate policy. Rather the opposition wants to "study" an introduced bill before taking a stance (*Politiken* 13.12.2012), declares itself "ready for a dialogue" with the government (*P1*, *Politiken,* 13.12.2012), or claims that former governments also fought against climate change (*Politiken*, Letter-to-the-editor, 13.12.2012). Such statements reflect the political culture in Denmark (centrist and consensus-seeking), but also illustrates that climate change has become a relatively undisputed fact; i.e. a global issue among many that the government has to attend.

Fig. 3 Agents in climate change reporting



Second, politicians from the official political system dominate climate change reporting. This includes representative of the government, opposition, locale politics or international politics. If IGOs such as the World Bank or EU and UN institutions are counted in the political dominance becomes overwhelming. Thus, there are surprisingly few references to NGOs considering that the environment traditional have been a key area of NGO influence. It confirms previous research, which argues that NGOs play a diminishing role in the press' approach to environmental issues. A study of Danish environmental journalism argues that NGOs have increasingly become secondary sources of information, reflecting a general tendency

away from concerned and critical perspectives on the environment towards positive stories on personal experiences of nature (Ørsten, 2006).

Finally, the almost total absence of references to ordinary citizens compared to the consistent attention paid to experts and scientists suggests that climate change reporting constitute an elite discourse - at least at the present moment.

Thus, looking at climate change reporting on an aggregate level indicates that the general pattern of climate change reporting is rather identical across media platforms when it comes to geographical orientation and climate change actors. Given the routinized nature of news production and the institutional convergence of media platforms it might not be that surprising. However, it raises the well-known question whether media differentiation entails content diversity or standardisation.

Ad v) News/Views

There is, however, one area where media platforms differ fundamentally. That is in relation to expressions of views as opposed to news. The distinction primarily applies to newspapers. Op-eds and letters to the editor "serve as forum for opinion, dialogue and debate: they (…) aim to *include* readers – both symbolically and literally (…) they also play a significant role in communicating the identity of a newspaper" (Richardson, 2007, p. 149). The same is hardly the case with broadcast news, although we do find personal interviews, occasional vox-pops, and magazine programmes that welcome personal opinions – especially in radio. In general, however, public participation in broadcast media is more limited and plays a marginal role in the identity of news channels.

This difference also reflects the historical origins of newspapers and public service media. In most media systems, newspapers were originally vehicles for political views and opinions; a situation which to some extent is still the case in Scandinavia (Hallin & Mancini, 2004; Hjarvard, 2010). Public service media, on the other hand, are traditionally regarded as politically neutral aiming at informing and educating the population.

Apart from the institutional dimension, there is also a temporal dimension to consider. In a newspaper the op-ed section is "always there," so to speak. It is a matter of just turning the pages. In broadcast media, you must know when magazines and debate programmes are broadcasted (although that is changing with the possibilities of pod-cast). Both dimensions mean that newspapers have continued to be the dominating arena of publicly engaged political debates. As newspapers turn into media houses the platforms of public debate may shift from print to web. The institutional frame, however, remains the same.

The extent and nature of public debate and dialogue on climate change differs slightly between print, online and mobile news. Web and mobile news contain almost all the published opinion pieces from the print edition, except the shorter letters to the editor, which are not reproduced online. In effect, this is cutting off the more "ordinary" comments produced by the readers as opposed to the analysis and comments produced by experts and "professional" opinion makers.

To some extent, online and mobile news compensate for this through the opportunities of web 2.0. Online and mobile news allow readers to comment and express their views regarding a given op-ed piece. The popularity of such a feature is difficult to measure. The current sample includes one editorial that generated 6 comments, and one op-ed piece on bio-fuel that sparked 12 comments. In general, climate change appears to be a popular topic in terms of generating comments and Facebook "likes." A cursory look at the opinion section on *Politiken's* web-news indicates that climate change belongs to the upper third in terms of topics that generate reader activity (comments and recommendations).

So who are the participants in the newspaper's climate change debate? Table 3 shows that experts dominate climate change debate. It further shows that op-ed authors tend to coincide with the actors that dominate climate change news in general. The order of actors in climate change reporting is national & international politicians (49,5%), experts (16,8%), IGOs (12,6%), business (8,4%). IGOs are for obvious reasons (language, influence) absent from Danish op-ed pages. Apart from that, the newspaper debate on climate change somewhat mirrors the general pattern of climate change reporting in terms of actors and themes.

Op-ed producers/thematic orientation	n	%
Politics	3	33,3
Experts	4	44,4
Business	2	22,2

Table 3. Op-ed pieces

All in all, this indicates that public climate change debate is overwhelmingly an elite discourse. Whether the online debate is changing that impression cannot be inferred from this study. On the one hand, online platforms offer new technological possibilities of participating in public opinion making. On the other hand, it is difficult to access to what extent these technological potentials have really been put to use by media houses and/or embraced by media users.

Climate Change News: Old and New Media

Data from this study suggests that in quantitative terms public climate change information is dominated by traditional mass media. In terms of original news items, printed newspapers are the main provider of climate change reporting, followed by radio and television. Apart from user-generated comments, online and mobile news is more or less identical with printed climate change news.

As a consequence, some researchers describe current online news as "newspapers on the web" rather than genuine "online newspapers", i.e. online news that make use of the true potentials of digital media (Falkenberg, 2010). This call for online media-specificity may, on the other hand, be considered a typical modernist vision (Bolter & Grusin, 1999). Whatever the case may be, print, web and mobile news seem to converge to such a degree that the real distinction is really not between technological platforms, but rather between communicative modalities (written, oral or visual communication). However, this is a proposition that goes beyond the scope of the present investigation. The rest of the paper therefore takes a closer look at the different news media in order to identify platform related differences regarding climate change reporting:

- *Web vs. mobile*. As already indicated, web news and mobile news have been integrated to become almost identical, at least when looking at major media houses like *Politiken*. *Politiken* has one of the more elaborated web and mobile platforms among Danish news providers. Both platforms contain a particular section/site on climate (lately it has become more of an environmental section that includes environmental news in general along with particular climate change stories). The principal exception to this technological convergence is the absence of a large new archive on the mobile platform. This may have implications in relation to minor news topics such as climate change. While there are sometimes several days between postings of new climate change related articles, the web archive typically contains 5-10 articles published over the last 4-5 weeks. In contrast, the mobile archive on climate change is often limited to a single story. Other times it is entirely empty.

- *Print/broadcast vs. web/mobile*. The main difference between web news and print and broadcast news is the lack of interactivity on traditional media platforms. Web and mobile news allow readers to make comments to op-ed pieces as well as emailing or recommending a news stories (e.g. as Facebook "likes"). The latter seems by far the most popular form of reader "interaction". The big question is, whether such devices represents genuine communicative innovations that take climate change communication to new standards. Or if it is simply an add-on to print news, which misses the interactive potential of innovative climate change communication.
- *Web news*. Online news differ from all other platforms, including mobile news, by occasionally offering access to extensive feature stories, photo essays and interactive graphics. However, during the entire sample period (four month) there was links to just a single photo/feature story, and the interactive graphics mentioned was hidden in a link in a story from the news-archive. Again the question is whether web news has fully taken advantage of the potentials of the Internet in generating interactive and engaging climate change communication.
- *Print news*. Newspapers are still a key supplier of news in what has been called "the journalistic food-chain" (Lund, 2001). There is a large, although often un-credited, recycling of news taking place between various news media. This study shows that in absolute numbers, newspapers are the main provider of climate change news. It is in newspapers that we find the most diverse climate change reporting in terms of public debate, thematic orientations and variety of involved as well as public debate. It is therefore important to keep an eye on how print media prioritises climate change reporting. If newspapers downgrade climate change coverage (as has recently been the case), a general decline in climate change reporting might be expected across news media.
- *Radio*. Radio is a somewhat overlooked and neglected medium in bot media studies and environmental communication. It nevertheless remains a quite "resilient" media in a changing media landscape (Kleinsteuber, 2011). 93,2% of the Danish population listen to radio once a week, and the average use of radio (12 years+) is approximately 2 hours per day (Danmarks_Statistik, 2013; DR, 2012). It is therefore significant, and somewhat reassuring, that radio is the second most important medium in terms of numbers of news stories regarding climate change.
- *Television*. Television is the most popular medium, although the pattern of TV consumption is under transformation due to the influence of online media (DR, 2012). Thus, despite the fact that audience tend to overestimate television when accounting for news information (Lund, 2001, p. 38), television is a key provider of climate change communication. Even though television produces relatively few climate change stories compared to other media platforms, it probably reaches the largest section of the population. The drawback of the current research design is that, due to its comparative intentions, it has primarily looked at the linguistic content of news programmes. Thus, the principal quality of television, i.e. the rich information provided by images, has not been taken into consideration.

Comparative and cross-media studies document the complexity of the media landscape. While new media attract attention because of its novelty, potentialities and the sheer speed of associated technological and cultural transformations, many content patterns, production routines, and institutional logics are still grounded in traditional mass media. Thus, in understanding current media representations of climate change traditional issues of news selection, news distribution and gatekeeping are still as relevant as questions of convergence, multi-mediality or gatewatching.

As already pointed out, this is an explorative study. It contributes with a general picture of public climate change communication as it is presented on various media platforms. It also acknowledges the challenges and problems posed by comparing visual and textual information as well as sampling dynamic and stable media products.

While the methods and approaches in this study have to be refined, and the findings corroborated by other comparative studies, a next step would be to move outside the big and established media houses and include the flow of climate change information taking place on social media, blogs, activists websites etc. Methodological challenges untold, such an approach would expand the notion of cross-media climate change communication. Just as importantly, however, it will take us further away from the tendency of looking at climate change communication from the perspective of individual media platforms, often associated with either old or new media. Instead a more productive strategy would focus on the convergence, complexity and diversity of mediated climate change communication across existing media platforms.

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Overcoming the Issue Attention Cycle: Four Possible Ingredients of a Successful Climate Movement

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One way in which citizens could participate effectively in the governance of climate change is by forming a social movement devoted to climate. However, few citizens are currently participating in this way, and few communication scholars have explored the idea of a climate movement (as opposed to a more general environmental movement). In this paper, we examine the possibility that a strong climate movement will be needed to overcome climate change's fading out of politicians' attention and media attention due to processes described by Downs' Issue Attention Cycle. We review four important strands of the social movement literature – mobilization, collective identity, political opportunity structure, and strategic capacity – and discuss how these factors could be important in determining the fate of current and future efforts to build a climate movement. We conclude by discussing what this means for those who are attempting to communicate the need for action on climate change.

Keywords: Social Movement, Climate Change, Issue Attention Cycle, Mobilization, Collective Identity

Several explanations have been put forward for why climate change did not continue to receive high levels of attention after the failure of the 2009 United Nations climate summit in Copenhagen and failure of the 2010 climate bill in the US Senate (Skocpol, 2013). One explanation is that the will for action on climate change, despite receiving majority support in most polls, is not organized or deep enough (Palmer, 2012; Roberts, 2011; Skocpol, 2013). Proponents of this view argue that there needs to be a stronger social movement on climate change, similar to the civil rights or suffrage movements, or to the earlier environmental movement of the 1970s (Amenta, Caren, Chiarello & Su, 2010). However, the idea of a climate movement – rather than a general environmental movement – has been little studied (for notable exceptions, see Burgmann & Baer, 2012; Endres, Sprain, & Peterson, 2009; Moser, 2007; Moser & Boulder, 2006).

We begin the essay with a discussion of the issue-attention cycle (Downs, 1972) and how this helps explain the pattern of attention to climate change seen over the last few years in the US, as well as waning attention on the global stage following Copenhagen. These patterns serve to highlight the reasons a movement may be needed to keep social attention fixed on climate change for long enough to get significant legislation passed. What would be the important factors to consider in building a strong climate movement in country like the US? For partial answers, we then consider four aspects reflective of social movement mobilization and likely success: the mobilization of resources, the collective identity among movement members, the political opportunity structure that forms the context in which mobilization takes place, and the strategic capacity resources of the movement.

Issue Attention Cycle

In his influential 1972 article, Anthony Downs proposed that social issues possessing certain characteristics tended to pass through an "issue-attention cycle" of five phases. In the first or "pre-problem" phase, the social conditions that will come to define the issue exist, but at most are noticed and thought about by a few experts. In the second phase, the issue is explosively "discovered" by the public, and calls are made for something to be done. In the third phase, as solutions are sought and legislative options are considered, people begin to discover that the problem will not be so easy or cheap to fix as had previously been imagined. In the fourth phase, due to the difficulty and cost of truly solving the issue and the unpleasantness of even acknowledging its continued existence, public attention begins to wane. In the final or fifth "post-problem" phase, the issue enters what Downs called a "prolonged limbo" (1972, p. 21) in which public attention is low, but due to the issue having already passed through the cycle and being available to collective memory, attention may flare up again in response to some new circumstance more rapidly than for an entirely new issue.

Downs (1972) also suggested that there were three characteristics that defined the types of issues that would pass through this cycle. The first is that the number of people affected by the issue must be reasonably large in absolute terms, but fairly small as a proportion of the total population. This would make the issue seem big enough to be worthy of national attention, yet small enough that most people will not have their attention kept fixed to it by personal experience of the problem. The second characteristic is that some aspects of the social arrangements that cause the problem also bring significant benefits to a majority of people, or at least to some powerful minority. This serves as an incentive against actually solving the problem – somebody would lose out from a solution. The third characteristic is that the issue is not intrinsically exciting. This would mean that the issue would quickly drop off of the public agenda, either because the public stopped reading or watching the reports that did exist, or because journalists' expectations of public disinterest resulted in a shift of reporting to other topics (in other words, journalists might quit seeing the issue as "a story").

Climate change fits all three of these criteria. Ultimately, everyone on Earth will be affected; however, the proportion of the U.S. population that will be significantly and visibly affected is likely to remain quite small for the next few years at least (Karl, Melillo & Peterson, 2009). All U.S. citizens benefit from the primary cause of the problem, the combustion of fossil fuels (Karl et al, 2009); in addition, however, a powerful set of interests within society, the fossil fuel industry, is directly threatened by the prospect of climate change-related regulation – or at least is likely to think that it is (Pooley, 2010). And the issue itself may not be seen as intrinsically exciting or threatening. The most dramatic impacts of climate change, those that we can imagine would otherwise draw attention, are either seen as not certain to occur, or (as in the case of extreme weather) their causal link to climate change is difficult to present in a way that is immediately and intuitively compelling (Leiserowitz, Maibach, Roser-Renouf & Hmielowski, 2012; Weber, 2010).

McComas and Shanahan have described the first "pass" of climate change through the attention cycle (1999). Climate change has recently made at least one more pass through the cycle. In this second pass, following a new "pre-problem" period of inattention outside of expert circles, the surge of publicity associated with the release of the movie *An Inconvenient Truth*, the release of the IPCC Fourth Assessment Report, and the awarding of the Nobel Prize to the IPCC and Al Gore constitute the second or "discovery" phase (Mooney, 2011). The convening and then the breakdown of the 2009 Copenhagen talks and the failure of the climate bill in the US Senate in 2010 characterize the third or "discovery of significant costs" phase this time around (Mooney, 2011). And the subsequent decline in media attention fits the fourth phase (Brulle, Carmichael, & Jenkins, 2012). Recent evidence that this decline in attention may have stopped is consistent with the "post-problem" stage (Borick & Rabe, 2012).

How a Social Movement Might Overcome the Issue Attention Cycle

One likely contributing factor to the lack of attention to global warming is the low levels of public mobilization and the low visibility of any kind of broad-based grassroots social movement for climate change (Skocpol, 2013). This explanation for the lack of attention has received support from several commentators (Romm, 2011; Roberts, 2011; Brulle, 2010; Skocpol, 2013). Why have grassroots climate movement organizations like 350.org not achieved broader mobilization across a wider range of individuals and organizations? Part of the problem appears to be that climate change does not entirely match the agenda of most existing organized groups such as the major U.S. political parties or even existing environmental activist groups, which often focus on more specific objectives such as conservation of wildlife and wilderness, stemming specific sources of toxic pollution, or halting practices that seem to carry high levels of environmental risk, such as nuclear or hydroelectric power development (Nordhaus & Shellenberger, 2007; Skocpol, 2013). Ironically, these and other potential alternatives to continued fossil fuel development may be anathema to many U.S. environmentalists. Thus, a climate change movement has interests that do not always align neatly with those of the existing environmental movement. It needs its own movement.

A well-organized social movement for climate could help to maintain public and media attention on the issue, and thus increase the likelihood of the issue staying on the political agenda and helping strong policies to get passed. One of the most important consequences of social movements is their impact on the political and media agenda (Walgrave & Fliegendhart, 2009). The historical record shows many examples of social movement activity helping to bring attention to an issue by way of direct person-to-person consciousness raising, through stunts that gain media attention, via rallies and other traditional protest activity, by issuing provocative statements and letters to the editor, by organizing pressure campaigns on lawmakers who then address the issue publicly, and by other methods (Goodwin & Jasper, 2009). Climate movement actions have recently helped to gain media attention, such as in the case of the large 350.org protest against the Keystone XL pipeline (and editorial reactions to the protestors), and by prominent climate scientists joining movement activity (Friedman, 2013; Nocera, 2013; Pearce, 2013).

At a minimum, a social movement organized around climate has the potential to help overcome two of the characteristics that help issues recede from attention: the number of people who perceive themselves as affected, and the interest people have in the issue (Downs, 1972). An active minority can maintain attention to causes that do not directly affect the majority of people by effective organization and media “savvy” (Rohlinger, 2002). Additionally, by working to find and highlight the most interesting parts of the issue, and by creating dramatic news events for media to respond to, a movement can provide “news hooks” that facilitate coverage by busy reporters and increase media, and thus potentially policymaker, attention (Gamson & Wolfsfeld, 1993). Organizations that provide the media with news and information get their issues – and their sides of those issues – covered, a phenomenon media scholar Oscar Gandy called “information subsidy” (Gandy, 1982; Ryan, Anastario & Jeffreys, 2005).

A climate movement shows potential promise for continuing to act in a way that maintains media and politicians’ attention to climate change, a critical function to keep attention on this “slow-moving disaster.” However, in order to be successful, this activity may need to be maintained over decades. Even if serious political action began immediately, a successful transition to clean energy is likely to take several decades at least, and political opposition to the transition is likely to continue throughout this process (Smil, 2010). Maintaining a climate movement for this long will be difficult. For this reason, a successful climate movement will benefit from considering the factors that have been shown to be relevant to movement success in the past. In the following sections, we describe four strands of the social movement literature

that reveal insights about what a climate movement would need to do to succeed in the long term. These strands of literature focus on movements' personnel and resources (resource mobilization), ideological makeup (collective identity), the political environment they find themselves in (political opportunity structure), and the qualities that make successful strategic behavior more likely (strategic capacity) (Ganz, 2005; Goodwin & Jasper, 2009).

Resource Mobilization

A major insight of the resource mobilization literature is the idea that social movements need resources to succeed, but that these resources can take many forms – numbers, money, skilled personnel, experience, social status, connections, and so on (Goodwin & Jasper, 2009; McCarthy & Zald, 1977). A successful movement will need to mobilize – to organize and deploy -- at least one of these resources in order to be successful.

One problem with regard to the U.S. climate movement is that large environmental groups are structured in a way that mobilizes some resources at the expense of others (Brulle, 2010; Skocpol, 2013). Several of these established organizations have a large income from multiple donors, and good connections to lawmakers and other elites, but little direct connection to their membership base (Skocpol, 2013). In the context of climate legislation, this means that when elite negotiations fail, these institutionalized, established environmental organizations may find it difficult to rally their membership and have them exert political pressure. This kind of pattern was predicted in Hypothesis 4b of McCarthy and Zald's classic 1977 article on resource mobilization: "The more a [social movement organization] depends upon isolated constituents to maintain a resource flow, the more its shifts in resource flow resemble the patterns of consumer expenditures for expendable and marginal goods" (p. 1230).

The solution that others have suggested is to try to mobilize a different resource instead of, or in addition to, broad but shallow memberships and insider lobbying: true local grassroots memberships and active protest (Brulle, 2010; Skocpol, 2013). There is substantial evidence of this kind of strategy being successful and affecting government legislation in the past (Olzak & Ryo, 2007). So why isn't this happening? Some observers have characterized the U.S. as a nation of disconnected, disengaged individuals, epitomized by Robert Putnam's discussion of the erosion of social capital in *Bowling Alone* (2000)*.*The proliferation of individualized media, "social" or not, can hardly have slowed this trend but likely accelerated it.

Yet the scholarly literature on this topic indicates that active mobilization on a large scale can play a large part in achieving a movement's goals. A recent review of articles on 54 social movements in the U.S. found that the larger movements were substantially more likely to have an effect (Amenta et al., 2010). A study of 3839 demonstrations in Belgium between 1993 and 2000 found that protests tended to influence governmental and legislative attention (Walgrave & Vliegendhart, 2009). Both frequency and size of protests mattered: more frequent protests were more likely to influence the government agenda, and larger protests were more likely to influence the legislative agenda. Another study has suggested that the size of a movement – this time measured in number of organizations rather than number of individuals – may have an indirect effect on success by increasing the diversity of tactics used by the groups (Olzak and Ryo, 2007). Perhaps different forms of mobilization are niches best filled by somewhat different types of organizations, creating a whole greater than the sum of the parts (Aunio, 2012; Swaminathan & Wade, 2001). Both these kinds of empirical studies of movements generally and recent real-world climate examples such as the activities of 350.org and Beyond Coal underscore the importance of social mobilization (Stepp & Trembath, 2013).

The resource mobilization literature helps us to understand the possibility of a climate movement by providing a model of how a complex organization (or network, or even a largely disconnected collection of

organizations sharing a single goal) can be constituted, and that its fortunes will largely depend on how well it acquires and deploys different types of resources (Goodwin & Jasper, 2009). Whether US society today is organized in a way that will facilitate mobilization for a goal as diffuse and abstract as addressing climate change is another question.

Collective Identity

The term collective identity has been used in several ways by scholars (Polletta & Jasper, 2001). Generally speaking, it refers to a group's sense (or individual members' senses) of who they are as a group – what it means, in terms of identity, to belong, in other words. Collective identity can play a large role in determining whether individuals join a social movement, as well as whether they continue to commit time and resources to it after joining (Polletta & Jasper, 2001). Evidence from the civil rights movement (and others) has shown that people are more likely to join particular movement organizations if they share strong ties with others who are already members, or if they feel a strong attachment to the ideals expressed by the movement (Goodwin & Jasper, 2009; Polletta & Jasper, 2001). In this way, collective identity can serve as one solution to the "free-rider problem," explaining why a rational person would bother to make extra effort when success is indeterminate or unlikely, and all people will share the benefits if the movement is successful (Polletta & Jasper, 2001). Indeed, non-blacks who participated in the U.S. civil rights movement likely gained exactly this sense of shared benefits, if only "feel good" benefits, from striving for a more just society (Friedman & McAdam, 1992).

Another way in which collective identity is important is in how it affects the activities that movements undertake (Polletta & Jasper, 2001). If a movement has a radical identity, for example, its members are more likely to be opposed to collusion with corporate power; if a movement has a moderate identity, its members are less likely to want to protest or get arrested. Even if the circumstances suggest such contra-identity tactics could bring significant returns, movement members would be reluctant to engage in them since it would go against their sense of who they are as a group (Polletta & Jasper, 2001). Collective identity is not a static entity that rigidly enables certain actions and limits others, however. A particular "external" identity can be cultivated in order to obtain certain benefits, such as respect (Bernstein, 1997). And in situations where certain activities that seem to be desirable step outside the current identity of the movement, the group can alter their identity in order to make the new actions more possible - and plausible (Polletta & Jasper, 2001). This may be one of the dynamics that ensures that multiple organizations with multiple identities filling different niches can be successful for a social movement (Olzak & Ryo, 2007; Swaminathan & Wade, 2001). We have seen this with the Sierra Club in February 2013 officially participating in civil disobedience (against the proposed Keystone XL pipeline) for the first time in its 120-year history (Sheppard, 2013). The Sierra Club's executive director explained their actions by reference to their collective identity: "The Club is unique in that we're a volunteer-driven organization that has a big toolbox… civil disobedience just offers us one mechanism that should be used under extraordinary circumstances to try to break impasses when we see them" (Sheppard, 2013).

Importantly, though, collective identity also limits the kinds of alliances or tactical choices that can be made by movement leaders without affecting membership (Polletta & Jasper, 2001). If movement members join a movement because the movement's collective identity resonates with them, and then leaders decide to take an action that members perceived to be inconsistent with that identity, they may leave the movement. Climate change represents a particular challenge in this regard because of the need for both environmental groups and energy corporations to embrace solutions, whether they do so as friends or enemies (Pooley, 2010).

Collective identity would certainly be an essential element within an effective climate movement, but the specific identity will vary for different organizations within the movement. While those involved with

organizations like 350.org seem to have a specific sense of identity as climate-oriented activists, others may see themselves as primarily as part of an environmental or global justice movement, with their climate related activities flowing from those broader goals (Nordhaus & Shellenberger, 2007). Yet others working in the renewable energy industry or energy policy may share many of the same goals and values as those in the climate movement, but may not see themselves as part of a "movement" at all – indeed, they might be restrained partly for fear of being seen as too radical (Roberts, 2013).

However, a stronger *shared* collective identity may still be needed to encourage more people, and more groups, to work together. There will likely be opportunities for productive alliances, such as between environmental and energy interests, if their identities can adapt to allow for larger-scale but sustainable industrial development, as well as smaller-scale industrial efforts that experiment with alternatives on a more local level (Nordhaus & Shellenberger, 2007). The term "sustainable" itself has become a buzzword in part because it is a concept that people and groups with divergent identities, working at various scales toward different but generally compatible goals, can all accept – even identify with (Solow, 1993). On the other hand, these kinds of alliances may not be palatable for some people, and it may be better for some groups to work independently, maintaining an "outsider," "fringe," or "pure protest" identity (Jasper, 2004). There may also be limits to how much identities can be shifted, and in some cases broadening the identity may result in a reduction of passion and the elimination of whatever it was that got people involved in the first place (Jasper, 2004).

Political Opportunity Structure

Another proposed factor in whether movements can be effective is whether they are able to align themselves well with the political opportunity structure (Meyer, 2004). Although the precise definition of political opportunity structure is debated, it has been well defined by Sidney Tarrow as the "consistent-but not necessarily formal or permanent-dimensions of the political environment that provide incentives for collective action by affecting people's expectations for success or failure" (1998, pp.76-77). Important factors in this environment include the nature of the political system in question, the amount of power held by the different political parties and other groups, specific legislative rules, recent political history, strength of alliances, and other similar factors (Meyer, 2004).

One relevant early work in this domain was a 1986 study by Kitschelt comparing the history and effectiveness of anti-nuclear movements in France, Sweden, the US, and West Germany. The dimensions Kitschelt (1986) looked at were political input structures – how easy it was for new issues and agendas to be introduced for serious consideration in the governmental arena – and political output structures – structures affecting how easy it was for new agendas, having entered the arena, to establish an effective coalition of allies and be established in policy. For example, the US was classified as having "open" input structures, due to the strength of Congress and the fragmentation of the executive branch, and "weak" output structures, due to the same factors, as well as to the lack of a structured process for interaction between interest groups and the legislature. France, conversely, had "closed" input structures due to its strong executive keeping attention fixated mainly on issues important to the two main political blocs, and "strong" output structures, due to the executive facing few challenges to any moves to implement policy it decides to make. These patterns of political opportunity structures resulted in anti-nuclear movements engaging in more lobbying in the U.S., where input structures were more open to such direct influence, and less lobbying in France, where input structures were closed.

More recent studies in the opportunity structure literature have criticized studies like Kitschelt's as overly simplistic and have shown how important variations in opportunity structure are much more intricate and variable within-country than closed/open input and weak/strong output (Amenta et al., 2010). For example, the output structures in Italy were weaker for environmental policy than other policy areas until a

Ministry for the Environment was set up (Giugni, 2004). However, this only strengthens the argument that significant attention to the opportunity structures in a particular country at a particular time is warranted for any movement that wishes to achieve recognition and success within that country.

That people following the climate movement's actions do not always take account of the political opportunity structure was demonstrated by the media reaction to the failure of federal climate legislation in 2010 (Roberts, 2010; Skocpol, 2013). Several media commentators focused on the difficulty of comprehending climate change, poor messaging, or the tendency of the media to give too much attention to climate skeptics (Roberts, 2010). While these factors were undoubtedly important, seldom was it mentioned that without the supermajority requirement, it is conceivable that the Senate bill could have come closer to passing, in which case the other obstacles would seem less insurmountable than they have been portrayed (Roberts, 2010). Any future attempts at mobilization (and scholarly attempts to account for its effects) ought to take into account the precise opportunity structures relevant to the specific goals of the movement if they want to improve their chances of success and avoid overestimating the influence of other factors such as individual psychological variables on movement success (Skocpol, 2013). For instance, the organizational ties and the ideology Republican members of Congress have been promoting suggests that the opportunity for bipartisan elite consensus may be non-existent in the short term; whether or not this has changed with the 2012 elections is open to debate (Restuccia, 2012). Rather than attempting to push for federal policy in the short term, climate legislation advocates might better focus on achieving goals that are possible in the current political opportunity environment, as well as taking steps that will change that environment.

Strategic Capacity

Scholars of strategy in social movements have suggested that the complexity of strategic planning and decision-making make it difficult to create generalizable rules about how to strategize well (Maney, Kutz-Flamenbaum & Rohlinger, 2012). Each case of strategic planning is a complex process requiring the consideration of multiple possible futures, and tradeoffs between different choices, the outcomes of which are usually impossible to know with certainty. The appropriateness of a strategy depends to a large degree on the particular circumstances and necessarily incomplete information available at the time at which the strategy is constructed, and a good strategy in the face of one particular set of circumstances may be inappropriate or inapplicable at another particular time (Jasper, 2008; Maney et al., 2012). Indeed, one element of successful strategy is the ability to change course rapidly in response to altered circumstances, rather than staying fixed to a rigid plan (Gamson, 1990). This need for flexibility is one reason that the masters of strategy in other areas such as military engagement have distilled their learning in the form of guidelines rather than hard-and-fast rules (Jasper, 2008).

While it may be impossible to create a blueprint for effective strategy that is generalizable to all social movements, at least one scholar has devoted significant attention to the generalizable characteristics of social movement organizations that may help increase the chances of those organizations making good strategic choices. The work of Marshall Ganz (2005) on strategic capacity is consistent with the results of Olzak & Ryo's study (2007), which showed that having diverse tactics was beneficial. Ganz (2005) goes into more detail, describing various elements that can add to a movement's strategic capacity. These include members with a deep knowledge of the issue the movement is based around, including its whole context in the broadest possible social, political and philosophical sense; an organizational makeup that results in members regularly encountering diverse perspectives on the movement issue; organizational processes that facilitate the expression of minority views; leadership consisting of both "insiders" with deep knowledge and experience and "outsiders" who can use their less conventional perspective to suggest innovative responses; and a financial and physical resource base drawn from multiple sources, so that the

organization is not overly constrained in their action by the need to maintain their appeal to any one particular perspective on the issue.

Lessons for Communication Scholars and Practitioners

Although there are substantial differences between climate change and other issues that have mobilized social movements in the past, much can be learned from studying the important aspects of past social movements and applying them to the present. In this concluding section, we present our speculations on new research opportunities for communication scholars suggested by the four areas of social movement literature we have outlined. These ideas may also be of interest to practitioners concerned with issues of practical relevance to current movement organizations, or anyone attempting to mobilize similar collective action on climate change.

Mobilization

The resource mobilization perspective suggests that communication scholars wishing to understand and even promote effective collective action on climate change should find ways to promote the specific types of mobilization that a climate advocates are likely to require for their goals to be achieved. Individuals must not just be concerned about climate change or have positive attitudes towards the movement; at least some of them must be prepared to donate their time, effort, money, skills, social contacts, or other resources to the movement (Goodwin & Jasper, 2009). Interventions that are successful at promoting positive attitudes but fall short of mobilizing more substantial resources are not enough. Research has shown that even those who are most concerned about climate change are typically not taking a great deal of political action in response (Leiserowitz, Maibach, Roser-Renouf, Feinberg & Howe, 2013). Rather than making more people more concerned, more effort should be devoted to encouraging the people who are already concerned to be more active in supplying resources to a climate advocacy organization.

Promoting mobilization rather than positive attitudes may require changing the types of message appeals used. Specific types of message interventions that are effective in promoting individual behavior, such as appeals to saving money, may be less effective in promoting collective behavior performed as a member of a social movement. Conversely, other messages that are ineffective in promoting individual behavior, such as appeals to moral principles, may be more effective in promoting resource mobilization. Importantly, and unfortunately, communication scholarship has often had less to say about messages that can motivate and mobilize groups than about messages that can motivate and mobilize individuals (Singelis, 1996; Dutta-Bergman, 2005).

Collective Identity

Individuals' sense of positive collective identity that comes with movement participation can serve in lieu of material rewards in encouraging participation (Polletta & Jasper, 2001). Scholars have previously encouraged communicators to focus on the immediate material benefits to pro-climate actions, such as home energy audits or other financially motivated choices, in order to overcome unwillingness to make effort (Center for Research on Environmental Decisions, 2009; McKenzie-Mohr, 2011). In fact, even those who are actually motivated to invest in home energy conservation are likely to be motivated by environmental values as well as financial savings (Priest, Neill & Young 2012). However, few scholars have examined the effects of appeals to collective identity on pro-climate actions. The importance of collective identity in eliciting and sustaining participation in past movements suggests this could be a fruitful avenue of research – and an effective strategy for encouraging collective action.

Also, in order for a climate movement to be generally successful, the associated collective identity needs to be one that people whose participation is crucial will not be discouraged from participating. For example, a radical anti-capitalist, anti-growth identity might encourage intense, dedicated participation from some people, but could make it less likely for other potentially powerful movement constituents such as renewable energy entrepreneurs and industry groups to join forces. Conversely, a too-moderate identity may be unwise, as it may make it difficult to generate support from members for the kinds of committed civil disobedience that have proven crucial to some movements in the past. While recognizing that a variety of organizations and strategies will contribute to a successful climate movement, more research needs to be done on the issue of climate advocacy groups' collective identity, its influences on motivation for action, and how it is formed.

Political Opportunity Structure

The literature on political opportunity structure suggests that a successful climate movement would aim to utilize the leverage points in the political system that are most likely to generate outcomes that will have a large effect on carbon emissions. For example, the climate movement may be unable to have a strong effect on U.S. federal legislation in the short term, due to the supermajority requirement of the Senate and the entrenched anti-regulation stances of Senate Republicans and some coal-state Democrats (Skocpol, 2013). For this reason, developing and deploying effective messages related to climate policy and clean energy development at a more local level may be more important. This could involve developing messages that invoke state- or city-specific identities, values, shared history, and development and regulatory opportunities (Kahan, 2012). If successful, these messages could help build local grassroots movements that could help achieve significant emissions reductions, and help elect pro-climate legislators and local officials (Skocpol, 2013).

Strategic Capacity

Available research on strategy shows that movements need to be flexible and adaptable (Ganz, 2005; Ryan et al., 2005). A successful climate movement will need to be able to react quickly to changing circumstances and emerging opportunities in order to pursue its strategic objectives most effectively. For example, the movement would need to respond effectively to unexpected extreme weather events, sudden changes to legislation, or signals that an opposing or allied organization's stance was changing. Communication research can support this effort by contributing to improved understanding of these opportunities and which strategies will exploit them most fully. This might possibly be achieved through case studies of relevant sequences of events that previous social movement organizations responded to successfully (or unsuccessfully). Relevant existing scholarship from communication studies and other fields such as political science and sociology should also be put into a form that makes it accessible and useful to those outside the academic world who seek guidance for developing effective mobilization strategies within the timeframes required in the field (Maney et al., 2012).

Conclusion

All things considered, practitioners have much to gain by considering what academics have had to say about the nature of successful social movements, and communication researchers and other social scientists have much to learn - and contribute - through closer study of the emerging climate movement and its unique challenges and opportunities. Improved understanding by academics and practitioners, in turn, will help make it more likely that a well-organized climate movement will prevent the issue from fading away from public and policymaker attention.

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Experiential Programs for Educators: A Case Study on Coastal Policy Communication in Cebu, Philippines

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Optimizing citizen engagement for coastal policy implementation is an ongoing, ubiquitous challenge for local governments. This case study describes a recent project in which project facilitators piloted an experiential learning program for educators as a coastal policy communication tool in the Municipality of Santander, Philippines. The process of program design and implementation allowed over thirty educators to collaborate with local policy makers and fish wardens while learning about salient coastal policy issues in their community. Project outcomes suggest that experiential learning programs for educators could drastically improve the policy communication efforts of local-level governments, leading to an increased awareness of, engagement in, and support for community-based coastal resource management among citizens.

Keywords: experiential, coastal, policy, communication, collaboration

Introduction

Approaches to natural resource management have increasingly acknowledged the need to bridge communication gaps between policy makers and citizens. The term "politics" has been famously defined as "who gets what, when, and how" (Lasswell, 1936), and so it makes sense that, in nations like the Philippines whose governments purportedly espouse democratic ideals, the policies that govern the allocation and management of natural resources should be clearly communicated to any citizens who are affected by such policies. This kind of political transparency and accountability regarding environmental issues is likely to stimulate greater levels of trust between the general public and those in government. In addition, as policy makers communicate more effectively with those they serve, levels of citizen participation in and support for environmental policies and management practices may increase significantly.

Given these benefits of optimizing communication between governments and citizens, our goal is to describe a policy communication tool recently piloted as part of a collaborative conservation project in the coastal community of Santander on Cebu Island, Philippines. The communication tool involves providing experiential learning opportunities for teachers and engaging them with local governments and fish wardens about community coastal issues and policies. Our recommendations are based on the idea that educators are invaluable assets for communities and should be more intentionally involved in bridging the gap between local governments and resource users (Phillips & Pittman, 2009). An experiential learning program has the potential to increase educators' understanding of environmental issues, to foment their support for environmental policies, and to enhance their ability to engage students in conversations about community-based natural resource management projects. Opening opportunities for citizens to participate

in addressing local environmental issues is a primary goal of increasing communication between local governments and educators through experiential learning activities.

We present a framework for bridging local governments and citizens though experiential learning programs (Figure 1). This framework emerged from our case study as we applied experiential marine learning programs with citizens or local stakeholders such as educators, fish wardens, local government representatives, and students in Santander. The experiential learning program involved participatory processes for local governments and citizens to engage in and collaboratively discuss coastal issues and policies influencing local livelihoods and coastal resources crucial for the community's well being. Potential outcomes of applying experiential learning programs with local governments and citizens involve transparency of policies, engagement of citizens, awareness of local issues, and mobilization of educators and communities for addressing policy communication on local environmental issues. These outcomes and participatory processes will be addressed as we provide a more in-depth description of our case study.



Figure 1. Applying experiential programs for educators as a policy communication tool.

Background

In the Philippines and around the world, recognizing the importance of transparent governments, informed citizens, and participatory processes in environmental governance is nothing new. Many tools have been proposed and adopted to support local governments' efforts to communicate more openly and effectively with their constituents. Public forums, community or environmental education programs, NGO-led social campaigns, and even experiential or collaborative learning opportunities have all been incorporated into environmental governance projects with varying degrees of success. Current coastal management practices in the Philippines require that local governments utilize participatory approaches in creating marine sanctuaries by educating and consulting with the public as often as possible throughout the planning process (Pietri et al., 2009; Balgos, 2005).

Philippine government operates at the national, provincial, municipal, and *barangay* (village) levels. The Municipality of Santander can be found on the southernmost tip of Cebu Island and has a population of approximately 17,000 (Municipality of Santander, 2011; Figure 2). Santander consists of 10 barangays – six of them coastal, and four of them inland/mountainous – with an estimated 70% of the population living in coastal barangays. According to Santander's 2010-2014 Integrated Coastal Resource Management Plan (ICRMP), over 50% of the population is employed in agricultural or fishery-related work, demonstrating the importance of Santander's coastal resources for citizen subsistence and livelihoods. Coastal tourism is also a large driver of the economy, with most of the 11 lodges having dive shops catering to a predominantly Japanese clientele.

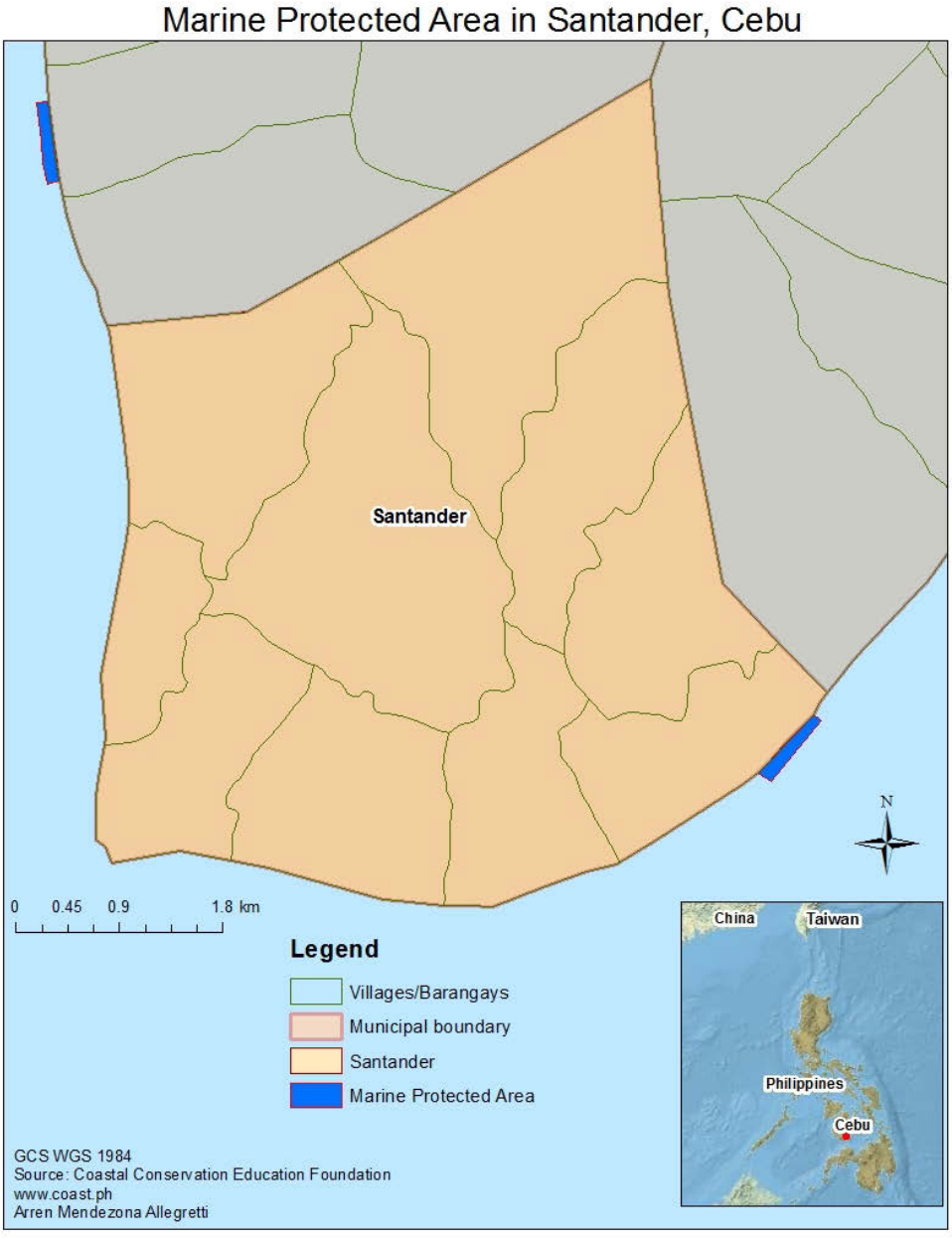


Figure 2. Location map of Santander and its Marine Protected Area in Cebu, Philippines (Map by Arren Allegretti)

In 1998, the Philippines passed the Fisheries Act (RA 8550), delegating responsibility for municipal governments to convert a minimum of 15% of their delineated municipal waters to marine protected areas (MPAs). RA 8550 is intended to address unsustainable fisheries and livelihoods through community-based management efforts, including awareness and education campaigns for coastal management. In fact, Section 118 of RA 8550 states that the Department of Education, Culture, and Sports – in partnership with the Department of Agriculture and with the Commission on Higher Education – will promote a nationwide education campaign fostering the conservation, management, and sustainable use of the environment (Republic Act No. 8550, 1998). This legal mandate for environmental education encourages local-governments and non-governmental organizations (NGOs) to develop partnerships in managing the sustainable use of MPAs and municipal waters.

In response to RA 8550, through the oversight and support of a Cebu-based NGO known as Coastal Conservation and Education Foundation (CCEF), Santander partnered with a cluster of six neighboring municipalities to collectively create and monitor MPAs along their coastlines. An experiential learning program known as *Lakbay Aral* (i.e., travel learning) was established to build the capacity of local government representatives for creating coastal policies and management plans. Currently, the Santander local government has created one MPA protecting 5% of its coastal waters and has mobilized a team of 10 fish wardens responsible for collecting SCUBA/snorkeling users' fees and apprehending illegal fishing operators.

Rationale

One aspect of RA 8550 salient to this case study is the legal mandate for local governments to communicate with citizens through Information, Education, and Communication (IEC) campaigns. Although there is no specific outline for how these campaigns should be conducted, the process involves some communication between municipal and barangay-level government through public forums. With low turnouts at the public forums, and with many citizens left unaware of the coastal policies being implemented, the effectiveness of IEC campaigns to inform and engage communities about coastal policies is difficult to ascertain.

To foment the level of communication between governments and citizens beyond what these traditional environmental communication tools have allowed, we suggest that exposing teachers to environmental policies through experiential learning opportunities may have benefits for community-based coastal management efforts. Emphasizing information diffusion to citizens through formal and informal community education programs is important for achieving MPA success (Pietri et al., 2009). As such, it seems that expanding Santander's current IEC to provide experiential learning opportunities not only for local governments, but also for educators and fish wardens, would be an effective way to communicate with and engage citizens on coastal policies and issues influencing their community.

The potential for such a program to positively impact learning, citizen engagement, and coastal policy communication would depend on the nature of program activities. If "learning is the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38), then we propose that activities should incorporate site-based experiences allowing teachers to better grasp specific issues that policy makers and coastal law enforcers want to communicate. Such experiences would be invaluable for helping teachers understand and communicate coastal resource management approaches, potentially leading to improved classroom instruction and student learning (Marlow & McClain, 2011).

Program activities should not only be experiential, but should promote collaboration among policy makers, educators, and fish wardens. Numerous learning and cognitive development models have suggested that knowledge is created primarily through people's interactions with other people and with the physical environment in which they are immersed. Piaget and Vygotsky, among other developmental psychologists, have emphasized the importance of social interactions for constructing knowledge (Palincsar, 1998). Within the context of natural resource management communication, it has been suggested that collaborative learning among differing stakeholders can be valuable for supporting conservation and community development efforts (Daniels & Walker, 2001). Giving teachers the opportunity to learn with and from local governments and fish wardens through hands-on, site-based and relationship-building activities may enable educators to engage students far more effectively than if the teachers were simply given a politician-drafted list of topics required to share with students.

Of course, it would be utterly quixotic to claim that an experiential learning program for educators would necessarily enable them to effectively communicate environmental policies to their students, and that these students would necessarily feel empowered to support initiatives related to coastal governance as a result of the instruction they received. Clearly, countless factors would influence how well an experiential learning program might generate such positive outcomes. However, given the potential for experiential activities to benefit classroom instruction and student learning, expanding the Lakbay Aral program to include educators may hold tremendous promise for local governments and fish wardens expected to achieve greater levels of transparency, accountability, and trust among the citizens they serve.

Case Study

Lakbay Aral for Educators, Fish Wardens, and Local Governments

The project conducted in June-July of 2012 provides context for how an experiential learning program for educators might optimize coastal management and policy communication through increased citizen engagement. With funding from the Center for Collaborative Conservation (CCC) of Colorado State University, and through the support of CCEF, the project pursued a participatory approach in bringing together local government representatives, fish wardens, and elementary school teachers for the purpose of designing, implementing, and evaluating such an experiential learning program.

Entry into the community, an important relationship-building stage for participatory processes (Bopp & Bopp, 2006), began with informal meetings among members of the municipal local government, fish warden, and educators. Among Santander's local government, two individuals– the Municipal Planning and Development Coordinator and the Municipal Agricultural Technician – were most interested in collaborating with educators and fish wardens in expanding IEC efforts to include teachers in Lakbay Aral programs. Early on, these local government representatives recognized a need for the program to focus on their 2010-2014 ICRM plan, since no IEC campaign had yet been conducted to communicate plan details with citizens, particularly local teachers. In a final meeting discussion on Lakbay Aral outcomes, several members of Santander's legislative body, Office of the Mayor, Tourism Development Office, and Municipal Agricultural Office actively discussed positive outcomes and challenges for implementing Lakbay Aral with educators. This participation from various local government representatives highlighted citizen and political interests for increasing communication about coastal management within Santander.

Comprising the fish warden group was a team of 10 individuals who serve the Santander community by protecting the municipality's MPA and enforcing coastal law on a voluntary basis (i.e., without pay). These men were not only fish wardens, but fathers, fishers, farmers, boat operators, motorcycle drivers, etc. who contribute to the Santander community in numerous ways. In other words, being a fish warden was not

their primary livelihood. In 2010, the local government began allocating dive tourism revenues to support their coastal law enforcement efforts, paying fish wardens an honorarium of approximately 50 USD per month.

Early meetings with fish wardens revealed their commitment to honorably protect Santander's municipal waters (e.g., by not taking bribes from commercial fishing operators) and to collaborate with educators for engaging youth in coastal governance. Under the leadership of their dynamic captain de facto, several men from the fish warden team became a driving force supporting the expansion of the Lakbay Aral program to include educators. It was clear that these fish wardens recognized the value of mobilizing teachers for helping policy makers communicate Santander's 2010-2014 ICRMP with citizens.

For the educator group, the principals of Santander's ten elementary schools, along with one to five teachers from each school, also expressed an interest in expanding the Lakbay Aral program. Through an initial, informal meeting with the principals, followed by a more formal gathering attended by nearly all of Santander's fish wardens and elementary school teachers, the dates and activities for two experiential learning field trips were collaboratively selected and planned. It was decided that the trips would be voluntary and would incorporate collaborative workshops to help teachers and fish wardens brainstorm ideas for expanding the Lakbay Aral program. Fish wardens would serve as "guides" to highlight coastal law enforcement and management practices, as well as Santander's marvelous coastal environments. As a result, over 30 elementary school teachers and principals, 10 fish wardens, and 2 policy makers participated in the Lakbay Aral trips. These two excursions were full-day events, free for all participants, and included such activities as responsible snorkeling practice sessions for protecting reefs, a patrol boat ride with the fish wardens through Santander's MPA, a visit to a mangrove-planting site, a glass-bottom boat excursion, and snorkeling in an MPA. Lunch was provided on both trips, and presentations were conducted in which educators were exposed – many of them for the first time – to such topics as:

1. the mission of Santander's ICRMP
2. national laws and municipal ordinances on coastal resources
3. the proposed location for Santander's second MPA
4. the lure of Santander's marine ecosystems for tourists generating a yearly revenue of 30-40,000 USD for coastal management initiatives
5. fish warden roles in sustaining Santander's coastal resources for future generations
6. pros/cons of marine sanctuaries regarding food security and livelihoods issues for local peoples

Providing educators with these opportunities to learn and perhaps partner more purposefully with local government and fish wardens "was just a beginning," as several participants stated over the course of the project. One teacher was extremely disappointed to find that the 2010-2014 ICRMP had still not been implemented, but he gratefully acknowledged that Lakbay Aral trips were the first time local government had ever communicated or collaborated with teachers in this fashion to engage citizens for optimizing coastal policy implementation.

Participatory Evaluations

During the evaluation sessions held after each trip, participants identified benefits of the expanded Lakbay Aral program. These included making teachers more aware of illegal destructive fishing, building relationships with local government, increasing pride in Santander's rich marine resources, and helping teachers better instruct pupils about preserving coastal ecosystems for future generations. All teachers expressed interest in planning future experiential learning activities, and fish wardens were prepared to

continue helping teachers and students learn about coastal management. Local government representatives vocalized an interest in providing teachers with future experiential learning opportunities.

Despite these noticeably positive project outcomes, there were many challenges to the collaborative process. First, the familiar issue of time seemed to affect project aspects, including teachers' and the local government's ability to attend meetings or trips. Brevity of the project hindered efforts to establish a core group for overseeing the continued development, implementation, and evaluation of the expanded Lakbay Aral program. Posing additional challenges to collaboration was the culture-based issue of gender roles and how the different sexes tend to interact in the Philippines. During the experiential learning trips, for example, several members of the all-male fish warden team were hesitant to communicate with the nearly all-female group of educators.

Galvanizing local government interest in, accountability for, and commitment to expanding the Lakbay Aral program without external support was a significant issue in and of itself. Local policy makers have come to appreciate and, to an extent, depend on NGO and researcher involvement over the years to address urgent coastal management issues. The uncertainty of minimal or intermittent support from these external groups was only magnified by existing limitations on funding and time. As such, although Santander policy makers agreed that partnering more purposefully with teachers to support IEC efforts was a good idea, few seemed interested and committed enough by project's end to take ownership of the planning and development process on their own. Accountability for coastal management communication and sustained commitment are inevitable challenges in coastal governance, particularly in the case of Santander where coastal policy communication through experiential learning programs is not seen as a priority by accountable local government representatives (Allegretti, 2012).

Lessons Learned: Proposing a Framework For Future Endeavors

The comments and perspectives of project participants suggest that increased collaboration among educators, fish wardens, and policy makers through experiential learning programs can lead to desirable outcomes for coastal policy communication. We now wish to describe in greater detail an emergent conceptual framework that is meant to guide such policy communication efforts (Figure 1 above). First, we will expound upon the primary stakeholder groups (i.e., government and citizens) identified in the framework. Second, we will describe the participatory processes and anticipated outcomes outlined in the framework that are meant to direct the creation of experiential learning programs in the future. Lastly, we will summarize several key considerations for experiential learning programs that seem especially salient for supporting coastal policy communication.

We have already alluded to the communication gaps that tend to exist between governments and citizens. Although the extent of these gaps differs with respect to the scale of government under consideration, our framework is meant to be applied in the context of local-level (e.g., municipal or city) government. The "government" category in our framework thus includes any political actor operating at the local level who is involved in coastal management or policy creation efforts. For coastal municipalities in the Philippines, these actors might include the Municipal Planning and Development Coordinator, the Municipal Agricultural Officer, the Fisheries Technician, the Tourism Development Officer, and others. On the other end of the spectrum, any non-governmental actor would fall under the framework's "citizen" category. Citizens would include students, educators, fishermen, fish wardens, and owners of tourism businesses or other enterprises, among others.

If government representatives and citizens hardly interact under normal circumstances, what might encourage them to collaboratively create an experiential learning program? As was the case in Santander, outside funding and facilitation may be needed to get such a program underway. However, some governments may pursue a course of action without any outside (e.g., NGO) support. Whether driven by

an outside facilitator or by some internal and innovative force, experiential learning programs for educators may better support coastal governance efforts by incorporating the participatory processes and anticipated outcomes we propose in our conceptual framework.

There are four participatory processes that we think will drastically increase the potential sustainability and success of a particular experiential learning program geared toward coastal policy communication. Conveniently, each of the terms representing these processes in our framework begins with the letter "p." Given the contextual factors that will inevitably affect how these processes play out in a given coastal community, we will not go into great lengths here to describe them. Instead, we will simply provide a brief explanation of each term as it relates to the process of designing, implementing, and evaluating an experiential learning program.

We propose that the first aspect of this participatory process involves establishing healthy partnerships with and between local governments and citizens. Specifically, this would entail forming a core group of government representatives, educators, and fish wardens who will seek to collaboratively address the second step in the participatory process: *planning*. Here, members of the core group consider specific educational/curricular and coastal management strengths and weaknesses, develop shared vision and goals for the experiential learning program, and decide on specific experiential learning activities that will help teachers learn about coastal governance. In an effort to involve additional stakeholders, decisions and information may then be shared with government representatives, educators, and fish wardens who aren't members of the core group. The planning process also entails educators considering how they will bring their experiences back into the classroom to promote student learning about coastal issues.

The third participatory process in our framework involves educators engaging students through *pedagogy*, which will occur primarily after the experiential learning activities take place. As pedagogy refers to the art of teaching or classroom instruction, this process may involve bringing students on field trips to the same locations teachers experienced; it may involve government representatives or fish wardens speaking with or presenting to students; or it may simply involve teachers engaging students in discussions about coastal management or policy through traditional classroom instruction. At this point, the fourth participatory process of *personalization* may already be happening to a large degree among experiential learning program participants. Personalization refers to the process of ongoing reflection and evaluation on how well the experiential learning program meets the specified educational/curricular and coastal management goals. This process is considered participatory in the sense that it would ostensibly involve conversations among students and teachers, among program participants, and among core group members. The personalization process thus feeds into the formation and strengthening of new or old partnerships, alluding to the cyclical nature of these four participatory processes.

As a result of these processes, we propose that four anticipated outcomes may be attained. The outcomes could apply to numerous aspects of socio-political communication, and they are especially salient in the context of coastal governance in the Philippines. We refer to these four outcomes using the acronym T.E.A.M., standing for transparency, engagement, awareness, and mobilization. *Transparency* refers to how an experiential learning program may impact citizen perceptions of the clarity, legitimacy, and context-specificity of the Coastal Management Plan in their municipality over time. It is expected that the government's purposeful interactions with fish wardens and educators (and, indirectly, with students) may positively influence citizen views of government through the increased transparency of coastal policies. *Engagement* refers to the potentially heightened involvement of citizens in issues of coastal governance. This is related to *awareness*, which basically refers to the ways in which experiential learning programs may increase educator appreciation for the value and beauty of their coastal areas, significantly impacting their classroom instruction and student appreciation for the same. The fourth and final anticipated

outcome refers to *mobilizing* educators more effectively for coastal policy communication through classroom instruction and through more egalitarian democratic processes (Wright, 2010).

While we have suggested that experiential learning programs can effectively support coastal policy communication efforts, we have not yet specified our view of what these programs might look like. Clearly, if such programs are to be collaboratively created through interactions between members of State and Society at the local level, then the programs may look very different depending on the socio-political (e.g., educational, associational, institutional) contexts of respective coastal communities. Economic factors, also, will be play a major role in determining the kinds of activities a particular municipality may implement as part of their experiential learning program. This being said, the comments and suggestions of those who helped design, implement, and evaluate the experiential learning activities in Santander provided key considerations for creating experiential learning programs integrated with policy communication schemes. Based on these considerations, Table 1 lists potential characteristics of experiential learning programs for educators that may lead to more effective coastal policy communication.

Table 1

Programs should…

- Be based on both curricular/educational and coastal management goals
- Provide a fun, unintimidating space for collaborative learning and interaction among educators, fish wardens, government representatives, and other groups as desired, such as fishermen or tourism business employees
- Start small and expand with time; for example, involving teachers from just one school, or one grade level, or one subject area to begin; or, selecting just one day during the summer in which the experiential learning activities take place before expanding to multi-day excursions
- Allow for rich, hands-on learning opportunities in which teachers can increase their understanding of and appreciation for coastal resources and policies
- Involve participatory processes that encourage program sustainability through effective partnerships, planning, pedagogy, and personalization
- Pursue T.E.A.M.–based outcomes, including greater governmental transparency, increased citizen engagement, raised citizen awareness, and mobilized educators and egalitarian democratic processes

Potential characteristics of experiential learning programs for educators to support coastal policy communication.

Concluding Thoughts

The Santander case study provides us with lessons in applying the collaborative process for engaging educators, fish wardens, and local governments through experiential programs such as Lakbay Aral. Through these programs, conversations about local coastal issues occur among engaged citizens and local governments.

Experiential learning programs among local governments in the Philippines are not novel. However, the uniqueness of this project entails two facets crucial for communicating natural resource policies. First, engaging three very different stakeholder groups such as local governments, fish wardens, and educators for the first time in fun, outdoor settings presents unique opportunities for exchanging knowledge, opinions, and experience about local coastal issues. It is not often that you get local government representatives to converse with educators as they experience their community's coral reefs in their MPAs.

Many of the participants were experiencing their MPA for the first time, having incredible learning opportunities and heightening their pride in their community's resources.

Second, the experiential learning program's participatory processes and outcomes entailed empowering educators to collectively evaluate coastal issues while conversing about the responsibility and accountability of government in a transparent and non-intimidating manner. Through these processes, fish wardens and local government representatives exchanged stories with educators about their experiences in coastal management and the challenges of coastal policy implementation. Increased awareness among educators would contribute to improved classroom instruction and student learning, escalating community support for Santander's ICRMP. Our experience with the Santander case-study depicts the importance of partnerships, collective planning, pedagogy, and personalization in experiential learning programs. These participatory processes organically result in outcomes such as transparency of policies, engagement of citizens, awareness of issues, and mobilization of educators as depicted in our conceptual framework.

We highlight the importance of providing opportunities for very different stakeholder groups to engage in collaborative conversations about salient community resource issues in non-intimidating and fun-filled settings. An expanded *Lakbay Aral* program can provide these opportunities and serve as a policy communication tool for local governments seeking to optimize citizen engagement in coastal management.

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Learning in the Beat: What Influences Environmental Journalists' Perception of Knowledge?

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We conducted a survey of environmental journalists in the US to explore individual, routine and organizational influences on perceived knowledge of environmental issues. Using the gatekeeping theory, we found that routine and organizational factors, such as orientation to particular sources and affiliation to an organization, predict perceived knowledge. Years of covering the beat, affiliation to a news organization, and orientation to particular sources, particularly scientific and business sources, predicted perceived knowledge. In terms of individual factors, we did not find any significant influence. The relevance of these findings in the context of journalists' training is discussed.

Keywords: attitudes, environmental journalists, gatekeeping, knowledge

Introduction

Environmental journalists face a wide range of hurdles and constraints. The characteristics of environmental issues—scientific complexity, the long-term nature of most of them, and the inherent level of uncertainty, among others—create challenges in reporting from a news values perspective. Entman (1996) suggested that the US media are not really driven by political partisan bias, but a bias of "simplicity over complexity, persons over institutional processes, emotion over facts, and, most important, game over substance" (p. 78). These problems are highly conspicuous to environmental issues. However, there is still a limited understanding about the factors that influence the ways in which environmental journalists report environmental issues.

Clearly, the attributes of the issues mentioned above influence what journalists know about the issues. Moreover, what they know will influence the way they conceptualize problems and how they report them. In this respect, some previous efforts have attempted to determine factual knowledge of environmental issues among journalists, most recently concerning climate change (Sundblad, Biel, & Garling, 2009; Wilson, 2000). However, few efforts have been made to determine what factors influence these levels of knowledge. With this in mind, we present an initial attempt to determine the influence of journalistic sources, environmental attitudes, organizational factors, and individual characteristics of environmental journalists on their perception of their knowledge about environmental problems.

Literature Review

Detjen, Fico, Li, and Kim (2000) presented one of the earliest efforts in understanding the roles, organizational constraints, and characteristics of environmental journalists in the US. Focusing in the mid-1990s, they reported that environmental journalists were facing budgetary and time constraints in a period when news organizations were decreasing their commitments to the beat. Following this effort, Sachsman, Simon, and Valenti (2010) conducted one of the most comprehensive studies of environmental journalists in the US, presenting a thorough look at their main demographic characteristics. The study, based on a census of environmental journalists in the US, provided baseline data on the state of environmental journalism. The general results showed that the same constraints identified by Detjen, Fico, Li, and Kim (2000) still remained. These studies, however, both presented a mostly descriptive overview (see 2004, Simon, & Valenti, 2002, 2006, 2008), providing limited explanations to understand the activities of these journalists (Yang, 2004).

Few studies of environmental journalists' attitudes, concerns, beliefs, among other socio-psychological variables, have been conducted (see Skanavis & Sakellari, 2008 for an exploratory study in Greece). Wilson (2000) focused on journalists' levels of knowledge about climate change. The results revealed that members of the Society of Environmental Journalists (SEJ) showed higher levels of factual knowledge about climate change than laypeople, but that some glaring misunderstandings remained. These results are similar to those reported by Sundblad and colleagues (2009) who found that journalists have more knowledge about climate change than environmentally minded politicians and laypeople in Sweden. The environmental journalists' perception of personal knowledge also matched their factual knowledge.

A common assumption is that environmental journalists possess pro-environmental bias, but Sachsman and colleagues (2005) found this was not the case. Instead, environmental journalists often use a business angle, rely heavily on business sources, and perceive the need to balance business and environmental concerns. For example, in the case of climate change, journalistic norms, specifically the norm of balanced reporting, have been found to be a main reason for the biased reporting in the US (Boykoff & Boykoff, 2004). These journalistic practices, coupled with the issue attributes of environmental problems, create many barriers for environmental reporting. For example, Yang (2004) argued that environmental journalists feel the pressure from management or advertisers, and the possible legal consequences of their work, as constraints.

Archibald (1999) suggested that part of the limitations is journalists' lack of confidence on scientists and scientific information. Peters (1995) also found differences between the views of scientists and journalists about the mass media in Germany. The differences are, in part, a response to different professional cultures in which each group operates. Besley and Nisbet (2011) reviewed past literature on scientists' views of the media and the public and found that scientists think that the media do not accurately report on scientific issues, which then negatively influences the public.

How does their relationship with scientists influence journalists' levels of knowledge about environmental issues? Malka, Krosnick, and Langer (2009) found that "the relation between knowledge and concern about global warming varies as a function of trust in scientists and party identification" (p. 643). On the other hand, knowledge was most strongly predicted by the number of media sources used to gather information about global warming, by information seeking efforts, and by general education (Kahlor & Rosenthal, 2009; Zhao, 2009). Sources exert influence on news content (Shoemaker & Reese, 1996; Shoemaker & Vos, 2009). Though politicians are generally the most quoted sources because of their accessibility and prominence not only in the US but also in other countries (Boorstin, 1973; Kiousis & Strömbäck, 2010; Tandoc & Skoric, 2010), there are instances when ordinary people get represented more prominently (Salwen, 1995).

Business sources have also been quoted in news reports dealing with environmental issues. Rosen (2005) had argued that one cannot divorce business from the environment, as businesses feed on natural resources. Environmental journalists also rely heavily on business sources, seeing the need to balance business and environmental concerns, partly because of the norm of objective reporting (e.g. Boykoff & Boykoff, 2004; Lacy & Coulson, 2000). However, little else is known about the level of influence that dealing with scientists and business sources exert on overall levels of environmental knowledge among journalists.

Journalists' environmental attitudes also form another important factor that can help us understand the acquisition of knowledge about environmental issues. Within the field of environmental psychology, scholars have continuously studied the relationship between attitudes and environmental behaviors. Environmental attitudes have been measured in variety of ways (e.g. Gagnon Thompson & Barton, 1994), but the use of the New Environmental Paradigm has become prominent (Dunlap & Van Liere, 2008).

Based on this discussion, we first present three research questions that seek to describe basic characteristics of environmental journalists:

> RQ1: What are the levels of environmental attitudes of environmental journalists?
>
> RQ2: How much do environmental journalists think they know about current environmental issues?
>
> RQ3: What kinds of sources do environmental journalists use in their reporting?

Studies have explored influences on journalists' attitudes and beliefs, such as their role conceptions (Cassidy, 2006), perceptions of news sources (Yoon, 2005) or positions in particular issues (Chang & Lee, 1993). These and other studies on influences on journalists have explored the effects of individual and organizational factors. However, very few studies explored influences on journalists' knowledge of the issues they encounter in their work. This is especially salient among specialized journalists, such as those who cover the environment, for they are exposed to complicated issues and scientific jargon. Shoemaker and Reese (1996) identified five levels of influences on news content: individual, routine, organizational, extra-media and social system. In this study, we are interested in individual, routine and organizational factors. Individual factors refer to factors such as age, gender and even personal attitudes. Routine factors include deadlines, editorial rules and orientation to particular sources (Shoemaker & Vos, 2009). Organizational factors include organization structure, among others. It is possible that the same factors that influence news content (Shoemaker & Reese, 1996; Shoemaker & Vos, 2009) and attitudes of journalists (Cassidy, 2006; Chang & Lee, 1993; Yoon, 2005) also exert influence on knowledge levels of environmental journalists. Thus:

> RQ4: Which individual, routine and organizational factors influence the perception of knowledge of environmental issues among environmental journalists?

Method

This study is based on a web-based survey of environmental journalists. In the absence of a database that adequately lists all environmental journalists in the United States we combined two strategies to invite as many environmental journalists as possible.

First, we sought support from the Society of Environmental Journalists (SEJ). SEJ allowed us to send two emails to their members who opted to subscribe to the organization's emails and press releases. Inviting journalists through SEJ ensured that we tapped into freelancers, as many of SEJ's members are journalists not employed by a single organization. This process yielded 100 responses after three weeks

and one reminder email, of which only 79 were completed (response rate was approximately 5%, an issue that we discuss in the discussion section).

Second, we compiled a list of environmental journalists listed in the Winter 2012 edition of the News Media Yellow Book. The directory lists172 journalists assigned to environment beats across the US. We sent email invitations to each of them, but only 137 emails were successfully sent. This process yielded 32 responses after two weeks and two reminder emails, of which only 24 were completed, or an 18% response rate. From both email campaigns, this study has a sample of 103 environmental journalists. We collected data through a survey-hosting site for three weeks, from February 10 to March 2, 2012 for the SEJ membership and from March 5 to March 19, 2012 for our own email campaign.

Sample

A typical environmental journalist in our sample is 47.7 years old (SD = 12.14) and has been covering the environment beat for 13.3 years (SD = 8.85), producing about two stories per week. In our sample, females (54.7%) slightly outnumber males (45.3%). The majority (83.5%) worked as reporters. Some 35% were freelancers. In terms of medium, 65% work for online media while 52.4% work for newspapers (respondents could choose as many media they work in as possible; see Table 1).

Newspaper	52.4%
TV	8.7%
Online	65%
Wire	1.9%
Magazine	40.8%
Radio	10.7%

Table 1: News Medium

Dependent Variable

Perceived knowledge. This was measured using eight items that asked respondents to rate in a 5-point scale from none at all to a great deal, how much they feel they know about each of the following environmental problems: global warming, ozone layer depletion, hydraulic fracturing, nuclear waste, invasive species, species extinction, water pollution and toxic heavy metals. We decided to measure perceived knowledge instead of factual knowledge because respondents could easily access the information online, and because of the limitations of measuring actual knowledge based on a limited number of items. The scale was constructed to include two global issues, two energy issues, two biodiversity issues, and two pollution issues. The scale is reliable, Cronbach's alpha = .78.

Independent Variables

Demographic measures. We asked our respondents to indicate in the questionnaire their gender, number of years covering the environment beat, highest educational attainment (12th grade or less; graduated high school or equivalent; some college, no degree; associate degree; bachelor's degree; or postgraduate degree), and status (either freelancer or identified with an organization).

Environmental attitudes. This was measured using the shortened version of the New Environmental Paradigm (Dunlap & Van Liere, 2008) used by Steger, Pierce, Steel, and Lovrich (1989). This scale presents six statements that measure ecological and anthropocentric views. The respondents were asked to rate their level of agreement in a 5-point Likert scale, from strongly disagree to strongly agree, to each of the following statements: "The balance of nature is very delicate and easily upset by human activities;"

"The earth is like a spaceship with limited room and resources;" "Plants and animals do not exist primarily to be used by humans;" "Modifying the environment for human use seldom causes serious problems (reversed);" "There are no limits to growth for nations like the United States (reversed);" and "Mankind was created to rule over the rest of nature (reversed)" (Cronbach's alpha = .67). The last three items were reverse-coded so that higher scores mean rejection of the anthropocentric paradigm and support for the ecocentric view. Mean scores for the six items are presented in Table 2.

Table 2: Environmental Attitudes	**Mean**	**SD**
The balance of nature is very delicate and easily upset by human activities	3.70	1
The earth is like a spaceship with limited room and resources	3.95	.92
Plants and animals do not exist primarily to be used by humans	3.97	1
Modifying the environment for human use seldom causes serious problems	4.18	.82
There are no limits to growth for nations like the United States	4.42	.74
Mankind was created to rule over the rest of nature	4.48	.80

Sources. We asked our respondents to indicate in a 5-point scale from not at all to very frequent how often they used different sources of information for their environmental stories (Table 3).

Table 3 Sources Used	**Mean**	**SD**
Scientific Sources	3.87	.74
Academics and experts (e g James Hansen, Mike Hulme)	3.97	.71
Academic publications (e g journal articles, scientific reports)	3.78	.93
Government Sources	3.62	.56
Federal Agencies (e g EPA, Department of Interior)	3.87	.64
State Government Agencies	3.67	.69
Local Government Agencies	3.32	.81
Environmental groups (e g Greenpeace, Sierra Club)	3.45	.76
Business (e g Monsanto, Solyndra)	3.22	.69
Judiciary (e g Federal courts, state courts)	2.67	.86
Politicians (e g Barack Obama, Mitt Romney)	2.53	.84
Lay-population (e g man-on-the-street interviews)	2.42	.87
Celebrities (e g Leonardo Di Caprio, Angelina Jolie)	1.44	.73

We ran factor analysis using principal axis factoring with oblique (Promax) rotation. Our sampling was adequate for the analysis, KMO = .63; the Bartlett's test of sphericity also confirmed that correlations between items were sufficient, X^2 (55) = 282.75, p & .001 (Field, 2009). Three components emerged with eigenvalues over Kaiser's criterion of 1 and explained 59% of the variance (see Table 4). The first one is composed of three items on *government sources* (Cronbach's alpha = .66). The second one is composed of two items on *scientific* sources (Cronbach's alpha = .76 after a third item is deleted). The third factor is composed of *personalities* that include politicians, celebrities and ordinary citizens, but since the Cronbach's alpha is very low (.46), we decided to test them separately, along with other items that did not load on any factor.

Table 4 Factor Analysis of Sources	Pattern Matrix		
	1	2	3
Federal agencies	.563	.357	.065
State government	.804	-.086	-.122
Local government	.579	-.117	.180
Academics and experts	.019	.775	-.078
Academic publications	-.113	.826	-.041
Politicians	.272	-.210	.435
Lay-population	.080	-.139	.529
Celebrities	-.124	.150	.444
Judiciary	.399	-.287	.308
Environmental groups	.429	-.040	.468
Business	.506	-.048	.493
Eigenvalue	3.152	1.893	1.410
% of Variance	28.66	17.21	12.82
Total	58.69%		

Results

RQ1 and RQ2 asked about the levels of environmental attitudes and perceived environmental knowledge of what could be considered as an elite group: environmental journalists. On a 5-point Likert scale that measured levels of environmental attitudes, the respondents scored 4.11 (SD = .54), which displays a great concern for the environment by leaning toward an ecocentric view. Similarly, on a 5-point scale that measured environmental journalists' perceived knowledge of environmental problems from none at all to a great deal, the average score was 3.80 (SD = .58), showing a close to moderate level of perceived knowledge of environmental issues. Although we did not measure factual knowledge of any of these issues, we can make some inferences based on the study (Sundblad et al., 2009) that found a moderate level of knowledge about climate change of environmental journalists in Sweden. This factual knowledge was consistent with their perception of such knowledge; therefore, we can say that perception of knowledge is an appropriate measurement of the latent variable knowledge (e.g. Sundblad et al., 2009).

RQ3 asked about the use of different sources in environmental reporting. Table 4 shows that scientific sources *($\bar{x}$ = 3.87, SD = .74)* government sources *($\bar{x}$ = 3.62, SD = .56)*, and environmental groups *($\bar{x}$ = 3.45, SD = .76)* were the most used sources. This is partially consistent with previous studies, which reported that government sources were the most prominent type of source, both from self-reports as well as from a content analysis of environmental stories (e.g. Lacy & Coulson, 2000; Sachsman et al., 2002).

RQ4 asked about what influences the level of journalists' perceived knowledge. We proceeded to run multiple regression analysis since all our variables meet the assumptions of regression. We explored individual level variables (gender, education, environmental attitudes), routine-level influences (orientation to use particular sources) and organizational influences (years in the environment beat, identification with an organization). The regression model is significant, *F (10,73) = 2.992, p & .01.* The model also explained 19% of the variance in perceived knowledge (see Table 5).

Table 5 Predicting Perceived Environmental Knowledge	B	t
Gender	.113	1.022
Education	.099	.926
Environmental attitude	.085	.823
Years in the beat	.284	2.643*
Affiliated to an organization	.346	3.003*
Government sources	-.003	-.031
Scientific sources	.246	2.384*
Politicians as sources	.049	.427
Business people as sources	.263	2.081*
Environmental groups as sources	-.231	-1.729

Note. *p & .05; The regression model is significant, F (10,73) = 2.992, p & .01, adj R^2 = 19%.

None of the individual-level variables were significant predictors of perceived knowledge about environmental issues, including educational attainment. In contrast, both organizational-level variables—years of covering the environment beat *(β = .284, t = 2.643, p & .01)* and status as a journalist *(β = .346, t = 3.003, p & .01)*—positively predicted perceived environmental knowledge. Thus, journalists affiliated with news organizations (in contrast to freelancers) who have spent a lot of years covering the environment beat tend to perceive themselves to know more about the environment. Studies have established that perceived knowledge is strongly correlated with actual factual knowledge (Sundblad et al., 2009).

Finally, we looked at the influence of orientation to use particular sources on perceived environmental knowledge. Not surprisingly, using *scientific* sources (e.g. interviewing experts or quoting academic journals) positively predicted perceived knowledge, *β = .246, t = 2.384, p & .05.* What is surprising is that journalists who said they use business people as sources of information often also tend to have higher perceived knowledge, *β = .263, t = 2.081, p & .05.* The use of environmental groups as sources, such as Greenpeace or Sierra Club, was not a significant predictor (see Table 5). Neither the use of government sources nor politicians predicted perceived knowledge of environmental issues.

Discussion

There is no argument that having knowledgeable journalists is important if the news media is to fulfill its responsibilities of informing people. If journalists are not confident with their knowledge of environmental issues, how can they confidently inform the public with accurate facts about important issues about the environment? In this study we sought to look at how individual, routine and organizational factors as operationalized in news construction models such as the gatekeeping theory (Shoemaker & Reese, 1996; Shoemaker and Vos, 2009), influence perceived knowledge of environmental journalists. In the current scheme of things, where does environmental knowledge for environmental journalists come from? Not from school, our findings showed.

Instead, the strongest predictors of perceived knowledge are at the routine and organizational levels. Years of covering the beat, also a measure of experience and the decision of a news organization to assign a reporter to a particular beat for long period, as well as affiliation to a news organization, are significant and positive predictors of perceived knowledge. Those who were affiliated with an organization reported higher levels of perceived knowledge than those who identified themselves as freelancers. Organizational support is apparently a driving force of perceived knowledge. Being able to focus on a particular beat, in this case the environment, and on a particular outlet (compared to freelancers) apparently allows journalists to gain more knowledge about the issues they cover.

Orientation to particular sources also predicted perceived knowledge. Not surprisingly, accessing academic experts and journals predicted perceived knowledge of environmental issues. The use of business people as sources was also a positive predictor. When it comes to learning in the beat, environmental journalists apparently rely more on objective information, represented by figures and statistics, which is characteristic of the information usually supplied by scientific journals or business reports. This is consistent with what Sachsman et al. (2010) found, that environmental journalists mostly maintain objectivity over advocacy. Thus, the prioritization of objectivity over advocacy leads journalists to rely more on what is purportedly objective information communicated through statistics instead of loaded statements that determine, to some degree, their perceived knowledge of the issues they cover.

In terms of individual factors, we did not find any significant influence on perceived knowledge. Whatever levels of perceived knowledge environmental journalists have are accumulated in the course of their work, through experience and dealing with sources.

The interpretations of our findings are constrained by several factors. First, we cannot claim to have generalizable conclusions because of the limitations of our sample. Though we used two sampling techniques in an effort to reach all environmental journalists in the US, we still obtained a relatively small number of respondents. However, we believe the relationships we uncovered among the variables we have studied shed light on the practice of environmental journalism and how it transforms, at least in terms of perceived knowledge of issues, those who work as environmental journalists. Second, we used perceived knowledge as a measure of knowledge. Studies have shown that perceived knowledge correlates highly with actual factual knowledge. But as what we have raised earlier, we need to further tease out what knowledge means for environmental journalists and how best to measure it.

These constraints notwithstanding, we believe our findings illuminate interesting peculiarities of environmental journalism. An implication of our findings is how journalism education as it has been set up in the past did not lend itself efficiently to train journalists about environmental issues. A way to augment this is through alternative sources of knowledge acquisition, such as workshops where journalists and scientists can interact (Schneider, 2010). What is interesting is an affirmation of the socialization process that journalists undergo: They are learning in the beat. The next step in this area of research is to make sure they are learning the relevant things from the scientific community and the academe, and that the learning process facilitates the understanding of such information. If journalists see these pieces of information as credible, they better be correct, or we are risking underserving the public and the larger environment that environmental journalists vow to serve.

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Putting the U in Carbon Capture and Storage: Performances of Rupture within the CCS Scientific Community

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This paper examines a framing shift from carbon capture and storage (CCS) to carbon capture, utilization, and storage (CCUS) within science and technology professionals' communication. In particular, we focus on how the professional community responded to this framing shift. Drawing from participant observation, we describe and evaluate the breach caused by putting the U in CCUS. Drawing from terministic screens, rhetorical boundary-work, and the cultural performance of social drama, we argue that the framing shift is a rupture in the boundaries of the CCS professional community that calls forth cultural performances of proactive efforts to frame their work, as well as resistance to framing and acquiescence to others' proactive efforts. This theoretical framework has the potential to serve as a powerful heuristic for examination of similar inter-scientific framing shifts. In addition, this paper contributes to contemporary research in rhetoric of science (RoS), social dimensions of CCS, and environmental communication.

Keywords: CCS, CCUS, Social Drama, Boundary-Work, Demarcation, Framing

Carbon Capture and Storage (CCS, also known as carbon sequestration) technologies are a significant facet of international deliberation about energy policy, particularly in the face of the impending climate crisis. In 2005 the Intergovernmental Panel on Climate Change wrote a report on the potential of CCS as a strategy for climate change mitigation (IPCC, 2005). CCS incorporates a wide variety of technologies for the reduction of CO_2 emissions from the coal-dependent energy sector and other stationary industrial sources (e.g., cement plants, ethanol plants, refineries, and iron and steel mills) (U.S. Department of Energy, 2008; IPCC, 2005). Clean coal technology serves as one suite of technologies included in the carbon capturing side of CCS (Feldpausch-Parker et al., 2011). Although research into CCS technologies has been underway since the late 1980s, coordinated national and international efforts did not start until the early 2000s (Herzog, 2001). These more comprehensive efforts included researchers in both the biophysical and social sciences. Individually the authors of this paper have been involved with research on the social and cultural dimensions of CCS for between two and nine years. Our research and meeting attendance has allowed us to observe a variety of venues where CCS-oriented science and technology professionals (e.g., academic, industry, agency, and non-governmental organizations or NGO scientists and engineers) gather. This includes our attendance of the annual spring CCS conference in Pittsburgh, Pennsylvania, home to the coal industry and one of three main offices for the U.S. Department of Energy's National Energy Technology Laboratory.

In this paper, we turn our attention to rhetorical dynamics of naming and framing within the CCS professional community. We use the term CCS professionals to refer to people with scientific and technical training who engage in work related to research, development, and commercialization of CCS. This includes basic and applied scientists (Killingsworth & Palmer, 1992) from academic institutions, industries, federal and state agencies (e.g., NETL, DOE), public utilities, and NGOs that participate in CCS science and technology. Drawing from ethnographic participant observation within the CCS professional community, we focus in particular on an attempted framing shift from CCS to CCUS (carbon capture, *utilization,* and sequestration) at the 11th Annual CCS Conference in May 2012. For the 2012 conference, the conference organizers changed the name of the annual conference to the Annual Conference on Carbon Capture, Utilization and Sequestration and devoted much of the conference to promoting the business case for CCUS. Utilization refers to using captured CO_2 for an additional purpose before storing it, such as enhanced oil recovery (EOR), a displacement method for extracting oil from mostly depleted fields. While utilization does not suggest new technologies—indeed the DOE has funded research on it for several years—it has not been so prominently associated with CCS to be included in the term. Since the conference, the name change has stuck not only for subsequent annual CCUS conferences but also in other venues, suggesting that the name change and framing shift has had an enduring effect on the professional community.

During our participant observation research at the 11th Annual CCUS conference, we witnessed an attempt by the conference organizers to rhetorically shift the discursive terrain from CCS to CCUS and re-map the landscape of CCS research and technology towards pursuing a "business case" for CCUS specifically by linking CCS with EOR. When we arrived at the first plenary session for the conference, we were quickly faced with the ubiquity of this new term. The conference presented the term CCUS prominently in all of the on-site conference materials including the welcome signs, name badges, conference programs, and plenary session presentation titles. The conference organizers emphasized the importance of making the business case for CCUS through the conference theme: "Building a Business Case for Carbon Capture, Utilization, & Sequestration…Good for the Economy & the Environment." Based on our own confusion at the framing shift, we paid particular attention to how CCS professionals at the conference responded to the shift. We observed various reactions including confusion, proactive promotion, acquiescence, and resistance to the new term by conference attendees, most of whom were not privy to the terminology shift prior to the conference. Upon further examination, we found that these reactions roughly corresponded to particular groups and interests within the CCS professional community such that, for example, while industry applied scientists with much to gain from the new framing tended to proactively support the business case for CCUS, academic scientists tended toward indifference to the framing shift.

We examine how the framing shift of putting the U in CCUS created a rupture in the community's practices, temporarily creating a liminal moment "betwixt and between" (Turner, 1974, p. 41) the old and new frames in which participants responded to and negotiated boundaries associated with the shift. Drawing on Kenneth Burke's concept of terministic screens (Burke, 1966), rhetorical boundary-work in scientific communities (e.g., Gieryn, 1999; Taylor, 1996), and the cultural performance of social drama (Turner, 1980), we argue that the framing shift is a breach in the CCS professional community with significant implications for the negotiation of boundaries—breaking down, reinforcing, and creating anew the boundaries that demarcate CCUS—within the community. Our analysis reveals the cultural performances that emerged in response to the framing shift and highlights proactive framing efforts, modes of resistance, and ultimate acquiescence to the term CCUS.

We will begin by further clarifying a theoretical framework that puts framing, boundary work, and social drama in conversation with each other. After discussing our methodological approach and choices, the subsequent analysis section will deepen our understanding of the CCS-CCUS framing shift. Finally, we will

conclude with some implications and suggestions for future study, particularly in terms of what practices are enabled and constrained when certain interests embrace communicative efforts and others resist rhetorical work.

Performing Boundary Work in Liminal Spaces

While there are numerous academic perspectives on the concept of framing (Burke, 1966; Entman, 1993; Goffman, 1974; Lakoff, 2010), Kenneth Burke suggests that terminology creates a terministic screen that frames how people understand terms like CCUS. He states, "even if any given terminology is a reflection of reality, by its very nature as a terminology it must be a selection of reality; and to this extent it must also function as a deflection of reality" (Burke, 1966, p. 45). Any message is, consciously or not, rhetorically constructed to emphasize certain things and deemphasize others. In the case of the shift between CCS to CCUS, the addition of "utilization" to the process of carbon capture and storage reframes the technology in interesting ways. Instead of viewing CCS as a set of climate mitigation technologies—ways to lessen CO_2 emissions from energy production and other industrial operations—adding utilization in the form of EOR to CCUS changes the frame of the technology such that it is focused on *using* the captured carbon to facilitate the production of additional fossil fuels. As we will demonstrate in our analysis, CCUS refocuses research and technology toward facilitating EOR. Utilization implicates CCS more firmly in industry logics and business imperatives: a shift that foregrounds the interests and goals of some constituents involved in CCS implementation over others. In particular, the fossil fuel industry benefits from the shift to CCUS in that carbon mitigation is no longer the single goal as it was, at least conceptually, in CCS.

This framing shift destabilizes several rhetorical boundaries at play within the CCS professional scientific community. Studies of boundary-work (e.g., Gieryn, 1999) or rhetorical demarcation (e.g., Taylor, 1996) examine the discursive construction of boundaries particularly between science and non-science but also boundaries within science. While boundary-work comes out of a science, technology, and society (STS) tradition and rhetorical demarcation comes from a rhetoric of science tradition, the concepts are complimentary in their focus on how science is in part a cultural, social, and rhetorical activity in which scientists construct (evolving) boundaries as a way to name and define their activities, garner credibility, and compete for resources. Indeed, Kinsella (2001), for instance, demonstrates how the two concepts work well together (p. 172). Boundary work and demarcation are not simply focused on "laboratory practices and their finished products, but also of the wide-ranging activities that facilitate those and other practices, including securing funds, ensuring public patronage, and the like," to which we add professional scientific and technical conferences (Taylor, 1996, p. 7). The boundaries of science and technology communities are "ambiguous, flexible, historically changing, contextually variable, internally inconsistent, and sometimes disrupted" (Gieryn, 1983, p. 792). It is these moments of boundary (re)negotiation that reveal the interests and implications of the framing shift from CCS to CCUS.

While this case reveals the boundary work between science and public, our vantage point on the framing shift from the perspective of conference attendees in the CCS professional community also reveals the negotiation of boundaries within this scientific community. The majority of rhetorical work on demarcation and boundary-work has examined the boundaries between science and non-science (e.g., fraud or bad science) or between science and the public (e.g., Condit, 1996; Derkatch, 2012; Holmquest, 1990; Karänen, 2005; Kinsella, 2001). Through analysis of a messy interdisciplinary scientific community made up of both applied and basic scientists and engineers from academic, industry, and political sectors, our analysis highlights the boundary work that happens within science between applied and basic scientists, oil technologies and coal technologies, and competing interests and goals within the community. Adding the U to CCUS not only creates a boundary between CCS and CCUS, but also breaks down a boundary

between the coal (and other CO_2 producers) and oil industries, considering that CO_2 captured from coal-fired power plants and other industrial sources would be used to extract oil through the use of EOR. Gieryn (1999) suggests that "boundary-work is strategic practical action. As such, the borders and territories of science will be drawn to pursue immediate goals and interests of cultural cartographers, and to appeal to the goals and interests of audiences and stakeholders" (p. 23). As we demonstrate in our analysis, the framing shift represents an attempt to re-map the landscape of CCS research and technology towards pursuing a "business case" for CCUS that makes CCS technology viable through its association with EOR.

In order to study the boundary-work stimulated by the framing shift from CCS to CCUS, we focus our attention on cultural performances in response to the framing shift within CCS professionals at the conference. Victor Turner's (1974, 1979, 1982) theory of the cultural performance of social drama illuminates the process through which communities (or cultures) attend to conflict. Social dramas progress through four stages: breach, crisis, redressive action, and reintegration/recognition. He argues that a conflict begins with some sort of norm violation, which leads to a crisis within the community. Redressive action is the response to this crisis that eventually leads to reintegration into culture or recognition of an enduring difference. Social drama is "a spontaneous unit of social process and a fact of everyone's experience in every human society. . . Social dramas occur within groups bounded by shared values and interests of persons and having a real or alleged common history" (Turner, 1982, pp. 68–69). Viewing the community of CCS professionals as a culture, the framing shift between CCS and CCUS represents a breach in the norms of the community. This breach moves the community into a liminal stage wherein "what is mundanely bound in sociostructural form may be unbound and rebound" (Turner, 1982, p. 84). This state of liminality includes opportunities for redefinition, reframing, and remaking, and renegotiating boundaries. As Turner puts it, "Liminality is full of potency and potentiality" (1979, p. 466). In this case, the breach opened the possibility of shifting the boundaries within the scientific community through reframing the shared technology that unites the group. Importantly, Turner recognizes that:

> Social dramas are in large measure political processes, that is, they involve competition for scarce ends—power, dignity, prestige, honor, purity—by particular means and by the utilization of resources that are also scarce—goods, territory, money, men and women. (1982, p. 71-72)

The framing shift between CCS and CCUS is strongly imbricated not only with politics and power within the professional community but also with external constraints on CCS technology. In a United States context, where mitigation efforts face stagnating policy directives and CCS technologies are unviable without certain policies, competing interests within the professional community are attempting to redefine this technology in terms of its economic utility when combined with EOR.

Methodological Approach

We focus our analysis on one moment in our ongoing participant observation and research of the CCS professional community: the 2012 Annual CCUS Conference. Exchange Monitor Publications—a private technical publishing house devoted to nuclear and CCS technologies— sponsored the conference in partnership with the National Energy Technology Laboratory (NETL) and the Department of Energy (DOE). This conference was a significant moment because it is the site at which the framing shift between CCS and CCUS was prominently presented to a large gathering of interdisciplinary CCS professionals through the conference theme and plenary presentations. This gathering is unique because of the diverse audience of attendees that represent the various divisions within the CCS professional community including both basic and applied scientists and engineers from academic, industry, governmental, and NGO sectors. The

2012 conference hosted approximately 600 participants from twenty-two countries, included plenary speakers from all sectors, and presented 300 technical papers and posters on CCUS research and technology development. Our role as participant observers allowed us to observe and document the way(s) in which conference attendees grappled with the framing shift presented at the conference.

Latour (1988) argues that science can only be understood through its practice (see also Woolgar, 1982). Science happens in multiple sites beyond the laboratory and the field tests (Hine, 2007; Lorenz-Meyer, 2011). We argue that while CCS scientists' discourse travels to, localizes, and constitutes anew around such artifacts as scientists' websites, journal articles, and government documents, professional conferences are a particularly important site of localization for the CCS professional community. We build on the insights of Heath (1998) and Krauss (2011; 2009) to argue that professional conferences are a relatively understudied site of science in practice. Conferences are an integral space for co-presence and chance encounters (Henke & Geiryn, 2008) where mobile, cross-disciplinary CCS professionals converge to present, discuss, and develop new scientific ideas, as well as for negotiating norms and boundaries. According to Krauss (2011), conducting research at conferences follows "migratory scientists" where they coalesce (p. 155). For a topic as interdisciplinary as CCS, conferences serve as a crucial localized site of knowledge and, as Heath (1998) argues, act as performance settings.

We use rhetorical field methods (Middleton, Senda-Cook, & Endres, 2011) to conduct participant observation of science rhetoric in action at CCS professional meetings. Our participant observation yielded fieldnotes (e.g., Emerson, Fretz, & Shaw, 2011), transcribed plenary speeches, and conference materials. Our fieldnote data was supplemented by analysis of relevant documents, including journal articles and DOE documents that use the term CCUS. We employ rhetorical criticism to analyze the data described above. The theoretical framework described above emerged inductively from an analysis of our data.

The U in CCUS

Before we discuss the responses to the framing shift, it is important to further explain how CCUS relates to CCS. As stated above, the U refers to utilization of captured CO_2. Utilization includes different ways of using CO_2, from commercial carbonated beverages to pushing oil out of geologic formations. According to Damiani et al. (2012), "the captured CO_2 may also be viewed as an inexpensive raw material with multiple potential beneficial uses" (p. 2). Prior to the conference, utilization was already part of the CCS conversation, including the utilization of captured CO_2 for EOR as well as enhanced coalbed methane (ECBM) extraction (U.S. Department of Energy, 2008). However, we argue that the 2012 conference's explicit shift to CCUS represents a shift towards fully embracing utilization as a step in the CCS process because of the strong business case for doing so. At the 2012 conference, CCUS was presented as almost synonymous with the capture of industrial CO_2 for EOR and its eventual sequestration. Indeed, as discussed below, one of the plenary session presenters used the term CC-EOR-S instead of CCUS.

In addition to the conflation of utilization with EOR, the framing shift as it occurred at the conference was heavily linked to making CCS more economically viable absent needed climate mitigation policies that would incentivize CCS. The commodification of CO_2 defines the "business case" for carbon capture technologies. Carbon's commercial usage legitimates its viability economically, which stands in contrast to the lack of economic viability of CCS (Tomski, Kuuskraa, & Moore, 2012). Framing utilization as strictly EOR brings the CO_2 producers and oil industries together in a viable economic system that benefits all interested parties.

Welcome remarks and plenary session speakers on the first day of the conference set the tone for and explained the framing shift. The Conference Chair, in his introduction of the first speaker of the conference, set the conference theme by foregrounding the economic and policy work of CCUS. He noted that making

a “business case” for CCUS and developing a clear image for its role in the future of energy was “maybe some of the most important work going on in the energy sector.” Subsequently the assistant secretary of fossil energy at the DOE explained the need for CCUS. US policy, he argued, has been slow to move on creating a regulatory climate conducive to CCS, and is therefore more amenable to something like EOR that utilizes carbon as a commodity while also increasing domestic oil extraction. In this regulatory context, the DOE representative rhetorically framed the business case for CCS as CCUS. Other plenary speakers built on this logical progression. For instance, a representative from the National Enhanced Oil Recovery Initiative (NEORI) declared that there are no enemies to CCUS, other than the two extremes of those who want to eliminate oil tomorrow and those who do not want to do anything with CO_2. Between these “extremes” and without a carbon tax or policy, this speaker presented CCUS as the obvious choice in the particular context. The DOE representative also voiced his confidence in CCUS as a win-win path: to recover oil, create jobs, generate tax dollars, and get the tangible benefit for sequestering. In this framework, the “business case” is easy: utilize CO_2 for EOR, “the unmined gold story in America,” and CCS (as CCUS) becomes viable. These speeches thus present a very particular framing shift at play during the 2012 conference. It was not simply adding utilization to CCS. Rather, the framing shift also emphasized a business case for CCUS with EOR, effectively renegotiating the boundaries of CCS to include enhanced oil recovery and breaking down a previous boundary between Carbon/CCS technologies and Oil/EOR technologies.

Competing Interests in Utilizing and Resisting Framing

While the framing shift is interesting, what is more interesting is examining how conference attendees accounted for and responded to this framing shift. We observed a variety of responses throughout the conference including confusion, proactive promotion, and resistance or acquiescence. Once we got over our initial confusion at the name change, we noticed that there were competing responses to the framing shift that corresponded in significant ways to particular sectors of the CCS professional community and their interest in CCS. In other words, through asking the question of who benefits from the framing shift, we reveal that the framing shift serves the interest of applied scientists—who are primarily concerned with applying science to management and problem-solving (Killingsworth & Palmer, 1992)—particularly those in industry and governmental sectors. While this may not be surprising that industry and government scientists and engineers benefit from making CCS viable through CC-EOR-S, we also found that CCS professionals from the academic sector—primarily basic scientists concerned with scientific knowledge absent social consequences (Killingsworth & Palmer, 1992)—took a remarkably passive stance toward the framing shift. As we will demonstrate, the indifference of academic scientists and engineers to the framing shift was both a form of resistance to framing and a form of acquiescence to a shift in focus that would have implications for their interests. In the first two sections, we turn to proactive efforts at managing the name change and the boundary demarcation these efforts suggest. Then we examine examples of resistance to the importance of framing and, in turn, acquiescence to the vested interests that see the constitutive dimensions of such rhetorical boundary work.

Governmental and Industry Interests

Government agency and Industry professionals were strongly represented in the conference plenary sessions. Many of these speakers and other conference participants from these sectors proactively adopted or reinforced the framing shift from CCS to the business case for CCUS. As we will explain in this section, proactive responses embraced the addition of utilization-as-EOR. However, it was not simply a matter of acquiescing to the name change. Recalling Turner’s point that all social dramas are political competitions over scare resources, the proactive responses to the framing change reveal that it is in the

interest of government agencies and industry to move to CCUS. On one hand, the inclusion of utilization-as-EOR helps to make the business case for CCS technology by making it economically viable while also sustaining the environmental benefits of CO_2 sequestration. On the other hand, utilization-as-EOR benefits both coal and oil interests. For the coal industry, it puts a price on captured CO_2. For the oil industry, it provides a means to extract oil remaining from primary and secondary extraction.

Presenters taking the proactive stance emphasized the conflation of utilization and EOR as key to making the business case, effectively framing CCUS as CCEORS. A marketing executive for the oil company Denbury Resources even substituted the "U" with "EOR" in his title: "CC-EOR-S." The framing gets pushed further to suggest that CCEORS is really just doing CCS. During the question and answer session for plenary presentations from the CEOs for Australian Global CCS and Petra Nova, a conference participant asked about the differences between CCS and CCUS. After the Global CCS CEO offered a technical answer, the participant followed up by asking what the U stands for. The presenter explained that the U means: "you are utilizing the carbon dioxide to actually push the oil out." At this point, the person who had introduced the two panelists, a representative of Schlumberger, interjected:

> And just to pile on that point, it's important that when you do see CCUS, and utilize the CO_2 for the enhanced oil recovery, you are effectively doing CCS. So to try to discuss it as if it's two different things, it really isn't. And that's the whole point of, a lot of theme of [sic] what we're going to be talking about for the next several days here. In terms of a shift, and in terms of people's understanding across the board, utilizing CO_2, the "U," allows you to do sequestration. So it really is one and the same.

The boundary work in this question and answer session—not merely defining "utilization" but collapsing utilization-as-EOR into the only viable form of sequestration—represents a significant shift in how a scientific community's technical efforts get reworked in practice.

Industry sector participants use the framing change to sell the argument that CCEORS benefits both the economy and the environment. The core boundary work here is an emphasis on the points that: a) CCEORS technology is favorable to the environment because it contributes to mitigating greenhouse gas pollution by storing CO_2 emissions in the subsurface; and b) CCEORS promotes the economy through its potential to generate billions of dollars through EOR while also creating employment all along the capture-utilization-sequestration cycle. An executive from Denbury Resources sells the CCUS/EOR story to his direct audience while also asking them to "Advertise-Tell the EOR Story." He notes key selling terms: the potential to "increase domestic energy supply," then "safely store GHG," followed by simply "jobs," and finally "environmentally friendly." This executive is building a vision of CO_2: a waste when released into the atmosphere but a safe and reliable mitigation strategy when used for domestic oil production. He is taking advantage of an opportunity to frame this discussion as a way to learn this story and share it in order to overcome the stumbling blocks of financing, public perception, and regulatory environments so that the audience can all get on board with *this* framing. The alignment brings EOR into the CCS framework, where the U is the economic driver that ignites the implementation of CCS' positive associations (such as mitigation). Traditionally, once sequestration is complete the economic cycle stops, he argues; but with the addition of utilization, CCEORS becomes economically viable, as the CO_2 is stored as well as utilized to produce profits via recovered oil.

Similar to the industry perspectives, the government sector of the CCS professional community also took a proactive stance toward the framing shift. In addition to the assistant secretary of fossil energy's comments mentioned above, the DOE Director of the Office of Coal and Power RD for the National Energy Technology Lab aligned the benefits of CCS, CCUS, and EOR in his plenary presentation, titled "Closing The CCUS/CCS Technology Gap: A Path Forward for NETL." He explained that the objective of CCS to mitigate greenhouse gas emissions does not change with the name change to CCUS. Rather, the

incorporation of utilization into CCS optimizes existing CCS projects and technologies, *"tailoring*" them to EOR. This stance follows the logic that if CCS is a viable and desirable technology that is crippled by its lack of economic feasibility, then it might as well be combined with EOR to make it more economically feasible with the added benefit of producing more domestic oil.

As these presenters acquiesce to the name change and accept the implications of the U/EOR inclusion in the implementation of CCS, they are participating in re-shaping the boundaries of scientific and technical action at the same locus. The cultural performance of proactive acquiescence then goes far beyond a simple acronym change. It refocuses the efforts of the CCS professional community as they concentrate on ensuring a "business case" and thereby future viability of CCUS. This acquiescence also calls forth a re-focusing of environmental efforts from CO_2 mitigation to enhanced recovery making it clear once again that a safer environment simply does not sell.While there were definite (and multiple) forms of proactive acquiescence to the shift toward CCUS, there were also distinguishable forms of resistance to the specific shift to a business case, particularly among non-United States industry representatives. The CEO of GASSNOVA, a Norwegian industry, rejected the business case in favor of emphasizing the underlying assumption that CCS is about climate mitigation and global warming and not about an economic or policy imperative. Much of that may have to do with his geographic location in Norway where climate skepticism is less of a factor than in the US. The President and CEO of the National Institute of Clean and Low Carbon Energy, China rejected the business case on similar grounds. He declared his challenge to be a strategic imperative in terms of reducing carbon intensity. He confirmed that business cases are important but without a strategic imperative nothing works. Again, given the non-US orientation of this presentation this may simply be a byproduct of the relative newness of the CCUS frame (given that this conference was the birthplace of the business case and strategic focus on CCUS). Or, maybe the frames developed in the US do not apply in all international settings. In that way, the business case framework centered on utilization exists within a contestable political context. US-centered governmental and industry presenters are trying to sell CCUS as something that can revive CCS, perceived to be dying because of a lack of good legislation and regulation and a deficient business case without utilization. These examples point out how the rhetorical appeal of the CCUS narrative is dependent upon its political context.

Each of these instances is a discursive effort to push forward different industry and national interests through the framing shift to CCUS, specifically CCEOR, and compose a framework to "tell the story." The conference space ignited a contested terrain in which vested interests composed a particular story around "CCUS" or redirected the story in different but similar terms, each in an effort to suggest that, when people understand the story, they will act accordingly. Amid this discursive battle, the academic scientists continued to focus on the basic science of CCS and CCUS.

Academic Scientists

Participants affiliated with the academic sector and basic science largely responded with subtle, initial friction to the CCUS/CCEORS frame but ultimately dismissed the change and its implications with indifference. That is, some conference participants acquiesced to the framing shift in a disinterested manner. Due to its scope, the conference space includes different constituents negotiating the conceptual boundaries amongst each other. Academic scientists congregated around the non-plenary, largely technical panels much more than the plenary sessions geared more towards the "business case" framing. Many academic scientists, therefore, were cognizant of a shift in terminology but cared more about the process of technical research, enacting a form of acquiescence through initial confusion yet subsequent disinterest. For example, in a conversation with an academic science participant en route to the conference, a member of our research team was asked if we were attending the "CCUS" conference. When that member enquired about the addition of the U in CCUS, the conference goer replied indifferently that, apparently, they just changed it.

Such disinterest carries with it implications for the outcomes of their scientific research. In an interpersonal conversation, another academic scientist discussed how the name change was surprising but ultimately inconsequential to her own research focus. She described her response as putting faith in smart people, others who would implement her work in productive ways, and that was more important than the new name. This scientist, who also projected a similar stance onto other academic scientists, was more process-oriented than outcome oriented. Therefore, her research was well equipped for changes in economic emphases: if geologic data would be used for one type of extraction over the other, the shifts were less important than her research leading toward generally productive directions. Therefore, a shift from CCS to CCUS was a bit befuddling but largely inconsequential to this academic researcher. Compartmentalizing her work, she deferred to government and industry participants' choice of framing, and admitted that neither she nor other academic scientists she knew even attended the plenary sessions.

These reactions might be seen as subtle resistance to the framing shift, but we argue that, in dismissing the importance of framing and not taking an active argument against this shift, these constituents are engaging in a form of acquiescence. That is, vested industry and government interests are taking a proactive stance, taking seriously the importance of framing, and the reactive responses of those more interested in the technical side are not doing so. The insistence on scientific objectivity and neutral positions, and hence enabling others to do what they want with the discursive terrain, is instead a form of resistance to the idea of framing in general. As CCUS, and all that the name change enables and constrains, gets adopted, vested interests in the technical development of mitigation strategies are being coopted under the commodification of CO_2.

Conclusion

We have identified and examined a framing shift from CCS to CCUS that occurred at a major interdisciplinary and cross-sector CCS professional conference that represented the broad range of CCS scientists and engineers across government, industry, and academic sectors. As a social drama, the framing shift represents a breach in the norms and accepted boundaries within the community. Through analysis of the responses to the breach, we have shown that the framing shift destabilized and created new boundaries within the CCS community, namely in expanding the boundary of CCS/CCUS professionals from mitigation (CCS) to mitigation and extraction (CCUS) and breaking down a boundary between the coal industry (CCS) and the oil industry (CCUS-as-EOR). In addition to the boundary negotiation that resulted from the framing shift, we also revealed that, as is often the case with a social drama, responses to the breach articulated with particular sectors of the CCS/CCUS professional community and their vested interests. While government and industry representatives primarily responded with a proactive adoption or bolstering of the CCUS-as-EOR frame because of the purported economic and environmental benefits, academic scientists mainly disregarded the framing shift and placed faith in other sectors to take care of the framing. This difference in response may also align with a perceived boundary between applied scientists (government and industry) and basic scientists (academic). Yet, by resisting framing, academic scientists may be passively acquiescing to the significant implications for policy and society that a shift to CCUS-as-EOR would bring not only to society but also to their own perceived insular community of basic science. In other words, the acquiescence to the framing shift effectively allows for the vested interests of government and industry to determine the direction of the CCS professional communities in ways that may not benefit other sectors. It is, therefore, not only important to recognize science as rhetorical, but also that when scientists dismiss rhetorical framing, vested interests that latch onto that rhetoricity may be able to do so more easily.

This paper has several important implications for scholarship. First, the theoretical framework that emerged from our analysis has the potential to serve as a powerful heuristic for examination of similar inter-scientific

framing shifts. Second, this paper also contributes to contemporary research in rhetoric of science (RoS), social dimensions of CCS, and environmental communication. RoS scholarship focuses on the rhetorical dynamics of science, scientists, and scientific controversy. While research in RoS tends to be focused either on academic science or on the relationship between scientists and the public (Ceccarelli, 2001; Wander, 1976) our project uniquely offers insight into the relationship between academic scientists, industry scientists, and government agency scientists when they come together to interact at a professional conference. Third, previous research on social cultural dimensions of CCS focused on public perceptions and knowledge of CCS technologies (Bradbury et al. 2009; Feldpausch-Parker et al., 2011; Johnsson, 2011; Moutenet et al., 2012), in addition to policy efforts for technology implementation (Pollak & Wilson, 2009). These studies have demonstrated limited knowledge of industry and government efforts toward the commercialization of CCS with varying degrees of acceptance, or in some cases, outright protest against operations. Similarly, policy creation and implementation have been slow to arise, stemming from issues over pore space ownership, liability and a slew of other issues economic and cultural in nature (Feldpausch-Parker et al., 2013). Expanding on this research, our study shifts the focus from public perceptions to professional perceptions of CCS, an often-overlooked area of study in the social and cultural dimensions of CCS. Finally, this paper contributes to environmental communication and scholarship, more generally through its focus on the importance of understanding the rhetoric of CCS professionals to controversies over climate mitigation strategies and energy policy (e.g., Moser & Dilling, 2007; Nerlich & Koteyko, 2009, 2010).

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Articulating Resistance to Nuclear Power: Local Tactics and Strategic Connections in a Nuclear Construction Financing Controversy

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This essay examines how environmental advocates, public interest advocates, and "citizen-consumers" have challenged corporate efforts to construct new nuclear power plants in the southeastern United States. The recent merger of Duke Energy and Progress Energy has produced the nation's largest electric utility, with a stronger capital base for costly nuclear construction, while the merged company seeks financing arrangements that would shift costs and risks from shareholders to electricity consumers. Opponents have challenged state-level regulatory approval of the merger and the financing plan, with mixed success. Linking insights provided by articulation theory with an argument for strategic intervention made by Cox (2010), we examine these efforts to articulate the economic and environmental risks of nuclear construction. We argue that these local engagements have broader consequences: in challenging one corporation's nuclear ambitions, opponents also challenge a global narrative of nuclear necessity and inevitability.

Key words: articulation; nuclear power; regulation and governance; rhetorical boundary work; risk communication

In July 2012 two of the largest electric utility companies in the United States, Duke Energy and Progress Energy, completed a controversial corporate merger after 18 months of planning and regulatory review. A focus of extended controversy before and since its completion (see Kinsella, Kelly, & Kittle Autry, 2013), the merger has created the single largest electricity provider in the nation. Combining the resources of the two antecedent companies, the new Duke Energy has more than seven million customers in six states and conducts international operations in Argentina, Brazil, Chile, Ecuador, El Salvador, Guatemala and Peru.

Nuclear power occupies a crucial role in the strategic vision of the newly-merged company, and one motive for the merger has been to provide a stronger capital base for new nuclear plant construction. The company currently operates ten reactors at six plants in North Carolina and South Carolina. An eleventh reactor, at the Crystal River site in Florida, was damaged during a failed maintenance operation and has been declared retired, with a 40-60 year timeline for decontamination and decommissioning (http://www.duke-energy.com/power-plants/nuclear.asp). Despite the technical, economic, and public relations challenges faced by its nuclear fleet, in 2007 and 2008 Duke and Progress Energy applied for licenses to build six new reactors at three locations in Florida, North Carolina, and South Carolina (http://www.nrc.gov/reactors/new-reactors/col.html). The company has promoted these projects as beneficial for reducing its reliance on coal-fired electricity production, and thereby its carbon emissions,

but opponents raise concerns regarding nuclear safety, nuclear waste generation, displacement of investments in sustainable energy sources, and other environmental and economic risks associated with nuclear power. In May 2013, Duke Energy suspended its license applications for two of these reactors, at its Shearon Harris site in North Carolina, citing reduced forecasts of future energy demand (http://www.duke-energy.com/news/releases/2013050203.asp).

Duke's nuclear strategy illustrates the role of high-risk "megaprojects" (Flyvbjerg, 2003) in the current energy and environmental context. At the national level, the case engages important questions of communication affecting the prospects for expanded nuclear power production in the U.S. In turn, the future of nuclear power in the U.S. has implications for nuclear power globally. The costs for a single reactor can approach or exceed $12 billion, construction projects have historically taken a decade or longer, and many nuclear projects have eventually been cancelled after years of effort and billions of dollars have been invested (Cooper, 2009, 2012; Schneider & Froggatt, 2013). Thus the success or failure of a single nuclear project can be a bellwether event, influencing decisions by utility companies, investors, regulators, and government policy makers nationally and globally.

As a case study of the communication processes involved, this project examines how citizens, environmental groups, and other public interest groups have acted to challenge the corporate merger and to oppose publicly subsidized financing for Duke Energy's proposed William States Lee III nuclear power plant, planned for construction in South Carolina. Drawing on the critical cultural studies perspective provided by articulation theory (e.g. Angus, 1992; Laclau & Mouffe, 2001) we broadly frame this controversy as an engagement between "corporate common sense" that presumes the necessity and inevitability of nuclear power, and an alternative common sense articulated by citizen-consumers and public interest organizations. The latter can be understood as a form of "public expertise" (Kinsella, 2004; Kinsella & Mullen, 2007) that incorporates values and knowledge not recognized by the corporate narrative. Angus (1992) conceptualizes articulation as involving "the politics of common sense" and the communicative co-constitution of meaning, power, social order, and social change:

> Social order relies on the circulation of meaning for its legitimation and social change requires an intervention in this circulation….The concept of articulation is concerned with the politics of common sense, in which discursive interventions modify the field of power. (pp. 535-537)

Linking this understanding of articulation with additional analytical concepts from environmental communication scholarship and beyond, we situate this case of local discursive intervention within a larger field of power constituted by national and global energy politics.

Resistance to Nuclear Power as Environmental Communication

This case has a number of implications for the field of environmental communication. First, the case demonstrates how individuals and communities affected by a strategic corporate agenda have engaged with a state-level regulatory process to address questions of environmental impact and social justice. The principal regulatory process examined here is that of the North Carolina Utilities Commission (NCUC), charged with overseeing the costs of electric power provided to residential and commercial customers throughout the state. With North Carolina as the home of Duke Energy's and Progress Energy's (and now the merged company's) corporate headquarters, the NCUC has played a key role in the merger approval process. Although the Lee nuclear plant would be built in the neighboring state of South Carolina, the NCUC shares authority for cost regulation related to the project because the facility would also serve North

Carolina customers. North Carolina's regulatory process has posed greater challenges for Duke Energy than has South Carolina's, largely due to more active opposition by citizen-consumers, and the company has stated that it would not continue the Lee project without early approval to charge North Carolina customers.

At another level, this case also illustrates how local actions by environmental and public interest groups can have broader strategic implications. Using the example of a Sierra Club campaign that seeks to block the construction of new coal-fired power plants, Cox (2010) argues that focused opposition to specific corporate projects can have substantial impacts both directly and indirectly. In the Sierra Club case, preventing the construction of a particular coal-fired plant directly eliminates a significant new source of carbon emissions, and more broadly, increases the overall challenges to a corporate commitment to this problematic form of energy production. Cox (2010) suggests that such efforts afford opportunities to identify "openings within networks of contingent relationships and the potential…to interrupt or leverage change within systems of power" (p.122).

Cox's view resonates with the concept of articulation developed by Angus (1992), which [Angus states] "we could provisionally define as the 'logic of contingent relations' extended to the entire social field" (p. 537). While Cox offers targeted strategic communication as an alternative to approaches emphasizing macro-level discourses, public perceptions, and message framing, an articulation perspective helps to integrate those approaches with Cox's call for focused strategic interventions. Understood as articulations, the interventions examined in our case have the dual potential to disrupt particular activities such as nuclear power plant construction projects, as well as larger discourses such as the corporate narrative of nuclear necessity and inevitability. An articulation perspective also affords a kind of analytical symmetry, recognizing both the corporate narrative and the counter-narratives of nuclear opponents as discursive accomplishments within a field of social and material relations.

The systems of power or social fields in Cox's case and ours overlap significantly. Both cases involve the proposed construction of new electric power plants, with corporate actors such as Duke Energy operating both coal and nuclear plants. State-level regulatory processes for both forms of electricity production are similar in terms of their general restriction to issues of consumer cost (Binz, Sedano, Furey, & Mullen, 2012; Kinsella et al., 2013). However, the two technologies differ in terms of their material impacts (e.g., carbon footprint versus nuclear footprint), their federal regulatory oversight regimes, their financing and operating contexts (nuclear plants are far more expensive to build, but less costly to operate due to lower fuel costs), and how they are understood and represented in public discourse. Accordingly, the rhetorical challenges faced by engaged stakeholders, and the implications of those challenges, exhibit similarities as well as differences.

The broader context for the case examined here is the "renaissance" proclaimed by the nuclear industry at both the U.S. and global levels. That purported nuclear revival, in turn, is part of the still-broader social field of global energy politics. Material and discursive elements across that field articulate to constitute what we characterize, following Angus (1992), as a form of "corporate common sense" in which expanded nuclear power production appears necessary and inevitable. Although the prospects for new nuclear construction in the U.S. remain highly uncertain, other nations are considering adopting nuclear power or expanding their existing nuclear capacities, both responding to and further reifying the corporate nuclear narrative. As the U.S. is the single largest national consumer of nuclear energy and a key source of nuclear technologies, U.S. opponents occupy a special position from which they might "interrupt or leverage change" within "networks of contingent relationships" (Cox, 2010, p. 122) related to energy choices and their environmental and social consequences.

Nuclear advocates argue that their technology provides a crucial tool for addressing problems of global climate change, energy costs, and energy security, while opponents typically emphasize risks to public

health, safety, and environmental protection. Arguably, however, the most crucial factor for the success of the nuclear industry's agenda is the cost of building new plants. Despite the safety and environmental risks made newly salient by the disaster at Japan's Fukushima Daiichi plant (e.g., Cooper, 2011; Kinsella, 2012), and the intractable issues surrounding nuclear waste storage and disposal (e.g., Endres, 2009a, 2009b; Peeples, Krannich, & Weiss, 2008), the single greatest impediment to nuclear expansion may well be the difficulty of financing each new project (Cooper, 2009, 2012).

In the case of the William States Lee project, Duke Energy is heavily reliant on early-stage financing through customer charges approved by the NCUC and the North Carolina legislature. A number of advocacy groups have campaigned against the approval of those charges and continue to challenge the Duke-Progress merger in light of subsequent developments. Those groups have mobilized stakeholders across the state and in other affected states to engage with the arcane and obscure processes of electric utility regulation. We characterize these stakeholders as "citizen-consumers," recognizing their dual identities as participants in the democratic process and as consumers of a commodity, electric power, produced under the monopolistic framework of state-level utility regulation. These stakeholders have been articulate in their efforts at democratic participation, and those efforts articulate with the broader strategies of nuclear opponents at the U.S. and international levels.

Theoretical Framework: Articulating Risk and Resistance

Latour (2004) argues that sociotechnical systems often pose as "risk-free objects" with "clear boundaries," obscuring the "risky attachments" that make them "matters of concern" for democratic engagement (pp. 22-23). The citizen-consumers opposing Duke Energy's Lee project have sought to articulate—in the sense of discursively making clear—a complex network of risky attachments among economics, environment, energy production and consumption, and environmental and social justice. In doing so, they have also articulated—in the sense of connecting together—elements of their resistance through multiple forms of communicative action: enrolling and mobilizing individuals, groups, and organizations; organizing collective efforts; and crafting rhetorical strategies and tactics. These articulations, in turn, enact a form of democratic engagement within a "reticulate public sphere" (Hauser, 1998) comprising multiple actors linked in and through a network of communication. Issues of risk, regulation, and rhetorical action are at play in this democratic space.

Articulating Economic and Environmental Risks

Linking technical (i.e., nuclear safety and environmental impact) and economic (i.e., cost and consumer demand) aspects of risk, our analysis demonstrates the interconnectedness of multiple forms of risk in large sociotechnical projects (Flyvbjerg, 2003). Luhmann (1989) argues that due to "insufficient resonance" between scientific, economic, and political communication systems, "system rationality increasingly loses its claim to be world rationality" (p.138). Kinsella (2010, 2012) has applied this principle to examine the "limits of representation" in prevailing approaches to risk analysis and risk communication in nuclear energy contexts. In the U.S. regulatory regime for nuclear energy, corporate actors have constructed rhetorical boundaries between cost and safety risks, reifying the separation of "technical" and "economic" approaches identified by Renn (1992), the division of "scientific" and "economic" social subsystems theorized by Luhmann (1989, 1990, 1993), and the illusory "clear boundaries" noted by Latour (2004). State-level regulators have the primary authority for economic matters in "regulated states" such as North Carolina, while in other "non-regulated states" the economics of nuclear energy are largely left to the free market. Meanwhile, issues of public health, safety, and environmental protection are addressed primarily by the U.S. Nuclear Regulatory Commission. Our previous study (Kinsella et al., 2013) examined how

these boundaries have been produced and challenged in the context of the Duke Energy merger and Lee construction project, exploring the implications of that rhetorical boundary work. Our focus in that analysis was on two rhetorically constructed boundaries: one boundary separating "public," "lay," or "vernacular" discourses from "expert" discourses, and another boundary separating issues of environmental, health, and safety risk from issues of economic risk. The analysis below considers additional aspects of the controversies surrounding the corporate merger and the Lee project, placing those controversies in a larger analytical context of rhetorical articulation.

Rhetorical Action as Democratic Articulation

Our analysis is informed by concepts drawn from interrelated literatures across a number of research areas:

- Articulation theory (e.g. Angus, 1992; DeLuca, 1999; Laclau & Mouffe, 2001; Mouffe, 1993; Slack, 1996)
- Environmental public participation in civic settings (e.g., Cox, 2010; Depoe, Delicath, & Elsenbeer, 2004; Endres, 2009a, 2009b; Hamilton, 2003; Katz & Miller, 1996; Peeples, 2011; Peeples, Krannich, & Weiss, 2008; Peterson, 1997; Richardson, Sherman, & Gismondi, 1993; Taylor, Kinsella, Depoe, & Metzler, 2007)
- Environmental and social justice (e.g., Bullard, 1994; Pezzullo, 2001)
- Argumentation, public discourse, and narrative theory (e.g., Fisher, 1984; Goodnight, 1982)
- Rhetorical boundary work (e.g., Fisher,1990; Gieryn, 1983, 1995; Holmquest, 1990; Kinsella, 2001; Taylor, 1991, 1994)
- Vernacular rhetorics (e.g., Hauser, 1998, 1999; Hauser & Benoit-Barne, 2002; Ono & Sloop, 1995; Stevens, 2006)
- Counterpublics theory (e.g., Asen, 2000; Asen & Brouwer, 2001)
- Actor-network theory (e.g., Callon, 1991; Callon & Law, 1982)

Linking these perspectives, we argue that opponents of Duke Energy's Lee project articulated their rhetorical strategies from distinctive subject positions within a network of public interest, social justice, and environmental organizations. In doing so, they participated in the production of a "reticulate public sphere" through "actual discursive practices" in vernacular communication settings (Hauser, 1998, p. 85). A range of allies provided resources for that rhetorical action including technical, legal, and policy analysis; channels for information distribution and participant mobilization; and templates for identification on the part of participants.

Research Methods and Research Setting

The situational focus for our study comprises five public hearings conducted by the North Carolina Utilities Commission, and one conducted by a committee of the North Carolina legislative assembly, spanning the time period March 2011 through April 2013. The first NCUC hearing concerned a proposed financing arrangement for the Lee nuclear construction project, the second concerned the proposed merger, the third involved a last-minute challenge to the merger, and the fourth involved a new challenge to the merger after its approval by the Commission and the emergence of an internal corporate governance conflict described below. The fifth NCUC hearing concerned a proposal by Duke Energy to raise its rates for electricity purchased by residential and commercial customers. The legislative hearing addressed a

proposal to modify requirements regarding the use of renewable energy sources by electric utilities in North Carolina, which would rescind measures favored by environmental and public interest groups (The proposal was later defeated in a committee vote). Questions regarding the viability of Duke and Progress Energy's nuclear power plants played a central role throughout all of these hearings. At least one of the authors was present at each of the hearings, and we have examined more than 600 pages of associated transcripts and NCUC decision documents.

Our analysis is also informed by ethnographic engagement with one of the participating public interest groups since 2004, by attendance at events sponsored by a number of organizations, by a related study of how the corporate merger has been represented in online media venues (Kittle Autry & Kelly, 2012), and by a broader ongoing research program on public, organizational, and institutional communication regarding commercial nuclear energy and nuclear safety regulation in the U.S. and globally (Kinsella, 2010, 2011, 2012).

Analysis: Nuclear Articulations and Counter-articulations

Our analysis builds upon our previous study of public opposition to the Duke Energy-Progress Energy merger and to financing arrangements sought by Duke Energy in connection with the Lee nuclear project (Kinsella et al., 2013). We begin with an overview of the regulatory processes related to the two undertakings. Articulated by Duke Energy within a larger narrative of nuclear necessity and inevitability, these endeavors appear to be regarded by the nuclear industry, and perhaps by some regulatory officials, as common sense responses to problems of energy supply and economic development. Nevertheless, the merger and the Lee project present openings for intervention by opponents of nuclear energy, promoters of alternative energy sources, and social justice advocates concerned about the impacts of rising electricity costs. We identify some of those openings, and then examine some of the counter-articulations accomplished by citizen-consumers and public interest groups in their engagement with the regulatory process.

The Duke Energy-Progress Energy Merger

The merger was a highly-contested affair in which the companies sought approval from multiple state and federal regulatory bodies while opponents invoked a range of arguments regarding economics, social justice, environmental impact, public health and safety, and democratic governance. Concerns about the two companies' nuclear commitments played a central role throughout the 18 months leading up to the merger's approval. Progress Energy's nuclear plants had suffered a number of operational, maintenance, and safety challenges, the most dramatic being the failed maintenance project that led to the closure of the Crystal River station. Meanwhile, nuclear safety issues had acquired renewed salience in light of the disaster at the Fukushima Daiichi plant following the Tōhuku earthquake and tsunami in Japan. Under these conditions, safety risks and the risks of investing in such costly and vulnerable technologies were key themes in the merger debate. Nevertheless, the merger was ultimately approved despite the efforts of opponents. A close reading of the events and documents related to the approval process suggests that an overarching corporate discourse prevailed regarding the necessity and inevitability of nuclear power. "Master themes" of nuclear discourse as identified by Kinsella (2005), particularly potency, secrecy, and entelechy, are evident in these materials.

A bizarre corporate drama erupted immediately following the merger, adding to the concerns of opponents. The merger plan approved by the regulatory authorities had provided specific arrangements for the leadership of the merged company: the Chief Executive Officer (CEO) of Progress Energy would become the CEO of the merged company, which would operate under the name Duke Energy, while the

pre-merger CEO of Duke Energy would move to a less active position as Chairman. However, within hours of the merger's conclusion and the formal appointment of the new CEO, a telephone meeting of the merged company's board of directors was hastily arranged at the initiative of the former Duke Energy directors, who held a majority position on the new board. In a vote that aligned strictly with the former affiliations of the board members the new CEO was removed from his position, soon to be replaced by the restored former Duke CEO.

Subsequent inquiries by the regulatory authorities and the North Carolina Department of Justice indicate that questions regarding Progress Energy's nuclear operations were significant elements in this internal corporate struggle. Many details categorized as proprietary business information remain publicly undisclosed, evoking challenges by public interest groups regarding regulatory transparency. Nevertheless, media reports and testimony provided at open public hearings suggest that Duke Energy's directors had developed misgivings regarding investment and liability risks associated with acquiring Progress Energy's nuclear plants. Opponents sought to use this episode as a warrant for reversing the merger decision, but their hopes were not realized. Arguably, the merger's survival in the face of these additional challenges further demonstrates the power of the corporate nuclear narrative (Despite concerns raised regarding his management of Progress Energy's nuclear operations, the former Progress CEO is now serving as President and CEO of the Tennessee Valley Authority, another major nuclear plant operator. For background on the post-merger corporate governance episode and its relationship to Progress Energy's nuclear operations, see http://www.bloomberg.com/news/2012-07-19/ex-progress-ceo-to-speak-for-first-time-on-duke-energy.html and http://www2.journalnow.com/business/2012/jul/19/problems-spare-no-progress-energy-nuclear-plant-ar-2444880/).

The Lee Nuclear Power Plant Project and the AP-1000 Reactor

Named for a former Chief Executive Officer of Duke Energy, the William States Lee III plant would incorporate two Westinghouse AP-1000 pressurized water reactors, a "generation III+" design that the industry characterizes as safer than previous models due to the use of a gravity-based cooling system less reliant on electrical pumps

(http://www.ap1000.westinghousenuclear.com/ap1000_safety.html). Heralded as a flagship of the global renaissance claimed by the nuclear industry, the design was first submitted for review by the U.S. Nuclear Regulatory Commission (USNRC) in 2002. After the USNRC approved the design in 2005 and formalized its approval in 2006, independent analysts raised additional safety concerns that led to a series of design changes requiring new approvals. The Commission approved what is now considered the final design, the product of nineteen revisions, in 2011 (http://www.nrc.gov/reactors/new-reactors/design-cert/ap1000.html). This brief and partial history suggests the complexity of the U.S. regulatory process, in which interventions by independent researchers and public interest groups can highlight safety concerns and other issues, adding to the costs and construction timelines for projects that are already fragile.

Similar complexities attend the approval process for particular reactor sites and construction projects. Duke Energy submitted its "combined construction and operating license" (COL) application for the Lee plant in 2007, the fourth application under a streamlined process adopted by the USNRC as part of a larger federal effort to promote new nuclear construction. As of November 2013 the license has not yet been approved, and the USNRC has extended the schedule for the review process. Nevertheless, the company has begun work on aspects of the project not subject to USNRC regulation, such as engineering design and preparation of the construction site. Duke has been able to finance that work due to favorable legislation and regulatory decisions in the states of South Carolina and North Carolina, which allow utility companies to charge customers for costs associated with plants that would not become operational for

years, if ever. This controversial funding arrangement has been a cornerstone for a number of proposed and active nuclear construction projects in the southeastern U.S., in states where utility rates are decided by regulatory commissions rather than by market competition (cf. Regulatory Assistance Project, 2011). These so-called "regulated states" have been the focal point for the attempted revival of nuclear power in the U.S.

The opponents of Duke Energy's nuclear ambitions have been more successful in their efforts related to the Lee plant than in their efforts regarding the corporate merger. Although USNRC license approval remains possible and "pre-construction" work is underway, the regulatory authorities have significantly limited Duke Energy's ability to charge customers for that work (see Kinsella et al., 2013). Continuing uncertainties regarding USNRC approval, combined with continuing financing challenges, make the future of the Lee plant unclear.

As a favored technology among nations considering adopting or expanding nuclear power production, the AP-1000 reactor design provides a particular point of leverage for opponents seeking to disrupt the narrative of nuclear expansion and inevitability. Of 18 proposed new nuclear construction projects under license review by the USNRC, involving 28 proposed new reactors, seven projects involve a total of fourteen AP-1000 reactors. Three of the AP-1000 projects were proposed by Duke and Progress Energy. As of May 2013, one of the AP-1000 projects and five of the non-AP-1000 projects are in a state of suspended review at the request of the applicant companies (http://www.nrc.gov/reactors/new-reactors/col/new-reactor-map.html). Accordingly, the success or failure of any of the AP-1000 projects would be a significant strategic moment for Duke Energy, for the reactor's manufacturer, Westinghouse Electric Company, and for the U.S. nuclear industry.

The future of the AP-1000 design is significant at a global level, as well. Four AP-1000 reactors are now under construction at two sites in China, using the 2005 design standard rather than the updated design that addresses safety concerns identified later. China provides the most dramatic test case for nuclear energy: a nation with a problematic record of public health and safety regulation, limited government transparency, significant seismic activity, rapidly expanding energy demands, and an ambitious national vision to build as many as 100 new reactors by 2030 (cf. World Nuclear Association, 2013). Thus challenges to the AP-1000 design on the basis of safety, cost, or a combination of both have broad implications. Such a challenge is being articulated by opponents of the Lee construction project in the U.S.

Counter-articulations by Nuclear Opponents

We now identify a number of rhetorical, informational, and organizational strategies enacted by opponents of the merger and the Lee nuclear construction project. Through these strategies, citizen-consumers and public interest organizations articulated a variety of "elements" in the sense developed by Laclau & Mouffe (2001). We wish to stress, however, that these elements do not operate independently; rather, they are articulated together in a larger network of communicative activity.

Articulating organizations. A key participant in the hearings we observed has been the North Carolina Waste Awareness and Reduction Network (NC WARN). Founded in the late 1980s, the group's initial focus was a hazardous waste incinerator project considered for siting in a series of North Carolina counties. Subsequently, the group has participated in challenges to a proposed low-level nuclear waste storage site (cf. Katz & Miller, 1996), another hazardous waste incinerator, a landfill intended for disposal of polychlorinated biphenyl (PCB) materials (Pezzullo, 2001), an interim storage site for high-level nuclear waste, and other environmentally risky projects. The organization's activities are not purely oppositional, however; they also include substantial efforts to promote the development and use of renewable energy sources including sponsoring economic analyses, conducting public outreach campaigns, and mobilizing public support.

NC WARN has served as an ethnographic focus for our study, but is one of many groups involved in challenging Duke Energy's nuclear commitments. Non-profit organizations active in these challenges include:

- AARP North Carolina (formerly American Association of Retired Persons)
- Blue Ridge Environmental Defense League
- Clean Water for North Carolina
- Consumers Against Rate Hikes
- Environmental Defense Fund
- Interfaith Power and Light, a project organized by the North Carolina Council of Churches to address social justice issues related to energy costs
- North Carolina Conservation Network
- North Carolina Justice Center
- North Carolina Waste Awareness and Reduction Network (NC WARN)
- Piedmont Progressive and Green Party
- Sierra Club
- South Carolina Costal Conservation League
- Southern Alliance for Clean Energy
- Western North Carolina Physicians for Social Responsibility

The missions, goals, interests, and membership demographics of these groups vary considerably, as do the relative strengths of the ties connecting them. Rather than a sustained coalition, the groups constitute an emergent, flexible, and evolving network. Their relationships illustrate an observation by Weick (1979) that collaborative actions are not necessarily products of shared goals; sometimes they are products of shared means that serve the diverse goals of participants. At some hearings, these organizations were accompanied by other entities including a number of North Carolina and South Carolina municipalities, small local electricity providers facing competition from the merged utility, industrial electricity customers, and electrical workers threatened by layoffs that would follow the merger. The state legislative hearing exhibited what was perhaps the most incongruous temporary alliance, when a large meat processing company often criticized by worker rights, environmental, and animal rights advocates testified against the proposal to reverse requirements for the use of renewable energy sources. The company had recently implemented a biomass technology for producing energy from hog waste, an investment that would be threatened by a relaxation of the renewable energy standard.

Articulating identities. At the hearings we observed, speakers providing testimony were expected to identify themselves at the beginning of their statements. These witnesses spoke from a wide range of identity positions including small business owner, minister, university student, physician, grandmother, and most simply, concerned citizen and electricity consumer. A state legislator spoke at an NCUC hearing in the role of a private citizen, but nevertheless articulated expert authority by referencing her membership on an energy-related committee. A minister spoke with moral authority on issues of social justice, highlighting the inequitable impacts of utility rate increases on low-income communities. A Physicians for Social Responsibility member utilized his *ethos* as a medical professional to comment on the health risks associated with nuclear energy. These speakers responded creatively to the hearings' mandate to focus on economic rather than environmental and health risks, highlighting "risky attachments" (Latour, 2004)

that were formally excluded from the scope of the hearings but nevertheless relevant to the issues at stake.

Historical articulations. Pezzullo (2001) identifies Warren County, North Carolina, as "the benchmark case for the environmental justice movement," arguing that "the inventional resources that communities possess" provide "ways in which citizen groups are able to interrupt and/or reframe discursive practices that sustain oppressive environmental conditions" (pp. 1-2). An environmental justice movement "origin story" positions the citizens of Warren County as among the first to mobilize to address the disproportionate impact of environmental hazards on low-income communities and communities of color. NC WARN strategically links its own history to that powerful narrative, citing its later collaboration with Warren County residents in a list of "past victories" (http://www.ncwarn.org/about-us/past-victories/).

In the nuclear arena, one of NC WARN's earliest engagements was with the low-level nuclear waste disposal siting controversy examined by Katz and Miller (1996). More recently the organization has opposed efforts to transport used reactor fuel from other locations to the Shearon Harris nuclear site operated by Progress Energy in Wake County, North Carolina (As in the case of the Lee project, the Shearon Harris plant is named for a former corporate executive. We note these naming choices as elements in an articulated, epideictic discourse of nuclear energy). NC WARN has worked persistently to identify and publicize safety issues at the Shearon Harris site, and to challenge proposals for two new reactors at that location (Duke has now suspended its license proposal for new nuclear construction at the Harris site). Through this history of engagement with environmental and nuclear controversies, the organization has built a foundation of public visibility, credibility, and connections with other organizations in and beyond North Carolina.

Geographic articulations. Three forms of geographic articulation are evident in the opposition to the corporate merger and nuclear financing arrangement. At a state level, citizen-consumers traveled from across North Carolina to provide statements at the NCUC hearings held at the state capital. As one example, a witness from western North Carolina recalled a controversy that had embroiled her community during the 1980s, when the region was under consideration as a potential geologic repository for high-level nuclear waste. Although that possibility was later removed from consideration, the cancellation of funding for the Yucca Mountain site in Nevada has renewed the concerns of some western North Carolina residents. As the topic of nuclear waste disposal is beyond the NCUC's regulatory scope, this comment may not have appeared pertinent to the Commissioners and the Duke Energy representatives. Nevertheless, the comment publicly articulates a connection between new nuclear construction, additional nuclear waste, and the potential for new environmental risks in North Carolina. The comment also mobilizes the emotional power of this issue for some North Carolina citizens.

At a regional geographic scale, opponents have articulated connections among the failed maintenance work that led to the closure of Progress Energy's Crystal River plant in Florida, the now-cancelled Duke Energy proposal to build two new reactors at its nearby Levy County site, and the role played by nuclear construction risks in the merger controversy and in financing controversies surrounding the Lee and Levy County projects. Journalistic reporting on growing opposition to the financing arrangements for the Levy County project provided informational and moral support for opponents, linking the company's nuclear activities in Florida, South Carolina, and North Carolina.

At a global level, the Fukushima Daiichi disaster dramatically reopened questions of nuclear safety just days before the first of the hearings we observed in connection with this study. Oppositional expert and public witnesses invoked the risks made immediately evident, as well as future uncertainties posed by the failures in Japan. New efforts to address safety risks are likely to add to the costs of new nuclear construction, introducing new economic risks. Opponents of Duke's proposed nuclear expansion have continued to articulate these connections throughout their interventions following the events at Fukushima.

Thematic articulations. Multiple articulated themes are evident in the discourse opposing the merger and nuclear construction financing arrangement. In linking nuclear safety risks to economic risks by highlighting the potential implications of the Fukushima disaster, opponents sought to overcome boundaries delineated by the NCUC's formal regulatory mandate. Other arguments remained within the economic domain, but inserted ethical questions of social justice and corporate responsibility into the otherwise technical discussions. Opponents argued that the merger would exacerbate the monopolistic framework characterizing "regulated" states such as North and South Carolina, leading to electricity rate increases that would disproportionately affect low-income citizens including elderly people and people of color. Critics emphasized that under the prevailing regulatory framework, which links electricity rates to capital expenditures, corporations profit from construction projects regardless of whether the projects are ultimately completed. Environmental advocates argued that Duke Energy's strategy would not only add new nuclear hazards, but would also displace investments in renewable energy sources. These themes were linked further in efforts to require the company to provide funding for home weatherization and appliance upgrades in low income communities as a condition for approving the merger. Such provisions would not only benefit low-income consumers, but would also reduce electricity demand. Together with other conservation and efficiency measures, steps such as this one could potentially eliminate the need for new power plants claimed by Duke Energy.

Conclusion: Common Sense(s) and the Common Good

We have characterized the interventions by opponents of Duke Energy's nuclear expansion strategy as an engagement between "corporate common sense" and an alternative common sense, or public expertise, articulated by citizen-consumers and public interest organizations. In the corporate narrative, nuclear energy provides a necessary and inevitable response to the needs of an expanding, energy-intensive society. The alternative narrative challenges the premise of ever-expanding energy demand as well as the corporate strategy proposed for addressing that demand, opening opportunities for intervention with local and global significance. Although the regulatory framework that provides the context for this engagement has largely aligned with the corporate narrative, its foundational purpose is to ensure the common good. Consistent with that purpose, the alternative common sense articulated by those who challenge the corporate narrative is a resource for new articulations of energy, environment, economics, and democratic governance.

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Proof Of Power: An Exploration Of Clashing Evidence-Based Claims In The A.N.W.R. Oil Drilling Debate

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Building on the aim of critical scholarship to address inequality by problematizing the structures and practices that reproduce power, this paper examines the positions of the oil industry and mainstream environmentalists in the U.S. policy debate over whether to permit petroleum development in the Arctic National Wildlife Refuge (ANWR). I am particularly interested in how the groups' respective 'for' and 'against' campaigns are both overwhelmingly framed in materialist and scientific, evidence-based terms. As a result, the range of legitimate but competing perspectives, interests, and values that lie at the heart of this difficult issue have been obscured by righteous claims to truth and antagonistic accusations of ignorance. Through Critical Discourse Analysis (CDA), this paper unpacks the reductionist, technicizing, and polarizing rhetoric of dominant lobby groups on either side of the conflict, and uncovers significant moral, in addition to material, concerns underlying the debate.

Keywords: oil, environmentalism, evidence, power, CDA

The ANWR Drilling Debate

On the North Slope of the U.S. state of Alaska lies a plot of federally protected land designated as the Arctic National Wildlife Refuge. ANWR, as it is known, is valued for its striking vistas and unique biodiversity as well as for its substantial petroleum reserves. Consequently, a range of stakeholder groups have long been engaged in heated debate over ANWR's management, and in particular over whether or not the refuge should be opened to oil development.

The ANWR drilling debate fits into an even longer-standing, multinational conversation about energy-sourcing, including whether, where, and how to recover fossil fuels. As is often the case in policymaking, however, there are winners and losers. The greatest winners are those with the resources and influence to effect legislation and public practices that serve their own interests. The greatest losers are those whose voices are never heard.

Building on the aim of critical scholarship to address inequality by problematizing the structures and practices that reproduce power, this paper examines the prominent and opposed positions of the U.S. oil industry and mainstream environmentalism in the ANWR debate. Specifically, through Critical Discourse Analysis (CDA), I explore their shared evidence-based framing of the issue, which serves to reify scientific expertise, marginalize competing values, and ultimately prolong the conflict. I focus on two key points of contention between pro- and anti-drilling discourses, which pertain to the estimated benefits of ANWR development and the anticipated costs to the local environment, to reveal significant social justice implications of this evidence-based frame.

Winners and Losers

It would be difficult to dispute that the single greatest winner in the ongoing global drilling debate thus far is the oil industry. Top oil companies bring in annual profits on the order of hundreds of billions of dollars, and receive approximately another billion in federal subsidies (Environmental Law Institute, 2009). The industry has also positioned itself as a consultant to high-level government officials on major legislative decisions, most notably to reject the Kyoto Protocol (USDOS, 2001). In another case, the American Petroleum Institute drafted an executive order (EOP, 2001), which was then signed into law, requiring that regulatory action proposed by any federal agency must be accompanied by a detailed statement of its potential adverse effects on energy supply, distribution, or use (NRDC, 2002a). That order forced even public health and safety agencies to serve the interests of oil companies.

In 1992, several oil giants, including ExxonMobil, ChevronTexaco, BP, and ConocoPhillips, teamed up with the State of Alaska to form a lobby group under the name Arctic Power. From the outset, the group's efforts were aimed at garnering support by citizens and elected officials for opening ANWR's Coastal Plain to oil development. Since then, a handful of corporations, including all of the above with the exception of ExxonMobil, have severed their financial ties to Arctic Power and distanced themselves from the contentious political debate over ANWR, which they and their stakeholders increasingly recognize as a "public relations liability" (Banerjee, 2002; Gerth, 2005). Nevertheless, support for ANWR development has not wavered among these corporations, and many still hold leases to lands within the Refuge. Given that the industry has endorsed Arctic Power's mission and allowed the lobby group to engage in the ANWR debate on its behalf, the discourse generated by Arctic Power serves here to represent the interests and collective position of the oil industry as a whole on this particular issue.

The greatest pushback against the financial and political might of the oil industry, and of Arctic Power specifically in the ANWR debate, comes from environmentalists, whose own influence and "wins" to date are therefore also of interest here. Direct comparison between industry and environmentalists is made difficult by the fact that the former is driven by a profit-imperative, whereas the latter are driven by social-imperatives. Nevertheless, environmental organizations, like industry, are active participants in the U.S. political system. They lobby Congress, coordinate petition-signing and letter-writing campaigns, and urge action from various high-level officials. Prominent representatives from environmental groups submit testimony to the U.S. Congress on relevant topics, and are sometimes called upon to contribute to government-sponsored scientific investigations. Many significant legislative actions are attributed at least in part to the organizing efforts of environmental groups, including the establishment of protected wilderness areas, implementation of industry regulations, and blocking of proposed oil development, including within ANWR, on numerous occasions.

This paper focuses on one prominent and representative environmental organization in particular, the Natural Resources Defense Council (NRDC), which has been at the forefront of the campaign to maintain the protected and development-free status of ANWR for over thirty years. NRDC's effective involvement in the drilling debate has been heralded by numerous other environmental groups, as well as noted in scholarly journals and popular media outlets. As such, NRDC is also frequently the target of attacks by pro-drilling groups who seek to derail the anti-drilling campaign or discredit its affiliates.

The Evidence-Based Frame

The discourses of both Arctic Power and NRDC, despite representing opposed positions in the ANWR debate, are overwhelmingly framed in the same scientific, materialist, and universal terms. Although the groups acknowledge that they don't share the same values, each avows its own ability to exercise

objectivity and professes to defer to the facts. This evidence-based framing of the debate may seem justified at first glance, and perhaps even conducive to productive deliberation or an indication of fair play by both sides. Indeed, the case against hinging political decision-making on emotional testimony has been thoroughly laid out, including by the lobby groups themselves, and I don't dispute it. However, as I argue here, a debate that restricts discussion to the facts is equally narrow and ultimately ill-fated.

The evidence-based framing of the drilling debate, which divorces facts from values, is problematic in primarily two ways. First, it extracts moments of scientific knowledge from the socially-embedded and historically-situated contexts in which they were generated and legitimized, and in which they can therefore be fully understood (Kuhn, 2012). Second, it obscures the competing priorities and perspectives at the heart of the ANWR conflict, namely those of stakeholders who operate outside of the sanctioned processes in which facts are produced. As such, an evidence-based frame removes any mechanism by which key differences in investments, priorities, values, understandings, and ideologies can be acknowledged, much less negotiated or reconciled.

Sociologists of science and knowledge have conducted numerous investigations into the upstream end of technical expertise, for example considering why it is that certain topics are heavily studied while others remain relatively unexplored, as well as how, and by whom, the resources needed to carry out research get allocated (Barnes & Edge, 1982). They have also looked at what incentives drive the efforts of experts themselves, at both the personal and institutional levels (Hagstrom, 1982). Other sociologists have focused their efforts further downstream, examining the myriad of ways in which scientific knowledge is received by lay individuals and communities or incorporated into public policy, and developing an appreciation for why it is sometimes embraced and other times rejected (Wynne, 1992; Yearley, 2005).

My interest lies in the mid-stream. As lobby groups first and foremost, neither Arctic Power nor NRDC is responsible for conducting the specialized research that is pertinent to the ANWR debate, for instance seismic data collection, economic analysis, or environmental impact assessment. Nor does either group directly engage in the procedural uptake or implementation of scientific knowledge. Rather, these two groups maintain close ties with credentialed experts, sometimes by assigning them to official posts within the organization or otherwise providing remuneration for consultation and support services, as well as with members of the lay public, through their multi- and mass-media publicity efforts. As a result of these connections, both Arctic Power and NRDC are enabled to sort through, sift out, and select excerpts of technical information to then interpret as they see fit for their respective, vast audiences.

The following paragraphs provide a Critical Discourse Analysis (CDA) (Fairclough & Wodak, 2012; Wodak & Meyer, 2009) of the official websites of Arctic Power and NRDC, which represent the groups' most current, comprehensive, and accessible communication outlets. Accordingly, several theoretical and operational principles of CDA guide my research, for example that the world is ascribed meaning, and thus realized, through language and communicative interaction, and that reflexive understanding requires the continual unmasking of social inequalities and injustices perpetuated by the status quo. CDA also underscores the importance of not only posing new questions within accepted structures of investigation and critique, but stepping outside of them in order that the structures themselves may serve as objects of analysis and (re)evaluation.

My analysis focuses on two key points of contention between the scientific discourses of Arctic Power and NRDC, which pertain to the estimated potential benefits of ANWR development and the anticipated costs to the local environment. As such, I begin with a discussion of the divergent constructions of oil offered by Arctic Power and NRDC as the contrasting lenses through which each group examines the issue of proposed development. I then explore the evidence on which each group bases its assessment of the specific benefits of ANWR's oil. In the succeeding section, I similarly address the groups' incongruent

constructions of the arctic environment, and unpack the evidence relied upon by each to estimate how and to what extent that environment would be impacted by drilling.

Constructing Oil

Arctic Power constructs oil as an invaluable resource and basic requirement of modern civilization:

> [Oil] is a perfectly rational requirement of not only our own, but every other nation's need for energy to power its industry, its homes, and its transportation needs. (Arctic Power, 2007)
>
> Eighty-eight percent of the energy for America's transportation, industry, government and residential needs comes from oil, gas and coal. No combination of conservation, technology or alternatives can come close to replacing these fossil fuels. It will take years for research, testing, permitting, construction, and distribution systems for replacement alternatives to be realized. When alternative energy sources become practical and economical, Americans will use them. Until then, fossil fuels must be relied upon. (Arctic Power, n.d.d)

The oil lobby group thus portrays oil, along with its counterpart fossil fuels, as an irreplaceable resource for which no satisfactory surrogates exist.

NRDC concedes that the U.S. is heavily reliant on oil to meet its energy needs. However, in contrast to Arctic Power, the environmental lobby group describes this relationship as a perilous dependence. Its own construction of oil as a dangerous drug rather than a basic necessity is reinforced through repeated use of the word "addiction" (NRDC, 2002b) and other commonly associated language, for example "America's oil habit" and "the road to recovery" (NRDC, 2011b).

Arctic Power's response to the addiction narrative has been to further normalize U.S. dependence on oil by asserting that we "may as well say we're addicted to food or water" (Arctic Power, 2007). As such, the very reliance of the United States on oil as a primary energy source is pointed to by Arctic Power as evidence of the vital importance and value of the resource, and at the same time by NRDC as an indication of weakness, susceptibility, and liability.

Despite their disparate assessments of U.S. oil dependence, Arctic Power and NRDC express many of the same concerns about current U.S. energy policy. Both groups, for example, consider the proportion of oil that is imported from unstable regimes in the Middle East to be a threat to national security, and invoke the terrorist attacks of September 11, 2001 to illustrate this connection (Coon, 2005; NRDC, 2002b). They both also describe the high price of oil as a strain on the national economy, as well as on the budgets of average American families needing to heat their homes and fill their gas tanks. In other words, Arctic Power and NRDC have identified many of the same troubling symptoms of current U.S. energy policy. Their contrasting valuations of oil, however, have led them to starkly different diagnoses of the problem. Herein lies the crux of the ANWR drilling debate.

Arctic Power attributes the political and economic instability mentioned above to the abundance of oil that is currently imported from foreign sources for domestic consumption. The oil lobby group therefore depicts ANWR's domestic source of oil as an integral part of the required solution. NRDC, on the other hand, portrays America's heavy reliance on oil itself, regardless of its source, as the problem. These incompatible constructions of ANWR oil, as part of the required solution versus as part of the problem, reflect as well as influence each of Arctic Power's and NRDC's representations of the available relevant material evidence.

The Benefits

Forecasts of the various benefits of drilling in ANWR are all initially based on the region's estimated volume of oil reserves, on which point there is a great deal of uncertainty. Arctic Power (n.d.c) describes that ANWR "could produce up to 17 billion barrels of oil." This figure, taken from the most recent petroleum assessment conducted by the U.S. Geological Survey (USGS, 2001), represents the volume of petroleum estimated, at a 5-percent certainty level, to be technically recoverable. NRDC (2001), however, reports from the same study that, "the amount of economically recoverable oil -- the fraction that can be extracted, transported and sold at a profit [...] -- is 3.2 billion barrels at $20 a barrel," which reflects the USGS estimate at a certainty level of 95-percent.

Given the expanse for interpretation involved in simply estimating the reserves of oil in ANWR, it follows that assessment of the direct and indirect benefits of recovering that oil is even more laborious, contingent, and layered. In particular, the science of predicting state and federal revenues that might be generated, as well as jobs that might be created, each come with an additional set of interdependent variables and dynamic unknowns. Among these are the timing and pace of petroleum production, size distributions of individual oil fields, operation costs, the response of the Organization of Petroleum Exporting Countries (OPEC) to the introduction of ANWR oil onto the global market, and a host of other conditions.

The thread of the drilling debate that pertains to money and jobs is particularly ripe for Critical Discourse Analysis and the unmasking of systemic social inequality because it refers to, and is also targeted at, blue collar, low-income or unemployed, and often minority families who, for example, are hit hardest by economic downturns, who struggle most to pay their monthly energy bills, and who would also most likely seek entry- or mid-level employment in the industry sector.

Arctic Power, which projects that a substantial amount of oil is contained within ANWR, estimates the associated potential benefits of drilling to be equally great, one of which is significantly lowered gas prices. The lobby group reasons that "adding oil to the market, from any source, will have an effect on price. This WILL result in decreased prices at the pump" (Arctic Power, n.d.b). Elsewhere it elaborates that, "disqualified from complaining [about the cost of gas] are all voters who sent to Washington senators and representatives who have voted to keep ANWR's oil in the ground" (Will, 2008). As with other aspects of the debate, Arctic Power's message is that the facts are straightforward and unequivocal: domestic oil development would ease the nation's economic burdens.

NRDC, like Arctic Power, laments the effects of high gas prices on financially struggling Americans, but contends that, "with only two percent of the world's reserves, the U.S. contribution to the global market could never be high enough to significantly alter world oil prices" (NRDC, 2011a). An NRDC representative reiterates that, "America does not control the 80-plus-million-barrel-daily oil market, and we never will" (Lovaas, 2012). Rather than to increase the global supply of oil, NRDC's president and CEO proposes that our best tool for lowering oil prices is to drive down global demand, of which the U.S. is responsible for 25% (Beinecke, 2008). This suggestion is rejected by the lobby group of the oil industry, whose profits are directly proportional to oil consumption.

Instead, a competing appeal by Arctic Power, which has increasingly become the keystone of the wider pro-drilling campaign, is that ANWR development would create a significant number of urgently needed jobs. Arctic Power reports, as in the excerpt below, that 735,000 jobs would be created across the United States, were ANWR to be opened to development.

> The U.S. economy benefits from domestic production when new construction, service, manufacturing, and engineering jobs are created. These jobs occur in all 50 states. A national impact study by Wharton Econometrics estimates total employment at full production in ANWR to be 735,000 jobs. (Arctic Power, n.d.d)

As Arctic Power indicates, the 735,000 figure was generated in a 1990 study by the WEFA Group, made up of a conglomerate of corporations tasked with financial analysis, econometric modeling, and economic forecasting. The study, entitled “The Economic Impact of ANWR Development” (WEFA Group, 1990), was commissioned by the American Petroleum Institute (API), which is a trade association responsible for advocacy and negotiation on behalf of the oil industry.

When API commissioned the WEFA study, it also prescribed certain features of its investigation. For example, it provided WEFA with particular development scenarios to consider, the attributes of which captured a range of “plausible variations” (WEPA Group, 1990, p. 5). The study was therefore designed to address specific hypothetical questions posed by API, which is wholly supportive of and heavily invested in ANWR’s development, rather than to predict the most probable economic outcome. Other central features of the study’s economic outlook, as described by WEFA, include a continuing decline in U.S. oil production, an increasing dependence on foreign oil imports, and steadily increasing oil prices.

The WEFA study has been extremely successful in bolstering the argument that drilling in ANWR would create jobs. Its results have been relayed by numerous industry and pro-oil groups in addition to Arctic Power, but have also stirred up a furious reaction from drilling opponents. NRDC (2001), in particular, describes the WEFA study as “implausible”, “misleading”, and containing “major flaws”. In the excerpt below, which was last revised in November of 2001 but remains available on the NRDC website, the environmental lobby group chastises the WEFA Group for using “optimistic” projections of ANWR reserves in its analysis, and for basing its own economic projections on an inflated market price per barrel of oil.

> WEFA […] overstated the amount of economically recoverable oil in the refuge at 9.2 billion barrels, which it conceded was a "high case" scenario, […and] based its economic projections on a price of nearly $45 per barrel. The price of a barrel of oil, however, has been under $20 for seven of the last 10 years, and is expected to be well below $30 over the next decade. In fact, earlier this year, Alaska's Department of Revenue forecast a steady price drop to less than $13 per barrel in 2009 to 2010 […]. (NRDC, 2001)

A point unacknowledged in the above critique by NRDC is that the most recent USGS petroleum assessment, published in 1998, has actually increased projections of ANWR reserves from those available at the time of the WEFA study, which would indicate that the “high case” scenario it analyzed is relatively less optimistic now than it originally was. NRDC also neglects to update its reporting on the price per barrel of oil, which instead of dropping has risen to approximately $100 in recent years (EIA, 2013).

NRDC’s deepest criticism of the WEFA study pertains to its assumption that ANWR oil would increase the total global oil supply, and therefore significantly lower oil prices. It explains,

> [WEFA] assumed that oil from the refuge would lower world oil prices by as much as $3.60 a barrel, which would have a ripple effect on the U.S. economy, producing jobs in the petroleum, trucking, steel, shipping and manufacturing industries nationwide. (NRDC, 2001)

NRDC’s assumption, in contrast, is that OPEC would respond to the introduction of ANWR oil onto the global market by decreasing its own output, thereby neutralizing any potential impact to the market price of oil. Indeed, by the complex nature of the global oil market, this alternative assumption involves its own ripple effect. Studies cited by NRDC, for example by the Congressional Research Service and the Economic Policy Institute (NRDC, 2001), enjoy their own features, employ their own methodologies, and rely on their own assumptions. As such, they offer dramatically different results from those of the WEFA Group study, including projections of ANWR development job creation as low as 46,000, many of which would be low-skill and last only a decade.

Constructing the Environment

Just as Arctic Power and NRDC differently construct oil in the context of the ANWR drilling debate, so do they differently construct the environment. The latter's campaign is built on the notion of a unique, vibrant, and intricately complex arctic, composed of diverse ecosystems and an abundance of flora and fauna. NRDC designates ANWR in particular as a "bioGem," and describes,

> The refuge is among the world's last true wildernesses, and it is one of the largest sanctuaries for Arctic animals. Traversed by a dozen rivers and framed by jagged peaks, this spectacular wilderness is a vital birthing ground for polar bears, grizzlies, Arctic wolves, caribou and the endangered shaggy musk ox, a mammoth-like survivor of the last Ice Age. (NRDC, 2008)

> Every year, [a] vast herd of caribou travels hundreds of miles from Canada's Porcupine River region to the coastal plain, where females give birth in the spring. The plant growth on the plain at that time of year nourishes pregnant and nursing caribou, and cooling breezes along the coast help disperse insects that can drain more than a quart of blood a week from the calves and their parents. These unique conditions -- and the fact that there are fewer predators in the coastal plain -- offer newborn caribou a better chance of surviving their vulnerable first few weeks of life. (NRDC, 2005b)

NRDC thus portrays the arctic environment as an elaborate web of climates, creatures, and natural processes, but which requires a delicate balance of conditions in which its many interdependent components can thrive. In this way, the environmental lobby group depicts ANWR not only as worthy of admiration, but also as fragile and in need of protection.

It is important to note that NRDC has increasingly rendered a second and complementary construction of the arctic environment as a symbol of political values and social movement. For example, it describes the ANWR region, which has seen relatively little human activity as compared to other parts of the globe, as a gauge against which the progress of industrial and technological developments can be measured, and the costs assessed (Goodyear & Beach, 2012, p. 8). Though extremely relevant to the present discussion, analysis of this socio-political construction of the arctic environment and its associated discourses, which are entwined with discourses on climate change and global justice, is featured elsewhere (including Moyer, forthcoming). In this paper, rather than tackle the much broader and more entrenched issue of oil consumption, I focus specifically on North Slope oil production. As such, NRDC's embodied construction of the arctic environment as an "American Serengeti" (NRDC, 2011c), is most relevant here.

In stark juxtaposition to NRDC's alluring and romantic portrayal of ANWR, Arctic Power depicts the Refuge as a frozen, unattractive "wasteland" (Arctic Power, n.d.f), which is "practically void of life" (Arctic Power, n.d.g). In a handout entitled, "Which one is the Real ANWR?", the lobby group mocks environmentalists' accounts of "majestic mountains" and "sweeping panoramas" within ANWR, claiming that actually the "facts aren't as pretty or as emotionally appealing" (Arctic Power, n.d.h). Arctic Power further contends that the area proposed for development is neither pristine nor unique.

> On the coastal plain, the Arctic winter lasts for 9 months. It is dark continuously for 56 days in midwinter. Temperatures with the wind chill can reach -110 degrees F. It's not pristine. There are villages, roads, houses, schools, and military installations. It's not a unique Arctic ecosystem. The coastal plain is only a small fraction of the 88,000 square miles that make up the North Slope. The same tundra environment and wildlife can be found throughout the circumpolar Arctic regions. The 1002 Area is flat. That's why they call it a plain. (Arctic Power, n.d.h)

The oil lobby group thus portrays the arctic environment as praiseworthy for little other than the potential energy it might provide.

The Costs

In line with its depiction of the arctic environment as both precious and vulnerable, NRDC describes development as a dire threat. The group explains, for example, that "environmental damage from oil spills is more severe and lasts longer than in more temperate climates" (2005a). NRDC further warns,

> For a sense of what Big Oil's heavy machinery would do to the refuge, just look 60 miles west to Prudhoe Bay -- a gargantuan oil complex that has turned 1,000 square miles of fragile tundra into a sprawling industrial zone […]. The result is a landscape defaced by mountains of sewage sludge, scrap metal, garbage and more than 60 contaminated waste sites that contain -- and often leak -- acids, lead, pesticides, solvents and diesel fuel. (NRDC, 2011c)

NRDC points to a range of ecological, biological, and social investigations into the environmental impacts of drilling in ANWR to back up its associations between development and destruction. These studies (for example in Goodyear & Beach, 2012; also National Research Council, 2003; Nellemann & Cameron, 1998; Walker et al., 1987) pertain to pipeline leaks and oil spills; hazards posed by carrying vessels; the release of harmful gases into the atmosphere; cultural, dietary, and economic adaptations required of Alaskan indigenous groups; damage to fish habitat from riverbed gravel extraction for use in drilling pad and road construction; and other wildlife disturbance.

The above evidence is heavily drawn from comprehensive scientific assessments that cover a range of intersecting issues and analyze "patterns of […] environmental perturbations or their effects over large areas and long periods" (National Research Council, 2003, p. 2). In other words, they address the cumulative impacts of development across space and time, in addition to the direct, local consequences of isolated activities. These studies frequently draw attention to uncertainties, risks, and knowledge gaps, which NRDC cites as reasons to exercise restraint, particularly given that the fragile arctic environment leaves "almost no margin for error" (Goodyear & Beach, 2012, p. 2).

Arctic Power's devaluation of the arctic environment, on the other hand, serves to trivialize environmentalists' warnings about the actual and potential impacts of drilling. The group also directly dismisses environmental concerns as "unfounded" (Carlisle, 2001), arguing, for instance, that oil spills contained at the site of production "shouldn't be blown out of proportion" (Arctic Power, n.d.e). At the same time, Arctic Power affirms that development must be environmentally responsible, not least because environmental considerations are inextricably linked to the viability of the oil industry itself (Arctic Power, n.d.e). For example, the group touts the advancement of minimal-impact drilling technologies, which aim to reduce the footprint of future petroleum production operations in the arctic, as well as the fact that U.S. oil is produced "under the world's strictest environmental standards" (Arctic Power, 2001).

Additionally, though it rejects NRDC's holistic appreciation of the arctic environment, Arctic Power concedes that certain of the region's natural resources, in particular its iconic and widely admired wildlife species, warrant protection. The oil lobby group's counter-argument regarding the environmental impact of development balances on this distinction and is revealed in the excerpt below, which invokes plague and harassment to describe the hardships suffered by the caribou during their annual migration. Specifically, through an "inversion of terms" (Livesey, 2002, p. 129), Arctic Power co-opts the language of environmentalists around protecting wildlife from development, and argues that in fact wildlife are in need of protection from the environment.

> The tundra provides a perfect environment for mosquitoes and other insects who emerge in late June and July to continually harass the caribou. By mid-to-late July, most Porcupine Caribou have moved off the Coastal Plain and dispersed in the foothills, only to be plagued by two other insect pests; the warble fly and the nose bot fly. The warble fly […] lays its eggs in the fur and the legs or abdomen of the caribou. The larvae soon hatch, burrow under the skin, and travel to the back. Here they encapsulate and cut a breathing hole in the skin. […] The nose bot bears live larvae, which it deposits in the nostrils of the caribou. The bot larvae move through the nasal passages and settle down at the entrance to the throat. By spring the larvae have grown so much that they may form a mass large enough to actually interfere with breathing. […] During July and early August, caribou can be seen violently shaking their heads, stamping their feet, and racing wildly over the tundra […] to evade warble or bot flies. (Arctic Power, n.d.a)

Maintaining that the "greatest threat to the herd is their harsh natural habitat" (Arctic Power, 2011), rather than development, Arctic Power contends that the relationship between wildlife and industry is uncompetitive, and may even be reciprocal. It thus counters NRDC's "threat of development" narrative with one of "successful co-existence."

The argument that "development and wildlife are successfully coexisting" (Arctic Power, n.d.d) is bolstered by the fact that, since Prudhoe Bay drilling operations began within the preferred habitat of the Central Arctic caribou herd in 1977, their numbers have risen substantially. As the following excerpt demonstrates, Arctic Power carefully notes periods of overlap between herd increases and development, though it attributes herd decreases to factors unrelated to industry activity.

> The Central Arctic Herd […] increased during the 1970s and 1980s from 6,000 in 1978 to 23,400 in 1982. Rapid growth stopped in the late 1980s, however, and the herd now appears stable at around 32,000 animals. Relatively low calf production and survival in recent years may result from severe winter weather which has also depleted moose and Dall sheep populations in the central arctic area. It is also possible that the Central Arctic Herd is approaching range carrying capacity. (Arctic Power, n.d.a)

Arctic Power doesn't explicitly credit oil development for the herd increase, but it does broadly characterize industry as beneficial to the caribou, noting, "it is interesting that while populations have been rising in the Central Arctic Herd which use lands in the North Slope oilfields, populations have been declining in the Porcupine herd which do not use lands where there is oil and gas development" (Arctic Power, 2002). The group further points to evidence that caribou have actively taken advantage of development.

Dr. Matthew Cronin, a researcher at the University of Fairbanks—Alaska, is heavily relied upon by Arctic Power for expert testimony supporting an amicable relationship between industry and wildlife. He argues that numerous benefits are afforded to the caribou by development, such as "use of oil field roads and structures for travel" and "to escape from insects" (Cronin, 2004). Cronin also explains that "caribou in the oil field areas frequently have had higher calf-cow ratios than in undeveloped areas," suggesting that industry operations have enabled improved reproductive rates, though causation between the two is never drawn. The correlation is strongly emphasized, however, and legitimized in the reprise that "these findings have been published in scientific journals" (Cronin, 2004).

NRDC rejects the claim that increases in the Central Arctic caribou herd population can be attributed to industry activity, citing herd movement away from oil fields as the more significant indicator of caribou response to development. It also points to studies that differentiate the Porcupine herd, for whom ANWR's coastal plain is vital calving ground, from the Central Arctic herd that inhabits the Prudhoe Bay oil complex (NRDC, 2005b). Arctic Power, in turn, cites studies by Cronin and his colleagues suggesting that movement among the "highly mobile" caribou is expected rather than evidence of impact, and that

alternative calving habitat for the Porcupine herd is available. Ultimately, the oil lobby group asserts, "there is little reason to fear that caribou at ANWR would be harmed" (Carlisle, 2001), whereas the environmental lobby group insists "it is premature to proceed […g]iven the uncertainties and the high stakes" (Goodyear & Beach, 2012, p. 15).

Conclusion

It would appear, from the dominant discourses explored above, that the available evidence on ANWR is conflicting and inconclusive. Indeed, both environmentalists and industry supporters call for further scientific investigation. In doing so, however, they neglect other critically important lines of inquiry. It is significant, for example, that each of the prominent lobby groups featured here implicitly assigns a different remit to the science it calls for. Arctic Power's position defaults to the authorization of drilling in ANWR, barring convincing evidence that it would directly lead to significant environmental consequences. Conversely, NRDC's position is that "study and assessment needs to produce convincing evidence that any new industrial activities pose little threat to the environment" (Goodyear & Beach, 2012, p. 2). As such, the environmental lobby group defaults to restriction of all industry activities unless and until they can be scientifically vetted. To seek additional evidence without acknowledging these predispositions, and the corresponding demands they place on the evidence itself, will not move the underlying conflict towards resolution.

Another omission from the debate concerns recognition of the social, political, and historical context in which evidence becomes relevant. The claims of Arctic Power and NRDC, like all scientific claims, are uniquely convincing both because they are buttressed by a history of institutionalized practices and trained practitioners, and at the same time, because they are presented from a god's-eye view, as if objective and inevitable. By highlighting objects rather than subjects of knowledge, evidence-based claims undermine the need for reflexivity on the parts of the solicitors, producers, and interpreters of evidence. To selectively focus on the evidence is therefore to adopt the frame of the recognized, rather than of those who seek recognition.

Herein lies a conundrum that not only underscores the privileged positions of Arctic Power and NRDC and exposes the self-perpetuating nature of power itself (Foucault, 1980), but reveals the interpretation and communication of ANWR science, specifically, as an exercise of power (Bourdieu, 2004). Critical analysis of the drilling debate thus begs questions about how we construct the "problem" that needs solving; what is important, or not; what is at stake, and for whom; and when evidence can be considered legitimate, or sufficient. To simply defer to the evidence is to obscure the diversity of answers these questions would inevitably solicit from across ANWR's many underrepresented stakeholder groups.

In sum, the conflict over ANWR is not merely fueled by factual discrepancies, but by a convergence of conceptions, valuations, and contextualizations of both energy and the environment. The debate further juxtaposes clashing visions of national prosperity, individual opportunity, and citizenship. The discourses of Arctic Power and NRDC thus serve to delineate and define the appropriate role of government, to prescribe the relationship between scientists and policymakers, and to shape our collective thinking about resource allocation, property rights, social responsibility, security, justice, and perhaps most importantly, about who to trust regarding all of the above. By framing the socio-political conflict over ANWR in evidence-based terms, however, the two lobby groups have together collapsed these practical, ethical, and ideological issues into a technical discussion.

In unpacking key evidence-based claims within the ANWR drilling debate, this paper contributes to a growing body of critical scholarship that explores the moralizing capacity of scientific knowledge and discourse. I draw, for instance, from the work of Frankfurt School theorists, who were interested in the

relationship between "right-thinking" and "right-willing" (Bottomore, 2002, p. 16), as well as literary scholars like Kenneth Burke, who have unpacked the ethical implications of seemingly disinterested communications. As Livesey (2002) describes,

> Countering the dominance of empirical scientific inquiry and materialist philosophies of his time, Burke focuses instead on understanding moral controversy […]. Ultimately, he suggests that science itself is caught up in such controversy, despite its seeming objectivity and neutrality. (p. 120)

Similarly, my research explores the moral controversy of ANWR, in which science is thoroughly caught up. Disputes between Arctic Power and NRDC over the facts of the associated debate are of course important, and worthy of in-depth discussion, careful scrutiny, and further investigation. However, they represent merely the 'whats' of the issue. The above analysis aims to begin to address this deficiency by weaving into the discussion a few of the "whos," "wheres," "whens," "whys," and "hows."

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Meta-learning in the U.K. Environmental Movement: Culture Change Theories and Their Pedagogical Implications

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The success of the environmental movement can partially be understood ideationally, in terms of the production of "green knowledge" and its uptake in wider society. Nevertheless, a serious knowledge-action gap persists. Given this situation, the movement is undergoing a process of meta-learning through which the dynamics of cultural change become a substantive knowledge interest. As environmental movement milieus come to terms with the informational deficit critique, they are becoming ambivalently positioned both "in and against" the pedagogical state, and concomitantly, a variety of "soft paternalist" modes of governance. The pedagogical implications of this are explored through two interrelated case studies based on a critical engagement with literature produced by the ENGO working group Common Cause and the Transition Towns movement. Whilst a nuanced understanding of the tacit emotional and affective dimensions of culture is important, overreliance on cognitive science and psychology raises concerns around power and politics.

Key Words Meta learning, cognitive praxis, pedagogical governance, culture change, public deliberation

Introduction

The success of the environmental movement can partially be understood in terms of the production of knowledge and its uptake in wider society, through a process dubbed "cognitive praxis" (Eyerman & Jamison, 1991; Jamison, 2001). In this view, a movement is distinguished from others by the "cognitive territory" it opens up for the "creation, articulation [and] formulation of new thoughts and ideas" (Eyerman & Jamison, 1991, p. 55).

Nevertheless, in the UK, societal consensus on the objective urgency of tackling climate change sits alongside something akin to collective denial when confronted with the fossil fuel—and particularly oil—rich energy base that ensures our social infrastructures and lifestyles. Thus, climate activism has been likened to building a social movement against ourselves (Monbiot, 2006, p. 215).

Theoretically, as Haluza-DeLay (2008, p. 217) has argued, this signals a shift away from the conventional view of traditional green democracy founded on Enlightenment notions of the reasoning subject—collective action and societal change founded on behaviour guided by environmental ethics, shared cognitive rules, and a calculating appreciation of "the facts"—towards a more nuanced understanding regarding the role of "embodied rather than consciously held dispositions" (p. 217). Haluza-DeLay (p. 210) thus contends that Eyerman and Jamison's conceptualization might need correction, primarily about the role of the "cognitive" in the "praxis". This "correction," as occurring in "actually existing" environmental milieus, is exactly what I take to mean by meta-learning: traditionally attributed to the individual

development of meta-cognitive capacities (Mezirow, 1981), my usage is a catachrestical application of the term onto the social learning of collective actors.

I investigate this process through critically engaging with the literature of two overlapping milieus: an environmental non-governmental organisation (ENGO) coalition/working group called Common Cause (CC), and the Transition Towns (TT) movement. CC and TT differ in that they each reflect a cognitive praxis of what Jamison (2001, pp. 151-164) has termed "professional", and "community" environmentalism, respectively. Intertextuality between their respective literatures evidences mutual learning and the brokerage of ideas by key intellectuals. Moreover, because these milieus have an ambivalent history of engaging with structures of governance—and indeed enacting environmental governance, I conceptualise the knowledge produced in these two milieus as being "in and against the pedagogical state," a term which I will now move on to briefly unpack.

Contemporary Environmentalism and the Pedagogical State

What then is the pedagogical state, how does it apply to the ideational work of CC and TT, and how does this consequently shape my methodological approach? In relation to the state, the pedagogical turn is often associated with the perceived shift from paternalistic government to performative technologies of governance, through which pedagogy replaces redistribution and direct state intervention (Newman, 2010, p. 721). However, Newman (2010) and Pykett (2010) both helpfully question the notion of a coherent turn towards a "governmentality of the self" under neoliberalism; the former identifying four policy strands relating to a "pedagogical state," which can be discerned from an historically complex assemblage of practices, actors and projects: these can be summarised as training for education and flexible capitalism; capacity-building for self-provision and self-management; moral regulation; and public participation and deliberative democracy.

Apposite to the development of "green knowledge," from amongst these ambivalent forms of pedagogical power, has emerged a form of political rationality alternately known as libertarian or soft paternalism, which, like the notion of a pedagogical "turn," can also be considered as an "assemblage" of practices, actors and ideas (Jones, Pykett, & Whitehead, 2011, pp. 52-53), albeit one in which the common point of departure is premised on a questioning of the assumptions of rational actor theory. In other words, policy aimed at: governing the irrational brain, governing through people's inevitable irrationality, changing behaviour through affective interventions, and cultivating the rational and reflexive aspects of the mind (Pykett, 2012, p. 219).

Formally, soft paternalism is characterised by interventions that "nudge" the subject in the direction that represents the paternalist's interpretation of the subject's "true wishes" that have been (in the paternalist's eyes) clouded by either an error in reason or an emotional override of reason (Buckley, 2009, p. 15). Jones et al. (2010, p. 486), through studying the political geography of "actually existing soft paternalism," identify its "epistemological drivers" as "behavioural economics, psychology and the neurosciences," and its "mechanisms" as "spatial design and (choice) architecture; temporal ordering; measures to rationalize the brain; and prompting social norms via culture change strategies, social motivation and segmentation, and the development of peer-to-peer pressure."

In an environmental policy context, DEFRA (2007) has recommended the use of "'wedge behaviours' which take advantage of windows of opportunity in order to promote demand-side lifestyle changes at opportune moments" (Jones, Pykett, & Whitehead, 2010, p. 487). DEFRA also draws upon the marketing concept of "segmenting" audiences in order to tailor interventions. In terms of developing green "cultural

capital," the government white paper "Achieving Cultural Change" (Knott, Muers, & Aldridge, 2008) builds upon work done by DEFRA but includes a more sociological perspective alongside the deployment of social psychological concepts, drawing on Putnam's work on bridging and bonding social capital, identifying the importance of developing deliberative fora, and crucially acknowledging the role of structural constraints in identifying "the capacity to change" as a key caveat in the consideration of cultural drivers for sustainable and low-carbon living.

Literatures in behavioural economics and psychology, highlighting the species-level psychological challenges of climate change related to its epistemic and spatio-temporal complexity, have in turn produced an important growth industry in climate change communications (McGreevor, in Pykett, et al., 2011, p. 306). Yet, as McGreevor (in Pykett, et al., 2011, p. 306) points out, proposed solutions range from building deliberative space, to targeting affective registers, tacit values and norms through linguistic "nudges." What is of concern here is the potential democratic deficit that may occur when expert epistemic communities deploy strategic communicative tactics and strategies in the governance of an irrational public, as well as the potential to create a deficit discourse through the valorisation of psychological concepts in lieu of robust social theory.

Critical theorist Robert Brulle (2010) has already critiqued US-based environmental campaigning efforts influenced by cognitive scientist George Lakoff for similar reasons. He challenges the hegemony of expert advocacy, seeing it as inherently democratically compromised, and in the long-term reducing the "mobilization capacity" of civil society; he challenges the unidirectional short-termist social marketing approach; he questions some of the intellectual and empirical claims made of core values; and he questions the ability of such efforts to move beyond the discursive status-quo of ecological modernization.

In what follows I ask similar questions of CC and TT, asking how they differ from "nudge politics" crudely described, how they differ from one another, what this means for cultural change, and what this means for deliberative democracy.

Methodological Approach

This work is based on an analysis of four widely disseminated texts—two from CC and two from TT, published between 2008-2011—in which the dynamics of cultural change are central concerns. Key texts, identified from a wider reading and knowledge of the conceptual field, were selected on the criteria that they "function as nodes within the intertextual web of debate" (Hansen, 2006, p. 82). For CC, "Common Cause: The Case for Working with Our Cultural Values" (Crompton, 2010), and "The Common Cause Handbook" (Holmes, Blackmore, Hawkins, & Wakeford, 2011) were selected as key texts. For TT, "The Transition Handbook" (Hopkins, 2008), and "The Transition Companion" (Hopkins, 2011) were selected.

I take each of these texts to represent key discourse moments that empirically signal a shift in, and questioning of "the cognitive" in the cognitive praxis of environmentalism in the UK. Moreover, there is a pattern of intertextuality between these texts, which evidences mutual learning and allows me to compare CC and TT. Working with these texts, I have sought to identify the (overlapping) intellectual drivers, academic disciplines, and epistemological commitments associated with the development of these cultural change theories and consider their implications for the cognitive praxis of the environmental movement. Taking a genealogical approach allowed me to interrogate how an invocation of grassroots knowledge (particularly in TT discourse), may obfuscate the routes of such knowledge.

I think it is possible to think of social movements in cultural and cognitive terms, without lapsing into cultural or cognitive determinism. My methodological approach is guided by a non-essentialist, yet materialist philosophy, most clearly articulated by philosopher Manuel DeLanda (2006). This is a transversal philosophy that negates the nature-culture divide. I contend that conceptualising environmental

movement milieus as more or less stable assemblages of material and expressive components located in time and space is a generative way of thinking through the issues at stake in this paper. To focus on assemblage (the verb), is to focus on the (de)territorialisation of material and expressive resources.

The discursive work of CC and TT must be thought of in this pragmatic context: movement frames and narratives are "not [always about] representing the facts," but are about maintaining immanent assemblages, and therefore "tend to leave out anything related to the unintended consequences of intentional action, any process of accumulation or concentration of resources that is too slow to be detected by direct experience" (DeLanda, 2006, p. 66). I therefore consider my task as a partial attempt at a genealogy of these milieus considered as "material-discursive apparatuses" (van der Tuin & Dolphijn, 2010, p. 168).

Meta-Learning in Professional Environmentalism: The Culture Change Theory of Common Cause

The Rationale for Common Cause

CC is a working group of ENGOs, green independent think tank staff, as well as other civil society organizations (CSOs).[1] The working group produces civil society research oriented towards explicating and promulgating theories of cultural change for "campaigners, community organisers, civil servants, fundraisers, educators, social entrepreneurs, activists, funders, politicians, and everyone inbetween" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, c.p). The impetus for CC emerged from a collective perception that "current approaches to tackling global challenges are failing." For example, "real UK [carbon dioxide equivalent (CO2e)] emissions have actually increased by 17% since 1990" (Crompton , 2010, p. 17).

The first point to make is that these collaborative publications foreground cultural concepts—namely values and frames—as primary strategic concerns. One of the drivers of CC seems to be an awareness of the pernicious fragmentation of CSOs into issue specialists, as various organisations claim each seek to claim their symbolic territory. A second driver is a rejection of *Homo economicus*. Following the work of psychologists, cognitive scientists, and behavioural economists (e.g. Cahan, 2010; Lakoff, 2004; Sherman & Cohen, 2006), the foundations of "enlightenment reason" and rational actor theory are questioned: they cite from a large body of empirical studies which show that, in order to avoid the "cognitive dissonance" that occurs when objective imperatives to action and values informing social identity collide, 'the facts' are routinely discarded (Crompton, 2010, p. 10).

Accordingly, the tacit dimensions of culture are opened-up. Interestingly, archetypal public intellectual Michael Sandel is an influence. CC is partially underpinned by his communitarian (virtue) ethics (Common Cause, 2011). Taken at face-value, the basic point is to reassert a holistic sense of the "moral" in public discourse going beyond the "hot button" approach of "social marketing" (Gamson, 1992, p. 185), which as Brulle (2010, p. 91) argued (in his critique of Lakoff and Eco America) reduces the long-term mobilisation

1 At the time of publishing the former document, the working group was convened by chief executives from the Climate Outreach and Information Network (COIN), Campaign to Protect Rural England (CPRE), Friends of the Earth (FoE), Oxfam, and WWF. The working group itself consisted of senior campaign directors and heads of communication from each NGO. By the time the latter document was published, the coalition had expanded to include "Action for Children, Cambridge Carbon Footprint, the New Economics Foundation and Think Global" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 4). The latter document was also written in collaboration with independent think tank "The Public Interest Research Centre (PIRC), whose primary interests are in strategic communications in climate change, energy, and economics.

potential of society by reinforcing individual self-interest. This, CC calls "collateral damage" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 43).

A well-known weakness of "green culture" continues to be the lack of perspicuity regarding the term "sustainability" to the point where it has been co-opted as an almost empty corporate trope. An effort is therefore made to redefine "sustainability" in more holistic communitarian terms (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 43). As the CC working group argues in relation to climate change, the Stern Review created political traction, but arguably reinforced the primacy of cost-benefit reasoning to the detriment of wider moral imperatives, "because of the tight association between national interest and economic interest" (Crompton, 2010, p. 50). Having adumbrated the rationale for CC, I move on to explain how culture change is theorised by CC through the two key concepts of values and frames.

Values in CC

CC's understanding of the cultural values draws on academic expertise from the domain of psychology. From this domain comes the first postulate of CC; that there exists a universal, trans-cultural "circumplex" of values. Secondly, CC recognises that values and behaviour are intimately connected. Third, it is proposed that "[f]rames offer a vehicle for promoting values" (Crompton, 2010, p. 11).

Cultural values, it is written, "represent our guiding principles: our broadest motivations, influencing the attitudes we hold and how we act" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 8). The particular conception of values articulated is derived, in large part, from the foundational work of social psychologist Shalom Schwartz (Crompton, 2010, p. 28). In his seminal paper "Are There Universal Aspects in the Structure and Contents of Human Values," Schwartz (1994, p. 21) defines values as "desirable transinstitutional goals, varying in importance, that serve as guiding principles in the life of a person or other social entity," learned through socialization. Values, he argued, are quantifiable, categorisable, interrelated in consistent ways and trans-cultural. CC emphasises that "[h]undreds of [worldwide] papers—amounting to literally 100,000s of participants—have also tested the relationships between the values the vast majority of these papers confirming the relationships Schwartz outlines" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 58). By their own (positivistic) epistemic standards, this is "a well-founded model of how human values relate to each other, with measurable impacts on our attitudes and behaviours" (p. 58).

Schwartz's theory of values is simplified by CC as being divided into two categories: those deemed intrinsic and those deemed extrinsic. Intrinsic values are those such as "affiliation to friends and family, connection with nature, concern for others, self-acceptance, social justice and creativity," which are "intrinsically rewarding to pursue" (Schwartz, 1994, p. 21). Extrinsic values are deemed to be those "centred on external approval or rewards", such as "wealth, material success, concern about image, social status, prestige, social power and authority" (p. 21).

The extent to which this represents an implicit desire to reduce culture to Western binary logic is up for debate. Post-structuralist critique would argue that the intrinsic|extrinsic binary is subject to a Western metaphysics of hierarchy whereby the intrinsic is understood as the "privileged essence" determining the contingent "outside" (Howarth, 2000, p. 37). Is this a fair characterisation?

Doesn't this analysis divide values and people into good and bad? Or even left-wing and right-wing? Values are not "good" or "bad" in and of themselves. They are each thought to express different needs, and are therefore each necessary for different purposes…Which of them come to the fore at any given moment will depend on the situation we happen to be in (and this effect will be strengthened over time) (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 62).

Furthermore, to support such claims of "Othering," one would have to demonstrate a lack of materialist analysis of the contingency of values, and consequent potential of creating a stigmatising "deficit discourse": a general danger of soft paternalist interventions, already identified by the think tank IPPR (Jones, Pykett, & Whitehead, 2011, p. 58). However, there is recognition that "meeting people where they are" involves recognising constraints, structural 'lock-in', and "creating spaces for change" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 41). Rhetorically at least, the seeds of a dialogical agenda are visible.

There is also a rhetorical recognition that such an agenda would require organisational and spatial arrangements congruent with espoused values and an ostensible questioning of the "churchly piety" model of citizen environmental engagement (Jamison, 2001, p. 150), with "direct debits [to protest businesses] as the deepest level of engagement" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, pp. 48-49). Values, then, are not perceived here to be free-floating social constructions. There seems to be an understanding that they exist in a dialectical relationship with the materiality and spatiality of daily life:

> Our experience of various aspects of our society will help strengthen particular values. Community centres and churches, trade unions, libraries, local sports clubs—institutions that we share and recognise as promoting the common good—may increase the importance we place on equality, social justice, or friendship. Forests and parks may promote appreciation for nature and other intrinsic values. Extrinsic and security motivations may be strengthened through competitive work environments; advertising appealing to status (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 68).

Now that we have a sufficient idea of how values are conceived by CC, we need to look further towards the epistemic implications and analytic utility of their understanding of framing as a controllable cultural process.

Frames in CC

The concept of "frame" in sociology is often popularly attributed to the work of Erving Goffman (1974, p. 464), who developed the term to describe hierarchical "cognitive schemas of interpretation that…function to organize experience and guide action." More generally, between 1970 and 1980, the term gained currency and was developed in the fields of cognitive science, linguistics and artificial intelligence (Donati, 1992, p. 140; Oliver & Johnston, 2000, p. 188).

In the social movement literature, there is significant conceptual entanglement within the ideational triad of discourse, ideology and frame (Johnston, 2002; Oliver & Johnston, 2000; Steinberg, 1998). This should not be surprising since each of these terms on its own is subject to multiple interpretations. However, for the current context, Howarth's (2000, p. 3) distinction is useful: "Positivists and empiricists argue that discourses are best visualised as 'frames' or 'cognitive schemata,' by which they mean the conscious strategic efforts by groups of people to fashion shared understandings of the world and of themselves that legitimate or motivate collective action."

This is the sense in which framing has been taken up by CC. Frames in context are understood as "vehicles for engaging and strengthening values" (Holmes, Blackmore, Hawkins, & Wakeford, 2011, p. 39). Therefore, "the way we incorporate them in our language" is said to be "crucially important" (p. 39). Frames are understood after cognitive scientist George Lakoff (Crompton, 2010, p. 11) as: "[M]ental structures that allow human beings to understand reality—and sometimes to create what we take to be reality…[T]hey structure our ideas and concepts, they shape how we reason, and they even impact how we perceive and how we act."

After Lakoff, CC makes the distinction between "conceptual frames" and "deep frames. Conceptual framing entails:

> …careful use of wording and phrasing such that an audience can be encouraged to focus on and communicate about (or obscure!) different aspects of an event, situation or policy…Particular word choices serve to activate frames that may be more (or sometimes less) helpful in terms of motivating behaviour associated with addressing bigger-than-self problems (Crompton, 2010, p. 41).

Lakoff's description of "deep frames" – likened to ideologies - seems to be rather more provisional (Crompton, 2010, p. 42): "[Deep frames] are the most basic frames that constitute a moral world view or a political philosophy. Deep frames define one's overall 'common sense'. Without deep frames there is nothing for surface frames to hang onto. Slogans do not make sense without the appropriate deep frames in place."

Deep frames, we are told, "embed values in the question 'how do I understand the world?'" (Crompton, 2010, p. 46). Values are said to be connected to deep frames through the use of conceptual metaphor. It is therefore possible to connect certain clusters of related values through "mapping" an easily understood "source domain" frame (they use the example of "family" and its associations) onto a "less intuitively understood…target domain" that the framer is interested in, such as climate change:

> "[H]umans are a family and must face climate change together,""poor people in poor countries are our brothers and sisters" (Crompton, 2010, p. 46)

The three binary pairs of deep frames worked up by CC are "self-interest | common interest," "elite governance | participatory democracy," and "strict father | nurturant parent." If the saliency of a discourse based on the "commons" and participatory democracy are self-evident to anyone interested in environmental and social justice, perhaps the strict father | nurturant parent is more abstract and needs unpacking.

This pairing was developed from Lakoff's work on constructions of the nation as a family (although primarily in a US context). In such constructions, we can envisage a strict father (state) whose role is to compete, provide for and protect the family in a paternalistic way. "Mapped" onto the "source domain" of environmental politics this means "the exercise of authority and control" (Crompton, 2010, p. 53). Conversely, the nurturant parent teaches empathy and respect for others, which mapped onto environmental politics, aligns with "social justice and empathy" (p. 53), and "intrinsic values."

The following passage creates the impression of a coalescing epistemic community, oriented more around normative belief in the applicability of a body of knowledge (cognitive science and psychology) to a particular area, than to an approach based entirely on empirical "rigour":

> The development of these examples has been informed through extensive consultation with two experts in frame analysis and cognitive linguistics,… and an expert in values and behaviour…There is a high degree of subjectivity to the approach taken in the development of these examples, and future work should shift this frame analysis on to a more empirical basis (Crompton, 2010, p. 47).

Some Pedagogical Implications

Turning to address the pedagogical implications of all this, one might ask, is the development of a "participatory democracy" frame, not oxymoronic? If participatory democracy connotes transparency and

social learning though dialogue, does this not contradict the notion of framing as the engineering of cognition by expert communicators? It is to these issues I now turn.

Let us begin by addressing the unidirectionality of communication implicit in framing: "idea specialists in social movements are never thought to change their thinking—just the way they package their thinking to make it more appealing to someone else" (Oliver & Johnston, 2000, p. 195). Two interrelated issues exist here: the democratic implications for communication, and the credibility of such an account of cultural change. The CC literature provides cogent commentary on the former, but not the latter.

As regards the latter issue, Marc Steinberg (1998, 1999) argues that framing rests on contradictory epistemological assumptions, which vacillate between social constructionism and rational actor theory. Indeed, as we can see in CC, there is a simultaneous rejection of rational actor theory (Crompton, 2010, p. 48), and implicit belief that they can instrumentally manipulate cultural processes. Steinberg (1999, p. 753) argues that this is not possible since discourse is inherently multi-vocal, recursive, and contingent.

Although it may be understandable for an assemblage of reformist organisations to avoid the loaded term ideology given its pejorative connotations (instead using "deep frame" as an uncontentious proxy), frame theory has little to say about how such change efforts involve "a long process of self-conscious discussion, debate, and political education," which necessarily grapples with "the relation between people's material conditions or material experiences" and their cultural worlds (Oliver & Johnston, 2000, pp. 196-200).

If this involves a dialogical and deliberative educational agenda, keyed to socio-material reality, is the framing theory espoused by CC not simply what has been described as "nudge politics," or "soft-paternalism"? Critical geographers have already noted the practice of think tanks such as Futerra and the Institute for Public Policy Research (IPPR) targeting emotional registers through discourse in their work on environmental communication. Can CC simply be considered a continuation of this or is there something different in their approach? Engaging with these debates, their answer is not straightforward:

Unfortunately, the grey matter cannot be ruled off-limits…We can bury our heads in the sand, and insist on the sanctity of Enlightenment reason. Or we can respond to the new understanding of how decision-making processes work, by demanding that there is public scrutiny of the effect that particular communications, campaigns, institutions and policies have on cultural values, and the impact that values, in turn, have on our collective responses to social and environmental challenges (Crompton, 2010, p. 24).

It is in this sense that CC can be said to be "in and against" the pedagogical state. Firstly, if one of the recognisable features of soft paternalist interventions is a cynical "segmenting" (Pykett, 2012; Jones, Pykett, & Whitehead, 2011) of "audiences" through "frame alignment" as social marketing (Oliver & Johnston, 2000, p. 195), then CC seeks to go beyond this because "unlike social marketing techniques, such frame analysis would…be used to tailor communications for specific social segments in order to help activate and strengthen helpful deep frames" (Crompton, 2010, p. 99).

Secondly, regarding these ethical dilemmas, there seems to be a suggestion that the meta-cognitive insights of the libertarian paternalists can be disseminated and democratised. In effect, citizens may become "co-producers" of interventions utilising these insights (Jones, Pykett, & Whitehead, 2011, p. 498): "How can values-based communications and campaigns be delivered in compelling ways, inviting – and achieving – widespread participation, and exhibiting (in their design and execution) those values that they serve to champion? (Crompton, 2010, p. 25)"

How indeed: the analysis of values hints at awareness of spatial, historical and material contingency. Nevertheless, Lakoff's framing theory, conjoined with a desire to map a universal progressive value base and nurturing state metaphor onto environmental politics, reveals ultimately an epistemic community seeking to justify a normative orientation towards a reductionist cognitivism, when in fact (and as Brulle

(2010, p. 87) has already noted in his analysis of Lakoff's work), the empirical and theoretical basis of these claims is far from uncontested.

The more dialectical and dialogical nature of cultural change hinted at in aspects of the CC literature are more fully developed in the literature of the TT movement, and the work of Rob Hopkins, who is identified by CC as being a key exegete of the "participatory democracy" frame. Accordingly, the cultural change theory of TT and its convergences and divergences in relation to CC are explored below.

Meta-Learning in Community Environmentalism: The Culture Change Theory of the Transition Towns Movement

The Rationale for TT

The TT movement is concerned with relocalisation through community capacity-building in the face of the "hydrocarbon twins" of climate change and peak oil (Hopkins, 2008, p. 18). However, part of the success of Transition is that it is about more than the "hydrocarbon twins": Transition culture aims to create a sense of "engaged optimism" so that participation would "feel like the most appropriate thing to be doing…connecting us more with place, with each other and with ourselves," even if climate change and peak oil were no longer issues (Hopkins, 2011, pp. 29-37). TT's rationale for relocalisation is therefore not merely "immanent," but is an "intentional" normative political project "based on inclusion, local distinctiveness, equality and freedom" (North, 2010, p. 591). Like CC, TT utilises the communitarian rhetoric of "community feeling." In fact, "community" is a key trope of the movement, used not just to describe an appropriate scale of local organisation, but as a "buy-in" tactic reflecting a grassroots approach (Aiken, 2012).

Like CC then, part of the rationale for the TT approach is that the environmental movement has, to date, paid insufficient attention to the dynamics of cultural change. Permaculture provides the holistic philosophical basis for TT that transcends its locally contingent character. However, TT is fundamentally an eclectic assemblage of different bodies of knowledge – "bringing pieces from systems thinking, psychology, business development and the power of the internet to spread ideas" (Hopkins, 2011, p. 21) - oriented towards experimentation and practical application. TT simultaneously finds strength in place-based cultural narratives and connectivist "learning network" metaphors. As a rhizomatic learning network of place-based initiatives, the key orienting concept from permaculture is that of resilience, defined as:

> [T]he ability of a system to absorb change while retaining essential function; to have the ability for self-organisation; and to have the capacity to adapt and learn. Resilience can apply to people, places and ecosystem (Adger, Brown, & Waters, 2011, p. 696).

Psychological Insight in TT

Having outlined the TT movement's rationale, I move on here to discuss how culture change is theorised in TT, highlighting similarities and differences with CC. Like CC, "psychological insight" is one of the main epistemological divers of TT (Hopkins, 2008, pp. 141-142). Unlike CC, narrative rather than frame is the primary cultural tool. First, it is pertinent to note that CC and TT share the same questioning of *Homo economicus*:

> The idea that people change by encountering distressing information, digesting it intellectually, and deciding based on evidence…is not how things happen. Transition also acknowledges that we are emotional creatures (Hopkins, 2011, p. 73).

In the earlier TT literature (Hopkins, 2008), the primary psychological insight is a catachrestical application of the psychology of addiction to oil consumption. This idea is based on the "transtheoretical" model of change developed by psychologists Carlo DeClemente and James Proschaska, and explained in the TT literature by contributing author and popular psychologist Dr Chris Johnstone, who plausibly argues that it is possible to say we are addicted to fossil fuels if we define addiction as "stuck patterns of behaviour that can be difficult to change even when we know they're causing harm" (Hopkins, 2011, p. 86). The value of this approach is that "recognising dependence allows you to anticipate, and deal with, the additional obstacles to change this brings…while pointing us towards proven strategies from the addictions field" (Hopkins, 2011, p. 86). Like CC, this reveals the ambitions of a normative epistemic community.

The questions I would therefore ask at this stage are: who wields the insights of the psychologist, and who is the patient? Are we all therapists, as well as addicts? To what extent does the psychologisation of change detract from, or stand in contradiction to, the notion of "Transition as an approach rooted in place and circumstance" (Hopkins, 2011, p. 73). There is a construction of undifferentiated responsibility in such discourse that could have the potential to stigmatise people with less capacity to act.

More recently, the psychological insights of CC have found their way into Transition discourse: "Transition works because it cultivates intrinsic values. It is already showing that a cultural shift towards more intrinsic values is a shift that can inspire sustained change" (Hopkins, 2011, pp. 75-76). In the same book, Tim Kasser (academic psychologist and CC collaborator), in dialogue with Hopkins (2011, p. 46), speculates that localisation would provide people with more opportunities to enact intrinsic values, and by linking resilience to happiness, they hint at a connection to the positive psychology literature, where resilience is understood as an individual cognitive trait (e.g. Seligman, Ernst, Gillham, Reivitch, & Linkins, 2009). It remains to be seen whether these links between theories of resilience in the positive psychology literature and the idea of community resilience will be developed in TT discourse.

Resilience, as a floating signifier emphasising the "bouncebackability" of individuals and communities, has, in the post-2008 context of austerity, become a key policy trope. Increasingly, insights from psychology are being deployed as state actors aim to teach citizens psychological dispositions to cope in tough times, to the exclusion of structural considerations (Harrison, 2013). Resilience is therefore often used to justify maintenance of the economic status-quo, and as a justification for a shrinking public sector. Therefore, the utility of 'resilience thinking' will rely on its ability to resist incorporation into hegemonic policy discourse. In this sense, we can position TT as being "in and against" the pedagogical state.

Having discussed the role of psychology in TTs theory of culture change, and having highlighted overlaps with CC, I turn to a significant difference; that is, the centrality of narrative as opposed to that of the frame.

Narrative in TT

Unlike the concept of frame in CC, narrative is the primary cultural tool in TT:

> The telling of stories is central to this book…Our culture is underpinned by various stories, cultural myths that we all take for granted…We need new stories that paint new possibilities, that reposition where we see ourselves in relation to the world around us (Hopkins, 2008, pp. 14-15).

Stories have the advantage over frames that they are situated in space and imbued with temporality. Because we make sense of prelinguistic experience by "recognizing the narratives in which we are positioned" (Clark, 2010, pp. 5-6), they act as a fulcrum between reality and possibility, and because we all learn from telling them and listening to them, they overcome the dialogical deficit of frames. It has been argued in the social movement literature that "stories overshadow frames in mobilizing power as a political resource" (Davis, 2002, p. 25). Through creating compelling visions of the places we live, cultural narratives

transverse the ideas of Transition as an inner psychological process and an external material process, as "[t]he outer creates the inner, and the inner creates the outer" (Hopkins, 2011, p. 140).

The collective creation of place-based cultural narratives of the future – "visioning," in Transition-speak – underpins the creation of the strategic twenty-year action plans, from which participants "backcast" in order to achieve their goals (Hopkins, 2008, pp. 104-121).

In pondering what the "pedagogical implications" might be for the environmental movement, in a context where the "cognitive" in the cognitive praxis has been reflexively called into question, social movement theorist Haluza-DeLay (drawing on Bourdieu) (2008, p. 216) seems to have arrived at the same place as TT. In his view, story-telling, as an intrinsically more dialogical process than framing, is conducive to on-going processes of experiential learning, where a tacit feel for the game, "living environmentally without trying," may become routinised. Below, he essentially describes the "visioning" process:

> One means by which movements create themselves as fields for the movement habitus to fit is through storytelling…[Ecological habitus] would be described backwards from the practices of living socially and ecologically well in place. [W]e can understand an ecological habitus as an expertise developed from a "sense of place" (2008, pp. 213-214).

In this way, TT's understanding of culture change seems more promising than CC's. More generally, it has been demonstrated in environmental communication literature that narrative as a form of "border pedagogy" (Giroux, 1992) provides the scope for individuals to connect collective 'matters of concern' to their own situated and emergent sense of values (Vandenabeele, Vanassche, & Wildemeersch, 2011, p. 183). This is a speculative sense in which the concept of narrative may be useful to a theory of culture change. However, Giroux's idea of "border pedagogy" is connected to a form of agonistic politics, which seeks to identify those species of power that maintain borders, so that they can be (re)territorialised. Given that the CC and TT literature lacks any sense of agonistic politics, I move on to offer some concluding thoughts about the obfuscation of power in both CC and TT.

Conclusion: Hidden Politics, Hidden Power?

I have interpreted the environmental movement as undergoing a process of meta-learning, through which various milieus are coming to question the 'cognitive' in the cognitive praxis (Haluza-DeLay, 2008). Through applying this insight to the discourse of CC and TT as interrelated case studies, I have also made the argument that this questioning of the Enlightenment subject positions each milieu "in and against" the pedagogical state, as they seek to enact environmental governance through cultural interventions.

Two significant differences between CC and TT are organisational form, and the use of framing and narrative as cultural tools, respectively. Regarding the first difference, it ostensibly appears as though TT has more democratic potential than CC, which despite its rhetoric, is inherently limited by the organisational structures of its core of professional campaigning organisations. Therefore, the CC literature reads at times as though the organisations are making an argument for their own planned obsolescence. Regarding the second difference, the dialogical notion of a situated narrativity, able to transverse the dialectics of space I society, and structure I agency, is more promising than the notion of framing.

The main points of commonality between CC and TT are a sharing of insights from psychology and cognitive science, and their intentional avoidance of agonistic politics, for the sake of inclusivity. From this perspective, there is arguably a danger that their culture change theories attempt to provide empirical justifications for woolly political messages, which construct an undifferentiated "we." Contested scientific insights cannot be simply superimposed onto communicative practices, as though they are free of latent

and potentially contradictory political assumptions. The supplanting of matters of concern, by supposed matters of fact, is never a healthy sign for public deliberation.

This strikes me as particularly concerning in the case of the TT movement because of its representational strategy of asserting its "grassrootness" using adjectives such as "open," "leaderless," "non-hierarchical," "rhizomatic," and "learning network" (Hopkins, 2011, p. 286; Scott-Cato & Hillier, 2010; Bailey, Hopkins, & Wilson, 2010, p. 603). Thought of as expressive components of discursive-material assemblages, such discourse does not describe an anterior material reality. This calls to our attention the potential for such representations to become abstractions that obfuscate more insidious, arcane and distributed types of power and control. Attention needs to paid to how the capacity to assemble for resilience – to contribute to the open network - is dependent on intersecting factors such as available time, class, gender, race, education, versatility, cultural and social capital, relative mobility, financial resources, and so on (Aiken, 2012, p. 97; McFarlane, 2009, p. 567; Nunes, 2005, p. 315).

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Social Media and Environmental Activism in China: Enacting Social Change on Wild Public Screens

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The emergence of China and the advent of social media are two events that rupture the world as it is and force us to rethink everything. Besides global economics and politics, rethinking everything includes social theory, especially theories of social change including democracy, rationality, the public sphere, and free speech. Exploring the thousands of environmental protests annually in China, often performed on a mediascape dominated by social media, suggests new conditions of possibility for activism. Displacing the moribund public sphere with the concept of wild public screens – places full of risk, without protection, without guarantees – opens up thinking the myriad practices of activists today and enables environmental activism to exceed the strictures of governmental control, offering hope for different futures. Environmental activism in China provides a compelling case study and focusing on wild public screens pushes us to explore how environmental activism is practiced in China and how social change is fomented.

Key words: Activism; China; Event; Social Media; Wild Public Screens

Introduction

The world is changing. The twin irruptions of China and social media force us to think of new possibilities beyond our stunted imaginations. The challenge for us is if we can think these changes. The point will not be to contemplate China and social media and then tweak our thinking appropriately. Instead, the challenge is to think with and in these changes. What we mean by this will hopefully become clearer in the course of this paper. First, back to our opening statement. The world is changing. Of course, the world is always changing, but not all changes matter. China and social media are momentous changes, what we will term *events* (Badiou, 2001, 2006, 2008; Deleuze, 1990, 2007).

The awakening of China is an event that ruptures the world as it is and forces us to think everything anew, to conceptualize the truths of this emerging world. The evidence of an event that is opening up a new world is apparent in myriad areas from the economic to the environmental to the social and cultural and political. The emergence of social media is also an event. Panmediation made possible by smart phones – public screens in people's pockets – has altered media practices, political practices, and social practices. Before panmediation and smart phones, institutions and authorities defined the world and what mattered. As the *New York Times* still anachronistically loves to claim, they select "all the news that's fit to print." Now, every single day exposes the lie of that slogan. We live in new worlds. People deploying social media become decentered knots of world-making (DeLuca, Lawson, & Sun, 2012).

In what follows, we will explore the events of the awakening of China and the emergence of social media both separately and together. What image of the world is being upended by these events and how do we

think in their wake? Since we are making at least an implicit claim to being theorists of social movements, that is, of change, we must examine the grounds of our own thinking and be open to changes following encounters with events. We will then provide evidence for our claims that China and social media are events.

The West Through the Looking Glass of China: A Shattered Vision

At the height of the Communism – in 1974 during the final stage of the Cultural Revolution – Roland Barthes travelled to China with a group of distinguished French scholars to tour the country. Though he originally planned to write a book about China, all that remains from his journey is a notebook, posthumously published in 2012. Amidst entries that detail seemingly disparate subjects including his health, Tiananmen Square, and comments about the sexuality of the Chinese people, lies a profound observation: the recognition that after his travels are complete, he "won't be able to shed light on them [the Chinese] in the least – just shed light on us by means of them" (Barthes, 2012, p. 8). Thus, he decides that the book he plans to write will not and cannot be about China, but about France. In short, Barthes' experience of China shattered his world and forced him to rethink the world in and through China.

Barthes was neither the first nor the last Westerner to realize new truths by confronting China. China has long been the exotic other that both founds and limits the West's understanding of itself. While Napoleon was conquering the West, he was fretting over China. He is famously quoted as saying "Quand la Chine s'éveillera, le monde tremblera," which translates as "When China wakes up, the world will tremble." In *Walden*, Thoreau would often use China as the reference point of the possible. In fact, he was one of the first Western philosophers whose work demonstrated clear connection to Chinese thought and philosophy. More recently, Western social theory, especially French social theory, frequently referenced China including Barthes, Foucault, Deleuze, and Badiou.

Foucault's (1994) seminal work, *The Order of Things,* was spawned from his encounter with a quote from a Chinese encyclopedia that ruptured his world. In the Preface, he states:

> This book [*The Order of Things*] first arose out of a passage in Borges, out of the laughter that shattered, as I read the passage, all the familiar landmarks of my thought. This passage quotes a 'certain Chinese encyclopaedia' in which it is written that "animals are divided into: (a) belonging to the Emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher, (n) that from a long way off look like flies." In the wonderment of this taxonomy, the thing we apprehend in one great leap… is the limitation of our own, the stark impossibility of thinking that. But what is it impossible to think, and what kind of impossibility are we faced with here? (Foucault, 1994, p. xv)

From this, Foucault came to question the "age-old distinction between the Same and Other" and the limitations of the systems within which we exist (Foucault, 1994, p. xv).

In *A Thousand Plateaus,* Deleuze and Guattari (1987) contrast East and West to introduce their concept of multiplicity, asserting that the West focuses on trees, "on agriculture based on a chosen lineage containing a large number of variable individuals" while the East focuses on rhizomes, or "horticulture based on a small number of individuals derived from a wide range of 'clones'" (p. 18). The authors ask readers to unshackle themselves from the trappings of tree-tracing (including hierarchy, singularity, depth, segments, and categories) by resisting rhizomatically. This new way of thinking, according to Deleuze and Guattari

(1987) is invasive. They quote Henry Miller as saying, “China is the weed in the human cabbage patch…Eventually the weed gets the upper hand. Eventually things fall *back* into a state of China” to assert that the hegemony of the US is merely a small blip in the greater expanse of time (Deleuze & Guattari, 1987, p. 19, italics added).

For contemporary French philosopher Badiou, the event of the rise of China is something that has thus far been unthinkable in the West. An event “brings to pass something other.” The event ruptures the world as it is. This is the reason why the re-emergence of China onto the global scene is an event – because it disrupts the world as it is and requires us to rethink the order of things, the dynamic distribution of power, the rhizomatic nature of the map that we have drawn. Thinking from the perspective of the event produces new truths and new worlds. According to Badiou (2012), “an event is signaled by the fact that an inexistent is going to attain genuine existence and intense existence, relative to a world” (p. 68). China is the place where hyper-urbanization/industrialization, postmodern panmediation of media, and a rabidly optimistic environmentalism collide at a speed and scale that creates a new world. As Campanella (2011) in *The Concrete Dragon* explains:

In terms of speed and scale as sheer audacity, China's urban Revolution is off the charts of Western or even global experience. … The dull blue-gray world of Mao suits and rationed goods is long gone; China today is a 24/7 frenzy of consumerism and construction. (pp. 15, 18)In his book, Campanella (2011) offers some shocking figures that evidence the unprecedented pace at which China is urbanizing. From 1970 to the early 2000s, the number of cities in China more than tripled. In 1980, Shanghai was devoid of skyscrapers, but by 2010, the number or skyscrapers was double that of New York City. This is largely a result of a mass movement of people from the countryside to urban centers and the population shift is evident in the numbers. As of 2012, China has over 160 cities with populations that exceed one million people. The U.S. has only nine such cities. Of the 1.3 billion plus people in China, half are now urban. Shanghai now has a population close to 19 million, Beijing 17.5 million, Guangzhou 15 million, Tianjin almost 12 million, Qingdao 8 million, and Xi’an 10.5 million, and these are just some of the largest cities. A mere 30 years ago, Shenzhen was a small fishing village of only 25,000 people and today it is a city of over 13 million.

This rise of urban culture has brought with it the need for an extraordinary expansion of infrastructure including roads, public transit, and bridges. In 1980, China had 180 miles of highway, but today has over 30,000 miles. In 2020, China is expected to have 53,000 miles of modern highway roads, which exceeds the world’s largest highway system – the one in the U.S., which covers 46,000 miles. Such expansion has been provoked by a growing car culture that has displaced many of the bikes and had enormous impacts on the environment. In response to the need to move people, China has invested heavily in transportation and energy solutions. In 2008 alone, China spent $100 billion to establish and expand public transit systems in cities and across the country, linking urban centers such as Beijing and Shanghai by train. In contrast, the US spent $8 billion as part of the stimulus package. In 2012, just four years after it began its first high-speed passenger service, China has more high-speed train tracks than the rest of the world combined.

China’s movement towards more sustainable energy practices only begins here. The country is delving into alternative energy sources to support its vast population. Today, China is the world’s leader in the production of both wind turbines and solar panels, and is working to build nuclear reactors as well as more efficient coal power plants (Bradsher, 2010). Additionally, China is extending its green energy investment, research, and manufacturing into aviation. It is currently working to create aviation biofuels from inedible weeds that grow in the countryside (Woody, 2011).

China must innovate, especially in regard to energy, to support its growth. Despite widespread allegations that China is stunted by a lack of creativity (Florida, 2012; Li, 2012), as of 2011, it took the lead in the

number of patent applications according to research conducted by Thomson Reuters. Facilities to conduct this research are becoming larger and more common. Applied Materials' Solar Technology Center in Xi'an, China is the largest non-government solar energy research facility in the world.

Chinese environmental non-government organizations (ENGOs) are also working to increase awareness about environmental issues and incite change. For example, the Institute of Public and Environmental Engagement headed by Ma Jun has created a China Water Pollution Map that details where pollution is happening and offers links to thorough reports. Larger ENGOs such as Greenpeace have also become increasingly involved in identifying industrial facilities that are dumping hazardous waste into water supplies and, with heightened awareness, villagers have gathered, using their bodies to protest. Other organizations that focus more on air quality issues have purchased their own equipment to measure air pollution and post relevant data because the official data released by the Chinese government is believed to be inaccurate and untrustworthy (Zhao, 2012).

New media has become an important tool to organize protests for groups and individuals. Chinese Internet users represent an already significant and growing portion of the virtual universe. They are the world's largest Internet nation. Though China had only 22.5 million Internet users in 2000, as of June 2012, the number of Chinese Internet users exceeded 538 million; this number is over double the 239 million Internet users in the US (internetworldstats.com, 2012). Of the 538 million Internet users in China, upwards of 350 million use Sina Weibo, a three-year-old microblogging service akin to Twitter (Magistad, 2012) and the number of users is growing quickly. Between 2009 and early 2012, Sina Weibo users tripled in size (Phneah, 2012).

Sina Weibo is just one form of new media in China, for it has just as many forms of social media as the U.S. As Google debated its presence in China, Baidu, a comparable China-based search engine, skyrocketed in popularity and is now the most used search engine in China. Similarly, QQ and renren fill the roles of instant messaging and Facebook (respectively), Youku offers users many of the same abilities as Youtube, and, of course, Weibo has fulfilled the role of Twitter. In fact, though refuted by other companies, the Global Web Index Social Platforms Report (2012) claimed that China is the most socially engaged country in the world, and with world's largest population, this statistic may be more true than skeptics think. After all, the Chinese have well over 300 million microbloggers, which is the equivalent to the entire US population (Anti, 2012).

The Responses to China as Event

There are two dominant ways to respond to China as an event that interrupts the world as it is: (1) by disfiguring the event so that it fits into the old discourses of the world as it is, and (2) to think through the truths of the event that disrupts the world as it is. In the United States, not surprisingly, the first strategy predominates. This can be seen in book titles about China, which echo how social theorists treat China as the other including: *China Shakes the World: A Titan's Rise and Troubled Future – and the Challenge for America* (Kynge, 2007); *China Inc.: How the Rise of the Next Superpower Challenges America and the World* (Fishman, 2006)*; China: The Balance Sheet: What the World Needs to Know Now About the Emerging Superpower* (Bergsten, Gill, Lardy, & Mitchell, 2007); *Charm Offensive: How China's Soft Power is Transforming the World* (Kurlantzick, 2008)*;* and *The Writing on the Wall: Why We Must Embrace China as a Partner or Face it as an Enemy* (Hutton, 2006)*.*

The US mass media has been more uniformly negative about China. Research has shown that news about China is laced with Sinophobic discourse and outdated conceptions that frame the country as backward, totalitarian, and the enemy (Lee, 2002; Lee, Li, & Lee, 2011; Ono & Yang Jiao, 2008). The *Los Angeles Times* provides one anachronistic example, which positions Barack Obama as the opposite of "China's

gray, staid Communist chiefs" (Demick, 2009, para. 5). More significantly, the *New York Times* has provided saturation coverage of China while consistently framing China as a threat. *The New York Times* front page headlines alone provide ample evidence, which include: "As China Goes, So Goes Global Warming" (Revkin, 2007), "Pollution from Chinese Coal Casts Shadow Around Global" (Bradsher & Barboza, 2006), "As China Roars, Pollution Reaches Deadly Extremes" (Kahn & Yardley, 2007), "China Grabs West's Smoke-Spewing Factories" (Kahn & Landler, 2007), "A Sea of Sand is Threatening China's Heart" (Kahn, 2006), "Under China's Booming North, the Future is Drying Up" (Yardley & Hooker, 2007), and "China Sets Rules and Wins Wind Power Game" (Bradsher, 2010).

This pervasive framing of China as a threat is echoed and amplified in the political arena. During the 2012 presidential debates, China was a frequent topic. Governor Romney labeled China as thieves of America's intellectual property and counterfeiters of American goods, and President Obama promised to crack down on China. Chinese citizens took note of this, and, as the title of one CNN story stated, "Obama, Romney's 'China bashing' grates Chinese netizens" (Park, 2012). The key aspect to note here is that this response to China tries to reduce China's presence in the world to the old world of Cold War discourse. *China as threat* simply replaces the *Soviet Union as threat*. This was dramatically revealed with the Obama administration's response to some educational test scores of all things. The Global Program for International Student Assessment (PISA) ranked Shanghai as number one in Math, Science, and Reading, whereas the US was ranked 29th, 23rd, and 17th, respectively. Upon hearing the results, U.S. Education Secretary Duncan said, "This is an absolute wake-up call for America….The results are extraordinarily challenging to us and we have to deal with the brutal truth. We have to get much more serious about investing in education" (Armario, 2010, para. 4). President Obama responded by saying that "Our generation's Sputnik moment is back. In the race for the future, America is in danger of falling behind" (Hoover, 2010, para. 2).

The second strategy available is to take the emergence of China as event that opens up the world to new possibilities. It is to take seriously a very simple fact that Ailun Yang of *Greenpeace China* points out, "It's a very simplistic way of thinking of China as just one singular thing. It is a place where you have 1.3 billion people and there are huge differences from region to region, and economic structures are different, education levels are different. So it's actually a country with huge diversity" (personal interview, 2008). It is to start thinking from the ground of China instead of the vantage point of the West. Jacques (2012) does this in his book *When China Rules the World: The End of the Western World and the Birth of a New Global Order*. As Jacques (2012) starkly concludes:

> Having been hegemonic for so long, the West has become imprisoned within its own assumptions, unable to see the world other than in terms of itself…. By seeing China in terms of the West, it refuses to recognize or acknowledge China's own originality and, furthermore, how China's difference might change the nature of the world which we live. (pp. 12, 416)

Our task, then, is to think the difference that the event of China introduces into the world. What worlds are now emerging? What new knowledges are being created? We consider this amidst the twilight of Democracy and the emergence of social media and wild public screens.

Delusional Axioms of Activism and Outrageous Possibilities

"Democracy—rule by the people—sounds like a fine thing; we should try it sometime in America."
--Edward Abbey

In the US, the Democracy[1] we now inhabit is a disfigured totem of the democracy of which we may have once dreamed. This is true in both theory and praxis. As Rancière (2009) explains, "We do not live in democracies. Every State is oligarchic. Strictly speaking, democracy is not a form of State. It is always beneath and beyond these forms" (p. 40). Nancy (2010) elaborates this position by arguing that *democracy* is not a property of the State, it is not a form of government, but the very opposite of the State:

> Democracy is not a regime but an uprising against the regime…. The democratic *kratein*, the power of the people, is first of all the power to foil the *arche* and then to take responsibility, all together and each individually, for the infinite opening that is thereby brought to light. (p. 38)

Thinking in the West about activism has been chronically constrained by an idealized image of Democracy that revolves around transcendental concepts of the public and the public sphere.[2] Such thinking has been built upon and limited by axiomatic tendencies with respect to Democracy. This is evident in Habermas' (1991) theorizing: "Citizens act as a public when they deal with matters of general interest without being subject to coercion; thus with the guarantee that they may assemble and unite freely, and express and publicize their opinions freely" (p. 231). In naively idealizing "freely," Habermas' (1991) point becomes suspect in his own writing, for in the same paragraph he writes of "Public discussions that are institutionally protected…" (p. 231). Institutional protection suggests not so much freedom as taming, a domestication. To be blunt, Democracy and its accoutrements hamper activism and social change. In other words, the "axioms of activism" – Democracy, rationality, civility, the public sphere, and freedom of speech and assembly – not only are not essential to activism and social change, but are often impediments. In practice in the United States, over time institutional protection has produced domesticated public spheres and tamed free speech, until now we have chain-linked free speech and protest zones. For example, at the 2004 Democratic National Convention in Boston, the "free speech zone" was underneath a highway overpass out of sight of the convention in the Boston Garden. This practice was repeated in 2008 and 2012. Far from Democracy being the condition for activism, institutional protection tames it and produces a domesticated activism as mere ritual. The shutdown of Occupy Wall Street across the US was a stunning example of what has become the Architecture of Oppression, the nefarious combination of free speech zones, the Patriot Act, Internet surveillance with the cooperation of corporations such as Facebook, Google, and ATT, privatized public spaces, and the use of local zoning laws to violate the 1st Amendment right to assemble.

The link of Democracy, the public sphere, and activism becomes even more problematic when trying to internationalize the concept. For starters, America's imperialism has rendered Democracy a terrifying and violent export, as the hundreds of thousands of corpses littering the globe mutely testify. In *Polemics*, Badiou (2006) rails against the current international manifestation of Democracy when he writes:

> We will never understand what constrains us and tries to make us despair, if we do not constantly return to the fact that ours is not a world of democracy but a world of imperial conservatism using democratic phraseology…. A solitary power, whose army single-handedly terrorizes the entire planet, dictates its law to the circulation of capital and images, and loudly announces everywhere, and with the most extreme violence, the Duties and Rights that fall to everybody else. (p. 137)

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1 We will capitalize Democracy when referring to the institutionalized, State form. We will write "democracy" when referring to non-institutionalized practices.

2 This section develops an argument first broached in "Occupy Wall Street on the Public Screens of Social Media: The Many Framings of the Birth of a Protest Movement" (DeLuca, Lawson, & Sun, 2012).

2 "Report of Chinese Environmental NGO Development" by All-China Environmental Federation, 2008. Last retrieved from http://www.greenlaw.org.cn/enblog/?p=258 on Feb 10th, 2010.

By contrast, we want to proffer a proliferation of *wild public screens*, public screens full of risk, without 1st Amendment guarantees. China is a vibrant example of wild public screens, of proliferating democratic activist practices with no guarantees of domesticating protection, wherein the decrepit delusions of the public sphere are absent, but there are risky and powerful images and conversations and protests. From the giant public screens overlooking the Beijing Olympics Bird's Nest to Shanghai's Nanjing Road to ancient hutongs glowing with TVs and computers to Yantai's middle classes absorbed by iPhones and iPads, public screens are as ubiquitous in China as they are around the globe. In comparison to the rationality, detachment, embodied conversations, and compulsory civility of the public sphere, public screens highlight images, glances, speed, panmediation, spectacular publicity, cacophony, immersion, distraction, and dissent (DeLuca & Peeples, 2002). The emergence of China combined with a mediascape transformed through the advent of social media gives birth to new conditions of possibility for activism and social change. It is past time to abandon the fossilized metaphor of the public sphere and engage the excessive proliferation of wild public screens characterized by *arrangiasti* (making do by any means necessary in the myriad places of the world). *Democracy* lives in practices, not institutional protections.

The myriad social media activities in China both echo and inspire and enable social activism at large. Far from gray staidness, China has long been a society that utilizes strikes to defend the rights of its citizens (Perry, 1995). In 2004, China experienced at least 74,000 protests, riots and mass petitions, compared to a mere 10,000 such cases a decade earlier (French, 2005). This number continues to grow. According to a leaked report, an estimated 127,000 protests occurred in 2008 and, in 2010, the number reported had risen to 180,000 (Wedeman, 2009).

This dramatic rise in activism is especially evident in environmentalism (News, 2013). Friends of Nature, established in 1994, was the first ENGO in China. In 15 years, the number of ENGOs in China had risen to 3,539 (ACEF, 2008). This number does not include numerous active ENGOs that are not registered due to various issues with official registration (Xie, 2009). Activism takes many forms. In a classic example, the Wild Yak Brigade took up arms and engaged with poachers in defense of the Tibetan antelope, which had been slaughtered to supply Western consumers with fashionable Shahtoosh shawls (In 30 years, the Tibetan antelope declined from over 1 million to under 100,000). In perhaps the most famous example of environmental activism, Green Watershed, Green Earth Volunteers, and Friends of Nature defeated a government proposal to build 13 dams along the Nu River in southwest China. The Nu River, 1,750 miles long, is home to 7,000 species of plants, more than half of China's animal species, and 22 ethnic groups. In a more current example, in 2006 citizens of Xiamen used a text messaging campaign to stop construction of a $1.6 billion chemical plant.

Xiamen is part of a wave of protests centered on polluting factories in cities such as Dalian, Shifang, and Qidong. These protests mark an expansion of environmental activism from committed activists to ordinary citizens and from green issues to social justice issues and from civil disobedience to activism by any means necessary. As professor and columnist Tang (2012) comments, "No longer is green campaigning solely the work of a small elite. Ordinary people, whose interests are at stake, are also taking to the streets" (para. 2). Such wild activism also reveals the complicated political terrain of China and the promise of social media. Similar to the US, China has its own architecture of oppression. It also has competing interests, with corporations and local governments (motivated by industrial growth bonuses and corporate bribes) at odds with local publics and often the national government seeking to promote harmony and quell unrest. Although Chinese governmental rules too often favor secrecy over transparency, social media provide improvised forms of transparency as networks of citizens are enabled to share information and organize outrage. Organizing via social media beyond effective government control and blocked from ritualized and domesticating forms of participation, Chinese citizens deploy protests by any means necessary. In the Qidong protest of a planned waste-water pipeline to benefit the Japanese Oji Paper Group, citizens ransacked government offices and seized and displayed material bribes, smashed

computers and overturned cars, and sartorially assaulted the mayor and Qidong's party secretary (Xu, 2012). Within one day the citizens succeeded and created concern, as was expressed in a Zaobao editorial that states, "The people's intense opposition demonstrated the strength of people power but at the same time displayed its violent side" (Xu, 2012, para. 10). Through wild public screens and risky practices, the people are manifesting the Chinese expression that warns about the power of the people: "*shui neng zai zhou, yi neng fu zhou,"* which translates as "the water carries the boat but can also capsize it."

Wild Hopes Beyond Reason

In performing unruly activism on wild public screens outside the confines of institutionally protected/permitted protests and fenced-in free speech zones, Chinese environmentalists enact a radical democracy beyond the ossified Democracy of the West. In inventing new forms of activism and democracy with the help of social media, the people make leaders follow. In the recently concluded 18th CPC Congress, President Hu established ecological progress as one of the 5 pillars of progress in China: "Faced with increasing resource constraints, severe environmental pollution and a deteriorating ecosystem, we must raise our ecological awareness of the need to respect, accommodate and protect nature" (Xinhua.net, 2012, para. 5).

The world is balancing on a knife's edge. Seeing the work and the impact of Chinese ENGOs gives us hope. ENGOs are changing conceptions of the "space of possibilities" and the "space of impossibilities," the very thinking enabling social change. As analyst Economy (2009) is quoted as saying, "China's greatest environmental achievement over the past decade has been the growth of environmental activism among the Chinese people. They have pushed the boundaries of environmental protection well beyond anything imaginable a decade ago" (para. 26).

The world is changing. The worlds emerging via the events of China and social media challenge our thinking and exceed our imaginations but buttress our hopes. Social media foster practices of perpetual participation as we can see with Chinese activism (as well as in OWS and the Arab Spring). These practices create new expectations of what it means to be a citizen and a person and a democracy. As Democracy fades, democracies and activisms are emerging. People becoming decentered knots of social media form cacophonous networks across vast arrays of millions of public screens that transform the tenor of the earth.

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Negotiating the End of the World in Climate Change Rhetoric: Climate Skepticism, Science, and Arguments

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Despite certainty on behalf of the scientific community, politicians and public officials have made little progress to protect the environment from the consequences of climate change. This inquiry explores one aspect of climate change rhetoric, associations with the apocalypse, as a factor in public debate. Constructing a climate change framework as foreshadowing the end of the world is a strategy of climate skepticism, because it promotes doubt, controversy, and the association of climate change with faith rather than fact. Though similar on the surface, accusations of climate science rhetoric being apocalyptic is a mischaracterization, which makes the strategy understandable, but not appropriate. The inquiry concludes by exploring the negotiations and strategies that could be used to respond to these claims in order to create a more productive deliberation surrounding climate change mitigation.

Keywords: climate change, apocalyptic rhetoric, skepticism, controversy

Evidence in support of climate change has increased dramatically over time and skepticism in the scientific community is shrinking (Doran & Zimmerman, 2009). Current scientific research largely accepts the existence of climate change and focuses on the specifics of its manifestation, severity, and urgency. Despite the scientific evidence in support of climate change, political consensus has yet to be reached, especially in the United States where climate skepticism blocks legislation that would protect the environment and incentivize lowering carbon emissions. Most opposition has emerged claiming uncertainty and a lack of scientific consensus, others minimize humankind's role in causing climate change, and others doubt its severity and urgency.

This inquiry explores the current climate of skepticism and doubt, its strategies, and the controversy surrounding climate change policies, especially in the context of apocalyptic rhetoric. The language used surrounding climate change rhetoric – doomsday, prophesy, and catastrophe – is contributing to a political atmosphere of doubt, skepticism, and disbelief where scientific data and environmental certainty are conflated as ideological hyperbole. Collectively, this rhetorical framing imperils political consensus and stymies preventive policy action, which is why claims of apocalypse are usually levied against climate science as a strategic tool to discredit their arguments. This inquiry evaluates the claims of apocalypse, its role in the climate change debate, and how apocalyptic rhetoric operates in the public sphere.

Although terms associated with climate change are often disputed, for the sake of consistency, we will use the following terms: "climate change," "climate skepticism," and "climate science." The term "climate change" refers to anthropogenic global warming that poses a serious and urgent risk for the environment and humanity. "Climate skepticism" refers to the perspective that denies or is skeptical of environmental protection policies and climate change as previously described. "Climate science" is the perspective that views current data and is subsequently alarmed about climate change and its consequences. Though

there are shades of perspectives between the perspectives of climate skepticism and climate science, these two perspectives are symbolic of the loudest voices in the climate change debate (Leiserowitz, Maibach, Roser-Renouf, & Smith, 2011). These two poles are also directly opposed and argue with one another on key elements of climate change. Additionally, when discussing religion, faith, and the apocalypse, we are primarily concerned with Christianity, Jesus Christ, and the second coming as a predominant eschatology in the United States.

This inquiry will examine the current strategies used by climate skepticism including their accusations that climate science is apocalyptic. After exploring the reasons and justifications for this comparison, we argue that these accusations are fallacious. Crying apocalypse is simply a rhetorical strategy to undermine science by mischaracterizing it. Finally, we will discuss the possible ways that climate science might respond to these claims of apocalyptic rhetoric to reclaim productive space for climate progress.

Environmental Apocalypse

Religion is a common link between doubting science and climate skepticism because influences from faith can complicate a belief in and the authority of science. Science has often had a tempestuous relationship with religion, as their ideological differences often make it difficult to believe in both (Ferngren, 2002). Emphasizing religious values can replace or supplement science as a method, transforming certainty into fantasy. Employing and appealing to religious values has often been a strategy of conservative politics and is a thread that connects many skeptic denial groups, which often tend to identify with conservative policies (Domke & Coe, 2010). Climate skeptics have even gone as far to describe "predictions of environmental disaster as the empty fantasies of confused leftists" (Killingsworth & Palmer, 1995, p. 8).

Conservative groups often pair skepticism of climate change and scientific authority with denouncing other scientific theories such as evolution (McCammack, 2007). The exclusivity of the views often means that all scientific theories are conflated as anti-religion. This dichotomy can be a powerful tool in undermining the authority of science. In the climate change debate, the authority of God over the Earth (i.e., God's plan) is in part why some groups deny science as relevant or important. Some faithful skeptics believe that the end of the world is under God's control, so addressing climate change can be conceived as diverting or opposing God's plan (Wilkinson, 2012). Religion can be a complicating force in the climate change debate that undermines and shifts attention away from the scientific data and certainty.

Climate skepticism can use religion as a tactic to create a false dichotomy between climate change and religion. Despite the prevalence of "creation care" groups that pair religious morality with climate change (e.g., Restoring Eden and the Evangelical Climate Initiative), the separation of climate change and religion has been an important factor in increasing climate skepticism (McCammack, 2007). In addition to creating a divide between climate science and Christianity, climate skepticism also engages in using apocalyptic metaphor and descriptions to apply religious connotations to climate science. By emphasizing the catastrophic possibilities, skepticism can aggrandize scientific claims in order to discount them.

According to O'Leary (1998), apocalyptic rhetoric contains three elements that answer three questions. Time answers the question, "When?", authority answers the question, "How do you know?", and evil answers the question, "Why?" (O'Leary, 1998). Engaging in apocalyptic rhetoric creates an argument for the end of world, but is this rhetoric being used by climate science? Are claims of fire and brimstone reasonable? In what follows, we use O'Leary's (1998) schema for the purpose of categorizing the apocalyptic claims from skepticism. We are not arguing that those claims are accurate. In fact, we argue that they are not genuine or accurate. These accusations, however, have gained credibility because of their superficial resemblance to apocalyptic arguments.

Perhaps the original canon of environmental activism, Rachel Carson's (1962) *Silent Spring* used elements of the apocalypse, specifically in the book's introduction, to highlight themes of "protest and awakening" (Killingsworth & Palmer, 1995, p. 11). This interpretation, however, refers to the term "apocalypse" as its definition of revelation. Carson revealed information about DDT use and its effects on the environment and described a better future without environmental damages. This association with apocalypse is not a reference to the end of the world, but simply a "balance [of] appeals to emotion" to scientific information (Killingsworth & Palmer, 1995, p. 12). *Silent Spring* is important because it shows the early roots of associating environmental advocacy with apocalyptic rhetoric, which subsequent environmental scholars invoked (e.g., Paul Ehrlich's *The Population Bomb*). This initial attempt to gain attention through emotional appeals, though initially successful, also encouraged the framing of environmentalists as "hysterical fool[s]" predicting "eco-catastrophe" (Killingsworth & Palmer, 1995, p. 1; Campbell, 1971 p. 112; Schwarze, 2006, p. 239).

Nearly 50 years later, Nerlich (2010) argued that the use of religious metaphors to describe climate change is still pervasive, especially in online spaces. The proliferation of apocalyptic terms such as "scientists as evangelists," "scientific theories as gospel," and "predictions as doomsday prophecies" constructs science as a religion devoid of certainty (Nerlich, 2010, p. 14). Accusing climate science of using apocalyptic rhetoric allows skepticism to claim equal time, space, and voice in the climate change debate by linking science to religion.

Time

Despite Matthew 24:36, "but about that day or hour no one knows, not even the angels in heaven, nor the Son, but only the Father," many predictions about the end of the world have been made. After Harold Camping's predictions in May and October 2011, a billboard in Greensboro, North Carolina emerged with a reference to Matthew 24:36 with the text "That was awkward." Failed prophecies reduce the discipline of science to a level of religious faith. Bader (1999) argues that "religion's great strength is its otherworldiness -- the ability to posit truths that cannot be readily disconfirmed" (p. 119). When Camping was incorrect, he could point back to Scripture to justify his mistakes. He qualifies as a false prophet whose "faith was mistaken," but the faith itself is still intact (Bader, 1999, p. 119).

For science, the unified discourse of inquiry and discovery means that failed prophecies discount the very method of climate science. Predictions of increased temperatures, if incorrect, would damage the legitimacy of science and all of its data. When a religious apocalypse fails, the error is in human interpretation of the divine word, a protection that science does not have. Religion does not have to provide a time or an end date for the world, but can rely on religious interpretations and their faith to determine the correct time. Science, however, cannot hide behind such abstractions and must instead propose estimates and ranges of dates.

Constructing the association with failed prophecy and prophets not only discounts science as authority but also allows for science to become separated from its identity as an environmental advocate. For example, the Cornwall Alliance (CA), a religiously-guided skeptic group founded in 2000, states that "liberty, science, and technology are more a threat to the environment than a blessing to humanity and nature" (Cornwall Alliance, 2013, para 2). The CA inverts the positive relationship between science and the environment and makes them antagonistic.

Authority

Comparisons between the apocalypse and climate change are made by some groups who would rather reduce science to faith rather than fact. Dr. Calvin Beisner, president of the CA, wrote, "Religion is the root

of any culture, and environmentalism has become a full-fledged religion in its own right. It is the most comprehensive substitute in the world today for Christianity so far as worldview, theology, ethics, politics, economics, and science are concerned" (Cornwall Alliance, 2013, p. 1). He describes environmentalism, or a focus and care on the environment, as a religion, based not on science, but on faith.

Working within an apocalyptic framework, skepticism deconstructs the authority of scientists, their scholarly rigor, and their observational and logical character. Gauchat (2012) proposed the politicization of science over time, where belief in climate change and global warming has become an issue of political loyalty. For liberals and moderates, trust in science has remained constant, but conservatives and frequent churchgoers have lost faith in science significantly over the past forty years (Gauchat, 2012). By levying accusations of apocalypse, skepticism constructs science as an authority not over certainty, but an environmental doomsday.

Using phrases such as describing Al Gore as a "green prophet of doom" creates an association between climate science and failed prophecies (Musser, 2013, para 4). The *Chicago Tribune* article wrote, "any 'science' that concludes that a future event or condition is inevitable is as suspect as a fortuneteller's prediction," undermining current predictions by comparing them to crystal ball readings (Byrne, 2012, para 11). This theme is echoed on the cover of Senator James Inhofe's (R-OK) book *The Greatest Hoax: How the Global Warming Conspiracy Threatens Your Future,* which shows a man in a suit consulting a crystal ball filled with the Earth. This theme of prophetic metaphor undermines scientific predictions based off of computer simulations and historical data. When climate science operates under a religious framework, both groups have equal grounds for discussion. The public can choose which authority to follow.

Evil

When both sides claim authority, any attempt to reduce skeptical opinions creates a strategic opportunity. Climate skepticism can create a narrative of the silenced and disempowered minority, where skepticism is David battling the Goliath of climate science (Schwarze, 2006, p. 247). In fact, when discussing claims of conspiracy, "evidence contrary to the conspiracy is itself considered evidence of its existence" (Lewandowsky, Oberauer, & Gignac, in press, p. 15). Reaffirming the majority does not silence the vocal minority, it only makes the minority louder. Lewandowsky et al. (in press) at the University of Western Australia's Cognitive Science Laboratories provide evidence for a "correlation between a general construct of conspiracist ideation and the general tendency to reject well-founded science" (p. 14). The inclination to reject science becomes a personal trait, which is also correlated with free-market ideology, and conspiracist ideation (Lewandowsky et al., in press). In the apocalyptic scenario, those who doubt scientific authority over climate models and data can easily construct a conspiracy narrative to justify deceit on behalf of scientists and experts.

This theme of conspiracy is echoed in many prominent climate skepticism outlets. Conservative media pundit Glenn Beck published a book about Agenda 21, a United Nations voluntary action plan that focuses on environmental protection and sustainable development (Beck & Parke, 2013). This book is a dystopian fictionalization about America after the worldwide adoption of Agenda 21. The plot is described on Glenn Beck's website:

> Just a generation ago, this place was called America. Now, after the worldwide implementation of a UN-led program called Agenda 21, it's simply known as 'the Republic.' There is no president. No Congress. No Supreme Court. No freedom. There are only the Authorities. (Beck, 2013)

This book overemphasizes the role of the United Nations, the authority that action plans have, and the effects of countries becoming more concerned with sustainable development. The book almost

purposefully takes the idea of global sustainability to absurd conclusions to craft a conservative nightmare for the future. This site also includes a warning list of words that are codes for discussing Agenda 21, where the use of these words should be placed under suspect of deceitful and malicious intentions. Innocuous words as simple as “climate change,” “environment,” and “equity” make the list. Also, seemingly unrelated terms such as “quality of life,” “affordable housing,” and “safe routes to school” are touted as indicators of an apocalyptic dystopian authoritarian regime (Beck, 2013).

An article on Canada Free Press states, “It was never about climate change - it was about powerful and moneyed elites controlling our economy and setting our lifestyles back to the Stone Age under the guise of preserving the planet from human destruction” (Johnson Paugh, 2013, para 2). This quotation is just one example of a pervasive theme of conspiracy rampant on website and conservatively leaning blogs. Skepticism regarding elitism, liberal policies, and environmental protection describe climate change supporters as a negative and evil force. The implications of conspiracy theories, specifically, communicate a sense of secrecy, deceptive leadership, and a fear of the majority that can be extremely damaging to climate change mitigation.

Although O’Leary (1998) stated that apocalyptic rhetoric can create platforms for action “by crystallizing vague fears into a specific danger that can be assessed and guarded against” (p. 294), the use of apocalyptic rhetoric is subject to many critiques. Using apocalyptic metaphors can easily be mocked, trivialized, or taken out of context. By accusing climate science of apocalyptic rhetoric, skepticism proposes a fortunetelling scientific authority predicting imminent apocalyptic disasters brought upon by their own greed, conspiracy, and ideology. Applying a religious framework mischaracterizes and sets expectations that science as a discipline cannot meet.

Controversy

A religious and apocalyptic frame promotes further strategies of deflection and substitution (i.e., disingenuous controversy) and staunch denial (i.e., manufactured controversy). These forms of controversy emerge in the climate change debate because religious and conservative groups can assert their opinions in equal footing with scientists. Apocalyptic rhetoric simultaneously allows for skepticism to propose a call for more research and to doubt the catastrophic consequences (i.e., manufactured controversy) and also to shift the attention from climate policies to other, less prominent factors in play (i.e., disingenuous controversy).

Scientific consensus and climate science has been a target of manufactured and disingenuous controversy from skepticism attempting to undermine reports, data, and conclusions. Two prominent examples among many will be examined here: influence from conservative funding sources and the email leak from the Intergovernmental Panel on Climate Change (IPCC) called “ClimateGate” (Nerlich, 2010). Each of these strategies emerges from an apocalyptic framing that encourages skeptical voices to be vocal.

Manufactured

One of the ways for skepticism to manufacture controversy or to maintain a position of relevance is to flood the public sphere with skeptical literature. A prominent study linking climate skepticism to conservative influence found that 92% of books published promoting environmental skepticism were funded by, sponsored by, or otherwise connected to conservative think tanks (Jacques, Dunlap, & Freeman, 2008). Of those think tanks, 90% specifically advocate for environmental skepticism as a main goal. These few but prominent voices “undermine the environmental movement’s efforts to legitimize [sic]

its claims via science" (Jacques, et al, 2008, p. 364). Influence from these sources with clear agendas for promoting climate denial can be problematic in subsequent claims of authority and truth.

Prominent promoters of climate skepticism include the Heartland Institute (HI), which engages in the tactic of manufacturing controversy. The HI has a separate center devoted to issues of the environment and climate change. Proud and outspoken about their skepticism, the Center on Climate and Environmental Policy's website hosts this quotation from the Economist: "The Heartland Institute is 'the world's most prominent think tank promoting skepticism about man-made climate change'" (Heartland, 2013). With such a powerful and purposeful agenda, one might doubt the intentionality of their reports and publications which prove their ultimate goal.

One example is a policy brief by Joseph L. Bast (2012), the president of the HI, that criticized the methods and conclusions reached in two articles that discussed the prevalence of scientific consensus over climate change. Not only have individual scientists and the IPCC established support for climate change, many scientific bodies have expressed similar sentiments such as the National Academy of Sciences, American Meteorological Society, and American Geophysical Union (IPCC, 2007). The two articles that Bast directly critiques are articles by Anderegg and colleagues and Doran and Zimmerman. In 2010, the National Academy of Sciences performed a content analysis of articles by climatologists and found that 97% of them supported the IPCC's definition of climate change, and the dissenting 3% had "relative climate expertise and scientific prominence … substantially below that of the convinced researchers" (Anderegg, Prall, Harold, & Schneider, 2010, p. 12107). Additionally, a survey found that 90% of scientists reported that global temperatures have risen since industrialization and 82% reported that humans are a significant factor in this increase in temperature (Doran & Zimmerman, 2009). These articles provide evidence that scientists have reached nearly universal consensus about the anthropogenic climate change.

Although Bast's (2012) criticisms are not without their valid points, there is no offer of alternative consensus data. Furthermore, the bulk of the critique centers on the impossibility of publishing skeptical research in a biased publication market dominated by climate science. Bast (2012) notes, "in the case of climate change, hundreds of millions of dollars in government grants have gone to scholars who say they are trying to find a discernible human impact on climate…Much less funding is available to scholars who say they are seeking to find natural causes for climate change, or explanations of natural phenomena that don't involve climate change" (p. 4). This might be the same argument that someone might levy on the HI and the potential bias of their funded research. In short, this article manufactures doubt and skepticism about the scientific consensus based on the methods used in conducting surveys of scientists.

The HI reflects just one example of conservative think tanks and political bias that can delegitimize scientific consensus. The actions of the HI, from denouncing the current state of scientific publication, the legitimacy of the IPCC, and discrediting scientific research, represent a united front against environmental protection. These strategies reflect ad hominem or ethos-related arguments against the sources, speakers, and advocates of the information as unqualified, illegitimate, or deceptive (Aberdein, 2010; Eemeren & Grootendorst, 1992). Although these arguments are not always fallacious (Leff & Mohrmann, 1974), they do reflect a diversion from the argument at hand to the relevance of the speaker. These tactics also reinforce the authority and power of groups such as the HI to critique climate science.

Groups such as the HI manufacture controversy because they undermine consensus by calling for additional research "for which there is actually an overwhelming scientific consensus" (Ceccarelli, 2011, p. 196). The production of climate skeptical books (e.g., *The Greatest Hoax*, *Climate of Corruption*, and *Eco-Tyranny*) creates a climate of uncertainty that undermines the technical sphere with a flood of manufactured controversy in the public sphere. These books emphasize the small dissenting voices and specifically fund those voices into prominent positions of authority. The anti-liberal and anti-left

commentary in these books betrays a political polarization funded by conservative think tanks (Jacques et al., 2008; McCright & Dunlap, 2000).

Disingenuous

Another strategy to discredit scientific consensus is to deflect arguments and change the conversation from legitimate public concern to disingenuous controversy (Fritch, J., Palczewski, C.H., Farrell, J., & Short, E., 2006). ClimateGate is an example of disingenuous controversy, where controversy is deflected from productive oppositional arguments to controversy that "closes off, rather than expands, argumentative space" (Fritch, et. al., 2006, p. 190). ClimateGate refers to the release of private emails sent between IPCC scientists discussing data in 2009. Climate skepticism promoted selective information therein as evidence of manufactured science. Although multiple investigative panels interrogating IPCC after the leak found the emails innocuous and the group operating under scientific protocols, these emails are still used years later as evidence of scientific deceit (Henig, 2009).

ClimateGate was used as justification for the Subcommittee on Energy and the Environment to cut funding for climate researchers by blocking climate change requests to the National Science Foundation. Describing the political climate after ClimateGate, Chairman Ralph Hall (R-TX) said, "The reluctance to engage in conversations with people who have doubts or question the veracity of climate science is at the heart of the wrongdoing that undermines trust in climate change science," thereby legitimating climate skepticism and halting funding for scientific research ("Witnesses Highlight Flawed Processes Used to Generate Climate Change Science, Inform Policy," 2011). The consequences of ClimateGate have created a pervasive rhetorical fluctuation between science as authority and science as deceitful, confirming conspiracy narratives.

Ironically, the HI had their own "gate" scandal in 2012 where the president of an environmental think tank, the Pacific Institute's Peter Gleick, leaked internal emails of the HI's funding sources and an internal strategy memo. The FAQ page of the HI website currently reads regarding FakeGate, "The tactics [Gleick] used to try to shut down debate – deception and outright lies – are common in the environmental movement" (Heartland, 2013, para 7). HI thus accuses climate supporters as using disingenuous controversy to end debate and discussion. Because climate science can be seen as shutting out dissent in order to promote expediency in policy change, climate skepticism can shift the discussion from policy action to the debate itself. McCright and Dunlap (2010) argued that conservatives learned by the 1990s that arguing against protecting the environment did not hold much traction in the American public. But, challenging "the ideas and actions of environmentalists" was a successful way to engage the public with climate skepticism (McCright & Dunlap, 2010, p. 108). Moving the conversation from the policies to the tactics, such as in FakeGate, skeptical groups engage in deflecting attention from productive controversy to disingenuous ones.

Damaging the image of science as an authority on climate change does not promote conversation, oppositional arguments, or productive controversy (Goodnight, 1992). Instead, ClimateGate and other skeptical arguments serve to stop discussion of climate change by discrediting it as a hoax. Falsifying scandals and encouraging disingenuous controversy is an intentional tactic used to halt progress by shifting public attention away from more prominent concerns, such as the most efficient way to mitigate climate risks.

These examples of climate controversy establish a framework for how climate skepticism uses strategies to attack scientific consensus already discredited by the equalizing with religion through apocalyptic rhetoric. These strategies aim to halt policy actions towards environmental protection by voicing an opposition calling for more research and hesitation towards sweeping changes. Also, the debate becomes a concern over the legitimacy of science, in general, as opposed to concern over environmental

protection. These elements of controversy are further problematized by themes of religion and the apocalypse.

Appropriateness

Having discussed the tactics of climate skepticism, their claims of apocalyptic rhetoric, and some prominent controversies, this paper now explores the accuracy and appropriateness of these assertions. Is climate science engaging in apocalyptic rhetoric? Or is this simply a label applied to climate science in order to discredit its arguments? Considering its catastrophic predictions and extrapolations, it is easy to see how discussing global shifts in climate could be compared to a religious apocalypse. Predictions of changing weather patterns, rising temperatures, and rising sea levels threaten other aspects of society such as economic, food, and health security (see Guterl, 2012; Schmidhuber & Tubiello, 2007; Schwartz & Randall, 2003; Anand & Kallidaikurichi, 2011). Are these similarities enough, however, to legitimize claims of apocalyptic rhetoric? How do we judge what is fair and appropriate in encouraging productive climate arguments?

Although science uses models to predict possible consequences of climate change, these predictions rarely, if ever, have specific dates, times, or consequences. Instead, they show ranges of effects, such as the IPCC's three levels of conservative, realistic, and severe ranges of possible temperature increases (IPCC, 2007). The predictions, when they appear catastrophic, often paint a long-term and worst-case scenario situation, not an actual, realized prediction for the end of the world. Whereas religious prophets can point to an exact date based on their faith, science can only work from past data, computer models, and established scientific reasoning to reach sound, logical conclusions. It would be unscientific to propose a precise date or in fact the inevitability of catastrophic events. Expecting science to do so is irrational.

Science itself runs on skepticism, re-running data, and performing new experiments to reach validity and accuracy, but there is never perfect certainty. That is a type of authority reserved for divinity. Extrapolating from data, the predicted changed weather patterns, is in part what makes it possible to extend climate change arguments to include catastrophic possibilities. For example, predictions of changing weather patterns can logically lead one to be concerned about cropland and the global food supply, which could endanger security within countries, cause mass migration, and endanger global security (Fischer, Shah, Tubiello, & Van Velhuizen, 2005).

These conclusions, however, are not proposed certainty, for the ultimate goal of interrogating climate science is to encourage policy makers to enact policies to mitigate these risks. Similar to buying insurance or engaging in Pascal's wager, climate science warns of the negative possibilities, ranging from conservative estimates to catastrophic possibilities and proposes tools to guard against those possibilities. Any scientist that claimed to know the exact date or consequences would be regarded in the discipline as a fortuneteller. Even by avoiding such predictions, science can still garner those labels.

At best, climate rhetoric provides estimates or the possibility of catastrophic events, but they are neither inevitable nor certain. Though science constantly strives towards knowledge construction and the advancement of information, claiming certainty is beyond its scope. "Scientific propositions are by definition provisional and open to refutation, they can offer no certainties" (Murdock, 1997, p. 87). Expecting science to be a purveyor of certainty is a mischaracterization which does harm to the scientific argument for climate change.

Climate skepticism also denounces climate science for not having all of the answers. Although science and the technical sphere can offer expertise over the possibilities and the risks, they cannot be expected to propose policy action or know all of the aspects or causes of climate change with complete certainty.

Whereas religious apocalypses propose specific sinful, immoral problems, similar to a jeremiad, climate science rhetoric merely encourages the moderation of emissions. For climate change rhetoric to demonize carbon emissions, it would necessarily demonize progress, innovation and technology. As Check (in Kinsella, et. al., 2008) noted, "the offending acts [against the environment] are tied to economic progress, one of the many God terms of our age" which may be why conservative groups are predominant in their denouncement of climate science as anti-America, anti-progress, and anti-business (p. 95).

Instead of calling for an end to progress and science itself, climate science calls for moderation and protective policies to mitigate the damages of unfettered development. This is quite a different argumentative conclusion from the apocalypse, which calls for a complete cleansing of sin with little hope of redemption. This is the positive and cathartic elements of millennialism, which argues that the apocalypse will follow or be followed by an era of "peace, prosperity and happiness" (Brummett, 1991, p. 17). A religious apocalypse contains an element of positivity and of good triumphing over evil in the second coming (O'Leary, 1993). There is nothing redemptive or cleansing about environmental catastrophe. Instead, climate change rhetoric finds redemption not in allowing for a climate apocalypse, but in mitigating that possibility.

In fact, claims of apocalyptic rhetoric might be more appropriately attached to climate skepticism which describes conspiracy plots that may imperil global safety and order. Apple and Messner (2001) describe apocalyptic rhetoric as featuring "dramatic, mysterious, quasi-scientific language and a dogmatic tone" (p. 210). Brummet (1991) further references apocalyptic rhetoric as encouraging "a sense of disorientation, disorder, and turmoil" (cited in Apple & Messner, 2001, p. 210). These elements can be found in the rhetoric of climate skepticism that emphasizes elements of conspiracy, the evil of climate science, and dystopian, inevitable consequences of an environmental world order.

To summarize the problems with conflating science and religion, we refer to Campbell's (1971) discussion of "science fiction" and "science fantasy" as a key narrative problem in communicating climate risks. She notes, that "science *fiction* has become scientific *reality* and predictions about the future of life on earth, which seem to be the ravings of a mad scientist, are actually systematically developed inferences based on processes already in motion" (Campbell, 1971, p. 123). There is a resemblance between the predictions of religious apocalypse and scientific extrapolations which makes believing them difficult. Scientific consensus and climate science rhetoric use the data and predictions discovered through the scientific method to convince the public of an urgent need. The catastrophic possibilities are simultaneously powerful rhetorical tools to encourage action and a tool for the opposition to discredit climate science.

Response Strategies

Climate skepticism levies claims of apocalypse on climate change rhetoric, even though such claims are not genuine and in fact damage climate change deliberation. But, are these accusations worthy of a response? Tarla Rai Peterson (in Kinsella, et. al., 2008) warns against ignoring these voices because "the material reality is that a small group of humans continues to engineer a policy that is destroying the earth as a habitat for humanity and many other species" (p. 101). These accusations should be addressed because they do construct a problematic and unproductive discourse surrounding climate change mitigation. In light of the pervasive use of these assertions to undermine climate science and arguments, how should climate rhetoric respond? What are the strategies for opposing an argument based on fallacious comparisons?

Argumentative response could lead to validation of the opposition as a worthy argumentative claim or as a threat to climate arguments. Ceccarelli (2011) argues that responses to such controversies should be

"sensitive to audience and burden of proof, reclaim democratic values for science, and highlight how opponents of mainstream science do not always embody the scientific and democratic values they claim to champion. Such responses would not try to shut down public debate on these matters, but rather, engage the debate" in order to undermine arguments as opposed to dismiss growing public skepticism (p. 198).

It is also possible to consider moving away from fear tactics and an emphasis on appeals to *pathos* in order to better communicate a deliberative framework. By minimizing a discussion of the potential consequences, climate change rhetoric could avoid providing fodder for apocalyptic claims. Although the emotional and affective aspects of climate change can be beneficial in communicating urgency and severity (O'Neill & Nicholson-Cole, 2009), they can also be used as justification for apocalyptic claims. As Campbell (1971) proposed, climate science should engage in "systematically extrapolating from what is known and proved in predicting future catastrophes, rather than fantasizing and exaggerating for the sake of dramatic and persuasive effect" (p. 124).

Another strategy could be engaging religion on a common ground of shared values. Reaching a basic agreement on values could create an opportunity for persuasion to begin (Perelman & Olbrechts-Tyteca, 1969). In the climate debate, science could engage with issues of morality and appeal to Christian values of charity and aid. Although developed countries produce 46% of carbon emissions, developing countries are predicted to receive the worst of the effects from increased temperatures (IPCC, 2007, p. 37). The IPCC 2012 special report on climate disasters noted that 95% of natural disaster casualties happened in developing countries, mostly due to limited infrastructure, preparation, and resources to respond to disasters (IPCC, 2012, p. 9; Anand & Kallidaikurichi, 2011). This places additional strains on the resources of developed countries not only to respond to their own disasters, but also to aid other countries affected. There is an inherent moral and humanitarian exigency in the climate change narrative, because those who are most contributing to the changes will not be those who bear the burden or experience the consequences. Appealing to these values could be persuasive for religious groups and individuals to care for the environment.

The major problem to reframing the debate and responding to claims of apocalyptic rhetoric is not to validate such accusations through a defensive response, but to restructure the discussion to a deliberative framework. Instead of staying trapped in a forensic battle of who is at fault and whether or not climate change is happening when and to what degree, the debate must shift to policy action, efficacy, and environmental engagement. Though previously used as a strategy, climate change science must refrain from aggrandizing the effects of climate change and focus more on prevention and mitigation.

Previous climate skeptic Bjørn Lomborg, author of the *Skeptical Environmentalist*, has since changed his opinion on climate change (Elmhirst, 210). He perhaps has summarized climate change rhetoric in the simplest terms, saying "Global warming is real, it is man-made and it is an important problem. But it is not the end of the world" (Elmhirst, 2010, para 2). By engaging claims of the apocalypse with an emphasis on the *possibility* of catastrophic risks and the *certainty* of science as a method, claims of apocalyptic rhetoric can be addressed. The apocalypse as a strategy is unlikely to end as long as it is successful in opening an argumentative avenue for opposition. Instead of completely ignoring skepticism, climate science must negotiate engagement with doubt and hesitancy as not to privilege or legitimize these skeptical voices. A failure to mitigate climate change could possibly end the world as we currently conceive it, but appealing to accusations of apocalyptic rhetoric will only exacerbate hesitancy, doubt, and skepticism. Avoiding apocalyptic rhetoric as a problematizing factor in public deliberation avoids conflating science with religion and reinforces the position of science as an authority in climate change mitigation.

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Masculinity and Making Do: Outdoor Recreation's Risky Rhetoric

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While conducting interviews in Zion National Park, I was struck at how often participants laughed while telling stories of seriously bad outdoor recreation experiences. They would explain that they forgot the extra rope or got lost or became dehydrated or fell off a horse. Nevertheless, they would conclude by laughing and saying that it was all part of the fun of outdoor recreation. These challenges constitute a perception making do and illustrate a masculine approach to risk taking. I contend that outdoor recreation discourses not only position making do as part of the attraction for these activities, they also normalize risk with masculine language, creating a context that connects risk-taking behaviors with identity affirmation. This analysis demonstrates that the concept of making do can be productively expanded and that this masculine way of conceptualizing outdoor recreation can blur the lines between acceptable risk and folly.

Key Words: Masculinity, Making Do, Risk, Rhetorical Field Methods, and Story Telling

> Hiker One: When we were on the Canyonlands trip. It was like the second day—I mean looking back at it now, I really enjoyed it—but at the time, I was like miserable—.
>
> Hiker Two: Miserable. The last mile was just so painful, but you didn't have a choice. It wasn't like you could just give up and sleep there for the night.

This snippet of a conversation between two hikers highlights a common framework for engaging in outdoor recreation: a masculine one that expects and even encourages persevering through pain. This framework creates a culture in which one is not surprised to go through misery to be rewarded with an amazing view or a feeling of accomplishment. Moreover, people who recreate outdoors sometimes devise situations in which they have no choice but to ignore pain and risk or call out Search and Rescue. Although not all outdoor recreators adopt this masculine view of recreation, an expectation of *making do* is almost ubiquitous.

De Certeau (1984) contends that practices of making do are ways for people to get by in a society in which they feel they do not belong or in which they are denied privileges. For example, marginalized groups of immigrants may have to learn a new language and adapt to a new way of living while holding on to relationships and practices that are culturally important. De Certeau states, "By an art of being in between, [they] draw unexpected results from [their] situation" (p. 30). Such actions allow people to take the conditions under which they live and "make something else out of them" (p. 32). In de Certeau's conceptualization, when people make do, they subvert a problematic system. For outdoor recreators, making do means understanding and surviving within the confines of nature's rules. Nature, especially weather, is capricious and dangerous, at times; humans must try to get by as best they can with what they have. The idea of making do is appealing to some outdoor recreators for its potential to challenge. The idea of making do is appealing to some outdoor recreators for its potential to challenge. Even among those who take a more relaxed approach to outdoor recreation, a common idea is that suffering is a necessary, and even enjoyable, part of outdoor recreation.

To understand how this masculine perspective makes its way into the performances of outdoor recreators, I analyzed twenty in-person interviews I conducted at Zion National Park. I contend that outdoor recreation discourses not only position making do as part of the attraction for these activities, they also normalize risk with masculine language, creating a context that connects risk-taking behaviors with identity affirmation. I start this essay by explaining what connections exist between masculinity and risk. I then move on to my analysis, discussing my method and results. And I conclude with implications of both my analysis and the masculine performances that pervade outdoor recreation.

Masculinity and Outdoor Recreation

Constructions of masculinity play a large role in sports, in general, and outdoor recreation, in particular. People who adopt masculine characteristics approach sports as a challenge to be met and overcome. Almost all outdoor recreation involves some kind of risk. People voluntarily engage in these risk-taking behaviors, deriving pleasure from "seeking *control over the seemingly uncontrollable*" (Lyng & Matthews, 2007, p. 89). Lupton (1999) explains that risk offers "ways of adding thrills to life, testing one's boundaries of fear and endurance, proving one's adulthood or masculinity" (p. 157). In her research, risk is rewarding because "Transcending everyday life becomes an end and purpose in itself" (p. 157). Participants in a study about skateboarding described "the joys of taking risks" as their reasons for engaging in such an activity" (Young & Dallaire, 2008, p. 240). In this same study, participants "constitute themselves as 'responsible' risk-takers, controlling their skateboarding practice to avoid injuries" (Young and Dallaire, 2008, p. 236). When engaging in risky behaviors, participants struggle with a loss of control over some elements and come to rely on the control they have over their bodies, skills, and preparedness to escape danger. For example, "Experienced skydivers, are typically only anxious on the ascent, as plane takeoffs (the most dangerous aspect of flight) are when these skydivers feel they have no control" (Celsi, Rose, and Leigh, 1993, p. 8).

Lyng and Matthews (2007) call this play between control and loss of control *edgework*. They explain, "Edgework is best regarded as a fully embodied practice in which the 'mind' . . . is extinguished by the demand for an 'instinctive' bodily response to saving oneself" (p. 87). They adopt an edgework approach to understand why people engage in high risk behaviors and why there has been an increase in recent times. The edgework model purports that people are drawn to risky behaviors to get a particular experience. Senda-Cook's (2012) research indicates that practicing some behaviors leads to specific experiences that reinforce one's sense of self, sometimes creating an authentic identity. People who normally would not take a risk will do so in a national park because they think it will produce the desired experience. Lyng and Matthews explain, "This seductive power derives from the attraction of a clear and vitally consequential boundary line – an 'edge,' as it were – which must be negotiated by the individual risk taker. In the purest expression of edgework, one 'negotiates' the edge by striving to get as close to it as possible without actually crossing it" (p. 78). The desire to challenge one's self with unbendable, material reality is part of what draws people to engage in hobbies that necessitate these interactions. Indeed, Lyng and Matthews state that edgework experiences alter the way we experience reality, "producing a sense of the experience as deeply authentic and ineffable" (p. 79). Lyng and Matthews continue: "Participants experience an exaggerated sense of self at the edge, which they often describe as their authentic or 'true' self" (p. 79).

Although risk-taking conventionally has been associated with men and masculinity, the relationship between these concepts is more complicated. Risk taking is not sex-dependent but rather gender-based. Taking risks is part of a gender performance (Butler, 1990; Engstrom, 2012). For example, Furman, Shooter, and Schumann's (2010) study did not confirm previous findings that men will ski more dangerous slopes to impress women and found that all-women groups can be just as competitive as all-men groups.

"The [risk] acceptance heuristic may apply regardless of sex" (Furman, Shooter, & Schumann, 2010, p. 465). In other words, people do not take risks in recreation because they are men or women, biologically. They take them because doing so conforms to a perception of masculinity or femininity and what is expected for certain activities. In attempting to understand why people engage in high-risk recreation, Schrader and Wann (1999) found that sex was not a strong predictor of involvement. They suggest, "Perhaps a better method would be to examine the individual's level of masculinity and femininity. Rather than just being 'male' or 'female,' perhaps measuring the respondent's level of masculine traits and feminine traits would provide a different, and more informative perspective in regards to participation in high-risk recreation" (p. 438). Taking risks is a gendered practice that contributes to people's gender performances (Hannah-Moffat & O'Malley, 2007). As Lyng and Matthews (2007) state, "The available data on risk practices suggest that males and females may not differ in their predilections to risk taking, but they may be attracted to different types of risk behavior and may deal with risks in gender-specific ways" (p. 75).

Some risk-taking behaviors reinstantiate the conventional relationship between sex and gender. Furthermore, engaging in high-risk recreation such as skydiving or mountain climbing reinforces their notions of themselves as masculine. Lindgren and Lélièvre (2009) revealed that the men who sought out danger on *Jackass* were engaging in a hypermasculine performance based on pain endurance. However, scholars also pointed out how high-risk behaviors can undermine this relationship.

Women, especially, use risk-taking to challenge dominant perceptions of femininity or to break out of feminine expectations. Lupton (1999) argues, "Women who find the constraints imposed by cultural notions of femininity may seek to counter these by deliberating [sic] engaging in masculine-coded risk-taking activities or other activities that allow them to 'let go' to some extent of the control that is expected of them" (p. 161). Challenge comes from skateboarding communities. "Through accepting pain and injury, [a female skateboarder] also deliberately challenges the restrictions imposed on her by techniques of femininity, transgressing gender boundaries" (Young & Dallaire, 2008, p. 241). Therefore, although risk is generally associated with masculinity, both men and women engage in it to either affirm or challenge conventional notions of masculinity and femininity. However, both use it toward masculine ends. That is, even though men could take risks that challenge conventional ideas of masculinity (such as performing femininity), those behaviors are not studied as performances of masculinity (i.e., coded as risky practices).

In outdoor recreation, risk is normalized among all participants. Celsi, Rose, and Leigh (1993) call this normalization *risk acculturation*. This is necessary in high risk activities. Without building up a threshold of risk expectation and normalization, people would not engage in these behaviors repeatedly. My analysis revealed that even when participants were not grounded in a competitive, masculine approach to recreation, they still retained elements of masculinity, specifically those associated with risk taking.

Artifacts and Field Work

In this analysis, I was interested in how the masculine paradigm manifests in the rhetoric that recreators themselves use to describe their experiences. I argue that stories describing experiences (whether fact or fabrication) combine and circulate to create a context for outdoor recreation. This context shapes not only how people choose their recreation activities but also how they interpret their experiences, cultivating a powerful discursive system in which outdoor recreation happens. Specifically, I studied the transcripts of a set of twenty interviews I gathered at Zion National Park in 2009 and the results of an online questionnaire to which 70 people responded. Using a *rhetorical field methods* approach, I spent a month conducting in situ research at Zion during the summer and conducted these interviews, which range in length from about 10 minutes to over an hour (Middleton, Senda-Cook, and Endres, 2011). I invited friends and co-workers

to respond online to 10 questions about outdoor recreation. I did not collect demographic data from my interviews. Based on what people said in their interviews, I can say that their ages varied widely – from early twenties to over sixty – and that both men and women were part of the interview group. At Zion, I interviewed people in a variety of locations (e.g., front country trails, back country trails, near the snack bar, in the town adjacent to the park, and at campgrounds) and thus had a variety of levels of experience represented. After transcribing these interviews, I treated the transcripts of these and the results of the online questionnaire as artifacts for analysis, supplementing them with my own participant observation and experiences.

A Masculine Performance: Making Do and Risk

Among outdoor recreators, making do is part of the attraction to outdoor recreation. Recall that to make do, in this context, means to suck it up, tough it out, take it, or, in contemporary parlance, "man up." Recreators frame this masculine approach to outdoor recreation as a response to the "broader culture [that] encourages immobility and acquiescence" (Atkinson, 2008, p. 307). The discourses surrounding outdoor recreation create a space for masculine performances by both men and women that seem appropriate and even desirable. People talk about themselves and their recreation practices in terms of the masculine paradigm even when such an approach does not support their stated goals (e.g., relaxing). The most ubiquitous types of talk that constructed and perpetuated the masculine paradigm are those that show the recreator as maintaining the right attitude, framing outdoor recreation as inherently risky, and finishing the trail.

Maintaining the Right Attitude

When telling the story of a difficult event, speakers consistently emphasized that maintaining the right attitude was essential to getting through it. Participants explained that they were able to survive a bad experience by adopting a correct frame of mind in the moment. Additionally, maintaining the right attitude extends to the discussion of the event afterwards. Participants would usually laugh about a bad situation, even if they knew it was serious or life-threatening. Some said they had never had a bad experience, even if by most standards, they had. Deriving pleasure from even the bad experiences is critical because part of the point of outdoor recreation is to engage in these risks. For example, a fellow camper stopped by my campsite to talk about the "killer three-mile hike" he had just done. He said it was "S-T-F-U." I asked what that meant, and he said, "Straight the Fuck Up." He said it "worked" him and that while he was hiking, he "hated it." His crew leader told him that was the wrong attitude to have, and this man said it was the right attitude to have because it was the attitude that would get him up the mountain. But in his retelling of it, he laughed and was proud enough to stop by my campsite to tell me about it. Having an attitude that shows one is prepared for hardships is a form of making do.

The more revealing performances came when people were telling about "bad" experiences after they had happened. I put bad in quotation marks because that was what I had asked about. But almost everyone with whom I spoke said either that they could not think of a bad experience or they would laugh about something that sounded terrible. One interviewee, after describing a climbing trip during which he and his partner forgot a second rope and had to jump or free climb to a ledge 10 feet below where their rope ended, said:

> You know, when I think back, I don't remember anything that I would not want to do again. There's probably stuff I wouldn't want to do again as far as a certain trail or something, but I've generally enjoyed most of my, most of my trips.

Another couple remarked simply, “We never have a bad time when we're outside.” Then one of them elaborated,

> You know actually we've had some—I've had some fiascoes at different points in time, but, ah, I think I've enjoyed them all. Even the bad times. I think I've just enjoyed being out. And, you know, the good comes with the bad. You have to put up with both of them.

Another couple recalled a time when they were lost on a mountain in fog and could not find the trail. They estimated that they went five to six miles off the trail and spent hours longer hiking than they had intended. At the end of this story, they concluded, “But in the end, it was a really good, fun day. We've never really had a bad walk ever.”

Another strategy in the retelling of bad events was to acknowledge that they were bad but laugh about them. One interviewee told a story about hiking the Manchu Pitchu trail in a snow storm with severe bronchitis: “I truly thought that *OK, this is it, my health is ruined*; *I'm really going to have serious, long-term problems with this*. So, that's one of my memorable bad experiences. You know, you usually laugh about these things later. I mean, even the bushwhacking one [that happened just a day before], we're already laughing about it, and it was horrible. You know, it happens. So, stay home.” Her attitude that if people are not ready to laugh at a horrible experience, even a death-defying experience, then they should stay home embodies the masculine performance. By denying that bad experiences happen or laughing about them, outdoor recreators are eager to show that they can handle whatever hardships come along because they perceive such activities as inherently risky.

Framing Outdoor Recreation as Inherently Risky

Outdoor recreators demonstrate their masculinity and ability to make do by characterizing the nature of outdoor recreation as inherently risky and that people who want to do must make do and acculturate to the risks. Part of the reason that people laugh at the bad times when they recreate is because if they did not have that attitude they would probably not continue to recreate after a bad experience. People who frequently recreate outdoors know that it is not always perfect and that often times, one must face and encounter danger. In fact, that is part of the attraction. One person, trying to think of a bad experience, stated, “I don't know that I could even think of anything that really went sour. Um. I mean I've had things happen. I've been thrown off horses and stuff like that, but that's just the way it is, you know?” One interviewee characterized bad weather as something that makes an experience more “interesting”: “Hiking down the Grand Canyon in the snow can be exciting. Six inches of it, slipping and sliding.” Wanting to challenge one’s self can be productive, as Lupton’s (1999) research into risk illustrates. The risk itself becomes not only part of the activity but also part of the reward. One woman stated it well, “We've gotten into some tight spots occasionally. But we've always got out of it. So, it's all part of the fun of it, really.”

This last quote is a good example of the risk acculturation that occurs in outdoor recreation. Many people new to recreating encounter this masculine paradigm of risk-taking behaviors and learn to see their own activities in a similar way. In order to continue recreating, knowing these dangers exist even if they do not happen every time someone recreates, means that people must acculturate to these risks. This is evident in the way that people talk about the risks they are will to take in order to feel as if they have accomplished something. That is part of the pleasure of risk taking, in general, and outdoor recreation, in particular.

In acculturating to these risks, people described how they had to learn to live with pain or fear and push through it. One couple, quoted above, described an experience they had bushwhacking, which means hiking without a trail: “Well, a couple days ago. We had a horrible experience on the Escalante, bushwhacking up one of the canyons. Just hideous, just the worst. I mean, my legs are just thrashed. That was terrible. But the usual.” After descriptors like “hideous,” “the worst,” “terrible,” and “thrashed,” most

people would not want to make this their “usual.” But for many outdoor recreators, these are things they learn to live with. Many people would tell a story or explain conditions that they have hiked through that sounded truly awful. And I would ask if it stopped them from engaging in that activity. And they would respond, “Oh, definitely not,” as one interviewee put it. During an interview with a group of students visiting a series of national parks (quoted at the beginning of this essay), one explained how her perception of a hike changed: “When we were on the Canyonlands trip. It was like the second day—I mean looking back at it now, I really enjoyed it—but at the time, I was like miserable—.” This quote demonstrates the how people develop risk acculturation of outdoor recreation. During the hike, this student was “miserable.” But seeing other people do it and hearing how they talk about it, had taught her that her level of pain and frustration was normal and expected. Another student picked up her train of thought to explain why people must acculturate to the risks to continue recreating outdoors. She echoed, “Miserable. The last mile was just so painful, but you didn't have a choice. It wasn't like you could just give up and sleep there for the night.” And this is the rub with outdoor recreation. Many times, recreators cannot give up without calling out Search and Rescue. Therefore, short of emergency, they learn to push through the pain.

Finishing a Trail

In the performance of telling one’s experiences with outdoor recreation, one’s ability to adapt to the risks and push through to finish a trail is closely connected with one’s sense of self. As Lyng and Matthews (2007) explain, when people engage in edgework, they feel as if their true self is shining through in the experience. They are pushed to the brink and can come out alive and that shows what they are really made of, in their own eyes. In this section I unpack how several groups of people conceptualize the importance of finishing a trail. First, some people seemed truly comfortable with not finishing a trail. They did not subscribe to a masculine paradigm of finishing at any cost. However, most people said they would prefer to finish, and if they didn’t, they would look forward to their next opportunity to do so, which indicated that they hoped to prove themselves the next time out. A third group of people indicated that they are willing to turn around in the face of exhaustion, pain, or bad weather. When framed in this way, they were assured that they had a good reason to turn around. But a few revealed that the reason they would turn around was because they would rather die than be rescued. And along those lines there were some, the last group, who claimed they always finish the hike no matter what.

First, some participants had no compunction about not finishing a trail and framing themselves in that way. One woman said, “We don't have to prove anything.” Another man summarized his feelings: “I could care less. If I make it as far as I want to make it, it's my choice. Do I feel as if, if I failed? No.” The conventional expectation is that a person will finish a trail or have a reason outside of pain or personal ability (e.g., weather or injury) not to. Among the group of students, there were some experienced recreators and some novices. Their conversation revealed some of the acculturation process in action, as shown above. In another example, when one said that Canyonlands was the worst hike, another one countered, “You didn't even go on the whole thing. So, you can't even say anything.” Then, the one who did not finish said, “I know, I turned around because I couldn't do it.” A whole discussion about not finishing trails unfolded. Some of them said if people need to get back in time to eat dinner, then it’s OK to turn around or if they are in pain. Then another one mocked and said, “You mean cold.” Then, I heard about how two group members turned around after hiking about 200 yards in a river. And they defended their decision while the others accused them of quitting too early and failing to tough it out. Then, one explained, “It wasn't rewarding going through it. I just didn't enjoy that and I didn't see any reason for me being there even if other people thought I should just suffer through it.” After this comment, another one asked, “Suck it up?” And the one who turned around said, “I thought there was just no point. I paid to be on the trip and I did not pay to be miserable.” And everyone laughed. The amount of defending the two people who turned around had to do was instructive about the dominant approach to outdoor recreation.

The pressure to finish a trail is strong. Therefore, many interviewees hedged their answers by saying that if they quit a trail before the end, there is always a next time. This was the second group of people. One person with whom I spoke was waiting for his friend to come back from the end of a trail he did not want to finish said, “You know, I feel OK. But I think I might come back one day and try to make it a little further. But for me, for now, I'm happy with what I did today.”

Some attached personal satisfaction to finishing a trail, connecting it to the kind of trail they are hiking. One reported that if he was going to do a difficult hike and got almost all the way, he would finish. Another one echoed this, “Depends. I mean, if I thought it was an easy trail, and I, you know, if I thought it was a trail I could have made, [I would feel] a little disappointed. If I get onto a trail and I really feel like it's dangerous or it was more than I really wanted to take on, I'm fine with that.” Mentioning this element of danger is important because many people feel like it is necessary to stop their activity if it gets dangerous. One person said:

> If the weather's bad and it gets dangerous, you turn around. Do the right thing and go back, call it over. I mean, it's you know, *c'est la vie*. So. So what? You don't make it to the goal, there's always the next time. It's not going away necessarily.

But because many people also frame outdoor recreation as inherently risky, it is difficult at times to determine how much danger is acceptable.

The third group of people includes those who turn around when the danger is too high. These participants framed this practice as acceptable within this masculine paradigm because it means avoiding an even worse occurrence – getting rescued. In popular press, people have reported feeling “embarrassed” about being caught in an avalanche, for example. Part of this embarrassment might stem from a desire to keep rescuers safe because of a bad choice. One woman said, “I just try to not—not to get too far from what I know is a safety zone 'cause I know I wouldn't want to put myself in danger nor would I want to put anyone else in danger coming to rescue me.” And sometimes it is simply personal pride in one’s abilities to make good decisions, as another pair of interviewees indicated. The gentleman in the couple said that i*f a person picks a difficult hike on a bad weather day, “You're putting yourself at risk. If yo*u get stuck and call out, then people are going to try to help you.” And the lady confirmed, “Yeah, and I'd feel a right idiot if I had to call out mountain rescue. It feels, I don't know. I'd be quite humiliated really.” To avoid being rescued some people just push through any conditions and any pain to finish.

This is the last group of people, those who claim they finish a hike no matter what. Some people so thoroughly adopt the masculine perspective in their telling of their experiences that they report always finishing trails. With some forms of outdoor recreation (e.g., backpacking), not finishing a trail is not an option unless it is truly an emergency. So, at times, the idea of not finishing is synonymous with calling out Search and Rescue. This is why some outdoor recreation is necessarily more risky than other types and perhaps why a masculine approach to risk is necessary to engage in the activity. While talking about goals in recreation, a woman said she likes to relax when she comes to recreate and her husband said he “likes to push the envelope a little bit.” But regardless of these different goals, both of them reported that they always finish trails. She said, “We never don't make it.” And he said, “I would kind of feel like I didn't accomplish what I set out to do.” Then, she added, “That's right. Keep going. You might rest for a little bit, but you're going to keep going until you finish it.” And he confirmed, “Exactly.” Another interviewee described his feelings:

> I think I would feel pretty bad if I did not finish the actual trail because, I mean, even the hike I did today, I was not expecting—It was Observation Point, which was four miles [one way], which I didn't think it was like that big of a deal, but it was four miles, it was just like straight up, switchbacks, just—I think it was 3,000 some feet in the air. So, I had thoughts of turning around, but I thought it would be awful to turn around just because I was tired.

> So—I mean other situations, I was on that backpacking trip, where you have like 100-pound pack on. That was, like, some of the most pain and misery I've been in, but I still went on because I wanted to finish that trip. Oh, and you sort of had to, too.

His last caveat, that "you sort of had to, too" is accurate. Unless recreators are willing to call Search and Rescue or die in the place they stop, they will have to finish the trail they are on.

These disparate examples illustrate the pervasiveness of a masculine approach to outdoor recreation and risk. Only one group of people indicated that they were comfortable not finishing a trail and willing to frame themselves as such. For most outdoor recreator, discomfort is a necessary part of the experience, which means that making do is as well. Again, not all people who recreate outdoors adopt this paradigm, but even for those who generally do not, my interviews reveal that some elements of it come through. The inherent risk in outdoor recreation is part of the attraction. Not everyone, but lots of people, use outdoor recreation situations to test themselves and push themselves to their limits. This could be because they like the pain (as Atkinson's research found), but my interviewees revealed that seeing beautiful scenery and feeling a sense of accomplishment were the important goals.

Although outdoor recreation has risks like unpredictable nature (e.g., weather and animals), it is perhaps made more risky by an approached couched in masculinity. Because to "keep coming back for more," as one interviewee put it, people have to have a certain tolerance for uncertainty and discomfort. However, they do not have to push themselves to endure terrifying, windy mountaintops or hypothermia or dehydration. These are choices that recreators make and they do so, I argue, in part because it conforms to expectations perpetuated through discourse about how one performs when recreating outdoors. And if many people are not actually doing those things, they are certainly talking as if they are. To me, that points to the same perpetuation of this masculine thread. This approach is not without consequences.

Conclusion

In talking about outdoor recreation, many people frame themselves and their activities through a masculine paradigm. Making do in tough situations is viewed as necessary and risk taking is considered "part of the fun." Although scholars report widely on the risks men take in many situations, this analysis supports findings that indicate in some sports both men and women take many risks because they are considered necessary to succeed in the sport. My analysis illustrated how risk acculturation is taught and learned in groups in outdoor recreation (i.e., through story telling). While people new to this area may give up early when hiking a difficult trail, more experienced members of the group may push others to continue. If they do not do so on the trail, the more experienced members may bring up the early retreat later in a mocking way to show that it is unacceptable. Conversely, many experienced recreators openly say that people should turn back when the activity is too hard, even if they themselves would continue going.

This analysis lends insight into different kinds of making do and the ways that people may construct this notion differently, extending this currently undertheorized concept. In de Certeau's (1984) understanding, marginalized groups use the tools of a dominant society to their own ends, creating spaces for identity and empowerment by repurposing or reclaiming practices and discourses of the dominant culture. I do not see the distinction between marginalized and dominant as clearly in outdoor recreation as I do in other cultural milieus. This analysis illustrates how people who are likely not marginalized in the conventional sense of the word, outdoor recreators, create situations to test themselves. Thus they desire to make do successfully. These contrived situations exist in many places in society (e.g., any typical sport like basketball or track). What differentiates outdoor recreation from these others is that there is no referee or boundaries or rules that stop the game. If people backpack in a remote desert and realize they did not bring enough water (perhaps violating a "rule" of recreation), they cannot simply call a time out. In this way, people

conceptualize outdoor recreation as a serious test of one's abilities, physicality, and knowledge. This "voluntary regression in lifestyle" is meant to offer the recreator some idea of their own will, their true self, if we align with Lyng and Matthews's (2007) explanation of edgework. Nature is uncontrollable and does not care if one lives or dies. And so people use this as a backdrop to engage in activities that range from uncomfortable to high-risk to deadly. This connects the concept of making do with risk taking. Although not all risk taking involves making do and vice versa, it is important to recognize the possibility of risk in making do. Consider de Certeau's example of marginalized groups of people. By appropriating the discourses and practices of dominant culture, they are risking punishment, exposure, and excommunication. Thinking about making do as something more associated with physicality – with one's placement on the globe and what one can carry in a backpack – prompts us to reconsider de Certeau's idea to think of what else we get when we make do and what we can lose.

Of course, power is a part of understanding what it means to make do. At this point, though, I would like to think about power in terms of control. Control is a more fleeting privilege than power. And I do not think this is especially clear in cultural terms. However, when we think about power and control with regard to nature, it does not make sense to think about power over nature but rather the elements one can control. Because of its enormity and indifference, nature always has power. Moreover because humans are so entirely dependent on nature, any harm that we do to "it" will land upon our own heads. In other words, you can't beat the house. However, people can and do attempt to control nature. This understanding surfaces not only in discourses about energy and development but also in metaphors about conquering nature by reaching the peak of a mountain. In the face of impossibility, people struggle to gain control. Furthermore, they exact control over the things within their reach: their bodies. This is why in training and preparing for a recreation trip, they strive to maintain the right attitude, frame outdoor recreation as inherently risky, and prepare their bodies to finish the trail. In other words, they voluntarily forfeit some control for the sport of attempting to regain it. Attempting to gain control can be risky and doing so consistently is like making do. The masculine paradigm of seeking to control situations can apply to making do as well as risk taking. In their research about risk taking, scholars do not discuss acts of making do as consonant with the masculine paradigm. But I submit that this gendered framework extends to making do. And because it is not connected to one specific demographic such as young, white men, it creates a dominant narrative within outdoor recreation that impacts how others perceive outdoor recreation.

In the context of outdoor recreation, this analysis illustrates the role that risk taking plays in building not only a subculture of outdoor recreators but also a dominant perception of recreation that is then perpetuated among non-recreators. Every year, search and rescue teams risk their own lives to help people who have lost their way, become trapped by bad weather, or injured themselves or died. This safety net for recreators can be costly, especially for the small towns that neighbor popular recreation spots such as the Grand Canyon. The National Park Service states in its *Search and Rescue Reference Manual* that it will make saving a human life a priority over everything else when needed. While these rescue missions are not frequent, they do point to a need to balance risk and draw a line between making do and folly. When acculturating new people to the risks of outdoor recreation, park staff and experienced recreators need to both normalize risks and teach people when the danger is too great. Without risk acculturation, people would not explore natural places in nearly the numbers they do. A masculine framework for processing risks may make it more difficult to determine effectively when the danger in a situation is too great. In Rickard, McComas, and Newman's (2011) study of risk communication in national parks, they found that visitors received messages from many different places about risk. All of the messages in national parks impact what decisions visitors make. The distinction between discomfort and risk taking is not entirely clear in part because it is probably different for different people. This makes creating an appropriate risk communication message more difficult.

When recreators laugh off their almost drowning or getting lost in the desert or having their campsite disturbed by bears, they contribute to the expectation that recreation should continue despite these problems. This prepares people for possible problems but it can also raise the threshold of danger acceptance, making recreation more dangerous overall. This kind of talk both reflects and creates sensibilities about what it means to engage in outdoor recreation. Being "scared shitless," as one of my interviewees put it, is not enough to make someone quite. Not only do the recreators need to get through the experience, they will likely have to get over that fear to do the activity again. This expectation can prepare people but it can also create a barrier for those interested in outdoor recreation but afraid to try it. The rhetoric that many recreators use to describe their experiences frames outdoor recreation as a rewarding struggle, creating a context in which misery is normal and even, in retrospect, enjoyable.

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“Are you listening?!”: Indecorous Voice as Rhetorical Strategy in Environmental Public Participation

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This essay calls for a revival of indecorous voice in environmental public participation. Robert Cox has explicated the means by which low-income and minority members of the public are discursively excluded from U.S. public forums. We argue, however, that publics whose participation may already be limited can still enact micro-performances of resistance by seizing kairos with indecorous voice, that is, challenging decorum through timely intervention. Publics in Love Canal, New York, and Salt Lake City, Utah indecorously disrupted institutional constructions of decorum. By shouting, clapping and cheering, and sitting in silence, participants seized kairos by indecorously drawing attention to marginalizing effects of public participation processes. These micro-performances of resistance express public frustration with exclusionary practices, demonstrating inventional possibilities for public participation in institutional settings.

Key Words: Public Participation, Indecorous Voice, Rhetoric, Kairos, Decorum

At the 1999 Conference on Communication and the Environment (COCE) held in Flagstaff, Arizona, USA, Robert Cox introduced the concept of “indecorous voice” in relation to public participation and environmental decision-making. Referring to the means by which low-income and minority members of the public are discursively excluded from U.S. public forums, “indecorous voice” operates as a strategy to limit public participation (Cox, 1999). Against this, Cox positions environmental justice advocacy tactics as a way to refigure the limits of public participation. Beyond a brief mention of “indecorous voice” in *Environmental Communication and the Public Sphere*, this concept has received little attention by environmental communication critics. This essay calls for a revival of “indecorous voice” in light of its “inventional possibilities” (Stoneman, 2011, p. 130) for institutional public participation.

Following Cox (1999), public participation remains central to environmental communication. For instance, *Communication and Public Participation in Environmental Decision Making* (Depoe, Delicath, & Elsenbeer, 2004) spawned numerous analyses of public-agency discourse. The ways that institutional forms of public participation, such as public hearings and comment periods, fail to provide “meaningful citizen involvement in environmental decisions” (Depoe, Delicath, & Elsenbeer, 2004, p. 2) is a dominant theme in environmental literature, perhaps contributing to later analyses of more radical forms of public participation (DeLuca, 1999; Pezzullo, 2007). These are valuable contributions to theories of resistance in the context of environmental discourses, which has expanded our field in indelible ways. However, we should not ignore the dynamics of resistance that occur in institutional, typically agency operated, settings. These traditional avenues for public participation represent an important opportunity for public engagement with decision-makers. What may be considered mundane public discourse can narrow our analytical scope from attuning to the radical dimensions of institutional public participation.

We call for a revival of "indecorous voice" as a heuristic for understanding the performance of timely intervention into what is often viewed as a skewed system of deliberation. Thus, we see indecorum not as a means of excluding the public from institutional forums, but as a *kairotic* opportunity for rhetorical invention that renegotiates rhetorical possibilities of public participation. With this in mind, we present an expansion of Cox's original thesis on "indecorous voice," drawing on the democratic commitments of classical rhetoric to imagine the emancipatory possibilities of indecorum (Stoneman, 2011). Although our research, like Cox's, is focused on public participation processes in the United States, it is not unlikely that similar participatory dynamics occur around the world. To demonstrate these radical possibilities, we offer two American examples: The fight for environmental justice in Love Canal, New York, and the struggle for clean air in Salt Lake City, Utah.

Taking Back Time

Traditional conceptions of rhetoric are centered on principles of good citizenship. Though not without its own hegemonic entailments (Foss & Griffin, 1992), Aristotelian traditions of rhetoric are grounded in notions of democracy and civic engagement (Garver, 1995). With the critical turn, however, scholars recognize the inequitable ways rhetoric is deployed, often with oppressive and violent ends (McKerrow, 1989; Wander, 1984). Rhetoric constructs barriers, marginalizes voices, and excludes communities from the public sphere as much as it offers possibilities for resistance and justice. The interplay between critical dynamics of rhetoric and environmental public participation is unique to our essay. Cox (1999) explicates how rhetorical construction of decorum dismisses the voices of low-income and minority members of the public affected by environmental decisions. However, Cox's analysis of Ciceronian decorum inadequately accounts for *kairotic* possibilities of indecorum, eliminating the rhetorical potentialities of indecorous voice. Thus, we seek to unpack ways citizens may seize *kairos* to resist barriers to public participation in institutional forums to perform the "inventional possibilities of indecorum" (Stoneman, 2011, p. 130). To address this ostensible component of rhetoric, it is important to recognize Cicero's conceptualizations of chronos, kairos, and decorum. Cicero is important because his work pioneered understandings of decorum in rhetorical contexts.

Following the Ciceronian-Humanist tradition of rhetoric, kairos enables rhetors to capture the right time for action, complete with significance and meaning. *Kairos* accounts for fundamental human experiences of time in relation to individual perception, managing the confluence of both human and non-human conceptions of time. *Kairos*, therefore,

> immerses speakers in a moral-intellectual crisis when the choice to speak or act (and what and how one speaks or acts) determines an individual's 'fate.' Hence, the Humanists' habit of weighing alternatives and occasions, of 'looking both ways' and speaking (or acting) accordingly--a habit, in short of prudential. (Baumlin, 2002, p. 156)

Because *kairos* manages time, its rhetorical possibilities are relative to *chronos*, which is often characterized as an absolute, or exact quantification of time that affects linear intervals of occasion (Baumlin, 2002). Although *chronos*-time (i.e. clock time) cannot be metaphysically altered, we argue that it can be used as an advantage or disadvantage to rhetorical situations. Particularly, the quantitative aspects of *chronos* affect the qualitative appeals for *kairotic* moments. *Chronos* is an important aspect of decorum because it can be rhetorically stabilized in concrete settings, enhancing or limiting *kairotic* occasions.

The notion of *chronotopos* is useful for understanding the rhetorical possibilities of speech within ordered rhetorical contexts. *Chronotopos* is the combination of absolute *chronos* time and "a conception of concrete and meaningful place," such as time management (Ramo, 1999, p. 323). Thus, *chronotopos* stabilizes the usage of chronos in concrete settings (*topos*). For our analysis, and consummate with Cox

(1999), this refers to the ways that organizations manage the context of rhetorical acts for public participants. For instance, organizers of public hearings, open houses, and public forums are able to situate the chronos-time of meetings in settings that may enhance or limit kairotic occasions. For rhetorical appeals to be effective in that context, rhetors must therefore recognize the confines of *chronotopos* in order to determine the right timing for rhetorical opportunities. This balance determines the prudency of rhetorical deliberation, a feature of rhetoric also known as decorum.

Following Cicero, decorum combines *to prepon* (the fitting) with *to kairos* (the timely) to account for the formal and temporal components of rhetoric (Baumlin, 2002, p. 142). Ciceronian "decorum is properly associated with harmony, grace, and comeliness as well as timeliness and appropriateness" (Beale, 1996, p. 169). Decorum may thus be understood as a measurement of ethics for rhetorical appeals because it emphasizes the right timing and appropriateness of human action and speech. That is, decorum represents "the knowledge of opportunity of things to be done or spoken, in appointing and setting them in time or place to them convenient and proper" (Baumlin, 2002, p. 143). More recently, Leff (1990) further indicates that eloquence merges relations of the form/content, thought/knowledge, and aesthetic/practical elements of discourse; such speech produces timely rhetoric with functional purposes. He notes, "The locus of decorum is that moment when the discourse becomes luminous in itself through its illumination of a subject" (Leff, 1990, p. 126). This means that decorum orchestrates a situated context that enables rhetorical timeliness. Consistent with Cicero's classical interpretation, we consider decorum as the localized appropriateness of speech and embodied behavior in particular contexts.

Indeed, decorum is an essential component of Cicero's moral goodness for speakers and actors within rhetorical situations. In *De Officiis*, Cicero states that decorum "is inseparable from moral goodness; for what is proper is morally right [*quod decet, honestum est*], and what is morally right is proper" (Cicero, 1961, I.93). Although chronos-time is uncontrollable, yet comprehensible, kairos-time remains a human construct that uniquely affects the decorum of speakers, actors, and deliberators. Consequently, decorum is an intricate part of properness within the greater construct of chronos-time.

We argue that there is a gap in research regarding critical components of rhetorical timing. Following Cox (1999), the decorum of public settings can inhibit deliberative rhetoric, limiting opportunities for kairotic appeals. Cox notes that government officials restricted the number of public testimonies, arbitrarily imposed time limits for public comments, and refused to allow additional opportunities for verbal comments following DEQ complaints concerning elevated cancer rates of people living near Shinotech Corporation in Louisiana. These restrictions indicate that chronos and decorum can be used as instruments of power to subordinate public participants from opposing decisions that affect environmental health. This compromises rhetorical opportunities for public participants concerned with environmental affairs.

Cox's essay is important because it demonstrates that decorum can be used to sustain dynamics of power inherent within environmental decision-making processes. However, while Cox (1999) argues that "indecorous voice" is used to marginalize voices in public participation settings, we believe that "indecorous voice" can strategically oppose logics of oppression wielded by privileged institutions. Indecorous voice, therefore, can rhetorically take back time by seizing kairotic moments in institutional settings. Cox, therefore, fails to recognize the rhetorical potential of indecorous voice. Although he argues that marginalized voices are often disregarded as indecorous, or inappropriate, we argue that indecorous voice can be deployed as an intervention to seize kairos in public forums. Particularly, indecorous voice can challenge the very rules of decorum constructed by institutions charged with managing public participation opportunities.

Thus, to account for the potentials of indecorum, our analysis attends to the rhetorical possibilities of disruptive behavior in public participation contexts. When isolated for critical examination, indecorum can

be understood as a performance that disrupts the privileged distribution of the sensible. Consistent with Stoneman (2011), we argue that public participants can performatively seize kairos in public settings by disrupting nominalized constructions of decorum. Importantly, indecorum need not be deployed as a rhetorical strategy for instrumental gain; indeed, we submit that "indecorous voice" serves to call attention to a disparities of power that limit voice in democratic settings. Additionally, indecorum can potentially reshape the nature of agency-public environmental decision-making. To demonstrate this, we present two U.S. examples of environmental public participation. In these instances, we observe publics using indecorous voice to disrupt decorum and utilize kairotic moments in institutional forums. Though the following two examples contrast in their historical settings, they both exemplify participants' attempts to take back time that publics feel has been taken away from them.

Love Canal Residents Fight to be Relocated

Love Canal is one of the seminal case studies of environmental justice in the United States (Jamieson, 2007). Located in upstate New York, Love Canal is a small working class community that was built over a chemical plume in the early 20th century. Residents first discovered evidence of chemical toxicity affecting human health in the late 1970s. Through grassroots organizing, one resident, Lois Gibbs, galvanized community support for U.S. Environmental Protection Agency (EPA) investigations and a federal injunction to help relocate affected residents. Although U.S. President Jimmy Carter eventually declared Love Canal a disaster location and approved relocation in 1981, Love Canal residents struggled for two years to get their voices heard.

The EPA carefully managed decorum in ways that marginalized democratic behaviors of resistance. Particularly, the EPA excluded forms of debate that did not follow normative standards of critical-rational debate. Mothers, for instance, were dismissed on the grounds that their claims were anecdotal rather than substantive. Mothers argued for environmental justice based on personal narratives about miscarriages, child health, and everyday life in their toxic environment (Peeples & DeLuca, 2006). Since these claims did not follow the EPA's ideal principles of critical-rational debate, residential arguments were thus excluded from democratic processes for not conforming to normative standards of critical-rational debate. Indeed, evidence of child mortality from dioxin and other chemicals in the soil and water was refuted as "useless housewife data" and, when pressed, the EPA arranged the residents to be examined by a veterinarian.

Consistent with Cox (1999), this event demonstrates that public participation agencies may strategically use indecorum to dismiss important arguments concerning environmental justice. However, this case reveals that indecorum can also be used to seize kairos by challenging institutional constructions of timeliness. As a rhetorical strategy, indecorous voice can therefore open the possibilities of effective participation by emphasizing the loss of voice during normal participatory procedures. With the production of the documentary *The Poisoned Dream: The Love Canal Nightmare*, real-time footage of many public hearings held in front of the U.S. EPA has been preserved. This film reveals the ways that area residents performed indecorous voice as radical resistance to oppressive constructions of decorum.

By early 1980, Love Canal residents were promised the U.S. government would seize infected homes and pay for the residents' relocation. When this action was stalled, residents responded with indecorum. Challenging the formal nature of the public participation process, locals vigorously contested EPA chronos, which was used to delay investigative procedures and dismiss residential arguments concerning environmental health. The timeliness for democratic behavior was dramatically restricted. What was believed to be an open context for democratic deliberation turned out to be a process of a different kind: One that limited participation to the normative decorum of silence. In one hearing addressing these concerns, documentary footage shows a middle-aged man standing up with arms outstretched in

exasperation, shouting: “All I want, all I want… I don’t want to be relocated, all I want is my 28-5 [referring to the government payment for his home] and give it to me tonight and I’ll move down that road and I’ll never look back at the Love Canal *again*!” (Matthews, 1999). On the verge of tears, his face was flush and his voice trembled. Immediately following his statement, the crowd sitting around him erupted in boisterous cheers. Community supporters clapped while chanting, “WE WANT OUT! WE WANT OUT!” Meanwhile, others pumped their fists above their heads or jumped from their seats.

Former resident, Luella Kenny, reflected upon another public hearing event held in 1980: “The people became petrified. I mean, I saw them throwing knives and forks at the government officials…one government official, I mean someone grabbed him, put a tie around his neck, just practically strung him up [she simulates this motion on camera for the documentary]… it was frightening” (Matthews, 1999).

These two examples demonstrate the rhetorical performance of indecorous voice. In response to what was considered an unfair construction of participatory democracy, Love Canal residents used indecorum to seize a kairos that was denied to them by institutional authorities. While the EPA attempted to silence publics by constructing a contextual setting that intrinsically silenced public voice, locals took back the time that was promised to them by violating normative standards for appropriate behavior. Appealing to their state and national government for rescue from toxic chemical exposure, locals resisted EPA standards of decorum because to EPA’s watch, the timing would never be right for environmental justice. Concomitant with Cox’s (1999) findings, public health officials constructed standards of “proper” public participation by using expert knowledge of health science to reject residents’ claims of toxicity. Love Canal residents were dismissed with insults of sexist language and veterinarian examinations, demonstrating Cox’s point that decorum is often established according to gender and socio-economic status (Cox, 1999, p. 22). After a round of false promises of relocation, residents expressed their anger and frustration as they “[felt] abandoned by their government” (Matthews, 1999).

This reading departs from Cox’s understanding indecorous voice because Love Canal residents used indecorum to their rhetorical advantage, rather than succumbed to its instrumental forces of marginalization. Indecorum was used to capture kairos. Infuriated residents demanded a right to be heard because the time for justice was now rather than later. By dismantling EPA’s seemingly unjust constructions of decorum, Love Canal residents seized *kairotic* opportunities to shout their comments, chant and clap together for one another, and even threaten the livelihood of hearing officials. These indecorous acts resisted EPA’s utilization of *chronos* and proper behavior, and attempted to transform the debate rather than bureaucratically resolve it.

Indeed, Gibbs herself reports that such indecorous actions were a deliberate strategy: “…we thought about how people behaved and how could we use that to heat up the struggle and put pressure on those target people. And it worked extremely well” (Matthews, 1999). For example, Gibbs explains, “We used to use Patty…who was one of our best criers, who would stand up and shout at them and cry.” With this comment, the documentary cuts to footage from a separate public meeting in which a woman, with toddler on her hip, stands and shouts at agency officials (Matthews, 1999). Thus, for Gibbs and the other Love Canal residents, the loud, emotional and even dangerous capacities of the human body were used as *kairotic* appeals to drive environmental reform in their community. Indecorous voice, therefore, a term denoting inappropriate behavior and previously understood as a construction by government officials to marginalize residents’ voices, was re-claimed as residents performatively re-invented the timeliness of decorous situations (Baumlin, 2002). Potentially, when employed as a rhetorical strategy against oppressive agencies of public participation, indecorum may reframe environmental debates by cathartically performing that which cannot be said, offering participants new strategies for resistance amid normalized behaviors of silence.

Utah Residents Fight for Clean Air

More recently, the Salt Lake Valley in Northern Utah has been entrenched in a fight for better air quality. Kennecott Utah Copper (KUC), a major mining operation, has maintained status as the primary polluter of Utah's air. On February 22, 2011 the Utah Department of Environmental Quality (DEQ) held a public hearing to evaluate statements concerning Kennecott Utah Copper's plan to expand the Bingham Canyon Mine. The nearly 150 hearing participants included air quality activists, unaffiliated members of the public, as well as KUC employees and elected representatives from area municipalities. The purpose of this hearing was to assess Kennecott's request to amend Utah's State Implementation Plan (SIP) and update air permits. This document outlines Utah's agenda for monitoring local air pollution. Since the Clean Air Act requires a public hearing for SIP amendment proposals, the DEQ and Division of Air Quality (DAQ) are responsible for monitoring and reviewing public comments before rendering a final decision.

The event was carefully regulated by DEQ's utilization of *chronos* and mandatory *kairotic* behavior. This organization, charged with facilitating public dialogue about the proposal, managed the temporal settings of this hearing. The hearing took place on a Tuesday at 3:30 p.m. at the Utah Department of Environmental Quality Headquarters in Salt Lake City. Arguably, this was an inconvenient time for those who work regular weekday shifts. Although the hearing began with a seven-minute speech limit, authorities soon decreased time to five minutes. Importantly, this change occurred immediately before a local clean air activist delivered his case; alternatively, those who enjoyed seven minutes of delivery were political and institutional leaders who spoke earlier in the meeting on behalf of Kennecott expansion.

Despite DEQ-sanctioned *chronos*, participants seized *kairotic* moments by clapping and cheering. Following nearly every statement opposing Kennecott expansion, the room filled with loud and sometimes boisterous accolades, applause, and approbations. This rhetorical event was both visually striking and audibly disruptive. One female participant who discussed citizens' rights in a participatory democracy received loud applause, energetic cheers, and shouts of "woo-hoo!" from supporters in the room. Similarly, a male participant who gave his comment wearing a white medical lab coat told an emotional story about a patient of his that is terribly sick. The speaker ended his story with a question posed directly to the DEQ representatives: "are you *listening*?!" With this, he received great applause and many cheers. Additionally, several attendants softly jeered statements delivered in support of Kennecott. There were also a few times when Kennecott supporters clapped for industrial devotees, but such instances were irregular and pale in comparison to those supporting clean air. These indecorous acts put the spotlight on the public's loss of voice in this environmental debate. As an attempt to transform the disparaging nature of this institutional process, publics rallied behind a new notion of timeliness that had been denied to them by the public participation authorities. Through indecorum, public participants were able to utilize a kairos unique to their demands, rather than the decorous ones implied by the DEQ.

Silence was also used as a rhetorical strategy to create *kairos*. For instance, the public often sat in silence after supporters of KUC delivered their statements. Although some supporters clapped for pro-business comments, they were far outnumbered by people sitting in silent opposition. Decisions not to applaud demonstrated that such comments were unworthy of public acknowledgement; thus, time became a rhetorical space that belonged to the public. One participant actually filled his speech time with silence. The gentleman physically moved his chair to face the audience and asked, "What is it that you love most in the world?" Following several minutes of silence the participant disclosed *his* love and the room immediately erupted with applause and standing ovations. Arguably, this statement demonstrates the marginalization of voices in Salt Lake City. While big companies such as Kennecott and the DEQ work together to forge agendas prioritizing economic gain, the public is left with the unhealthy ramifications of poor air quality. His statement represents an attempt to perform the silence experienced in the public sphere. Thus, this participant's micro-performance took back time. It used the hollowed space of silence

to critique the very process of the pubic hearing, which was responsible for silencing public voices in Salt Lake City. As a rhetorical trope, this strategy attempted to reframe the contextual form of the public participation process by featuring that which was missing: Voice.

As demonstrated, the hearing's *chronos* was carefully managed by the DEQ. Although we do not intend to speak on behalf of DEQ motives, we can safely note that the agency's *chronos* affected participants' form of *kairotic* behavior. For discourse to be timely within this situated context, participants were required to meet certain demands carefully monitored by DEQ authorities. For instance, DEQ officials disciplined those exceeding the five-minute time limit. Interestingly, the DEQ limited speech time from seven minutes to five minutes immediately before leading environmental advocates made their case for clean air. Potentially, this demonstrates the rhetorical power of regulating time to disparage oppositional voices. Consistent with Cox (1999), this point indicates that *chronos*, or clock time, can be rhetorically managed to disadvantage particular publics. It remains clear that the proper timing for deliberative arguments was restricted to DEQ standards. To the public, these restraints were used to unfairly privilege industrial voice. In response, the public decided to take back lost time by indecorously seizing the *kairos* that had been promised to them.

Recognizing the seemingly unfair limitations of institutional decorum, participants dissented from DEQ conditions of decorous speech and created their *kairos* by rhetorically using "indecorous voice." Acts such as clapping, shooting woo-hoo's and cheers, and sitting in silence broke from normative behaviors of DEQ time. Challenging DEQ definitions of appropriateness, participants performatively negotiated how things should be done. While the majority of the participants supported this endeavor, institutional rules still dictated basic features of speech such as the time and location of deliveries. Actions like clapping and cheering are not radical, yet this indecorous behavior performatively negotiated the dominant logic of undergirding this particular public forum. Drawing attention to the unfair constructions of decorum, participants attempted to transform the seemingly skewed debate, which they believed was marginalizing their voices in the public sphere.

In sum, this hearing demonstrates that indecorous voice can be used as a rhetorical strategy, especially under institutional conditions that limit, and potentially marginalize, public concerns. In this case, publics disrupted DEQ decorum by intervening with outcry, embodied gestures, and silence. Against a chronos inconvenient to many, the public created their own kairos, demanding that the time belong to them and not the American plutocrats controlling the processes of deliberative democracy.

Like the residents of Love Canal, participants in the DEQ hearing demonstrate the inventional possibilities of indecorous voice, especially when deployed under conditions of institutional marginalization. Participants performatively reclaimed the processes of deliberative democracy by renegotiating the prudency of timely actions.

Conclusion

At the fifth biennial Conference on Communication and the Environment, Robbie Cox argued that U.S. institutional settings have used decorum to marginalize public participation advocates from authentic democratic engagement. Although processes of public participation often remain unfair, Cox's analysis fails to account for rhetorical potentials of indecorous voice. We argue that participants in public forums can use indecorous voice to seize *kairotic* moments, disrupting rhetorical settings designed to subordinate public participation. In this way, indecorous voice rhetorically creates spaces of resistance autonomous from the restraining rules of decorum. This essay has provided two examples that support this thesis. Publics in Love Canal, New York, and Salt Lake City, Utah, indecorously disrupted institutional constructions of decorum. By shouting, clapping and cheering, and sitting in silence, participants effectively seized *kairos*. These micro-performances of resistance express public frustration with

exclusionary institutional practices, demonstrating the rhetorical possibilities of indecorous voice. This research contributes to environmental communication by reinvigorating the concept of indecorous voice, highlighting the radical dimensions of traditional participation, and exploring the critical potentials of classical rhetoric. In conclusion, indecorous voice may potentially transform public debates by exposing features of public participation that silence public voices.

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“The Closer the Better”: Possibilities and Limitations with Frontline Management. Lessons from the Majella National Park, Italy

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In the Majella National Park in the Abruzzo region of Italy, wolves reside in the vicinity of local communities and may cause attacks on farmers’ properties. In order to support the local farming community from the consequences of wolves’ harmful attacks on sheep and other living private property, the Italian state reimburses the farmers for their economic losses, gives support visa-vi precautionary measures to prevent further attacks, and strives to involve local communities in the natural resource management. Focusing on the locally recruited park managers, we address how they as “frontline managers” are to be considered as having an intermediary position in the implementation of natural resource protection policies. The paper investigates, firstly, how the ideas and goals of the national state, buried in regulations and policies, are put into action and secondly, how the park managers accommodate personal and organizational perspectives in their everyday meetings with the concerned stakeholders.

Keywords: frontline management, national park management, inspection, wolf attack, livestock compensation

Introduction

In recent years, many countries have implemented protection regimes following carnivore populations declining (Boitani, 2000; Linnell, Swenson & Anderson, 2001). At the same time, carnivore-related threats to human life, including economic security and restricted opportunities for outdoor recreation, often occur, pit human communities against carnivores, and against other humans who seek to preserve or restore wildlife populations (Sjölander-Lindqvist, 2008; Treves & Karanth, 2003). Successful implementation of protection regimes is, however, dependent upon the reducing of the conflicts between large predators and people. The question of how to avoid conflicts and at the same time increase local acceptance for large predators has become a top conservation priority. Conflict mitigation is even more important in the management of protected areas. As cornerstones of biodiversity conservation, protected areas can be a powerful tool for ensuring the continuity of fragile ecosystems and the future availability of limited natural resources. However, local residents and local communities may perceive the protected area as a loss of freedom or as an obstacle to daily economic sustenance (Carrus, Bonaiuto, & Bonnes, 2005; Sjölander-Lindqvist & Cinque, 2014, forthcoming; Stoll-Kleemann, 2001; West & Brechin, 1991). Conflicts and inconsistent opinions of restoration activities may arise when rural residents find that landscape management has material and social impacts on the lives and livelihoods of people (Tsing, 2001). In such

context, the disagreement surrounding wildlife recovery must be understood against the limitations and the restrictions introduced by the biodiversity conservation strategies.

The establishment of the Majella National Park in the Abruzzo region of Italy, has proven to be such a case, where landscape management and the implementation of measures to vitalize natural resources, have resulted in conflicts (Fico, Morosetti, & Giovannini 1993; Ciucci & Boitani, 2005). The designation of the Majella territory as a specific conservation area meant new prohibitive legislation; forest resources previously available were no longer to be accessible and local residents were constrained by building work restrictions. As elsewhere (McCarthy, 2002), the establishment of conservation regimes resulted in restricted access to and control of local environments; this engendered discontent among the park residents with regard both to the presence of protected large carnivores and to the presence of the park in the Majella territory (Sjölander-Lindqvist & Cinque, 2014, forthcoming). In the desire to make the local communities more supportive to the park and the park's intention to recover territorial natural resources, the administration adopted an innovative approach through which the relationship between people and land was to be strengthened. By employing locally recruited park managers in the recovering and managing of the wolf in the area, the park adopted a frontline management approach to encourage local communities to participate in landscape management. Through this approach, focus shifted from wolf conservation measures to a broader sustainable landscape management strategy. This approach adopted and implemented actions directed to rediscover and preserve the local traditions and the agricultural practices of the communities living in the Majella area.

Focusing on the occupational category of "frontline bureaucrats"[1](Lipsky, 1980), we will demonstrate how the encounter between the park administration and the local community is understood as an opportunity whereby the empowerment of strategies for ecosystem protection can in turn enable successful conservation management, but also indirectly legitimate the park management. In this process, personal and organizational perspectives of the frontline staff become crucial when they meet concerned stakeholders.

The Majella National Park

Founded in 1995 by the presidential decree on the facilitation of national park establishment (Legge n. 394/91, 1991; Decreto del Presidente della Repubblica, 5 giugno, 1995), the 74,000-hectare large Majella National Park in Abruzzo region holds an exclusive geographical location. Adjacent to the Mediterranean Sea, it is regarded as an important measure in the protection and conservation of biodiversity (Blondel & Aronson, 1999; IUCN, 1994). The geomorphologic conditions in combination with a long history of human settlement and exploitation, have given rise to a rich alpine flora and fauna. With 2,114 different plants, of which 142 are categorized as endemic and unique to Italy, it makes up more than a third of Italian flora and 22% of European species. Within the area, wild species like wolves, wild boar, Apennine Chamois, and the Orsini Viper, contribute to the park's biodiversity.

Pastoral grazing in the Majella national park is the result of a long history of influence of humans and grazers For centuries, sheep-rearing provided a livelihood for more than half of the population of Abruzzo

1 In his book, Lipsky uses the term "street-level bureaucrats" to indicate public service workers who interact directly with citizens in the course of their work, and who can exercise substantial discretion in the execution of their work (Lipsky, 1980, p. 3). However, the bureaucrats in our study differ from street-level bureaucrats in some important aspects. First, they do not always interact with their clients or stakeholders directly, which makes their practice of authority more anonymous. Second, they are not in a strict sense professionals; rather, they typically have a wide range of educational backgrounds in natural science and can be described as experts or civil servants with generic knowledge that might be applicable to several environmental policy sectors. In this study, we refer to these actors as "frontline bureaucrats".

region, and from pre-Roman times it constituted the basis of their economy, social fabric and culture. Sheep-rearing also provided the regions with particular characteristics and the earliest routes for travel and communication. In the beginning the 16th century, sheep-rearing began to decline, accelerated by a shift in land use from grazing to farming, as laws were enacted to encourage the growing of crops. The economic transformation reduced the traditional interdependent system of agriculture and sheep-rearing on which the economies of the region had been based for centuries. Many villages that once were mainly devoted to the raising of sheep, wool, cheese, etc., began to be de-populated and in some cases were abandoned all together (Avram, 2009).

After the inauguration of the park, the management found that biological concerns alone could not promote eco-system recovery. The understanding was that the upholding of biodiversity was largely dependent on the maintaining of farming development among practitioners. For example, the increasing number of livestock damages due to a larger wolf population combined to the intense migration of the people leaving the countryside to find jobs in more densely populated areas, resulted in the abandon of farms, and in the case of the Majella mountain area, open fields reverted to forest land. This, combined with the relinquishing of husbandry and environmental degradation, presented obstacles to the park management to overcome in the protection of natural resources of the Majella area. The park management decided that for the eco-system protection measures to have any success, the biological development of the region had to introduce a strategy building on the inclusion of local residential into the management of the park (see PNBA, 2008 [the National Plan for Biological Diversity]). In line with this assumption, the park administration decided to re-organize the system for the compensation of livestock carnivore damages

Frontline Management

Similarly to the situation with other large predators, conflicts between wolf and farmers are common throughout most of the wolf range and represent one of the most relevant problems in wolf conservation programs (Bangs & Shivik, 2001; Cozza, Fico, & Battistini, 1996; Mech, 1995; Schwerdtner & Gruber, 2007). Particularly in the areas where wolves live nearby local communities, damage compensation programs have been introduced and in many cases reinforced, as a common tool to mitigate conflicts between farmers and predators (Treves, 2008).

The Italian national wolf protection law n. 157/92 delegates the regional authorities to implement an ex-post compensation policy (Schwerdtner & Gruber, 2007). This means that in a case of suspected harm, a formal investigation process is initiated by regional authorities to assess damages. Regional authorized inspectors, carry out a field inspection, report their findings to state forest officials who in turn will compensate the farmers for their losses. However, inside national park areas, the decision to compensate farmers may be entirely delegated to the park's field staff employees. This is the case of the national park the Majella in Abruzzo region where the management plan for wolf recovery in the area makes the park inspectors directly responsible for making decisions regarding the compensation of livestock damages.

According to the park's management plan, the field staff (including inspectors and park rangers) is responsible for facilitating dialogue with the local communities during the damage inspection, acting supportively and empathically so as to promote local support for the park's wolf protection policy. They are also responsible for the inclusion of local communities in the management of the entire area and working towards the safeguarding of the natural and cultural environment (PNBA, 2008). For example, their work includes the implementation of local projects allowing for a closer cooperation between farmers and the park administration regarding the preservation of endangered agricultural varieties or the promotion of the tradition of transhumance farming. To ensure the success of these projects, the management plan

indicates that the field staff should interact directly with local communities. In order to do this, the management plan recommends to accommodate the regulation according to the local conditions.

These assumptions are in line with the concept of frontline bureaucracy introduced by Lipsky (1980), and later adopted by a large literature on public administration. The concept identifies public service workers as agents who have power to translate policies into practice, exercising professional discretion in performing their duties. According to Lipsky (1980), officials who interact with citizens extend state influence and control. They act as concrete agents of policy delivery at the frontlines of their organizations.

Similarly to the damage inspectors, the frontline bureaucrats enter their employing organizations with their own interpretations of the world (Kaufman, 1960), their work experience, education, and background (Fineman, 2000). Dealing with issues such as benefit allocation and imposing sanctions on individuals and businesses, the encounter between the citizen (referred to by Lipsky [1980] as the "client") and the public official (the "frontline bureaucrat") becomes a highly fluid interpretative zone of face-to-face interaction characterized by social, cultural, political, and economic dimensions (Maynard-Moody & Musheno, 2003). This transforms the traditional perspective on bureaucracy as typically rational and with hierarchical structure, steered by written rules, graded authority, strict discipline and control, and expert qualification (Simon, 1960). When performing their task, the inspectors instead find themselves in a highly emotion-laden judgment situation in which essential parts of the decisions made are formed by affective and cognitive factors (Feldman & Khademian, 2007; Maynard-Moody & Musheno, 2003).

By adjusting the (general) policy to the specific circumstances and needs of the clients, Lipsky (1980) and others (e.g., May & Winter, 2007; Vinzant & Crothers, 1998) have suggested that frontline bureaucrats are capable of contributing to policy redesign and remake. Here, one essential characteristic of frontline bureaucrats is their capacity to interpret and adapt the formal regulation to the real context, creating new rule and new praxis. However, whereas previous studies have sought the cause of this situation in the structure of frontline administrators' roles and duties (i.e., regulatory framework) or in their working environment (i.e., organizational and context bounded conditions), less attention has been paid to the social and cultural context in which the policy performers work and operate. This context in which the concerned actors disagree on the motivations and measures for ecological restoration are structured by a complex set of culturally defined ideas and beliefs regarding, for instance, the commitment to conserve and restore of ecological damage (Mech & Boitani, 2010; Woodroffe, Thirgood, & Rabinowitz, 2005) to the belief that the presence of wolves interferes with rural livelihoods and survival (Knight, 2000; Sjölander-Lindqvist, 2008; Skogen & Krange, 2003). In such a complex context, we argue that the frontline managers are induced to employ consensual, experience-driven heuristic strategies in providing diagnosis that will, in turn, enable the state to make decisions regarding damage compensation. In this sense, the inclusion of local communities becomes central in enhancing the quality of the decision-making process and the eventual policy impact as well as a means to enhance communities' acceptance for the presence of the park.

Data Collection

The empirical data of this paper drives from fieldwork in the Majella national park. The fieldwork included qualitative interviews with frontline managers: damage inspectors (park veterinaries) and park rangers who assist the inspectors in the field. Park rangers are also responsible for monitoring the territory. The majority of the interviews was conducted between 2009 and 2010 and took place either in the park administration office, or in frontline field of duty. The aim was to investigate how these managers handled their role of examiners of evidence of predator attacks on farm animals and livestock. To allow for an analysis of how procedures, professional standards, cultural norms, and social context influence the inspection decision

process, the inspectors were asked to share their opinions and perspectives on the various dimensions of their work. The park rangers were asked questions on how they work as well as questions on how they used to approach the farmers during the inspection.

We used semi-structured interviews; i.e., the interviews were based on a pre-designed interview guide, which contained thematic questions that were open ended. The benefit of this design is that it combines structure with flexibility (Kvale, 1996). The design is such that it opens up for unexpected information and is flexible enough to ask different follow-up questions in order to get deeper and more nuanced answers. Simultaneously, it is structured enough to keep the interviewees within the topic of the study. The interviews lasted approximately one to one and a half hours; they were recorded and later transcribed word for word. The transcribed interviews were analysed based on our research questions and theoretical framework. All quotations in the empirical part are translated from Italian to English.

Frontline Management at Work

In Italy, the wolf has been legally protected since 1971. Compensation for damages on private property caused by wolves was adopted soon after the species' legal protection. Compensation is formally funded by regional agencies. According to (Boitani, Ciucci, & Raganella-Pelliccioni, 2011), there is a great variation in the rules and procedures of the compensation programs adopted in Italy. The region of Abruzzo, for example, was the first to adopt a compensation program in 1974, following a previous compensation scheme run by the WWF Italy (Fico et al., 1993). Similarly to other Italian regions, there is no systematic collection of livestock compensation data and the efficiency of payment procedures varies largely which complicates the evaluation of the efficiency of ex-post damage compensation.

The current park regulation (Decreto del Presidente della Repubblica, 5 giugno, 1995) prescribes that if damage occurs inside national park borders, the park's inspectors must be informed within 48 hours from finding the damage. The aim of the inspections is to check if the damage effectively is caused by wolves. The attack site is inspected and a necropsy of carcasses is carried out. Injured animals are also inspected. Following a set of routines for the judgment of damage, the inspectors' work provides a basis of information on which to make indemnity decisions. The inspectors have no manuals or any written guidelines apart from a check list to fill in directly on the field during the inspection. When they meet concerned farmers they follow a procedure that they have developed themselves (Fico, Angelucci, & Patumi 2005). Through this procedure they ask also if any precautionary measures to prevent damage (i.e. electric fences or livestock guarding dogs) have been implemented by the farmers.

Every inspection begins with a telephone call to the inspector, reporting the suspected predation event. When asking about how an inspection usually starts, the interviewed inspectors and park rangers explain that the main task is to gain farmers' trust immediately when the inspector comes to the farmstead and in any case before beginning with the procedures. Because a detailed framework does not exist for their work in the field and considering the low acceptance of the park, the inspectors explain that they are induced to adapt their behavior to the actual case. For the majority of the interviewed inspectors the primary strategy is to create trust. They listen carefully to the farmers' explanations of the harmful event. They do not interrupt the farmers, because at this stage the farmers usually tell about their everyday struggle to create and maintain an economically sustainable livelihood activity, preserving local traditions and their family origins.

As follows, the farmers argue that wolves in the local environment increase the marginalization of countryside residents and lead to depopulation of rural areas. As the farmers see it, farming preserves the natural and cultural resources in the area. At the same time, according to the inspectors, the farmers blame the park management for consistently creating legal restrictions that limit their activities and making

small-scale entrepreneurship incompatible with the scope of sustainable rural development. As an inspector explains:

> Many farmers do not accept the park regulatory framework and they disagree with the constraints that the park administration imposes for example on building renovation or on hunting limitation inside the park territory. In meeting us [the inspectors], they try to communicate the frustration they feel in not being able to practice those activities as they did long before the national park was established.

According to the inspectors, the feeling of frustration negatively influences the way farmers conceive of the park's wolf recovery actions. They explain that for livestock owners living in the territory, the acceptance of wolf presence is interpreted as a way to legitimate the establishment of the national park.

Similarly, because farmers and shepherds oppose wolf presence, they also oppose compensation programs that support wolf management. In other words, the inspectors believe that the wolf becomes a "scapegoat" for local discontent. This fact has made the park aware that they cannot manage and conserve local resources without cooperating with the local communities. Most of the inspectors who were interviewed said that they have been promoting complementary strategies in an attempt to minimize farmers' discontent and frustration. For example, they provide the farmers with medical care to wounded animals or they initiated a management programme in order to reintroduce livestock guardian dogs, called "maremma sheepdogs," as prevention to the wolf attacks. As one inspector simplifies:

> You should always keep in mind to offer something back when you requires public acceptance of political decisions that affect people closely. You should have a sort of "give and take" approach so they understand that they get something back for tolerating wolves.

This approach resulted in the inauguration of two projects and the establishment of networks to strengthen local identity, and support the farmer traditional practices. Financed by the Nature Conservation Directorate of the Ministry for the Environment, the projects *Coltiviamo la diversitá* (Growing Diversity) and *Progetto Qualitá* (Quality Project) were presented to farmers in the park as a means to enhancement of the agricultural indigenous resources of the Majella area. In practice the projects aiming to support the survival of the small-scale agricultural sector and address the continued deployment of farmland as the overriding strategy for resource management. The farmers who enter the project become custodian farmers (*agricoltori custodi*), i.e. maintainers of traditional agricultural practices. A deepened sense of collaboration and cohesion across levels was inspired by including the local communities into these projects, as one park ranger explained:

> The local context is important. It is our common ground. Through the strengthening of local farming we can guarantee our own existence. The park can't survive unless the farmers cooperate.

During the interviews, many of the inspectors bring up the difficulty of making accurate and plausible judgments since "the wolves seldom follow a certain rational for action . . . We have to approach the attack site in many different ways if we're going to be able to make a judgment." Although many of the interviewed inspectors claim long experience in the field, they admit feeling uncertain as to how they should perform their duties. The inspectors are particular about presenting accurate decision-making grounds. This, as they say, must be accompanied by the employment of common sense if they are to arrive at a picture of the overall scenario. This means that they create new strategies and praxis to cope with concrete situations. For example, they may phone a colleague to discuss the inspection or even ask him to come to the attack site. Also, when the situation is particularly charged, they used to explain the constraints which limit their action. Some constraints are political, some are technical, and some are financial. Communicating information about the constraints limiting the decision-making process can help

people understand the course of a decision and eventually create or facilitate trust building. An inspector explains:

> I think people respect the fact that we try to accommodate different requirements and conditions for action when we make an inspection and we are honest in telling about our limitations. They understand even if they may disagree with our decisions.

The inspectors frequently recall the importance of being humble and calm during inspections especially in those cases where the harmed property owners ask, out of frustration, about which animal caused the harm. In response, the inspectors try to employ an "empathetic and inclusive approach," as one interviewed defined it. Calmly, methodically, and intuitively, the inspectors ask questions about the farmers' way to manage livestock or his or her working conditions. In doing so, they explain that they deliberately try to shift the focus from the single attack event to the larger context, trying to assess the wolf management in a broader prospective. Additionally, the interviewed inspectors explain that they never discuss the park conservation policy with the farmers as they believe that they first have to build tolerance for the wolves through "circumnavigating the problem." This does not mean to ignore or avoid the damages, rather to move away from the single event management to a broader and inclusive management. One inspector illustrated this argument:

> In doing my first inspections I used to go directly to the heart of the problem and I informed the farmers on the general obligation to take preventive measures against damages in order to obtain economical compensations in case of predation. Nowadays I would never do that. Nowadays I know that in order to gain tolerance for the wolves, the farmers need to feel the park concerned about the farmers' situation. They don't care that much about money, but they care very much about the way their situation is understood by those who have the power to take a decision above their heads.

Another innovation that was initiated by the park rangers is the attempt to sort out a more effective system of their routine patrolling against illegal hunting in the park. Three interviewees have been proactively developing trust and credible relationships with the farmers, with the clear idea that a good relationship encourages the local community to voluntarily report illegal hunting to the park rangers when they encounter such operations in the park. They believe that if farmers consistently report illegal hunting, the intensity of patrolling – which is one of the main duties of park managers in conservation park areas – could decrease, and the number of rangers –which is currently considered short of what is required – would not need to increase. A ranger explains:

> Information comes to me automatically even without visiting sites because I've already established a human network here. So, farmers could provide me with concerned information whenever they have those. I believe that local engagement and trust into the capacity of local communities to assist us in our everyday work may actually contribute to create a more sustainable management.

This idea of including local community residents in the park management can be understood as a new arrangement created in order to prevent illegal hunting. It provides also opportunities for people to meet the park, helping to dispel myths and stereotypes that they may have built up over time.

Discussion

In this article, we have illustrated how frontline management is individually, organizationally and collectively constructed. Through the performance of routine actions, the creation of new praxis and the enhancement of local involvement, the inspectors arrive to a decision on damage compensation.

Our findings demonstrate that frontline inspectors and park rangers execute their professional work not by strictly following formal rules, but by interpreting, adapting and in several cases creating praxis and strategies which steer their action. This is in line with the general theory of frontline management which also suggests that this process becomes possible by employing discretionary power (Cinque, 2011; Evans, 2010; Lipsky, 1980; May & Winter, 2007). At the same time, an additional aspect emerges from the empirical findings. The inspection represents something more than a simple event where managers make a decision on economical reimbursement; it constitutes an opportunity for those who are materially affected by the presence of the wolves to meet those who are enrolled in the duty of implementing state policy locally. More specifically, from the farmer perspective, the encounter becomes a vehicle to make their interests and values known to the government. At the same time, the encounter with the local community becomes a necessary tool to pursue and enact core tasks and achieve the policy goals. These different aspects are thus reconciled through the creation of inclusive practices, such as the promotion of initiatives to stimulate farmers' place attachment. Through these projects, the park management recognizes the local communities as indisputable partners. The practice to include local communities into the everyday management represents a strategy that was previously not addressed by the theory of frontline management.

The above considerations yield two main new findings compared to previous reports. First, our study shows that the behavior of frontline managers is not influenced by bureaucratic rules and regulations, because the inspectors do not have formal rules to advocate when they make a decision. Rather, their behavior is guided by their own understanding of the local environment and the social context in which they operate. Also, this process is influenced by their personal knowledge of – and constant interactions with – the stakeholders. Maynard-Moody and Musheno (2003) as well as Evans (2010) previously found that moral judgments about citizens or clients infuse all aspects of street-level decision making. In their study, street-level workers make decisions that are based on their own understanding of fairness and the process of justice. However, we find that in an extremely polarized context where conflicts regarding wolves must be minimized to assure their continued existence, the making of a decision by frontline managers needs to include skeptical stakeholders into the process. Thus, the inclusive practice discloses a new prospective on frontline management which deserves additional investigation.

Second, this study reveals that the inspection process can never be neutral, since inspector judgment and decisions are temporally nested within the domains of politics, administration, place and countryside – all aspects prevalent in the present controversy regarding the ecological role of large carnivores, the motivations for state recovery actions, and the consequences of policy implementation for local communities. Our study shows what occurs in frontline policy enactments, when the inspectors (as deliverers of political decisions) conflate organizational requirements and ideas with personal, yet socially and culturally framed commitments. As pointed out by other studies (Boholm, Henning, & Krzyworzeka, 2013; Brockner & Higgins, 2001), organizational and regulatory decision making is thus neither fixed nor stable; people operate interactively and they generate practices that enhance their action.

Conclusions and Implications

Nature and wildlife conservation strategies and practices range from the international, national and regional level to localized settings. The process of translating these strategies, negotiated on national or even supra-national levels, into local political practice is highly complex (Hupe, 2011; Meyers & Vorsanger, 2003). When political expectations trickle down to the administrative level, the public managers unavoidably meet not only the limits of budgetary and personal resources (e.g., Pressman & Wildavsky, 1984), but they must deal also with the social and physical context. As Skogen and Krange (2003) observe, to understand the driving forces of local distrust of state policy, a broader perspective that

considers the intersection of culture, traditions, and local community relationships is needed. Disputes over biodiversity conservation or environmental protection are therefore entangled with other contested issues, where local and state levels meet each other and where conflicting goals and incompatible strategies arise (Tsing, 2001).

In this study, we demonstrated that managers working at the frontline tried to resolve the dilemma outlined above by adopting inclusive practices. We conclude that those practices can help shape decision making processes that build connections between involved stakeholders and the management. Also, we conclude that focusing on context as social, cultural and physical space and keeping in mind that the landscape is where world views and interests of various stakeholders meet and interact, frontline management has the potential to become an adaptive method to resolve conflicts and disputes on environmental management.

However, it should be observed that the use of inclusive practices by frontline managers also presents risks connected to the exclusion and isolation of those actors who refuse or boycott the cooperation. Therefore, a framework of rules and criteria for inclusion should be shaped in order to assure fair and accurate processes (Cinque, 2011; Kubo & Supriyanto, 2010). Another consideration regards the general risks of having managers who are not able to work inclusively. For example, as previously demonstrated, both the level of inclusion and the influence on the process are highly dependent on how much public managers trust the citizens (Yang, 2005; King & Stivers, 1998). Public managers generally have a neutral (neither trustful nor distrustful) view of citizens, but factors affecting the level of trust have been identified (Yang, 2005). In frontline management trust is central because managers provide services based on their clients' worth (Maynard-Moody & Leland, 2000), and their trust in different citizens certainly affects this judgment of worth. Another factor which may impede inclusion is the creation of specific and individual-oriented praxis which in turn may benefit private interests. This is a risk being detected in public-private partnerships (Considine & Lewis, 1999) where concerns regarding accountability have been raised (Feldman & Khademian, 2002).

Working with inclusive frontline management strategies may create more sustainable environmental management. However, the obvious limitation is that inclusion is often an informal exercise carried out by an individual manager, and a scaling-up process of creative actions would not follow unless the entire management system explicitly organizes the process. Thus, the arrangement of a government regulatory framework is nonetheless indispensable in institutionalizing inclusive actions in the bureaucracy.

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Promoting Sustainable Transportation across Campus Communities using the Transtheoretical Model of Change

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Single Occupancy Vehicle (SOV) transportation is a key contributor to climate change, environmental deterioration, and sedentary lifestyle. Sustainable Transportation (ST), may help to slow climate change, reduce pollution and congestion, enhance community wellbeing and promote population health. A series of four studies applied the Transtheoretical Model of Behavior Change (TTM) as a framework for communicating sustainable transportation choices:(1) Measurement Development confirmed both the structure of pros & cons and efficacy measures for ST as well as the relationship between these constructs and stages of change for ST, replicating results found for many other behaviors; (2) Comparison of two different University campuses identified factors influencing ST adoption related to TTM; (3) A brief video intervention was effective in moving respondents towards contemplating ST behavior change; and (4) A Computer Tailored Intervention provided individualized feedback based on TTM and transportation-related variables, promoting modest changes in ST attitudes and intentions.

Keywords: Sustainable Transportation, Behavior Change, Transtheoretical Model

Introduction

Global climate change and prevalence of obesity represent major social, political, economic and public health concerns. According to the Intergovernmental Panel on Climate Change (2007), transportation, especially by automobile, is one main contributor to greenhouse gas (GHG) emissions and the depletion of fossil fuel sources. A range of transportation related conservation strategies will be needed to mitigate climate change, pollution, congestion, and other problems (Pacala & Sokolow, 2004). In addition, public health communities are increasingly concerned about the impact of sedentary lifestyles and energy balance, recommending population-based strategies to increase physical activity levels (Kumanyika et al., 2008). In developed countries like the U.S., sustainable transportation (ST, also referred to as'alternative transportation' or AT), which is defined as commuting by means other than a single occupancy vehicle (SOV), represents one effective way to simultaneously reduce GHG emissions and related threats, and increase physical activity (Dora, 1999; Kwaśniewska et al., 2010; Woodcock, Banister, Edwards, Prentice,

& Roberts, 2007). Despite many synergistic benefits of sustainable transportation, nearly 90% of Americans commute by driving alone. While numerous political, social, economic, structural and cultural factors need to be considered in order to change our overreliance on SOV driving, communication strategies aimed at behavior change will provide critical incentives.

Communicating the impacts of climate change and encouraging more sustainable behaviors have met with limited success in the face of indifference and climate change denial. But a growing number of scholars in Communication, Psychology and other disciplines in the humanities and social sciences have focused on the urgent need to understand the challenges of reaching key constituencies and encouraging attitude and behavior change. Authors attribute the prevailing inaction to a range of psychological factors, such as the *Finite Pool of Worry* (Linville and Fisher, 1991) and *Single Action Bias* (Weber, 1997, 2006); we tend to be overwhelmed with (seemingly) more pressing concerns, and we often engage in only one or two sustainable behaviors (often "low hanging fruit" like recycling) and feel that we have done enough. This might also help explain some reluctance to change transportation behaviors.

One widely discussed approach to improving public responsiveness to environmental communication is *Framing* (Lakoff, 2010). Framing refers to the way a news story or other communication content is constructed to highlight particular ways of looking at an environmental problem or its solution (e.g. marketplace, government, "wait and see"); a number of articles in the 2007 COCE Proceedings (e.g. Eosco, 2007) were devoted to understanding media framing. For instance, Minion (2007) categorized framing of environmental conflicts into different approaches (avoidance; fact-finding; joint problem solving; authority decides, etc., p. 85). Psychologists have adapted this concept in the sense that due to their complexity, climate change and sustainable behaviors can be discussed on the basis of different mental models, frames (or schemata). For instance, Climate Change deniers have successfully capitalized on *Doubt* as a key mental *frame: doubt about climate change itself* (in reference to the cyclical nature of weather events, for instance) or *doubt about the anthropogenic nature of climate change*. Another common frame is "job loss" as the result of government intervention to mitigate climate change—which resonates with the ongoing, emotionally charged debate about high unemployment. Lakoff argued that cognitive science has increasingly underscored the importance of emotion in decision making; and much Climate Change communication has failed to appeal to emotions and to develop appropriate frames, while Climate Change deniers have successfully triggered emotional responses and appealed to deeply rooted frames established over decades. In addition, there are limited possibilities for changing frames (2010, p. 72). We tend to lack appropriate frames considering the complexity of issues surrounding environmental behaviors ("Environmental Hypocognition") Lakoff, 2010, p. 76), especially since they tend to be systemic, global, and political in nature. For example, there is no popular frame for public transit, or walking and biking as transportation in most parts of the U.S.

Brulle (2010) took issue with Lakoff's approach and the use of "personal identity campaigns" (p.82) in general; he argued that this amounts to top-down social marketing and fails to address the need to overcome deeply rooted power structures and economic inequalities, and the system of continuous economic expansion, which are responsible for the bulk of Climate Change impacts. Brulle (2010) is skeptical of the efficacy of communication messages based on cognitive science in promoting broad enough social action necessary to address Climate Change concerns as a political, economic, and social power struggle. Rhetoric of confrontation based on an *alternative field frame* is necessary to overcome the *hegemonic frame*, which perpetuates the dominant system. By implication, Brulle (2010) suggests that cognitive science and resulting behavior change messages were merely designed to perpetuate the existing system by promoting minor improvements without leading to more lasting, profound systemic changes.

Skannell and Grouzet (2010) also addressed the cognitive complexity involved in thinking and acting related to climate change using three areas of metacognition: Metacognitive knowledge, certainty, and importance. *Knowledge* about Climate Change tends to provide a readily available heuristic "that guides intention and behavior (p.95). " Since Climate Change effects are often remote both in location and time of occurrence, *certainty* (or removal of doubt) about such effects is an important influence in promoting behavior change. They argue that communicating climate change risk is a challenge because media and politics often portray such risk as a debate with both sides having equal weight (in spite of prevailing scientific evidence), or tend to dwell on isolated research findings, which may appear contrary to prevailing data. In essence, the media's need to appear even-handed distorts the weight of the scientific evidence, which is not equivocal.

The connection between Climate Change and public health was established early on when scientists and a few politicians began using epidemiological imagery related to Climate Change. In addition, the *tipping point* concept gained prevalence after the success of Malcolm Gladwell's (2000) book, which espoused three key communicative principles: "The Law of the Few, the Stickiness Factor, the Power of Context (p. 29)." Russill (2008) analyzed the use of this imagery based on a non-linear view of social change, and he pointed out that the tipping point view had considerable public appeal, even though the analogy was somewhat flawed. He pointed out that framing Climate Change as an epidemic helped underscore the danger and urgency—but also uncertainty--associated with it, even though there was broad disagreement about solutions, and even about the possibility of meaningful solutions given the overwhelming global threats we face. He also argued that the Bush administration realized the power of the health-climate change associations when it engaged in a concerted effort to "remove human health-related references to climate change" (2008, p. 143). Hansen (2005) focused on *tipping points* to illustrate the dramatic and precipitous, rather than gradual nature of impending disasters—considered *alarmist* or *climate porn* by some, even those who acknowledged the severe threats related to anthropogenic Climate Change. Even former British Prime Minister Tony Blair used this term, thus catapulting it even further into public discourse. Russill (2008) cautioned that there was a clear difference between physical climate system *tipping points* associated with "threshold crossing, irreversibility, and positive feedback" (p. 146) and those involving social change, and he warned of a central dilemma facing climate change communication: "…the incommensurability between problem formulations and available solutions" (2008, p.147). However, the *tipping point* idea does not necessarily lead to a defeatist or fatalistic attitude. It can also support the great potential for considerable social changes resulting from accumulating small shifts.

Automobile transportation has not been an area of primary focus, even for many environmentalists. Awareness of the environmental impact of SOV driving is lacking as drivers observe this behavior to be the social norm--which has been widely promoted by corporations and institutions since the end of World War Two, is a vital part of our culture and economy, and is perceived to have limited alternatives. Advocates need to find a way to make it urgent by emphasizing local, current, and tangible threats. Nerlich, Koteyko and Brown (2010) attempted a comprehensive analysis of variables relevant for climate change communication, along with a discussion of extant research findings in light of the complexities of multiple impacts and uncertain time frames. In addition to the complexity of Climate Change (capitalized as opposed to the physical phenomenon of climate change), this work also relatedto different types of communication (e.g. risk, health, and science communication) as well as social and cognitive psychology, including behavior change science.

As argued by Brulle (2010) and others, profound economic and regulatory changes will be necessary to address these complex issues. However, in order to be effective, any mitigation and adaptation strategy must include population-based changes in individuals' transportation-related knowledge, attitudes, and behaviors. Model-based research and intervention efforts to increase sustainable transportation can contribute to mitigation as well as preparedness for unavoidable Climate Change impacts.

Interdisciplinary teams from psychology, communication, decision science, and the natural sciences have begun to address factors influencing the propensity towards sustainable behavior. A key element is the segmentation of audiences according to their willingness to accept anthropogenic climate change, and to support or engage in actions to mitigate its impact. Leiserowitz, Maibach and Roser-Reneuf (2009; also Maibach & Priest, 2009) conducted an influential series of studies dividing the American public into six distinct segments according to their Climate Change knowledge and attitudes. In related work, Leiserowitz and Smith (2010) conducted a large-scale survey and applied the segmentation in *The Six Americas* to knowledge of Climate Change. They found that respondents' position along the continuum (*Alarmed, Concerned, Cautious, Disengaged, Doubtful and Dismissive*) correlated with their knowledge of Climate Change scientific information. Presumably, Climate Change beliefs and knowledge were also related to behavioral propensities as well as support for sustainable policies. *The Six Americas* segmentation provides important correlates for readiness to change and the propensity to engage in sustainable behaviors. For our specific research goals, an important first step was to identify modifiable psychological constructs or determinants that influence transportation choices (Merom, Miller, van der Ploeg, & Bauman, 2008).

The Transtheoretical model of behavior change (TTM) (Prochaska & DiClemente, 1983) is an influential model in the field of health behavior change, with a strong scientific record of research and effective intervention development across a range of diverse behaviors (Prochaska, Redding, & Evers, 2008). The TTM describes behavior change as progressing through a series of five stages of change: *precontemplation* (not ready), *contemplation* (getting ready), *preparation* (ready), *action* (change occurred), and *maintenance* (change preservation). The TTM also includes three key constructs that drive the change process: *processes of change*, *decisional balance* and *self-efficacy*. Importantly, different constructs have been found to be important and are therefore emphasized in interventions for people at different stages of change. *Decisional balance* reflects the individual's relative weight of the advantages (*pros*) and disadvantages (*cons*) of the target behavior. *Self-efficacy* reflects the individual's level of confidence that they can practice the target behavior across challenging situations.

Stage of change has been found to be systematically related to *decisional balance* and *self-efficacy* across a range of diverse behaviors. For *decisional balance*, numerous studies have found that the *cons* outweigh the *pros* of change in the *precontemplatio*n stage, while the opposite is true in the *action* stage (Prochaska, 1994). Comparisons of groups in *precontemplation* and in *action* stages revealed approximately one standard deviation (SD) positive difference in the *pros* of change and approximately one-half SD negative difference in the *cons* of change across 48 health-related behaviors (Hall & Rossi, 2008; Prochaska et al., 1994). Generally, self-efficacy consistently increased across the stages with comparable systematic relationships between stage groups (Prochaska, DiClemente, & Norcross, 1992; Redding, Maddock, & Rossi, 2006; Velicer et al., 2000).

While the TTM is well established in the field of health promotion, very limited systematic work has been applied to transportation behavior. A few earlier studies supported the idea that the TTM was a useful framework for understanding and increasing Sustainable Transportation. Mutrie and colleagues (2002) demonstrated that a TTM-based self-help intervention effectively helped those people who were either in the *contemplation* or *preparation* stages to initiate active commuting to work (walking or cycling). Others applied some constructs from the TTM to ST or active commuting (Gatersleben & Appleton, 2007; Shannon, Giles-Corti, Pikora, Bulsara, Shilton, & Bull, 2006). Gatersleben and Appleton (2007) examined the stage distribution for commuting to school by bicycle in British university students and reported that the majority who commuted by car had little or no intention to switch to cycling.

Shannon and colleagues (2006) examined *stages of change* for using public transportation, walking, or cycling and evaluated associations with motivators (*pros*) and barriers (*cons*) in Australian university

students and staff. They found that remarkably few individuals were in the *precontemplation* stage. Furthermore, those in the *action* or *maintenance* stages rated the barriers (cons) lowest, while those in the *precontemplation* stage rated the motivators (*pros*) lowest. These findings support the application of the TTM to ST; however, systematic measures were still needed.

One critical step toward evaluating how well the TTM applies to transportation behavior in the U.S. is measurement development for *decisional balance* and *self-efficacy* scales. Once scales are developed, theoretically predicted relationships between stage of change and each of these constructs can be evaluated (Redding, Maddock Rossi, 2006; Velicer, Prochaska, Fava et al., 2000).

This research discusses the development of measures for *decisional balance* and *self-efficacy* for ST, relationships between *stage of change* and each construct in severalsamples of university students, staff, and faculty, and the development and pilot testing of two brief tailored interventions designed to move participants towards active, sustainable transportation behavior.

In order to create tailored interventions, key TTM measures and relevant messages had to be developed: *stages* for ST, *decisional balance*, and *self-efficacy*. These TTM measures were applied at two comparable university campuses with divergent public transit infrastructures and "sustainability cultures" in order to assess the impact of these factors and assess the relationship of travel distance, *stage of change*, demographic factors (age and employment status) and transit infrastructure on the likelihood of using sustainable transportation. Finally, two pilot studies of 1) a brief multimedia video and 2) an individualized Computer Tailored Intervention were conducted to test the initial effects of a one-time cross-sectional intervention. TTM measures were the cornerstone of this intervention development, including both the brief video and the individualized Computer Tailored Intervention.

Study 1: Instrument Development

Participants (n=588) were undergraduate student volunteers from a Northeastern university. About 54.5% of students lived off-campus with 70.1% women, and 84.4% Whites, 5.8% Black/ African Americans, 5.8% Hispanics, and 2.2% Asians. The mean age was 20.6 years. Anonymous student volunteers participated for extra credit or research credit; staff and faculty volunteers were also recruited on University email listserves. Surveys and procedures were approved by the University Institutional Review Board. Analyses confirmed that the terms Sustainable Transportation (ST) and Alternative Transportation (AT) were comparable; used interchangeably they were defined as "any way of getting to [school/work] other than driving by yourself (single occupancy vehicle use). So walking, biking, public transportation (bus/subway/train) and carpooling are all means of Sustainable Transportation."

Measures

For the *decisional balance* measure, 26 initial items were included and sequential measurement development procedures reduced this pool to 12 final items. Respondents rated the importance of each pro or con item in their own decisions to use ST on a five-point Likert scale. For the *self-efficacy* scale, 17 initial items were included and were reduced to a final set of 5 items. Each respondent rated their degree of confidence that they could/would use ST in each specific situation on a five-point Likert scale.

The *stages of change* for Alternative/Sustainable Transportation were assessed: Participants chose the best of five statements reflecting their situation, for instance: (1) "I do not use alternative/sustainable transportation and I do not intend to start within the next six months" (*precontemplation*). Sequential measurement development procedures were utilized, including split half cross-validation techniques

(Redding et al., 2006). Successive exploratory and confirmatory analyses ultimately produced the final measures.

Results

Participants were distributed across the *stages of change* as follows: 57.9% in *precontemplation*, 10.8% in *contemplation*, 3.7% in *preparation*, 13.7% in *action*, and 13.9% in *maintenance*. Analyses confirmed a two-factor *decisional balance* structure and a unifactorial *self-efficacy* structure, with good item loadings and breadth of construct. The final 6-item pros (α=.76), 6-item cons (α=.78) and 5-item efficacy (α=.86) scales demonstrated good measurement properties. MANOVAs revealed that scores on the *cons* subscale outweighed those of on the *pros* subscale in the *precontemplation* stage, while the opposite was true in the *action* and *maintenance* stages. An ANOVA by stage of change groups revealed a significant *stage* effect for *self efficacy*, accounting for 13% of the variance. Individuals in the *precontemplation* stage had significantly lower scores than those in the other four stages. Since these findings replicated findings of earlier studies and confirmed theoretical predictions, they support this application of the TTM model to the Alternative/Sustainable Transportation area.

Study 2: Location, Commute Distance and Sustainable Choices

Using the methodology described for Study 1, data were collected for two universities in the Northeast region (*Campus A* and *Campus B*) in order to assess the impact of campus culture and transportation-related policies along with geographical location on commute patterns and stages of change. A total of n = 1696 students, faculty and staff participated on the two campuses. Online data collection was supplemented with telephone surveys for faculty and staff to increase their participation.

Campus B is characterized by a better-developed transit system and an established culture of sustainability. There is a long history and a strong presence of the office of sustainability on Campus B, while Campus A's counterpart was only recently established. Campus B was voted by the Environmental Protection Agency as among the top 5% most sustainable campuses in the U.S. On Campus B, the university operated transit system extends to several surrounding towns with frequent bus runs. Here, students pay a commuter fee, which includes free use of these buses. In contrast, Campus A has free on-campus shuttle buses, but off-campus travel is part of the state transit system, with limited connectivity to campus; students, staff and faculty can purchase transit tickets at reduced rates. Campus B does not permit freshmen to keep cars on campus, staff/faculty pay a (small) annual parking fee, and a train station is within walking distance. In contrast on Campus A, freshmen are allowed to have cars on campus and there is no parking fee for staff/faculty; reaching the local train station requires travel by car, bus or taxi.

On both campuses, students, staff and faculty showed different commute patterns and attitudes. Students had the shortest commute distances and practiced ST more frequently than staff or faculty. Comparing faculty and staff, faculty lived slightly closer to campus and were more likely to use ST. Overall on both campuses in all subgroups of students, staff and faculty, commute distance negatively influenced both the use of and readiness to adopt ST. Other geographic location factors also affected ST usage and commuters' behavior and attitudes toward ST. Using geospatial models, the authors identified more ST users and greater readiness to use ST in towns with better public transit connectivity to the campuses. Commuters who lived near transit stops were more likely to use ST as their primary transportation mode. This remained true despite a fairly long commute from one town with adequate transit infrastructure.

There were more ST commuters, especially among students, at Campus B. The impact of the Campus B transit system was greater among students than among faculty and staff. Statistical multivariate analyses revealed a significant relationship between the three TTM constructs (*pros*, *cons*, and *confidence*),campus location and ST stage. Campus B had more ST users and rated *cons* lower, suggesting participants on Campus B perceive fewer negative consequences or costs of using ST. Stage group differences were consistent with TTM-based predictions: participants in *action* and *maintenance* stages scored lowest for *cons* but highest for *confidence*; and participants in *precontemplation* stage scored lower for *pros* and *confidence* compared to other stages. Comparing the two campuses, students rated *cons* of ST lower in Campus B, consistent with the more established culture of sustainability and better transit infrastructure, while faculty and staff at both campuses rated the *cons* of ST similarly. These results point to the importance of campus sustainability culture and transit infrastructure, in addition to readiness to change, especially on students attitudes and behaviors.

Study 3: Video Intervention Pilot Study

Since most participants were in the *precontemplation* and *contemplation* stage for ST, a one-time, brief video intervention was developed which primarily targeted college students, but also appealed to staff and faculty. This video primarily utilized appealing video of transit riders getting on the bus at an urban terminal, walkers, and bicyclists on campus, along with brief interview clips focusing on the benefits of these transportation modes, as well as carpooling. The 4-minute video primarily showed students, but a few actors were older, so as to include staff and faculty as well. In keeping with the TTM premise that interventions for *precontemplators* and *contemplators* should primarily focus on the *pros* (benefits) of change, the interviews and video clips emphasized positive aspects of using ST, in particular saving money, getting exercise, and relaxing, listening to music, or getting work done on the commute. These *pros* were underscored by an overall positive mood and the beautiful weather on a sunny spring day. The video also emphasized *efficacy* in that peers were shown walking, biking, and riding the bus. A graduating senior with experience in documentary production and editing helped produce the video.

Of 720 campus participant volunteers, 551 were students, 87 Faculty and 136 staff. This sample included 63.8% women, and 89.7% Whites, 3.1% Black/ African Americans, 3.1% Hispanics, and 1.5% Asians. The mean age was 28.06 years.

Intervention Development and Procedure

Participants completed the study entirely online. After informed consent, a pre-test survey was followed by a link to the4-minute intervention video, followed by the final post-test survey. The video was designed to increase the *pros* of ST and to show transit users, bike riders, and walkers emphasizing the relative ease of using ST to promote *self-efficacy*.

Results

Most respondents agreed or strongly agreed (84.1%)that they liked the program. They also agreed that the program: gave them new things to think about (78.2%), could help them make some positive changes (75.5%), and increased their interest in ST (70.5%). Participants' *stage of change* for ST was also assessed pre- and post-intervention. A decrease was found from 62.9% in *precontemplation* at pre-test to 42.1% at post-test, while the percentage of those in *contemplation* increased from 16.6% at pre-test to 32.5% at post-test. A smaller positive shift from pre-test to post-test was found for the *preparation* stage (2.9% to 7.3%). Not surprisingly for such a brief intervention, proportions in *action* and *maintenance* stages were consistent from pre to post test. Small significant attitude changes from pre to post-test were also

found in those not yet using ST: an increase in mean ST*pros* (t(592)=7.04, p & .001) and a decrease in mean ST *cons* (t(577)=-2.86, p & .01). Finally, participants rated their own likelihood of using four ways to increase their ST behaviors: carpooling (31.7%) was rated most likely, followed by public transportation (11.8%), walking (10.3%), and biking (7.1%).

Study 4: Computer Tailored Intervention Pilot Study

A *Sustainable Transportation(ST) C*omputer Tailored Intervention (CTI) was designed to promote these ST behaviors: carpool, bike/skate/scooter, walk, and/or public transportation. Campus B participant volunteers were recruited, including students, faculty and staff. Three related behaviors were assessed: sustainable transportation behavior, recycling, and exercise. The CTI focused primarily on sustainable transportation. Recycling and exercise were included as related behaviors that people may be more likely to engage in. These behaviors may prime thinking about sustainable options for participants who already engaged in them. Positive feedback for exercise and recycling was given to participants in later stages as one way of encouraging ST behavior as well.

Method

The study began with an overview of the research study, informed consent, and questions to determine eligibility. Among those consenting to participate, the *ST* CTI proceeded with alternating assessments and individualized feedback on transportation behaviors and tailored feedback based on TTM constructs (*stage*, *pros*, *cons*, and *self-efficacy*) (Redding et al., 1999). Finally, the CTI feedback concluded with stage-matched feedback and transportation tips.

*Demographics and Travel Behavior***.** Single items assessed participant race, gender, age, and university and enrollment status. Additional items assessed transportation behaviors including how often they travel, what modes they used to get to campus, and how likely they would be to use various ST modes. ST modes included: carpooling, biking, skating, or using a scooter/similar devices, walking, and using public transportation (train, bus, etc.).

*Stage of Change***.** Stage of change items were included for three behaviors: sustainable transportation, exercise, and recycling. Both *Decisional Balance* subscales, the *pros* and *cons* of behavior change, were measured on a Likert scale ranging from 1- “not important” to 5- “extremely important”. Questions were asked at the start of the CTI and again afterwards. Each subscale contained 6 items reflecting the *pros* (α=.81) and *cons* (α=.79) of sustainable transportation.

*Self Efficacy***.** Self-efficacy was a 5-item scale assessing participant confidence to engage in ST behavior. Items were rated on a Likert scale ranging from 1-“not at all confident” to 5-“extremely confident” (α=.87).

*Evaluation Questions***.** Several post-test items asked for feedback regarding the program, including two open ended questions asking what participants liked or did not like and fourteen questions used a four-point agree/disagree Likert scale.

Results

Participants (N=393) included students, faculty, and staff recruited to complete the CTI pilot study. Participants were mostly white (80.9%) and female (67.7%) and ranged from 18 to 66 years of age (M =26.84). 63.4% reported living off-campus and 75.3% reported owning a car. A full 81.1% of off-campus participants reported driving alone as the primary mode of transportation most often used in a typical

week. When asked what mode of transportation off-campus participants would consider if they increased their use of ST, 49.0% responded that they were most likely to carpool.

Participants were classified into one of five stages of change for three different behaviors based on their responses. “Pre-action” stages of change signify that participants were not engaging in the target behavior and included *precontemplation* (PC), *contemplation*(C), and *preparation* (PR). *Action* (A) and *maintenance* (M) indicated that the participant was actively engaging in the behavior. When comparing participants on each of three behaviors, sustainable transpiration, recycling, and exercise, more participants were classified into PC for sustainable transportation (43.3%) than were in PC for recycling (7.9%) or exercise (7.1%), and fewer participants were in M for sustainable transportation (21.4%) than were in M for recycling (59.3%) or exercise (36.1%). When combined into *pre-action* (PC, C, PR) and *action/maintenance* stage groups, 71.5% were in *pre-action* stages for sustainable transportation compared to 46.3% for recycling and 29.3% for exercise.

Reactions to the program were measured with evaluation questions and the percent of participants who “agreed” or “strongly agreed” to each question. Over 90% of participants endorsed the program as: easy to use, easy to understand, and easy to navigate. Significant differences in average evaluation score were not found by stage or gender subgroups. This last finding is essential since it indicates that even participants who were not ready to change their behavior (*precontemplators*) were engaged by the CTI program.

Since the pre-test, CTI, and post-test were completed in one session, participants could not, by definition, progress to the *action* stage during the session. Instead, participants rated their behavioral intentions as a means to examine preliminary stage movement. A significant paired sample t-test on pre- and post-test intention scores showed a moderate effect of movement towards being more likely to consider using sustainable transportation, $t(392) = -2.946$, $p = .003$, $d = .08$, after using the CTI.

Discussion

Study 1 demonstrated internal and external validity of three key TTM measures, *pros*, *cons*, and *efficacy*, for ST behaviors. In this study, only about 25% of university students were in the *action* or *maintenance* stages for ST. Of the remaining students, only about 4% were in the *preparation* stage, while the largest percentage of students were not ready to change. These distributions differed from those reported for Australian students (Shannon et al., 2006), but were more consistent with those reported for British students (Gatersleben & Appleton, 2007). Interventions need to include and target the largest percentage of individuals who are not yet ready to adopt AT/ST behaviors.

Study 1 produced valid and reliable TTM measures for decisional balance and self efficacy that can enhance research and intervention development targeting Sustainable Transportation. The pattern of *pros* and *cons* by *stage of change* groups replicated the patterns that were found across 48 other behaviors (Hall & Rossi, 2008; Prochaska, 1994). *Self-efficacy* scores were lowest among those in the *precontemplation* stage compared to those in later *stages* of change. These patterns also replicated previous patterns found for other behaviors and are consistent with TTM-based predictions (Redding, Maddock & Rossi, 2006).

Study 2 added to our understanding of commute distances and campus transportation policies and infrastructure as important factors affecting students, staff, and faculty transportation behaviors. For students especially, better transportation resources and a stronger culture of sustainability encouraged sustainable choices. Also, in both settings, distance from campus was negatively related to sustainable transportation use.

Study 3 evaluated an easily disseminable video intervention that was targeted primarily to those not ready for change and showed small, important shifts in stages of readiness to change and Sustainable Transportation attitudes (*pros* and *cons*). These results supported the utility of this brief video in changing college students, staff, and faculty attitudes and readiness to change Sustainable Transportation behaviors.

Study 4 evaluated an easily disseminable computer-delivered TTM intervention that was tailored to all stages of change for ST, engaged those in all stages of change, and showed significant medium-sized shifts in intentions to engage in Sustainable Transportation behaviors. These results demonstrate the feasibility and acceptability of a TTM Sustainable Transportation *Computer Tailored Intervention*. Future research should examine comparable interventions over longer timeframes, consistent with other TTM intervention research, to examine their efficacy in changing ST behaviors.

This program of research supports the application of the TTM to sustainability-related transportation behaviors and the ability of brief targeted behavioral interventions to increase people's readiness and intention to engage in sustainable behaviors. These measures provide the empirical foundation for TTM intervention research applied to additional sustainable behaviors (e. g. recycling, green eating, energy conservation, land/water resource management). To achieve the goal of a more sustainable society, population-based communications to promote individual behavior change are critical. Not only does individual change impact sustainability directly, TTM research has found that such change is often associated with policy support as well. In addition, those in *action* and *maintenance* for sustainable behavior can be role models for others, thus providing social support and normative support for change. Finally, we expect that this approach can be applied to other kinds of sustainable behaviors in the future. TTM research has shown that even very different health and environmental behaviors can be evaluated and intervened upon using common constructs and evidence-based strategies. This innovative approach has the potential to reach diverse population segments and to help provide tools for lasting change.

Conclusion

This research has demonstrated that the Transtheoretical Model of Change is a promising tool for encouraging Sustainable Transportation behaviors on a population basis. Measurement development produced brief, reliable and valid scales, which provided the basis for a brief video and a CTI, as well as other research and practical applications. The campus comparison utilized these measures, providing an interesting comparison of campus cultures and transit infrastructures. This research program has great value both for research and transportation practice.

This program of research supports the application of the TTM to sustainability-related behaviors and the ability of brief targeted behavioral interventions to increase people's readiness and intention to engage in sustainable behaviors. These measures provide the empirical foundation for TTM intervention development research applied to additional sustainable behaviors (e. g. recycling, green eating, energy conservation, land/water resource management). To achieve the goal of sustainable transportation as part of a more sustainable society, effective population-based communications that promote individual behavior change are critical. Not only does individual change impact sustainability directly, TTM research has found that such change is often associated with policy support as well. In addition, those in action and maintenance for sustainable behavior are role models for others, thus providing additional social and normative support for change. Also, we expect that this approach can be applied to other types of sustainable behaviors in the future. TTM research has shown that even very different health and environmental behaviors can be evaluated and intervened upon using common constructs. This innovative approach has the potential to reach diverse population segments and to help provide tools for lasting change.

Attitude and behavior change regarding mobility options will gain importance in the future both for individuals and for policy makers. Individuals will face increased gasoline prices, more road congestion and pollution, and more negative consequences of a sedentary lifestyle. Policy makers also face the same congestion and pollution concerns along with limited resources for new road and highway construction. And the social costs of sedentary lifestyles in terms of healthcare and quality of life will lead to a greater sense of urgency that will likely increase attention to transportation behaviors. And finally, the pressure to mitigate the rate of Climate Change and to be prepared for its future impacts necessitates a reduced dependence on fossil fuel based transportation. Individual consumer choices along with policy decisions can facilitate the necessary changes. The TTM has provided a roadmap for change, and the research discussed here is an important starting point. Because targeted multimedia messages and Computer Tailored Interventions are easily scale-able, they have strong potential to reach large demographic and geographic segments at relatively low cost and may ultimately lead to behavior change beyond the individual level.

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The Visual Rhetoric of Climate Change Documentaries: Aerial Shots and Interviews

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This paper discusses the ways in which a number of documentary films on climate change attempt to represent a consensus view through the use of the aerial perspective. It analyses the ways in which conflicting uses of the aerial view, to represent both industrial progress and environmental damage, are reconciled in documentaries such as An Inconvenient Truth. It goes on to discuss the relationship between the aerial perspective and the interviews also represented in the films, with the latter demonstrating a wide variety of possible political interventions. Like aerial shots, interviews are used to construct consensus and conflict but they can also demonstrate the difficulties in generating genuine participation and in using conflict constructively.

Keywords: Documentary, climate change, aerial photography, interviews, participatory politics

Introduction

In my chapter for the volume *Climate Change Politics: Communication and Public Engagement* (Hughes, 2012) I explored the use of high angle extreme long shots, including aerial shots and space photography in a number of environmental documentaries about climate change. Through looking at a particular aspect of cinematographic representation, some aspects of the relationships between visual representation and environmental communication become more visible. What the aerial shot means as a position is part of this understanding. Following Carvalho's and Petersen's division of environmental communication strategies into three categories: social marketing, strategies of participation, and agonistic politics (Carvalho & Petersen, 2012), the chapter positions the aerial in twenty-first century climate change documentaries as consensus driven and hence it can be seen a form of social marketing of environmental attitudes.

In the context of this conference gathering focusing on the concept of the commons, it makes sense to think about the aerial position as one which encourages the idea of shared mental and physical space. It is a position which necessarily contrasts with the close up on the body which emphasizes personal space. What I propose to do in this paper is to summarize some of the points made regarding the use of aerial overviews in contemporary documentaries on climate change. I then propose to link that analysis to some complementary issues concerning the framing of interview subjects in the same category of films. As with the high angle shot, the close-up on the body and the face has a particular history and again environmental debate has inflected this history in particular ways.

As part of the exploration of these three kinds of participatory strategy, I will also be thinking about the interview presentations in terms of their positioning as attempts to engage individuals in deliberation. The documentary theorist Bill Nichols has proposed that documentary "modes" exist, which he defines partly in terms of the tendency within the film strategy towards more or less participatory techniques (Nichols, 2001). While Nichols' six modes (expository, poetic, observational, participatory, performative, and reflexive) do not map directly onto Carvalho and Petersen's social marketing, formal strategies of public

participation, and agonistic politics, it can be seen that the general thrust of these categories, the thinking about how involved participants actually are in the deliberative process of decision making about the making of the film or the strategy about the environment, can be linked.

The Aerial Shot

In films, high angle shots have various functions. They are strongly associated with the establishment of location in particular, so that sequences that follow the establishing shot can be understood by the viewer as taking place within the area already mapped out from above. In documentary films about the environment the high angle shot also has a thematic function involving the relationship between human communities and the places they inhabit.

In my chapter on climate change documentaries, I explored a development that has taken place in the cinematic representation of the relationship between human beings and their environments at the beginning of the 21st century. I contextualized this with an account of the history of the use of aerial shots in environmental documentaries from Pare Lorenz's *The plough that broke the plains* to Davis Guggenheim's *An inconvenient truth*. In my chapter, I drew on two publications that have traced this history, Finnis Dunaway's *Natural visions: The power of images in American environmental reform* (Dunaway, 2005) and Cosgrove and Fox's *Photography and flight* (Cosgrove & Fox, 2010). Both of these projects have traced the growing symbolic importance of aerial images as evidence for the increasing impact of human activity on the planet.

One of the clearest and perhaps most obvious ways to understand the relationship between humans and their environments is through looking at the representation of housing development in aerial photography. In these images, the meaning of the word environment starts out in the 1950s as a neutral word to refer to the organization and management of built environments. As the environmental movement develops, the word "environment" comes to refer to the natural environment that is in need of protection from industrialization and urban sprawl. This ambiguity between planned and unplanned, managed and unmanaged environments becomes reflected in ambivalence about aerial shots depicting housing from the air. At the same time, awareness of the effects of industrialization turns images of agricultural productivity into evidence of damaging monocultures, or images of electricity pylons carrying electricity across the land into blots on the landscape or traps for wild birds.

An early use of aerial photography to represent environmental issues can be found in postwar publications discussing the problems posed by town planning and the phenomenon of urban sprawl. These images have their own political context and can be seen to be part of a struggle to prevent the kinds of development that arose out of the uncontrolled exercise of capital in the 19th century. The purpose of the argument is to encourage central planning. In his foreword to E.A. Gutkind's *Our world from the air* published in 1952, G.P. Gooch underlined the significance of this perspective for the new generation that will be responsible for designing the fabric of the human environment for the second half of the century:

> The discovery of the art of flight enables us to do a hundred things in addition to bombing our enemies and racing about the world. It allows us, for instance, to survey every portion of the earth's surface from a new angle of vision, to supplement the detailed though limited approach of the earthbound observer by a synthetic perception which reveals familiar objects in a fresh light. Perspective is the key to understanding, and the whole is greater than the part. There is a new fruitful technique for the geologist, the archaeologist, the town-planner, the sociologist (Gutkind, 1952).

Within less than a decade this vision of the aerial view as a means to usher in a better world for heroes has disappeared, and far from demonstrating the new planned utopia the new aerial view is used more

powerfully by organizations concerned about the protection of wilderness spaces. The planners' images come to critique the world that is being created by them. What is more, the aerial shot of the housing created for the postwar boom comes to represent not only the despoliation of the earth but also the abuse of the human spirit and its need for wilderness and organic spaces rather than the "grids" of postwar modernity. This viewpoint comes about in the publication of Ansel Adams and Nancy Newall's *This is the American earth* by the Sierra Club in 1960 and, as Cosgrove and Fox have noted, has been the dominant role for aerial images ever since (Adams & Newhall, 1960).

In the continuation of the story of aerial images in climate change documentaries of the 21st century, a development can be seen that nevertheless illustrates a new twist. This change concerns an attempt at consensus construction of the kind described by Carvalho and Petersen in their introduction to the book *Climate change politics*. The process bears the traces of its history: from the celebration of consciously designed environments for the progress of mankind, to evidence of environmental damage, to a new interpretation which historicizes the images and integrates them into a strategy to unite the population in the fight for the future.

In the film *An inconvenient truth, a*fter a sequence in which Al Gore explains the ways in which current technology can be used to get US carbon emissions below the levels of the 1970s. In making the statistics more concrete he signals a rallying call in his pace and emphatic delivery:

> We have everything we need save perhaps political will but, [acceleration in pace] you know what, in America political will is a renewable resource [applause]. [Increase in voice volume] We have the ability to do this. Each one of us is a cause of global warming, [black and white image flying over an urban housing grid is followed by a crowded street, followed by slowly moving dense six-lane traffic], but each of us can make choices to change that [computer generated images of an urban landscape with electric cars, is followed by an advertising image of a solar panel, a crowd of cyclists, a landscape of wind turbines] with the things we buy, the electricity we use, the cars we drive. We can make choices to bring our individual carbon emissions to zero. (1hr 20 minutes approx) (David, 2006)

In this tiny sequence, Gore attempts to reconcile the reasoning of decades of planned economic growth with the arguments of the environmental community about the limits to growth, and proposes a technological solution which he hopes will generate political will. In the context of the film, the moving image flying over the city interprets the postwar period as one in which wealth has been distributed across the American population creating an infrastructure that has allowed for an overall increase in the quality of life. This is a point of view that is represented by Alex Steffen in his "bright green" manifesto *World changing* (Steffen, 2006). In this way, Guggenheim and Gore seek to represent the agenda of technological solutions to climate change as a consensus position which all sections of the population can support. This sequence can thus be understood as a dialectical process, with critical information provided by the technological combination of photography and flight.

The sequence of images in which this aerial view is embedded is sophisticated, combining virtual images with real ones. In the film as a whole, the aerial view is also no longer the most removed of shots having been taken over first by space photography and then by satellite images. In documentaries about climate change, these various categories of overview images of the earth from space and aerial shots are used as part of various arguments to make the claim that human communities can come together to agree the future. To be able to see builds the idea that it is also possible to prevent, to preserve, and to change and as long as we remain in the air in a position that is sufficiently far away to miss the detail these images are inspiring and empowering.

In the documentaries, however, these images are alternated with interviews which seek to support the global overview and consensus building but in fact inevitably modify these aims in various ways. Since the

film *Housing problems* (1935), the interview has been an important way in which documentary filmmakers have sought to overcome the expository tendencies of the form and to bring in the voice of the people affected by the issues. The documentary interview has provoked a history of debate on the ethics of participation and several movements have been founded based primarily on the articulation of the relationship between filmmaker and the subjects of the films. Recent experiments in documentary interview techniques have continued to keep these debates live.

The Documentary Interview as Social Marketing

In the film *The 11th hour* (Conners Petersen & Conners, 2007), all of the interviews which have come from a process of "reaching out" to a diverse community of environmental and community activists are shot in exactly the same way with single individuals who look out of the screen and speak out their ideas into an empty space that contains the filmmaker and by extension the film viewer. The interview subjects are framed in a way that emphasizes them as unique and isolated. Speech, facial expression and gesture are the primary media for communication with the interviewer and the audience. The use of monochrome backgrounds isolates the person as a body so that the ideas can be universalized and contemplated.

These interviews are thus acutely individualized in one way but they are presented as collective through the uniformity of the style of representation, and through the accumulation of voices similarly uprooted. Although the interviewer is present by implication, each individual speaks a monologue rather than being in dialogue because the interviewer is not offering any response, thus not really introducing deliberation, and not allowing each individual to hear any of the other voices. Any notion of collective deliberation comes out of the editing of the film designed to balance out the many different individual voices.

There is a question about the kind of deliberation this represents. On the one hand, it is symbolic of the characteristically separated way in which experts put forward their considered arguments to the community in journals and books. On the other hand, it also creates a halfway house because we do see the individual people physically cooperative and present in front of the camera and thus participating in the project of the film.

It is worth making a comparison here between this film about climate change, and Errol Morris's enormously successful and paradigm shifting documentary *The thin blue line* in which Morris first introduced his "interrotron" to cinema audiences and his method for discovering truth through the process of interview or cinematic interrogation (Morris, 1988). For *The thin blue line,* Morris in effect reconstituted the legal community of the courtroom – the police, the witnesses, the lawyers, and the defendant – in order to deconstruct it as a community and to demonstrate how its deliberations were distorted by the world out of which the community was derived. The interview technique here isolates the individual deliberately in order to allow for the scrutiny of the individual voice and to show how the collected voices could add up to a different conclusion from that of the trial.

In using a similar interview method, *The 11th hour* also puts each individual expert and community representative in front of the camera for scrutiny so that the expertise on offer can add up to a conclusion about climate change. Rather than deconstructing an existing community, however, the film attempts to construct one out of voices which are actually quite separate even though they all express concern about environmental degradation and the future. This technique demonstrates the ways in which a new community can emerge out of different kinds of connectivity, including that which arises out of the making of a film.

What is interesting about this process is that it is consensus driven, but the absence of disagreement or dissent also makes it highly perplexing in that these individuals are all so sure and yet nothing appears to

follow from what they have to say. The message of the film is both magical and alarming because the solutions offered are not commensurate with the unanimity on the current and impending disaster.

The Documentary Interview as Public Participation

In the film *Everything's cool* (Gold & Helfand, 2007), community is a highly significant word not only because it is continually used by the filmmakers and by the protagonists, but also because the participants contest it as a concept in the course of the film. In this film the sense of despair about the lack of a response to the forecast of disaster is palpable both in the ironic sense of humor used and in the melancholy expressed by the journalists and writers. An effort to create a bio-fuel acts as a particularly ironic response to the fact that the investigative van around which the movie is based moves around the country burning fuel and contributing to climate change.

The interviews in this film are varied but always contextualised, ranging from vox pops in the street to more formal interviews set up in the family home. The interviews are concerned to show people in the environments in which they live and work and to show these environments to be part of individual consciousness and identity. The filmmakers ask questions as part of an explicit process of discovery focusing on the lack of public engagement with climate change. They thus portray a deliberative process in which only one side of the argument is properly engaged. The other side is either indifferent or employs strategies to deny the need for debate. In its attempts to create public participation the film demonstrates how deliberation is avoided in a multitude of different ways.

The film also shows environmentalists meeting and discussing the environmental movement itself bringing in a pair of researchers who challenge the relevance of the community of environmentalists – claiming the movement is dead. The issue here is not the climate debate avoiders/deniers but the indifferent – those with problems more urgent than that of climate change. In the film there is a tendency to show Nordhaus and Schellenberger as negative spirits who damage the sense of community and seek to promote their own careers (Nordhaus & Shellenberger, 2007). It is clear also that it is not Nordhaus and Schellenberger but Hurricane Katrina that brings people to address the subject of climate change, and to make statements about the need to know that "someone is taking care of it."

The ending of the film is awkward. It tries to rally through the depiction of a community demonstration of solidarity in the form of a walk, a common way to signify political unity where there is none. The film ends with "time running out." What we see in this film is a tired and fragmenting community looking for ways and means to do more than draw attention to itself. Although this may seem to be a negative outcome of the participatory effort, it can be seen as one which is progressive because it refuses to make the claim that the future is assured. It shows people willing and able to contribute their views, but recognizes that even if the debate is started there is not necessarily the sense that "the people" have the solutions.

The Documentary Representation of Conflict

I'd like to finish this presentation with an additional film which I do not discuss in my chapter and which perhaps represents a development in environmental documentary technique. *Veins in the Gulf* (Coffman & Hardin, 2011) is about the environmental issues currently confronting the US state of Louisiana and its famous river the Mississippi. This is a region that has a rich environmental documentary history, being the subject of both Pare Lorenz's *The river* (Lorenz, 1938) and Robert Flaherty's *Louisiana story* (Flaherty, 1948).

The forecast for this region is that large areas of land will soon be lost to the water as climate change causes the level of the ocean to rise. The people of the region are acutely aware of the consequences of

climate change as well as the consequences of industrial development having suffered disaster after disaster – oil spills, hurricanes, flooding, loss of land. It is a community which has needed some concrete strategies in the past and which needs some more for the future. The thesis of the film is that all these strategies have environmental consequences. The approach towards the strategies put forward remains neutral as a broader view is taken. Building the levees to prevent flooding of farming land in the past has led to the erosion of the wetlands. Building the levees to prevent storm floods from the ocean has led to difficult decisions about when and how to implement them. Whatever the solution is for the future, it will have environmental consequences, too.

Veins in the Gulf is an interesting film in that it does not follow the pattern of the activist documentary of the mid 2010s. In many ways it can be described not as a film about environmental issues but as an elegy about the history of a relationship between the people of the region and the place they have chosen to settle. As Martha Serpas, the poet and a central figure for the film, puts it:

> Hurricanes are part of the story. And oil gushing all over the Gulf, that's part of the story. But the overall story, the ongoing story is about land loss. It's about living off the land. It's about watching a community trying to save its home (Coffman & Hardin, 2011).

The film has a complicated structure, creating a tapestry of impressions of the people and the landscape, injecting information on the history of the Cajuns as well as the Houma, on the languages of the region, on the wildlife, on the rivers, the bajous, the different industries (fishing, oil, gas), and so on. The viewer becomes aware of each part of the community from its own point of view. Overall, it can be read as a film that is a meditation on the process of living, on the interplay between the tendency of the Cajun way of life to focus on the here and now, the sense of history, and the capacity to plan for the future.

A significant moment in the film occurs when a consultation about the engineering solutions to the flooding of the region is filmed and it is this that I would like to focus on in the context of the debate today about participation in the politics of climate change. This, of course, is not an interview, but a piece of observational filming. The participants are not directing themselves to the camera but to the community. Nevertheless some participants then also speak to camera, and, within the film as a whole, an interesting relationship is created between the direct interview and observational filming, revealing the filmmaker's interview technique to be relatively distanced and distancing:

> May 29 2009
>
> Meeting Purpose [presented on powerpoint slides]
>
> Provide information on flood damage risk reduction projects that impact residents and businesses in Barataria, Lafitte, Crown Point and other areas of lower Jefferson Parish
>
> Incorporate feedback into development of the Donaldsonville to the Gulf of Mexico Feasibility Study
>
> Collage of clips of contributions from the floor
>
> *Man in purple shirt:*
>
> Could someone please explain to me and to the audience the relationship between the major alignments (= Levees) wherever they might be and the subalternatives
>
> *Woman in glasses:*
>
> There are all our neighbours, all our families, all our friends, and we want protection for everyone not just partial neighbours
>
> *Man in cap:*

That's all I got to say is just to take into consideration the further south you go with alignment it is probably the best to protect the existing areas

John Lopez, Lake Pontchartrain Basin Foundation

Before I ask a question I'd first like to ask a question. How many people in this room like to eat crabs? How many people in the room like to eat shrimps? How many people like to catch red fish? All of those species and many more, they are dependent on moving from the Gulf and into the estuary. Those species cannot climb over a levee. So that is a big part of the consideration, a potential trade-off. Putting levees across the basin, across the estuary, all those species have to somehow get through that system.

Woman in glasses:

But to say that fish species is more significant than a human being. Come on Mr Conservation Man give me a break! First of all, if it wouldn't be for the Baratarians you'd be under the rule of the crown right now and speaking the Queen's English. It's the Baratarians and the fishermens from the Baratarians that made this place. [Barataria is a region in Jefferson Parish, Louisiana, Bayou Barataria] It's the Baratarians that go out and get the oil and the gas to put in your vehicle but you're going to say we're insignificant to a fish and a crab and a shrimp. Shame on you! God bless you because you need it. Thank you.

Tim Kerner,

Mayor Jean Lafitte (from the podium)

You know for a man to get up, with all these people that lost everything so many times and talk so foolish, it's really a sad thing. No, no, [applaus and noise] [inaudible] All that land is dry already. The bayou is going to have a floodgate that is only going to close during emergencies so it's a shame for somebody to come and say that and I just had to say it. I'm sorry. [applause]

John Lopez

I lost my house to Katrina, completely. It was gone. So let's try and keep it, not make it personal, a lot of people have experienced a lot of tragedy. I know something about it.

<u>After the meeting</u>

John Lopez

Actually this is the worst experience I've had in terms of that kind of audience reaction.

This issue of these large levees is getting to be growing into a larger challenge, I think, for us, and hopefully it doesn't polarise things. We still want to try and barter with people, but obviously we saw some of that tonight.

James Taylor, Army Corps of Engineers:

Since I'm retiring I can say this. Politics always trumps science and engineering, and people need to know that when they are building a community consensus for a project.

In watching this scene it is impossible to get away from the discomfort of this exchange which demonstrates the posture and the physicality of disagreement. The camera stays with the clash as long as it persists and as it passes it moves back into the communities and the landscape. The film allows sympathy for different sides to exist as both are community oriented. Although the argument that the

natural landscape would protect the community in the long term may the preferred one from the environmental point of view, the fear of this solution, the sense of sacrifice, the defeat of the conventional solution is also clear. Out of this clash comes perhaps a better awareness of why deliberation and debate is difficult, rare and only fleetingly visible if it does not turn into civil conflict. However, because the film has a historical and cultural perspective, the broader painful processes of crisis, struggle, decision making, and living with the consequences also become visible as part of the history and identity of the community. The healing process of storytelling is shown as offering consolation but not consensus.

Ultimately, this clash is shown to be another stage in a process and the engineering project that takes place consequently is based not on the plans put forward at the meeting but on an experimental process of shifting silt from the bajous into the wetlands. It is a solution that manages to combine the arguments about preserving and extending the wetlands with the need for a more immediate effort to protect homes and livelihoods.

Conclusion

As with the aerial shot, the interview creates an attractive perspective that appears to reveal the subject for what it is. Like the aerial shot the interview frame both reveals and hides the subject because it can only present it from where the camera is placed. The interviews in *The 11th hour* are an attempt to forge consensus out of a plethora of voices and images, and optimism out of the demonstration of human inventiveness in ideas and commitment. The encounters with people in *Everthing's cool* make the problems for communication of environmental issues and the difficulties of getting genuine participation more visible. In *Veins in the Gulf* the politics of environmental debate is accessed at a time of acute crisis. Within a larger politics of community, the problems posed by the rising level of the ocean brings about a process of uncovering, accepting and unleashing conflict in the community as well as its potential to sustain itself. The energy that this process generates is seen as moving the debate forward. The historical context of cultural assimilation is a critical part of this process as it speaks of radical upheaval, of economic ups and downs, of sequences of tragedy and recovery over decades. The poetry of the film is that this is not the just a picture of the past but a prediction of the future for the region.

Environmental documentary, as a form with a long history indicated by the archive footage in this film, has developed a wealth of resources to deploy and to explore the process of political communication, among these aerial shots and interviews with participants. Contemporary strategies to create consensus, to stimulate participation, and to capture and understand conflict emerge and are shaped into the structure of the overall narrative. Environmental crisis has ensured that the political project for documentary as a means to foster citizenship has survived and the challenges posed have provoked many different creative strategies in the effort to find the most productive ways to persist.

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The Ghost of Dr. Mesmer or the Illusionary World of Fantastic Claims

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Scientific truth is often victim of political debates about the environment. Indeed, these debates are often fraught with appeals to arguments outside the realm of science designed to counter scientific claims: witness the disputes about the existence of the sources and manifestations of global warming.This paper focuses on more insidious situations where the scene of science is exploited to provide irrelevant alternatives designed to confuse and sway a public and make it difficult to discern what is relevant. This is particularly troubling since scientific arguments are expected to be disputed *autonomously* within a context designed to unequivocally assess the import of data and models.Foucault's reading of Aristotle's logic will help characterize such deception. An ongoing case where private interests try to forcefully overturn an act of congress that had designated the area they exploited as wilderness will serve as illustration.

Key words: scientific discourse, sophistry, field of science

In the introduction of *We have never been modern* Latour (1993) remarks that when newspapers report on environmental issues, they do so through "hybrid articles that sketch out imbroglios of science, politics, economy, law, religion, technology, (and) fiction" (p. 2). Indeed, debates about environmental issues, whether in congressional deliberations, in workshops, in editorials or in personal conversations, often exhibit these same imbroglios.The science pertaining to environmental questions rarely escapes these entanglements and as a consequence partisanship is too often suspected in the scientific process and its conclusions. This paper seeks to understand how such suspicion came to be in the controversy surrounding the efforts of a California oyster company's attempts to overturn an act of Congress that had designated as wilderness the area they commercially exploit.

Case study: An unfinished play

With its twists and turns and what seems to be a cast of thousands, the controversy surrounding Drakes Bay Oyster Company (DBOC), an oyster operation located in the Point Reyes National Seashore a few miles north of San Francisco, has often been compared to a melodrama. What follows is a brief synopsis of plot and characters that foregrounds milestones in the ongoing narrative.

1972: The National Park Service (NPS) has collected the funds to purchase land to create Point Reyes National Seashore (PRNS), a designation conferred in 1963. Most of these funds are used to purchase the ranches within its boundaries and to turn them back to the ranchers with 5-year renewable leases. More is used to buy land where the Johnson Oyster Company (JOC) operates. Unlike the ranches, JOC is given a 40-year Reservation of Use (ROU), renewable predicated on the NPS's policies at the time of renewal.

By 1976, the 94th Congress has passed public law 94-544 which designates portions of the park, including Drakes Estero, as wilderness. However, because JOC is still exploiting Drakes Estero, this wilderness designation is deemed *potential*, a statute that allows the continuation of non-conforming use but also requires NPS to manage the area as wilderness (Nell et al., 2012) "with efforts to steadily continue

to remove all obstacles to the eventual conversion of these lands and waters to wilderness status" (House report 94-1680).

This designation changed park policy and implicitly set an end to JOC's tenure on November 30, 2012.

ACT I: THE PURCHASE

- 2005: Kevin Lunny, a local rancher, purchases the remainder of the ROU with the understanding that it will terminate on November 2012.
- 2006: The local press reporting of the plan to close DBOC in 2012 triggers comments for and against this decision.
- 2007: In response PRNS chief scientist, Sarah Allen, and two local naturalists publish an article summarizing the impact of DBOC on the Estero ecosystem, which was roundly criticized in editorials and letters to the editor.

ACT II: THE HEARING

Steve Kinsey, Marin County supervisor, recognizing the tension between Lunny and PRNS, proposes a hearing with the County Board of Supervisors to determine if US Senator Diane Feinstein should be called to arbitrate the brewing conflict.

- May 2007: PRNS's superintendent, Don Neubacher, and Sarah Allen, testify before the Board of Supervisors. They emphasize the oyster operation's effect on the seal population, claiming an 80% decline in pup population on a sandbar included in the oyster lease. Dr. Corey Goodman, a local scientist and member of the National Academy of Science (NAS) promptly rebukes them. He hints at charges of scientific misconduct, demanding an investigation from the DOI Inspector General.
- Shortly thereafter, PRNS releases "Drakes Estero: A sheltered wilderness estuary" which echoes the concerns voiced at the hearing.
- Jul. 2007: The Olema Meeting. Diane Feinstein, Mary Bomar, NPS director, Kinsey, Goodman, Jonathan Jarvis, NPS Western Region director, and Neubacher meet.Jarvis agrees to soothe the relationship between PRNS and Lunny and to provide a copy of the seal survey database to Goodman. Neubacher agrees to remove the "Drakes Estero: A sheltered wilderness estuary" report from the PRNS website. Feinstein calls NAS for a review.

ACT III: THE RIDER

- Dec. 2007: Goodman issues his first claim of misconduct to NAS.
- Jul. 2008: The Inspector General report is published with no evidence of misconduct.
- Sep. 2008: Goodman intervenes in the peer-review of a paper describing the dynamics of the seal population in the upper Estero by park scientists Ben Becker et al., which had been submitted for publication in Marine Mammal Science.
- Dec. 2008: Goodman writes to NAS to critique PRNS seal disturbance records.
- Jan. 2009: Goodman issues his second claim of misconduct to NAS.
- Feb. 2009: Lunny writes four letters to NAS 1) arguing that the revised version of the paper by Becker, et al. includes new scientific misconduct, & 2) requesting that NAS publicly reveals any

scientific misconduct it finds, 3) contesting the boundaries of the seal haul outs and 4) objecting to the conditions of his permit.

- May 2009: Feinstein writes to Secretary of Interior Kenneth Salazar, urging him to pressure PRNS to grant Lunny renewal of his Special Use Permit (SUP).The NAS report is published; no evidence of misconduct is found.
- Sept. 2009: Feinstein proposes a rider giving authority to Salazar to extend Lunny's SUP for 10 more years "notwithstanding any other laws." & The rider passes.

ACT IV: THE GLOVES ARE OFF

- Nov. 2009: Gordon Bennett, representing the Sierra Club, asks the Marine Mammal Commission (MMC) to assess the health of the Estero's harbor seal colony. MMC agrees and suggests a panel of scientists for the task.
- Dec. 2009: Lunny writes three letters to MMC, 1) to remove a member of the panel proposed by MMC, 2) to expand the MMC review to the entire Estero and 3) to recommend another individual for the panel.
- Feb. 2010: The 3-day MMC meeting, held at PRNS, concludes that MMC should review the draft of a new paper, building on the NAS criticisms, which Becker et al. presented at the meeting.
- March 2011: The DOI solicitor report is published, finding no evidence of misconduct.
- Jul. 2011: To fulfill the agreement reached at the February 2010 MMC meeting, Becker forwards information for the review of Becker et al. (2011) a published version of the paper presented at the Feb. 2010 MMC meeting.
- Aug. 2011: Goodman, Harwood, Richard, the reviewers respectively selected for DBOC, MMC, and environmental groups conducted a review of Becker et al. (2011) for MMC. Each reviewer was given the opportunity to comment on the other reviewers' submissions.

ACT V: THE DECISION

- Sep. 2011: The Draft Environmental Statement (DEIS) requested by Salazar is published.
- Nov. 2011: The MMC report is published and extensively criticized by Goodman.
- Dec.2011: ENVIRON, consultants to DBOC, publishes a report on boat acoustics in response to the DEIS.
- Jan. 2012: Goodman proposes organizing an in-person round table between the reviewers of Becker et al. (2011) under the auspices of MMC. MMC refuses.
- Feb. 2012: The Coastal Commission issues a warning to DBOC for violations.
- Jun. 2012: Lunny ignores the PRNS data request to support the socioeconomic DEIS analysis. Goodman personally contacts Christopher Clark, the scientist who reviewed the soundscape section of the DEIS to ask him to include ENVIRON data in his evaluation.
  Tim Regan, Executive Director of MMC, personally reprimands Goodman for his handling of the statistical review stating: "your analysis of the data indicates to me that you did not take the time to understand fully the statistical methods you used."
- Jul. 2012: The National Research Council (NRC) meets to review the DEIS.

- Aug. 2012: Goodman and Lunny file a complaint on data quality via Cause of Action. The NRC report is published.
- Nov. 2012: Goodman accuses Regan of scientific misconduct in coordinating the review of Becker et al. (2011).
  Salazar visits DBOC, environmental groups and PRNS and a week later decides to let the ROU expire "based on matters of law and policy."

EPILOGUE

Since Salazar's decision DBOC has filed suit against Salazar and the debate has shifted from an alleged scientific debate to legal arguments, which still claims scientific misconduct.

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In view of this brief chronology it is apparent that one individual (Dr. Corey Goodman), dominates the conversation about science. It is also notable that many of his contributions are derogatory critiques rather than constructive counter arguments. Furthermore, claims to scientific misconduct seem to be his preferential strategy.

These observations raise serious questions about the quality of the scientific process in this situation. A detailed look at Goodman's interventions may help uncover strategies that may clarify how and why the conflict degenerated to such an extent.

The Field of Science

The DBOC conflict certainly exhibits the entanglement of "science, politics," etc. that Latour (1993) describes. However, before focusing on the specifics of the issue, as Latour would suggest, it is best, as Bourdieu (2001) claims, to first understand the structure and dynamics of the scientific field itself.

For Bourdieu (1993) fields circumscribe themselves "by defining specific stakes and interests … which are not perceived by someone who has not been shaped to enter that field" (p. 72). Its agents, including individuals and institutions engaged in struggles for these interests are "endowed with *habitus* [a set of dispositions] that implies knowledge and recognition of the immanent laws of the field" (p. 72). Furthermore, the structure of a field itself, which reflects the current "state of the distribution of the specific *capital* which has been accumulated in the course of previous struggles and which orients subsequent strategies … is itself always at stake" (p. 73).

A consequence of the *capital, habitus, stakes* and *interests* which define a field is its autonomy which, for the scientific field, evokes "a sort of 'ivory tower' inside which people judge, criticize, and even fight each other with the appropriate weapons – properly scientific instruments, techniques and methods" (Bourdieu, 1998 p. 61). This framework reveals the internal making of science where scientists compete with their peers and at the same time rely on them for recognition. It also begs the question of the nature of this "ivory tower" which, beyond its "autonomy", still requires communication with the whole of the social field.

Scientific communication

Peer-review

The sacrosanct peer-review, which may make or break scientific careers, remains the referee of the struggle among scientists. It guarantees a consensus on the truth-value of scientific discoveries and promotes the reputation of their author. With the concept of "scientific revolutions" and paradigm shift,

Kuhn (1962) described the critical role that peer-review takes in the changing the shape of the scientific field; for instance, he showed how the peer-review process autonomously helped work through disagreements to consecrate quantum mechanics as a legitimate and distinct approach to physics (Kuhn, 1987).

Foucault foresaw this exclusion implicit in the discourse of any disciplines which: "within its limits …recognizes true and false propositions" (1971 p. 35). But he also noted the relative permeability of fields when, taking psychiatry as an example, he observed that "the discursive formation that [a discipline] reveals is not coextensive with it, far from it: it greatly exceeds it" (1969 p. 234). In other words the system of ideas on which psychiatry is built is also evident in science, literature, jurisprudence, philosophy as well as in everyday conversation and opinions.

The interaction of scientists with the public is therefore another stake within the field of science. However since most scientists have worked hard to "pay their dues" to be accepted in the scientific field, they would rather preserve the isolation it fosters. They justifiably require isolation during the peer-review process and only publish, once all issues are reasonably settled, in order to encourage the development of newly established knowledge. However, society as such is often unprepared to receive this knowledge especially when, as it often happens, it is conveyed through the media. This situation promotes several distortions:

1. A field effect: the rejection of scientists engaged in "proselytizing." An example is the astronomer Carl Sagan, who took his teaching and the results of his research to the "street" through media ("Cosmos") and fiction ("Contact") and, as such, may have been denied entry to the National Academy of Science despite his impeccable credentials (Olson, 2009 p. 150-154).
2. A reinforcement of the scientists' position in society because of the privilege they have since they "left Plato's cave" and saw the light of truth (Latour, 2004). In the eyes of the lay public this effect bestows quasi-infallibility to scientists who may publicly offer opinions about scientific positions outside their disciplines or about non-scientific issues.
3. An apparent leveling of the fields, which seems to entitle anyone to participate in scientific debate despite a lack of stake in that field. This effect, which Bourdieu calls allodoxia, refers to misunderstandings that result from the interpretation of a situation with a habitus inadequate for its comprehension. Allodoxia is at the core of many struggles where science and politics mix (2000).

Extensions of the peer-review process

The effectiveness of the peer-review process is reduced when the claims it considers are either exaggerated or improperly substantiated because of negligence or manipulation:

1. To be sure, the intensity of the scientific debate can be exacerbated when the peer-review process is polarized with the introduction of scientifically valid objections given excessive weight in the evaluation of a problem. Sunstein (2005) explains this phenomenon through the combination of availability heuristics - how people visualize a particular problem (p. 36) and probability neglect - how people fail to estimate the probability of the heuristics they envision (p. 39). This, he argues, leads "to focus on worst-case scenarios" (p. 40) which skews the peer-review protocol.
   An example of this phenomenon can be illustrated in the debate about the danger of tobacco when C.C. Little, a geneticist by trade, insisted that lung cancer was primarily [*probability neglect*] caused by "genetic weakness" [*heuristics availability*] (Oreskes & Conway, 2010 p. 17). This claim, albeit true (about 1% of lung cancer cases have a genetic cause), was presented as overwhelming [*worst case scenario*] and thus temporarily justified the rejection of smoking as the main cause of lung cancer, thus delaying regulation on smoking by several years.

2. Alternatively, the peer-review process can be hijacked when scientific claims are made outside scientific procedures. Dr. Mesmer's claim for animal magnetism, proposed in the18th century illustrates this point. Mesmer, a medical doctor, tried to make sense of the world around him by invoking the existence of fluids such as the newly discovered electricity (Darnton, 1968 p. 13-22). In this context, it was no surprise that he "claimed that a single (and subtle) fluid pervaded the universe uniting and connecting all bodies" and assumed that a blockage of these flows would caused disease that could be cured with a restoration of the fluid equilibrium (Gould 1992 p. 184). Armed with this theory, Mesmer established a practice which initially consisted of one-to-one sessions where he physically connected with patients by touching their knees and hands while establishing direct eye contact to balance their flows. This therapy resulted in a convulsive crisis in some patients, which was interpreted as a release of their ailment and *therefore proved the existence of animal magnetism*. When demand for his cure increased, he instituted group sessions which included added theatrical components: a bucket of magnetized water from which protruded copper rods that patients could put in contact with their ailed organs
   However, when a royal order established a commission including Franklin and Lavoisier, to evaluate this claim, a thorough peer-review (including several experiments testing the existence of animal magnetism through its effects) concluded that "this theory is presented today with more imposing apparatus necessary in our more enlightened century – but it is no less false" (Gould, pp.195-196). Dr. Mesmer may have cured his patients by the power of suggestion, but his claim for the existence of animal magnetism was not supported by evidence.

These two situations were eventually streamlined in a scientific peer-review process by clarifying the probability neglect associated with Little's genetic claim for lung cancer or by formally demonstrating the falsity of Mesmer's claim for animal magnetism. The only dark spot of these two cases is the suspicion that Little was in fact aware of the likelihood of genetically caused lung cancer and only used this claim to delay the development of tobacco regulations and the fact that Mesmer recused himself from participating in the peer-review process choosing, instead, to criticize the commission's conclusion by dismissing the credentials of his former student who acted as commission's informant.

Scientists are becoming more sensitive to these various aspects of communication. As such they are seeking to improve communication skills by learning how media works (Baron, 2010) and by reflecting on the possible roles that scientists can take as citizens (Pielke, 2007). Communication specialists are also concerned about this and have analyzed the characteristics of the communication environments that include science (Cox, 2013).

Appropriation of the Scientific Discourse

Beyond this typology of scientific discourse and despite the effort of scientists to engage and to communicate better, there are two other approaches to dealing with scientific disagreements which artificially distort the scope of any debate: one uses arguments with the appearance of truth that are irrelevant to a scientific debate and the other uses true scientific arguments that are irrelevant to the situation it claims to address.

3. In the first instance the scope of the debate is typically broadened with arguments that fall outside the range of science, most notably religious arguments. These debates are fraught with faulty logic (e.g., carbon dioxide concentration has significantly increased over the "6,000 years of existence of the earth" … *therefore* the current increase in carbon dioxide concentration cannot possibly be anthropogenic).
   In these situations the scientific debate is usurped and reframed in a political or religious framework. For example, in the Scopes trial the court was presumed to legislate between scientific

and religious arguments (Gould, 1983, p. 253-262). Similarly, in the Galileo trial, the Church attempted to impose a false scientific conclusion on theological grounds.

4. The second circumstance fundamentally departs from any coherent scientific dialogue, yet maintains its appearance. According to Plato's definition, it is a dialogue akin to sophistry, a phenomenon which Aristotle analyzed in detail. Indeed, if Aristotle primarily wrote his logic to focus on the proper way to construct logical arguments he also added & a section entitled *Sophistic Refutations* (1950), where he developed a typology of thirteen verbal and material fallacies such as equivocation or irrelevant conclusion, that have the appearance of a logical statement but are really paralogisms. He then wondered how such statements could maintain the appearance of reasoning, noting the use of homophony, un-decidable propositions, and rhetorical devices such as fast-talking and hiding important questions under a plethora of peripheral ones.
   Synthesizing this text in his seminar on the *Leçons sur la volonté de savoir*, Foucault (2011) noted that sophistry is only possible because "in a discursive practice, it is not the things that are manipulated but their verbal symbols," their names (p. 43).
   However, because names are finite in number while things are not:
   "it is the specific character of the materiality of words – their rarity – that authorizes sophism. The sophist uses the same word, the same name, the same expression to say two different things, thereby making two statements within the identity of a single utterance" (p. 43)
   Consequently, making use of the materiality of language in logical statements opens the door to a dissonance between perceived and actual premises leading to misunderstanding under the guise of clarity.
   Building on this idea, Foucault identified four aspects that enhance the materiality of discourse beyond the materiality of words: a linear aspect in the mutual displacement of the elements of speech, a serial aspect in the inclusion of statements in the flow of earlier discourses, an "*evenemential"* aspect related to the authority of "ritual formula and sacred text" (p. 52, n36) and a strategic aspect in the inherent struggle that is an argumentation.
   This framework enabled Foucault to compare syllogism and sophism with four contrasting characters-- thought vs. given premises, limited vs. infinite scope, signified vs. signifier as operator, truth vs. victory as effect-- from which he concluded that sophism is not a false argument that appears true. Rather, it is not an argument at all because it operates at the levels of words (signifier) while reasoning occurs at the level of concepts (signified). Furthermore, he observed that sophisms can only be resolved through "the introduction of difference … which helps construct a universe of meaning from which one can formulate true and false [i.e., apophantic] statements" (p. 47).

This typology can be illustrated in the diagram of Figure 1 which delineates the three fields that are implied in the four descriptions just presented, and places the actors of these examples in relation to these fields. This shows that, despite their lack of allegiance to the peer-review process, both Little and Mesmer operate within the scientific field but with an interest respectively drawn from the field of politics (i.e. ways of delaying regulations) and the field of the supernatural (i.e., ways of marketing oneself on the sole basis of anecdotal evidence). More extreme positions are illustrated by the monkey trial which essentially belongs to the field of the supernatural, thus unilaterally denies any scientific argument that does not suit the tenets of the faith as well as the arguments that Goodman presented in the cases discussed below, which squarely fits in the political field keeping only the appearance of scientific discourse.Overall this diagram suggests that discourses with the appearance of scientific reasoning are, in fact, ignoring the radical autonomy of the scientific field.

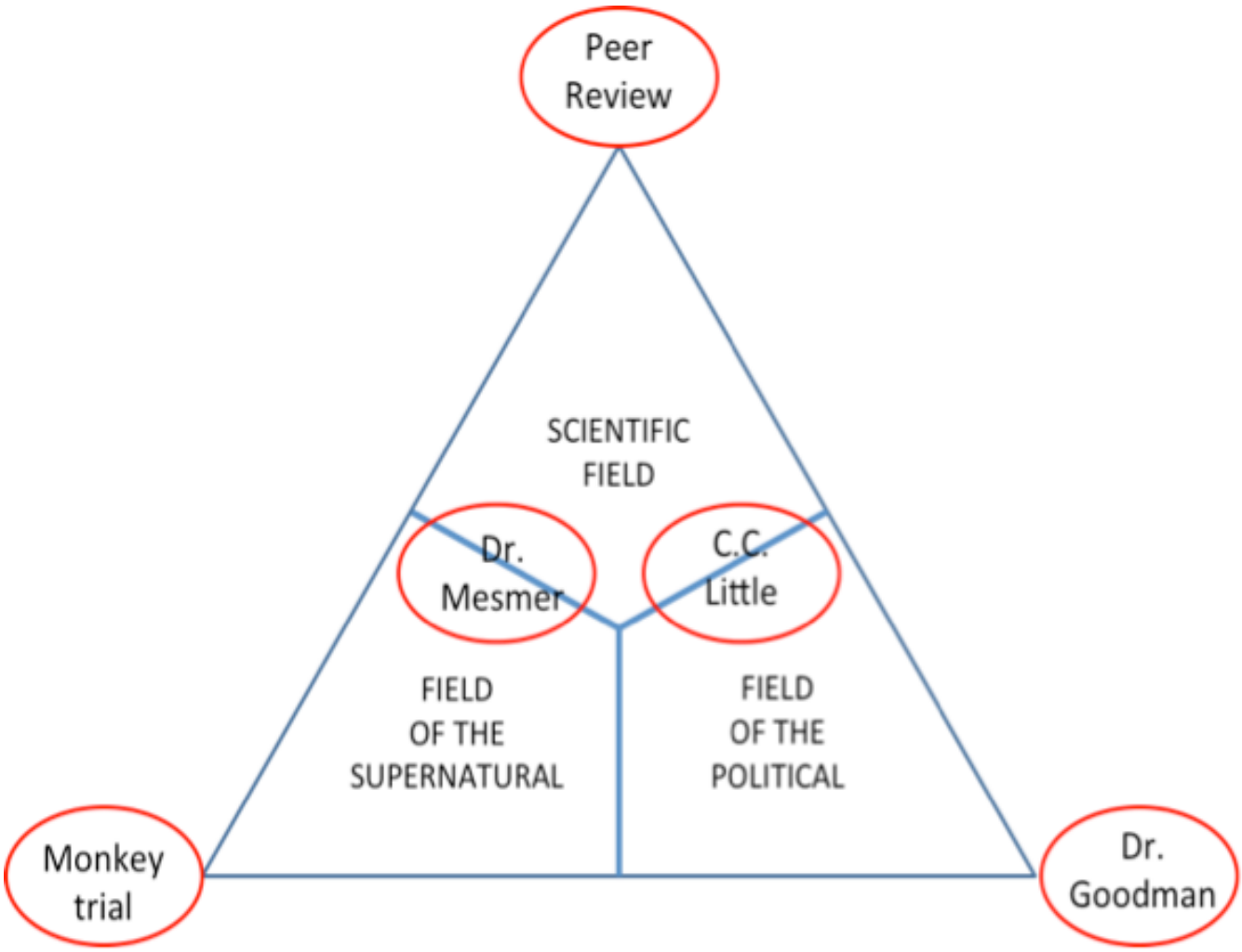


Figure 1: Typology of departures from the pure scientific discourse

Case Study: The Arguments

The remainder of this paper will analyze three instances of Goodman's intervention within the DBOC conflict that was described at the onset of this paper to better characterize this departure from authentic scientific discourse and identify some of the salient characteristics that help hide this departure.

Specifically three of Goodman's analyses were selected for that purpose:

- His critique of the seal pup decline claimed by PRNS in May 2007,
- His statistical review of Becker (2011) for the Marine Mammal Commission,
- His critique of the DEIS soundscape assessment in June 2012.

These cases were chosen because this author was personally involved in reviewing them and because they exhibit various aspects of sophistry discussed earlier.

Pup population decline

The critique of the seal pup decline relied on a statement Sarah Allen, then PRNS head scientist, made at the hearing of the May 8 Marin County Board of Supervisors. The relevant part of the transcript of these hearings reads as follows:

> "…Over the past few weeks we have documented oyster operations disturbing mothers with pups and oyster bags left on sandbars where seals would normally give birth and nurse their pups. The harm is resulting in abandonment of one area where more than 250 seals including 100 pups 2 years ago occurred in that spot, this year chronic disturbance and placement of bags on the nursery area caused an 80% reduction in the seals dropping to around 35 this last Saturday."

A review of all surveys recorded in the database clearly indicates that not a single sandbar meets all these constraints. However, the cue "*we have documented oyster operations disturbing mothers with pups and oyster bags left on sandbars where seals would normally give birth and nurse their pups"* limits the possible candidates to the three sandbars of the oyster lease. Of these only one met the 80% conclusion if we assume that the base line was 2004 instead of "2 years ago" and that the current data was reflecting the status a week before the hearing instead of "last Saturday". With these adjustments, this conclusion is the best way to make sense of the statement made at the hearing, which, incidentally, was not uttered in a scientific forum but a political one held at DBOC's request.

Nonetheless, Goodman took a single number at face value and looked for an 80% ratio anywhere in the Estero, regardless of the other cues that were provided. Since this ratio could also be derived from the data from a sandbar outside the oyster lease Goodman concluded that it *proved* that DBOC was not responsible for the decline.

Three years later, at the MMC meeting, he dismissed three reasonable explanations placing the 80% decline in the DBOC lease with ad-hominem attacks. He further reiterated his conviction that this issue was critical to consider because it affected the results of the models PRNS had developed notwithstanding the fact that this particular metric was never used in these models.

This incident illustrates how sophism "plays with a series of premises without limit" (Foucault, 2011, p.47). Indeed, Goodman only used the premise of an 80% decline and discarded the premise that the decline occurred in the oyster lease area. His strategy was to focus on the number (80%) as a formal goal and to show that his solution was the only possible one in a table that compared all sites without, however, specifying the conditions and constraints of his analysis, which, in a final analysis, contradicted his conclusion.

The review of Becker et al. (2011)

The statistical review of Becker et al. (2011), the second paper published by PRNS on the Estero which analyzed the distribution of harbor seals at three different scales, was conducted by three independent statisticians (including this author). Goodman conducted his review on behalf of DBOC.

His analysis first demonstrated a total ignorance of the methodology PRNS used, eluding the fact that the *single* model PRNS proposed was a compound of several models weighted with a probability reflecting their information content. Instead, Goodman limited his review to the least likely model included in the PNRS compound solution to demonstrate that the oyster operation has no effect on seal distribution in the region. He achieved this by removing the data points that exhibited a significant variation from average, thereby emasculating the analysis to prove, in effect … nothing. Indeed the remaining data showed a

system in statistical equilibrium (i.e., approximately constant seal distribution) which, by nature, cannot display a correlation with a quasi-constant production level.

Nonetheless, rather that say that after removal of the salient data, one cannot tell if there is a relationship between seal population and oyster activity, he asserted that he had proven that there is none. He also implied that this proof does not only apply to this particular model but to all possible models that include oyster activity as a covariate.

With this result he proceeded to demonstrate that there were many more models that were significantly better than the best model presented in Becker et al. (2011). The model he chose never included the activity of the oyster operation and as such could be entirely explained by the work of *"Mother Nature."* To promote this breakthrough idea he calculated the goodness of fit and its significance level for several models meeting his "natural" requirements. He plotted these two measures for his models as well as those derived from the individual PRNS models to graphically prove how PRNS had not done its homework. The claim was that his models had a significance level three orders of magnitude better than the best models that PNRS suggested. The new variables he introduced were *therefore* the cause of the observed distribution variations.

Goodman's weakness in this instance was his inability to recognize the tautology that all his models exhibited. Indeed, the models he proposed were all set up as a comparison between two distinct formulas, which were the continuous and the discrete representation of the *same* function. As such this comparison was bound to yield a high goodness of fit and, correlatively, a very low significance level regardless of the "meaning" of the variables used in these equations.

Beyond this mathematical minutia, these analyses exhibit a clear example of the materiality of language, particularly with the words *significant* and *cause*.Undeniably, to the lay person, the way statisticians express significance is not intuitive. The statement "the smaller it is the best it is" may be difficult to grasp as we tend to associate good with up and bad with down (Lakoff, 1980). This ambiguity results from defining significance as the probability that the model being considered is explained by noise. This means that a model with a significance of 1% has a relevance of 99%. So a significance "three orders of magnitude better" (i.e., a thousand time smaller) would be 0.001% which implies a relevance of 99.999%; statistically, not a significant difference.

As for cause, Goodman forgot Aristotle's (1980) four-cause theory that distinguishes the *material cause*, the *formal cause*, the *final cause*, and the *efficient cause* that is the only one bringing about an effect.In modern science we often only consider the efficient cause. For instance, laboratory experiments isolate the object of analysis so the scientist is relatively indifferent to the matter used to set up the experiment (material cause), the hypothesis of the experiment (formal cause) and the ultimate use of the results of the experiment (final cause). What matters is the execution of the experiment by its efficient cause, "that from which change or coming to rest first begins" (Aristotle, 1980,p. 29): i.e., the experimenter and her device who seek to learn from the experiment.

In mathematical modeling, however, the formal cause, which "means the form of the pattern" (p. 29) predominates. As a consequence regression, the statistical procedure used by PRNS and Goodman, operates on a formal relationship defined between arbitrary variables that may themselves have formal dependency. This is a deception often forgotten by budding statisticians because these formal relationships may yield very high correlations, which inadvertently become conflated with causality (Schield, 1975 p.2).

Indeed, expecting causality to magically fall out of a formal relationship such as regression is misinformed. It is the scientist's responsibility to select covariates that have a rational mechanism to *a-priori* explain an efficient cause-to-effect relationship (e.g., the reasonable likelihood that an oyster worker may sometimes

flush seals and as such change their distribution in the region) and then use regression to verify if the data confirms this a-priori assumption.

Evaluating the Soundscape

In contrast to the formal discussion just completed, evaluating a soundscape is an experiment grounded in empiricism. Because no data on boat noise from DBOC was available, the consulting company preparing the DEIS used a library of sounds to select a level that would be appropriate as a proxy. This is a very common practice in the discipline of noise control, a practice that DBOC consultants used to evaluate the sound expected when (and if) DBOC's oyster racks will be dismantled.In the DEIS, 70dB @ 50 ft was used for boat noise – for reference it is comparable to the sound of a vacuum cleaner. DBOC strongly disagreed with this assessment, so their consultants did an actual reading with a boat running at reportedly "normal cruise speed" which was measured at 60dB @ 50 ft. This discrepancy was the basis of Goodman's criticism of the DEIS, which had concluded that DBOC had a significant impact on the soundscape.

To validate the 60 dB measurement, Goodman requested the recording of a microphone that PRNS had installed on the eastern bank of the Estero for two 4-weeks periods in 2010 and 2011. He selected the winter period and tried to match the recoding with the passage of boats bound to a water sampling site as mandated by the California Department of Public Health. From the GPS records he deduced the boat speed and position at discrete time and from the microphone record he determined the time and decibel level. Goodman theorized that by matching times and adjusting the recorded sound upward for distance, he could derive the relationship between speed and sound level. It was a clever idea except for its execution and some serious omissions about sound propagation.

One problem was that one of the four boat trips he selected was a meandering trip that did not even seem to go to the water sampling site. The other three were straight runs to the sampling site. In consequence, because more than half the data points came from the first trip, calculating a straight average sound level biased the result toward low sound levels. Besides this oversight, Goodman, ignoring the dampening caused by relief, vegetation and air absorption (Beraneck, 1971), also underestimated the noise level of the boats.

But the more troubling part of Goodman's demonstration is its methodology: Unnecessarily using regression to make his case instead of simply calculating an average. Indeed, starting with the slow trip data, he identified a strong correlation between speed and sound level; he then added the other three trips to the dataset (discarding a significant drop in goodness of fit) to "read off" the average result from the regression graph. But, despite having the (flawed) "answer" to his problem, he proceeded with another double move:

> (1) To plot the variation of speed as a function of sound level (reversing the admittedly arbitrary relationship between cause and effect) and
>
> (2) To normalize the sound level from the standard decibel to a Bel scale normalized to the pressure at 60dB, placing essentially 60dB, at 0, the very center of the graph.

These moves had visual consequences, which emphasized the results of the analysis. Indeed, as Tufte has shown in *Visual display of quantitative information* (2001), because our gaze tends to focus on the center of an image a well balanced slide like the one Goodman presented conveys a stronger message. This approach reaches the lowest level of sophistry: the use of artifice to induce a "gut reaction," a seizure, not so different from Mesmer's bucket of magnetized water. It illustrates the undue influence that Goodman can have on those who do not possess the scientific capital to analyze and evaluate his conclusions.

Dissonances

Beyond the artifices used to make his arguments, the sum total of Goodman's contributions display a high level of inconsistencies:

- He accuses PRNS of lying when they claim the 80% decline in pups count; however, he makes this accusation with demonstrably false evidence.
- His soundscape data contains serious discrepancies between the sampling dates he selected and those reported by the agency overseeing the sampling activity.
- He repeatedly calls for peer-reviewed documents, sometimes inserting himself in a peer-review uninvited, while presenting information and analysis that has never been peer-reviewed.
- He demands civil discourse and invites the community to discuss science while filing numerous claims of scientific misconduct and without offering constructive criticism as was done by the NAS study panels.

In short, Goodman takes the high ground of independence and claims to defend ethics in science while remaining an unabashed advocate for DBOC.

His ability to maintain such a contradictory position primarily results from the sophistic approach he takes which is reinforced by several factors:

1. Goodman systematically presents scientific claims outside the field of science: None of these claims have been peer-reviewed and his primary modes of communication are limited to intervention in a newspaper where he controls the editorial policies, well orchestrated presentations to the "community" where he is the star presenting material in a tabloid style and participating in misleading propaganda videos.
2. His interventions always have high media content and strong overtone of "brilliance" turning the debate into a spectacle, "a social relationship between people that is mediated by images" (Debord, 2004, Thesis 4)
3. His extensive use of symbolic capital, the least understood yet the most important form of capital which Bourdieu (1979) defines as "a reputation for competence and an image of respectability and honorability easily converted into a political position of *notable*" (p.331). He is an elected member of the Academy of Science, affiliated professor at UCSF, author of more than 200 academic articles, a scientist committed to ethics in science, and a rancher!

I believe these to be important indices to recognize the sophistic approach to scientific debate.

Conclusion

As Cox (2013) has pointed out, "scientific claims become a site of conflict when the legitimacy of science…is challenged" (p.319). These challenges are often manifest in calls for additional research or in strategies that instill a sense of uncertainty (p. 333). Oreskes & Conway (2010) have documented several tactics aimed at avoiding governmental regulation and tipping the balance in favor of industry and the free market. Most of these tactics rely on attacking science using a tool of the field, the peer-review, which is used to delay the decision process. With this delay the public loses interest in its outcome and the affected businesses are able to minimize their risks, should regulation pass.The controversy analyzed in this paper unveiled very different strategies, different in kind not in degree. These strategies rely on sophistry. The Bush administration adopted this approach with the infamous language play that evoked bucolic images

to describe environmental devastation: “clear sky initiative” in place of “deregulation of pollutants” (Shulman, 2008). The DBOC controversy reveals an even more pernicious approach, transposing the language play in the realm of science and thus providing another screen, the prestige of science, to hide it from suspicion. Perhaps this is because this struggle is not about limiting regulations but about overturning a law: the Wilderness Act. No longer about nuances in opinion, it is about fomenting a discursive coup d’état: promoting the overturning of protective laws and opening the exploitation of public lands to commercial interests. This goal has become clearer since the termination of DBOC’s special use permit and the initiation of suits against Salazar as Lunny’s legal team is headed by Cause of Action, a right-wing organization with close ties to the Koch brothers, oil and gas industry magnates and premier polluters.

The Wilderness Act is the perfect target for this political move because of the limited awareness of most Americans to environmental issues and because of the implicit silence of its main constituents, wild animals and plants. The conflict between DBOC and PRNS is a call to action. It is also a call for civil discourse and for inclusion of all stakeholders, including spokespersons for the wild. It is a call to return discourse to a true dialogue.When in 1974 Foucault delivered his course on the Will to Know he said:

> “The apophantic discourse is defined by a continuity in relation to the object, sophistry by the exclusion of the subject” (2011, p.48).

In its conflict with PRNS, DBOC almost succeeded in “excluding the subject” by forcing the National Park Service to establish a de-facto gag order to PRNS and by silencing its opponent with sophistry. It is incumbent on us, as citizens in a democracy, to restore apophantic discourse which clearly sorts out the true from the false and to initiate a new dialogue, still fraught with conflicts, but “defined by continuity in relation to the object” in this case wilderness.

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Distrust as a Tool in an Environmental Conflict

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Lack of trust in planners is observable in communities concerned by a development project. Through a case study of a conflict related to a contested wind farm in Québec (Canada), this paper focuses on the role of trust and distrust in the diffusion of information. Interviews with 93 individuals involved in the conflict were conducted. The participants were asked the following questions: Do you think that someone was withholding information from you? If yes, who withheld what kind of information exactly? The main findings are that opponents and supporters showed high levels of trust within their own group. However, distrust regarding the other group was also very high, especially from opponents toward supporters. Suspicion was used relatively successfully as a strategy to discredit adversaries who were perceived as untrustworthy.

Keywords: Suspicion, Transparency, Lack of information, Cohesion, Wind energy

Introduction

For decision-makers and the public, environmental issues create an increasing need for information (Senecah, 2004); and information goes hand in hand with trust, because the perceived legitimacy of a piece of information is highly related to the perceived trustworthiness of its source (Fox & Irwin, 1998; Senecah, 2004; Slovic, 1999). However, lack of trust in decision-makers and developers is often observed in communities concerned by a development project (Aitken, 2010a; Ellis, Barry, & Robinson, 2007; Huijts, Midden, & Meijnders, 2007; Priest, Bonfadelli, & Rusanen, 2003), even though trusting social relationships may be beneficial for all and conducive to reaching consensus instead of division in the community (Walker, Devine-Wright, Hunter, High, & Evans, 2010).

In environmental public participation processes, "the degree to which the process supports trust" is "the fundamental measure" (Senecah, 2004, pp. 31-32), calling for the construction of a template (both theoretical and practical) for the use of trust as a tool to manage environmental conflicts. Trust and distrust can indeed be good indicators of the social climate and zones of tension in a conflict. They can therefore be used as means of understanding and eventually, managing environmental conflicts (Senecah, 2004).

Through the case study of a conflict related to a wind farm project in Québec, Canada, this paper proposes a better understanding of the tight relationship between trust and information in environmental conflicts. Who do people trust to provide relevant information, and who they do not? And how does this affect the unfolding of a conflict?

Trust and Information

In what follows, we unravel some of the theoretical considerations underlying the notion of trust and its thigh coupling with that of information.

Coexisting in Dynamic Social Relationships: Trust and Distrust

Trust and distrust are dynamic states linking two individuals (Kramer, 1999). Trust is not a switch that can be turned on (*a* trusts *b*) and off (*a* distrusts *b*). It has often been described as laying on a continuum, from total trust, involving strong solidarity between individuals, to total distrust, involving endings of relationships and social fragmentation (Lewis & Weigert, 1985). However, Lewicki et al. (1998) proposed that trust and distrust are not opposed, they rather are "confident positive expectations regarding another's conduct" on a specific issue in the case of trust and "confident negative expectations regarding another's conduct" on a specific issue in the case of distrust (p. 439). At first glance, these definitions may seem to be the two faces of the same coin, but this would be forgetting that relationships are multiplex (Monge & Eisenberg, 1987), i.e., one can feel both trust and distrust toward another. For instance, someone can trust a friend to keep a secret, but distrust that same person to drive his or her car (Lewicki, 2006; Lewicki, et al., 1998). This also means that trust and distrust always have an object (Nannestad, 2008); in the previous example, keeping a secret or driving a car. Trust and distrust can thus coexist simultaneously in a relationship and vary independently (Lewicki, et al., 1998). More importantly, they are embedded in social relationships (Granovetter, 1985); strongly influenced by his or her social relationships, an individual will trust someone else or not. Homophily predicts that trust is more likely to blossom in a relationship between members of the same group (McPherson, Smith-Lovin, & Cook, 2001). Knowing that values are shared also decreases the perceived risk of trusting a person (Kramer, 1999). Trust in institutions follows the same patterns (Peters, Lang, Sawicka, & Hallman, 2007; Slovic, 1993, 1999).

To trust or distrust is a shift toward certainty; the higher the trust or distrust, the more certain one's perception of another is (Burt & Knez, 1995; Kramer, 1999; Lewicki, et al., 1998). Trust is also understood as a sign of well-being, both for individuals and for societies (Kramer, 1998); trust answers a need for security (Lewis & Weigert, 1985). By contrast, to distrust is to express a fear that someone may act in a way that can be harmful or reckless (Kramer, 1999). The social impacts of distrust are as yet not well understood; it is perceived as a social ill, but at the same time it can be the sign of resilient societies (Kramer, 1999). To distrust may sometimes be interpreted as an adaptive attitude, being vigilant and aware, to make sense out of a potentially hostile situation in order to act accordingly (Kramer, 1998). Distrust is also in part at the origin of the various monitoring and assessment systems currently in place in our societies (Kramer, 1998; Lewis et Weigert, 1985), such as the one that serves as the context for the present case study.

Information in Context of Uncertainty: Who to Believe?

In environmental conflicts, lack of information is a complaint often expressed by stakeholders who feel excluded from the planning process. This information insufficiency is documented in the literature on risk perception and communication (Griffin, Dunwoody, & Neuwirth, 1999).

According to deficit models in communication, an individual exposed to a given risk (thus needing information) reaches a point where his or her knowledge about this risk will be sufficient to accept the risk or to help protect himself or herself from the risk – granted that protection measures do exist (Endres, 2009). This point would be the threshold where the need for information meets someone's current knowledge of a risk. However, this theoretical explanation does not consider that more information may also modify the risk perception and therefore raise the information sufficiency threshold (Griffin, et al.,

1999). Neither does it take into account that knowledge is inseparable from the context in which it is acquired, meaning again that more knowledge does not systematically result in a greater acceptability of risks (Priest, et al., 2003).

For someone exposed to a risk, the least common behavior is systematic information-seeking efforts from unfamiliar channels (Griffin, et al., 1999). On the contrary, people often access information already available in their memory or in their daily life (Fiske & Taylor, 1991; Griffin, et al., 1999), but do not dig further for more information (Cobb, 2005). In uncertain situations, people often rely on third-parties to acquire information, because gathering information alone may require many interactions and much information management (Kramer, 1999). A third-party is someone bridging two individuals only weakly related to one another (Burt & Knez, 1995; Kramer, 1999). Although it is common to rely on third-parties who diffuse "second-hand knowledge about others," these third-parties often present incomplete and partial information (Burt & Knez, 1995; Kramer, 1999, p. 577). The sense made out of this information (e.g., an information about someone being untrustworthy) will also be influenced in part by prior beliefs and values (Burt & Knez, 1995; Fox & Irwin, 1998). According to cognitive dissonance theory (Festinger, 1957), people selectively focus on information that is consistent with prior beliefs and avoid information that does not confirm what is already known (Sorrentino & Roney, 2000).

In environmental conflicts, the struggles for the right to know are illustrations of the widespread perception that information is undisclosed (Depoe, Delicath, & Aepli Elsenbeer, 2004). This raises suspicion toward the actor who is believed to withhold it, providing a fruitful context for distrust to blossom and once installed, it is especially hard to invalidate (Kramer, 1999).

Moreover, suspicion, the primary component of distrust (Kramer, 1998), is a state where someone "actively entertains multiple, plausibly rival, hypotheses about the motives or genuineness of a person's behavior" (Fein, 1996, p. 1165). Suspicion is a way of coping with disturbing social environments, and often implies a fearful perception that something is hidden (Kramer, 1998). Suspicion and distrust can also be directed to institutions, decision-makers, and experts (Lewis & Weigert, 1985; Peters, et al., 2007; Siegrist, Cvetkovich, & Roth, 2000; Slovic, 1993). Furthermore, distrust engenders actions that impede the nurturing of trust, for example ceasing contact with someone judged untrustworthy; initial perceptions will taint any new information, and thus foster distrust (Kramer, 1999; Slovic, 1993). When such distrust toward experts and decision-makers arises, the public tends to rely on sources they believe to be independent or serving the best interest of the general population (Frewer & Shepherd, 1994), or to rely on their neighbours and friends (Morell, 1987).

Methods

This paper propose a closer look at the role of distrust with regard to information in the build-up of a conflict related to a wind farm project in Quebec (Canada). For a better understanding of the particular situation of Quebec regarding impacts assessment in environmental conflicts, a quick overview of the official public hearing process will first be presented. Then, descriptions of the case background, of the sampling, and of the data collection and analysis will follow.

The Public Hearings Process of the BAPE

Since 1979, the province of Québec has had an official public hearings office –the Bureau d'audiences publiques sur l'environment or BAPE. It is a compulsory process, ruled by the Ministry of Sustainable Development, Environment and Parks (Ministère du Développement durable, de l'Environnement et des Parcs, MDDEP), for every planned project that may have impacts on the environment. The process unfolds in two phases (one involving information diffusion and the other involving consultation) observed by a

commission created to assess the project and its impacts. The BAPE is an advisory body and has no decision-making power: it provides advice and recommendations to the government with regard to the project it was commissioned to assess.

Context of Study: A Contested Wind Farm

The case selected was related to a wind farm in the planning phase located in a rural area of the province of Québec, Canada. The wind farm project consisted of 50 wind turbines located on private land. The project faced considerable opposition (BAPE, 2010). In the fall of 2009, 248 briefs were presented at the BAPE, from which 209 were opposed to the project. The government of Québec authorized the project in March 2011.

Sampling Design

The 308 individuals who expressed themselves through a brief or who were actively involved in the public hearings process were considered to have shown interest in the project, and thus were retained as the study population. The data presented here came from interviews conducted between January and May of 2010 with 93 individuals from this population. The convenience sample was constituted of people encountered during the BAPE process and completed with the snowball sampling method (Goodman, 1961). Of the 93 individuals, 58 were men and 35 women; 74 were opponents to the project and 19 were supporters. For the present analysis, data were lacking for two participants, thus providing a sample of 91 individuals.

Data Collection and Analysis

During the interviews, no direct questions about trust were asked to the participants, but perceptions of trust and distrust were operationalized through the following questions: Do you think that someone was withholding information from you? If yes, who withheld what kind of information exactly?

Quantitative and qualitative analysis were performed on the collected data. Quantitative results were obtained by a categorization of participations' answers to the aforementioned questions. Both analyses are presented together in order to add depth (with excerpts from the interviews) to rawer, quantitative results.

Results

Is Information Withheld, Buried or Hidden?

Some participants criticized or nuanced the way the question was formulated; for them, information was not necessarily withheld, but rather "hidden" or "buried." Some considered that information was in some cases circumstantially withheld and that this was maybe not voluntary. For example, the following nuances were proposed:

Excerpt 1 –A woman, opponent

I don't know if information is withheld or if these projects proceed by trial-and-error. I wonder if answers even exist.

Excerpt 2 –A woman, opponent

Withheld? I don't know if that is the right word. It wasn't voluntarily withheld. It wasn't like "These annoying citizens! This, we won't show them!" There was an agreement, a business relationship, where it was taken

for granted that elected officials represented citizens. And the goal was not to withhold information from citizens; it's just that citizens weren't part of this process.

Generally, while expressing nuanced perceptions, participants described different ways for not diffusing information: covering up, disinforming, lying, burying or controlling information, or making access to information complicated, such as in the following examples.

Excerpt 3 –A man, opponent

There is a lot of disinformation. For example, after the BAPE, [the developer] paid for a paper in [the local newspaper] to thank people for their support [during the public hearings], but it gives a false idea of the support that the project really receives. And this is a way to hide the reality that we know.

Excerpt 4 –A woman, opponent

The mayor, I'm sure that he hides all the process, the papers he signed, all the meetings he had with [the developer]. He doesn't tell the truth. They don't want us to know.

When Citizens Investigate

If the perception that information was withheld was widespread among opponents, many insisted on the fact that, despite the obstacles, they were now well informed because some opponents unburied and spread the information despite the obstacles. Many opponents insisted that they were the ones who searched for information. For instance, it was them who found the studies "from countries who have a long history with wind energy" and "stricter regulations" that the developer was withholding. Opponents also "discovered" or even "uncovered" information and stories that needed to be known to understand the project and the actions of the involved actors. In this quest, the opponents played a central role.

Excerpt 5 –A man, opponent

We were forced to act as investigation journalists. This is what we've done: investigating on what [the developer] did in [another country], investigating on conflicts of interests, investigating on the contracts, investigating on this trip to [South America]… Nobody would have told us these things if we hadn't dug them up.

This opponent refers to a trip to South America that the developer offered to some local elected officials and regional authorities' representatives in order to show them one of its model wind farms. For many opponents, this trip was considered a clear faux pas from the local and regional authorities. To avoid any appearance of conflict of interests, the authorities repaid the developer afterwards (with funds coming from the agreement with the developer). Nonetheless, this story was often used by the opponents to illustrate the perceived schemes between the authorities and the developer in the planning of the project.

Excerpt 6 –A woman, opponent

I have the feeling that [some opponents] really shed light on the whole thing. It said: "Hey, there is something going on in your area!" It's really how it was. This expensive trip to [South America], it's [them] who told us.

Also, the public hearings of the BAPE seem to have contributed to information gathering; according to an opponent, the developer and decision-makers "had finally no choice, but to answer our questions." This whole information-seeking process convinced many opponents that they knew enough to have a clear opinion on the project.

Excerpt 7 –A man, opponent

At the beginning, we had the impression like everyone else that information didn't flow. But now, myself, I have the information: I know the state of the project, its problems and its advantages. Today, I don't have the feeling that I lack information, but I did at the beginning.

More importantly, some participants viewed the opponents as the sole provider of information; because its members were the only ones who seriously looked for information "on all aspects" and therefore were "the best informed."

Who Withholds Information?

Overall, 15 actors were identified as withholders of information. Most of them were groups or organisations rather than specific individuals. Withholders received between 1 and 57 mentions, with an average of 16. Each participant identified between 0 and 7 different actors (mean of 2) as potential withholders of information.

However, 11 participants (12% of the sample) indicated that no one was withholding information; 10 of these were supporters of the project (more than half of the supporters in the sample). Indeed, and in clear contradiction with the portrait painted by the opponents, many supporters described a really transparent process, where the developer withheld "zero" information. Among supporters, the perception that the developer was especially willing to provide information was widespread. And when it did not, it was small things, like "administrative subtleties" that nobody except the developer needed to know.

Excerpt 8 –A man, supporter

When I listen to opponents talking against [the developer], and when I look at the discussions I have with the developer, I have the feeling we don't refer to the same people. [The developer] might as well choose the ones with whom to talk.

The same supporter added that it was in the developer's "best interest" to provide him "with as much information as possible," "since [he is] in favour" of the project. Such logic of transparency however would exclude all opponents.

For the participants, the most-cited withholders of information were: the developer (57 citations out of 91 participants), the Local authorities (53), the Regional authorities (34), the Environmental Impact Assessment (EIA) firm (23), the government (22), and Hydro-Québec (16).

What is Undisclosed?

A majority of participants mentioned that the developer withheld details of the project development, e.g., characteristics of the project, possibilities of expansion, etc. Some perceived that the developer withheld information as long as they could or misled the population with false or incomplete facts. Many participants criticized the way the prospection was carried out by the developer; many stories were told, some probably only rumours, but nevertheless often taken for granted by some opponents.

Excerpt 9 –A man, opponent

I don't know if it is a rumour, but I have friends who told me they have proof that some people were offered money. You go there and they give you 1000 dollars and you sign your name under here. I have no proof for this. Usually, I avoid this kind of comment, but these are things we hear, and, considering the enormity of their actions, I say that, yes, they probably did that on top of everything else.

Moreover, precise maps of the wind farm seem to have been hard to get access to for a long time. It is not clear whose responsibility it was to provide such maps: was it the developer or the authorities? Although the developer was probably the one having them – or their latest version because they were a work in

progress – the local and regional authorities were a more familiar partner for the population, who thus often sought for maps through these authorities. In a revealing anecdote, an opponent explained how, using a subterfuge with another opponent, he managed to have access to information concerning the locations of the wind turbines after many unsuccessful attempts through more usual channels.

Excerpt 10 –A man, opponent

We wanted to know how many turbines they were planning to install and on whose land exactly… We had access to maps, but we couldn't have more information from [the regional authorities]. We always had to call, we were going to their office, but then we needed to take an appointment. It was very long… Until we and [this other guy] went well-dressed to their office and passed as two guys working for [the developer] and then we spent two hours with the environmental manager.

Distrust reached an important scale when it came to local and regional authorities. Most of the time, the two actors were considered as one by the participants, possibly because some representatives sat in both assemblies. Many participants suspected conflicts of interest and corruption, which are not trivial accusations.

Excerpt 11 –A woman, opponent

I think there were bribes. Maybe it is not true, but the mayor just built a huge house on the lakeside. Maybe he received money? Maybe it is not even true, but I think it is. When he speaks, it doesn't sound true.

Also, for a lot of participants, the authorities never acknowledged a lack of "competence" or expertise to take part in these planning processes although they did not have enough knowledge to lead such processes. Therefore, this lack of competence was perceived by many as being hidden. Some participants even considered themselves as being better informed than the representatives whose task was to decide and regulate on the project. Therefore, some of them thought it was their role to inform decision-makers.

Excerpt 12 –A man, opponent

Our role was to give [our representatives] the information they did not have in order for them to make enlightened decisions. Even if the government sends the information to their office, if they are not used to integrate such a great quantity of information… It is not because the government gives it to you that you will read it, and it is not because you are a local elected representative that you will start to read several books and documents. But these are now prerequisites if you want to make decisions on behalf of thousands of people.

According to this opponent, the important quantity of information gathered by opponents was even acknowledged by a local mayor who told him: "You know ten times more than us about wind turbines." This opponent and his wife recalled that for a long time the mayor was trying to be reassuring and was hoping for people to trust him and his colleagues for the decisions they would make.

The main criticism aimed at the EIA firm was that their work was of poor quality because they hid the negative impacts of the project.

Excerpt 13 –A woman, opponent

The impact studies were not serious. I did not compare, but I believe the people who say that [the EIA firm] just repeats their study from one project to another, that they only adapt it very superficially, not spending a lot of time on it. People told me that, but I believe it because what I read from the impact studies was unsatisfactory. For example the noise measures were not at all adapted to our villages. They did not consider that if you live on a hilltop, there will be more noise than if you live in the valley. I am not an expert, but topography is a reality that needs to be considered, and the studies were very general.

Another participant said that the EIA firm "*followed a 'seller logic,'*" trying to sell the project to the population. This perception was accentuated by local circumstances; a representative of the EIA firm was involved in more than one wind farm project in the region, but with different responsibilities.

Excerpt 14 –A woman, opponent

[The representative of the EIA firm], he was the same man who sold wind turbines in [our village]. On one hand, you do impact studies, and on the other, you sell wind turbines… Information will be biased in some way; you're not 'pure as the driven snow'.

The representative of the EIA firm was a consultant also working on another wind farm project in a neighbouring village, in which he was acting as project leader and not as an environmental impacts specialist. Citizens who attended public meetings on both projects in the planning phase recognized the man and publicly accused him of holding two positions that were perceived as incompatible. Several participants reported this as the reason why they thought that the EIA firm had conflicting interests in the situation.

The government of Québec was also perceived as a withholder of information. The main point that the government was thought to withheld was the justification for the development of the wind energy sector. People questioned the way it was done, especially the political decision to have this energy being developed by the private sector instead of Hydro-Québec (the state-owned energy company), but also the costs and benefits of wind energy for the province.

Even if some opponents seemed to be proud of the results of their information-seeking activities, a few questioned the burden that fell on their shoulders. An opponent said that citizens had to seek out information by themselves because of the perceived lack of criticism of different organisations in charge of monitoring the implementation of such a project, like Hydro-Québec. According to him, none of these organisations counterbalanced some information provided by the developer that seemed exaggerated to many participants, such as the number of jobs created and the effective investments in the region.

Discussion

The Seed of Suspicion

As the conflict developed and information was gathered, opinions about the project became clearer. A great majority of participants then became entrenched in their position: supporters increasingly trusting supporters and distrusting opponents and vice versa. The distrust was constructed through social networks, as the groups were framing the issue, their adversaries and themselves (Gray, 2003). Trust was almost blind between members of the same group (either in favour or against the project), while distrust toward the other group (especially from the opponents to the supporters) seemed to be just as high – to the extent that some assumptions made by others were unverified but nevertheless reported as trustworthy. Opponents indeed had high expectations of the more prominent members of their group and displayed a great willingness to believe their discourse. For some, the opponents played the role of a rescuer who "shed light." Some of its members indeed took this mission seriously: they investigated when no one was asking questions, and they informed others to "enlighten their decisions." The opponents who considered that information may simply not be available were not numerous. To the contrary, some "knew" that "reality" was different than what was showed by the developer, for instance. Information appeared to them not only to be undisclosed, but also twisted to show another "reality." Therefore, the opponents began to spread suspicion, and thus distrust (Fein, 1996; Kramer, 1998). Through discussion networks, they indeed spread the idea that their adversaries and the information coming from them were

untrustworthy. The trip to South America offered by the developer is a good example of this "strategy of suspicion." Although it might be considered useful for decision-makers to see for themselves projects similar to the one they have to decide on, the opponents used this trip – among others things – to discredit both the developer and the authorities, who had apparently schemed.

The suspicion affected the credibility of the actors with a strong influence in the negotiation and decision-making processes, with the notable exception of the agricultural sector (Maillé & Saint-Charles, in press). It created fertile ground for rumours and unverified information to grow (Fein, 1996; Kramer, 1998), like suspicion of corruption and conflicts of interest in the case of the Local and Regional authorities. Suspicions of bribes have also been observed in other studies, suggesting that the current way of developing wind farm projects might increase distrust toward developers and decision-makers, especially considering that the financial benefits attributed to the community are not subject to formal guidelines (Aitken, 2010b; Cass, Walker, & Devine-Wright, 2010; Cowell, Bristow, & Munday, 2011).

The distrust toward the elected representatives was so strong that many participants said that the Local and Regional authorities had neither the competence nor the expertise to make decisions about such a project. The anecdote about the two false consultants working for the developer who received more consideration from the Regional authorities' environmental manager than simple citizens is also illustrative of a certain lack of experience when it comes to dealing with such projects and the new types of actors they may bring. This perceived incompetence fed a lack of institutional and social trust and is consistent with the literature on trust and risk perception (Frewer et al., 2002; Huijts, et al., 2007; Lewis & Weigert, 1985; Peters, et al., 2007; Priest, et al., 2003; Siegrist, et al., 2000; Slovic, 1993).

In this context of distrust, technical expertise did not play the role the deficit model predicted it would, while anecdotes or even unverified rumours seemed to have had more influence on opponents' perception of others' trustworthiness. This reinforces the idea that the deficit model has important limitations and does not take into account the way the public constructs and manages scientific information and arguments (Endres, 2009); people are not empty well waiting to be filled with scientific information in a top-down and authoritative way, they rather are expecting information they can trust. No matter how accurate and complete the scientific assessment can be, if its bearer is perceived as untrustworthy, the information has great chances of being disregarded. The situation observed in this case study concurred more to those where trust-destroying information, as Slovic (1993) put it, is clearly more influential and diffused further by citizens than the technical assessments. The EIA firm responsible for such an assessment was here undoubtedly perceived as biased in favour of the project, especially since its main representative was also leading the development of another wind farm project in the region. Hence, even the institution that could have made an independent scientific assessment of the impacts was suspected of having failed at its role. Other organisations, such as Hydro-Québec, were also blamed for not verifying the information provided by the developer and for leaving to the citizens the burden of defying this often very technical information.

In such a context of extended social and institutional distrust (Lewis & Weigert, 1985; Siegrist, et al., 2000), the perception that so many actors withheld crucial information fed a belief in conspiracy theories (Goertzel, 1994; Kramer, 1998, 1999). Actors at every level of the decision processes were perceived untrustworthy, especially actors that were generally expected to act as bulwarks of citizens and democracy. Although for most opponents distrust was first expressed towards those who were acting locally, many proposed a more global picture and questioned the government's intentions behind the whole development of the wind energy sector in Québec, perceived as inadequate and disrespectful of the population. For instance, an opponent described this development as a business relationship where citizens are not taken into consideration. If the elected officials were still perceived as representatives of the citizens (and for the developer and some supporters they were the only legitimate discussion partner when it came to the community's interests), many perceived that they failed at their role of protecting the citizens

from the actions of the developer. Worse, some perceived that they even schemed with it and favoured mainly their own interests.

Moreover, considering that the developer was acting locally, the answers about the withholders of information show concentric circles of distrust; the closer an actor was to the participant, the more susceptible it was to be perceived as withholding information. Interestingly, however, targets of this high distrust were public actors (or their representatives), and less frequently relatives, despite the important social divide observed in the community (Maillé & Saint-Charles, 2012). This might be because these public actors were expected to have, but especially to provide information in the form of official facts and documents, while this responsibility did not lie with relatives.

Lack of Information as an Argument

For many opponents, distrust contributed in giving meaning to their opposition of the project. Not only did the opponents acquire legitimacy this way, it also gained autonomy and thus power (Friedberg, 1993) over the actors who were believed to withhold information. Repeated demands to access information appeared to have been merely an argument, because the most important for opponents with this "strategy of suspicion" seemed to have been to discredit these powerful actors by spreading the idea – justified or not – of their untrustworthiness. They were especially successful in this; many participants believed that information was withheld in various ways by almost every actor.

However, supporters seemed to have succeeded in the exact opposite since more than half of them believed that no one was withholding information and that the process was transparent. Moreover, their position justified that they were well-informed. In this sense, the supporter in Excerpt 8 was expressing with other words the same idea than the opponent in Excerpt 2: opponents are not legitimate discussion partners in the decision making process – or in this so-called business relationship – and their exclusion is therefore justified by their position. Such a belief however does not contribute to conflict resolution, quite the contrary.

Furthermore, this "strategy of suspicion" contributed to the cohesion between the opponents to the project (Lewicki, et al., 1997; Scherer & Cho, 2003) through a consolidation of the opposition discourse. The fact that many opponents cited the very same actors and the same stories about information in this conflict showed that consolidation was occurring (Gray, Hanke & Putnam, 2007). The opponents were positioning themselves as antagonists to the supporters, and against what they perceived as common and untrustworthy adversaries.

When opponents decried a lack of information (BAPE, 2010), they in fact expressed a lack of trust in the information diffused (mainly because of its bearers). At this stage of the conflict, when everyone stuck firmly to their position, the opponents' demand for more information was unsolvable because they were asking for more information they could trust (or information that benefited their cause) from actors they considered to be untrustworthy. This information would have given legitimacy to the opponents' voice, a legitimacy that is essential for public participation (Senecah, 2004). However, their adversaries (in this case the supporters of the project) had no reason to fuel the public debate with information they, in turn, did not trust. The two discourses were at this point irreconcilable, but each side wanted "the reality" that it knew to prevail, as Mumby (1988) described in his explanation of power relationships. Therefore, one of the main problems in this conflict was not uncertainty, but rather the certainty expressed by each side, which is consistent with definitions of trust and distrust that imply a shift toward certainty (Burt & Knez, 1995; Kramer, 1999; Lewicki, et al., 1998). This entrenchment contributed to the escalation of the conflict and to social division (BAPE, 2010; Lewicki, Saunders, & Minton, 1997; Maillé & Saint-Charles, 2012; Walker, et al., 2010).

Conclusion

Public participation in environmental consultation processes implies not only access to information, but also trust in the providers of information. Without trust, information will likely be disregarded. However, with trust, information will likely be taken for granted and diffused further. Among themselves, opponents and supporters showed high levels of trust. Distrust regarding the other group was also very high, especially from opponents to supporters. Distrust was fed by lack of information and by suspicion. It was also used as a strategy to discredit adversaries who were considered untrustworthy.

This study shows that the perception of untrustworthiness of the provider of information, diffused through social networks, can have a great influence on the way one receives information from this source, on the position one takes toward the proposed project, and ultimately on the unfolding of a conflict.

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“Blue is the New Green”: Neoliberal Logic and the Co-optation of Environmental Justice Discourses in the Pennsylvania Fracking Debate

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In the debate over hydraulic fracturing in the Marcellus Shale, industry rhetoric appropriates environmental justice discourses paired with neoliberal logic. First, industry voices assert that fracking is clean. Second, they argue that fracking will help sustain local families and communities for many generations to come. Third, by appropriating a scaled understanding of EJ, the industry asserts that fracking locally results in benefits nationally and globally. Finally, the industry marginalizes anti-fracking activists as impractical alarmists. Through this rhetoric, the industry defines the process and associated values of fracking as desirable, inevitable, and most importantly, a sustainable process with just outcomes.

Key Words: Environmental Justice, Fracking, Rhetoric, Neo-Liberal

Travelers along Pennsylvania highways are exposed to an array of billboards lauding natural gas as a crucial fuel for “America’s future.” PiOGA’s messages often argue that “blue is the new green,” invoking an allegiance between labor and environmental organizations built on local energy production that will result in strong, sustainable communities. These slogans and advertisements subtly link together Pennsylvania shale gas production with key phrases of Environmental Justice (EJ) activists: employment, multi-generational concern, and community built on healthy environments (See, e.g. Bullard, 1993; Cox, 2007). Indeed, messages across a range of media suggest shale gas production is a key strategy for achieving sustainable communities from the local to global scale.

For example, America’s Natural Gas Alliance (ANGA) has taken to Youtube with a clip titled “The Truth About Gasland” (2011). ANGA’s video is meant as a direct response to Josh Fox’s well-received 2010 documentary, *Gasland*, which is an anti-fracking documentary that argues that fracking is detrimental to air, water, and people everywhere. In ANGA’s video, the narrator ties key elements of national identity with natural gas production and consumption: “We have something special in this country; Our people. And our freedom to express our opinions and beliefs.” The backdrop of lush greenery, toddlers learning to walk, and mothers kissing babies, with upbeat banjo music, sets the tone for a tally of the United States’ natural resource blessings: “Our abundant natural resources, including America’s vast newfound supplies of natural gas. Natural gas provides clean, domestic energy our country needs.” As images of Latino families, elderly couples, and more toddlers splashing in waterways occupy the screen, the narrator continues, “and it’s our neighbors who work everyday to produce it. With this opportunity comes great responsibility…[the] responsibility to ensure that all of us reap the benefits of this natural wealth. And a responsibility to develop this natural resource with a constant sense of stewardship to the land, our air,

and our water." Although somewhat vague on process, the message is clear: there is a connection between shale gas production and possibilities for sustainable communities now and into the future.

While observers may dismiss such proclamations as mere rhetoric, one side of the debate, or corporate greenwashing, we suggest that these industry discourses do more than simply present an alternative perspective on fracking. The practice of co-opting justice narratives, in effect, defines fracking in terms that are favorable to the industry *and* appeal to stakeholder desires for sustainable communities. Simultaneously, anti-fracking activists lose a key component of their messaging strategy and are discursively marginalized from the conversation. These activists are posited as alarmists who lack a clear message or alternative to the options laid out in the dominant fracking debate. In other words, by co-opting activist narratives, industry rhetors control both sides of the debate and force the anti-fracking message to the margins. Through this discursive practice, the gas industry is able to define the process and associated values of fracking as desirable, inevitable, and most importantly, a *sustainable* process with *just* outcomes.

In this paper we argue that the gas industry utilizes a neoliberal strategy of co-opting multi-scaled EJ narratives (Holifield, 2004, 2007) to legitimize the process and outcomes of fracking for natural gas in Marcellus Shale. Environmentalists have long demonized fossil fuels as a dirty, unsustainable energy source that creates great risks for workers, communities, and their environments. Industries have endeavored to produce a counternarrative that often simultaneously attacks the messenger and the science that backs up environmentalist claims (Oreskes & Conway, 2010). Fossil fuel industries (see "Clean Coal") have built their public relations campaigns on the insistence that their products are clean, safe, and sustainable. It seems that the next phase of this strategy can be found in the current debates over fracking in the Marcellus Shale, a natural gas embedded shale spanning across New York, Pennsylvania, Maryland, West Virginia, Ohio, and Virginia. Pennsylvania's fracking debate has exploded on the media scene across local, national and international scales. A February 14, 2012 survey of news stories in Lexis Nexis with "fracking" as the keyword reveal 336 stories in the Pittsburgh Post Gazette alone and 2000+ internationally, as compared with 157 total international publications five years ago and 41 articles a decade ago. As tensions emerge over the uneven costs and benefits from natural gas production, industry stakeholders as well as concerned citizens and environmental justice activists struggle to frame this complex issue in their own terms (Finewood & Stroup, 2012).

And indeed, the issue is incredibly complex. Fracking allows fossil fuels to be extracted from the United States in a time when dependence upon foreign oil is a hot button issue for both the right and the left. Proponents argue that it is an important bridge fuel between crude oil and alternative energies that cannot yet be extracted, stored, or transported efficiently. Environmental activists raise concern about the contents of the fracking liquid injected into the ground during extraction and the disposal of that liquid afterward, concerns validated by recent preliminary research linking fracking to low infant birth weight (see Hill, 2013), geological instability (see BC Oil and Gas Commission, 2012), and, most famously, water that can be lit on fire (see Osborn et al., 2011). However, those concerns have each been met with skeptics who argue the infant health study was flawed and (rightly) that it has not yet been through the rigorous process of peer review (see Revkin, 2012), that flammable water is regrettable, but not proven linked to nearby drilling (see Lustgarten, 2008; Sullivan, 2011), and that the seismic events linked to fracking are insignificant and on par with those caused by other industrial processes (see "New Fracking Research," 2013).

Proponents and opponents of fracking are often portrayed as residing on the poles of an environment-versus-economic debate, particularly in terms of jobs versus the environment. However, in this paper we point to shared arguments, topoi, and tropes used by the two groups that complicate a simplified environment/economic dichotomy. Rather, we suggest that proponents and opponents both employ a

frame of environmentalism that must be interrogated in order to better understand the nuanced techniques various players use to sway the debate (Dempsey, 2009).

Industry proponents seek to frame the negative impacts of energy production and resource extraction – water pollution, unsafe working conditions, toxic air, exploitation of the poor – as minimal, normal phases of global economic growth and environmental change that will, in turn, benefit Pennsylvanians with a new source of clean energy, national energy independence, and family-sustaining jobs. Thus, fracking is conceived as the sort of multi-scaled, collaborative effort that would typically be supported by EJ activists. And despite the potential costs (e.g. water pollution, air pollution, infrastructure degradation, rent increases), this discursive framing constructs local, rural communities as the true beneficiaries of green energy production and jobs. As the rhetoric of multi-scalar environmental justice is co-opted and reframed at the local level, those who argue against fracking are constructed as economically short-sided, alarmist, unreasonable, and impractical.

Here we focus primarily on the industry discourses in favor of fracking, and reconstruct key textual fragments (McGee, 1990) to show how neoliberal logics coupled with the topoi of environmental justice authorize fracking and undermine/marginalize the arguments of concerned citizens. In this view, we suggest that academic scholars play an important role in not only deconstructing the fracking debate, but also in identifying the way environmental perception materializes in costs and benefits. In other words, the ability of oil and gas firms to discursively shape the debate (and the corresponding heroes and villains) means that they can normalize the outcomes of fracking, which metes out benefits to particular stakeholders and faraway energy consumers, while distributing the costs to working class, rural communities and the places they live.

We consider our role as both academic and activist, and our argument is presented from that vantage point (see, e.g. Cox, 2007; Pezzullo, 2010). Community-based scholarship and activism is one of the most important avenues for effecting social change: it is through community work that we gain insight into the interplay between everyday life and broader institutional discourses and policy decisions (Dreier, Mollenkopf, & Swanstrom, 2001). Localized experiences, thus, help to better understand the consequences of grand, global narratives (Adger et al., 2001). Further, we suggest, the expansive and taken-for-granted logic of neoliberal globalization (Harvey, 2005) provides an important lens for interpreting both the practices and discourses of oil and gas firms.

This essay extends and builds upon the theories of environmental justice, neoliberalism, and critical rhetoric. The Environmental Protection Agency (2010) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” This perspective sees the struggle for social justice as a contest over socio-environmental geography. EJ advocates remind us that the “environment” or “nature” is not separate from people, and urges environmentalists to consider the interrelated social, economic, political, and ecological sustainability of present actions both intra- and inter-generationally (Adamson & Stein, 2002). The myriad of specifically located struggles of EJ activists all contribute to the global environmental justice movement, which emerged as a critique of the more traditional environmental movement for excluding poor and/or people of color from positions of leadership (Adamson, Evans, & Stein, 2002; Pezzullo, 2007).

As a global movement, EJ is founded on the unmasking of corporate discourses of power behind environmental policy as an effective tactic for social change (Agyeman, 2007; Pezzullo, 2007). While Pezzullo (2007) notes that the global EJ movement has “sparked a transformation in environmental discourses, practices, and agents” (p. 13), we are concerned with the ways oil and gas firms have appropriated and (re)deployed these discourses in Pennsylvania. Although it is clear that EJ has had a positive influence on vulnerable communities, we would argue that EJ discourses are often adopted and

(mis)appropriated by corporations and other large institutions as a way of greenwashing their practices. While communication scholars have produced a robust body of work exploring Environmental Justice rhetorics employed by activists and concerned citizens, we argue that the cooptation of these topoi and tropes by corporate interests warrants further examination.

Neoliberal Appropriations of Environmental Justice

Scholars have long engaged and theorized the concept of neoliberalism to characterize a particular market-oriented governance strategy (Harvey, 1996, 2005). Neoliberal theory is grounded in classic, liberal notions of individuals as rational and personally responsible actors, and a legal system that strongly enforces private property rights. Assuming these rational actors and legal systems are in place, neoliberal proponents suggest that governments should deconstruct (or under-fund) their involvement in socio-economic processes (i.e. entitlement programs such as welfare and regulatory agencies). Deregulation, privatization of all resources, and devolving state power are the mandates of neoliberal theory, suggesting that market forces (demand) will dictate the best management and outcomes for everything from land use, the U.S. Postal Service, health care, food inspection, to environmental regulation. If a conflict arises between actors (i.e. one person damages another persons property), then a strong legal system is in place that, ostensibly, encourages people to sue for damages (Friedman, 1975).

Through powerful institutions such as the World Bank – and the countries and corporations that influence such institutions (Peet, 2003) – the market fundamentalism of neoliberalism (i.e. a pragmatic deference to free markets) has played a strategic role in building "a global economy where control over local governments, communities, cultures, education, and health care is no longer in the hands of the people but in the hands of big business" (Adamson, Evans, & Stein, 2002, p. 3). This has translated into clear environmental and social injustices at a range of scales (Faber & McCarthy, 2003). However, Brenner and Theodore (2002) suggest that neoliberalism is not a single identifiable force, but manifests in contextually specific ways, more often reconstructing social, economic, and ecological relationships based on localized "institutional frameworks, policy regimes, regulatory practices, and political struggles" (p. 351). In other words, Brenner and Theodore (2002) argue that we should consider the way neoliberalism "actually exists" in place, which may look far different than the theory itself (Bakker, 2010; Brown, 2006). In the debate surrounding fracking, we argue that environmental justice discourses are employed by industry rhetors, but are tweaked by neoliberal logic in impactful ways. Robert Cox (2007) argues that neoliberal logic has been uniquely successful in disciplining the discussion of global economic change and asserting that the dual tropes of sacrifice and reward can be used to explain any social or economic phenomenon.

Neoliberalism, as a socio-ecological strategy, has increasingly influenced resource use, and consequently, specific people and the places they live (Heynen et al., 2007). Therefore, we feel it is essential to investigate the neoliberal rhetorical practices of Pennsylvania oil and gas firms in order to unmask the "complex relationships between local practices and the forces of neoliberal globalization" (Spurlock, 2009, p. 16). If Marcellus Shale gas production moves forward unabated and/or lightly regulated, it will no doubt influence production across the globe with considerable environmental health impacts (Osborn et al., 2011; Howarth et al., 2011; Colburn et al., 2011). By looking at this debate *in process*, we feel there is an opportunity to intervene in productive ways.

First, the industry asserts that fracking is "clean," "responsible," "abundant," and "sustainable" development at its best. Second, industry rhetors adopt a broadened, scalar definition of sustainability which includes social and economic factors to argue that fracking will help sustain local families and communities for many generations to come. Third, appropriating a scaled understanding of EJ, the oil and gas industry asserts that fracking locally results in benefits nationally as well as globally, including energy independence,

and an American-led energy innovation worldwide. Finally, the industry debunks the efforts of anti-fracking activists as misguided conservationism of bumbling "greenies" at best, and manipulative fear-mongering of extremist "fractivists" at worst.

"Blue is the New Green"

In his contribution to the groundbreaking *Just Sustainabilities*, Duncan McLaren (2003) encourages scholars to conceptualize just sustainability "in terms of access for all to fair shares in the resources on which healthy quality of life depends" (p. 19). One of the drivers of unsustainable development, EJ argues, is social and economic inequality. However, EJ rejects the conclusion that the elevation from poverty requires a trade off in terms of a higher level of environmental damage; instead, EJ sees justice and sustainability as interdependent (Agyeman, Bullard, & Evans, 2003). In an increasingly common, though ill-suited, marriage of neoliberal and EJ narratives, industry rhetors argue that this fair access to natural resources can finally be achieved through "green innovation" in the form of fracking, and insist that "it is a myth that we have to choose between embracing these opportunities and protecting our environment; thanks to natural gas, we can do both" (see ANGA, 2011; Halliburton, 2011). In one promotional video in the Marcellus Shale Coalition website, Kent F. Moors puts the potential of Marcellus Shale not in terms of dollars and cents, but in terms of warmth. The "game-changing" Marcellus gas play represents "enough [energy] for Pennsylvania to be warm in the winter for the next 2012 years," Moors argues (Marcellus Shale Coalition, 2010). In 1991, the First National People of Color Environmental Leadership Summit meet in Washington, DC to shape the defining principles of the global EJ movement. The twelfth of these principles asserts that there should be "fair access for all to the full range of resources," something natural gas can provide, the industry celebrates, because of its abundance and affordability (Principles, 1991).

The Marcellus Shale Coalition (MSC), was founded in 2008 and is "committed to the responsible development of natural gas from the Marcellus Shale geological formation and the enhancement of the region's economy that can be realized by this clean-burning energy source" (Marcellus Shale Coalition, 2011). The fact that natural gas is "clean-burning" is the pillar of the industry's argument that "blue is the new green" (PiOGA, 2011). However, this focus on product use ignores that fact that the full lifecycle of fracking for natural gas potentially creates as large a carbon footprint as coal (Lustgarten, 2011). In much of the industry discourse, technological innovation is our only salvation from environmental degradation. Halliburton, for example, insists, "our research and development team are involved in cutting-edge development of science in our quest to unlock energy resources. We are committed to aligning our technology development with our deeply held commitment to safety, environmental stewardship, and the well-being of our employees and their communities" (Halliburton, 2010, p. 16). "Responsibility" and "commitment" are referenced perpetually in industry accounts of fracking. MSC similarly argues that Pennsylvania is benefiting from technological breakthroughs "no one could have predicted a decade ago," but emphasize that "while this development is creating tens of thousands of jobs, we understand that our greatest responsibility is continued environmental stewardship" (Marcellus Shale Coalition, 2011). PiOGA argues "natural gas is a key bridge fuel to the renewable-energy technologies of the future" (PiOGA, 2011). Since wind and solar are not yet viable, oil and gas argue, we need natural gas as a cleaner interim option. However, natural gas is not just clean when used as a fuel, the industry insists, it is also a non-evasive, safe, and clean product to produce.

The sixth principle of environmental justice states: "environmental justice demands the cessation of all toxins, hazardous wastes, and radioactive materials" (Principles, 1991). Some of the most salient arguments anti-fracking activists make is that the chemicals used during the fracking process are potentially dangerous, that fracking pollutes ground water sources, and that the fracking process produces millions of gallons of hazardous waste water which is often disposed of in irresponsible ways. In stark contrast, the industry claims that the additives to fracking liquid are safe, disclosed, and natural, and

that the drilling process guarantees the safety of waterways. In advertising material for their new "Cleanstim" fracking fluids, for example, Halliburton argues that the fracking liquid is safe because it is "made from materials sourced entirely from the food industry" (Halliburton, 2011). PiOGA similarly asserts that the chemicals found in fracking liquid "both small in number and dilute in concentration – can be found in many household items," and are therefore safe (PiOGA, 2011). However, as many food studies scholars have argued, it is problematic logic to link the food industrial complex with what is "natural" or safe (see Retzinger, 2008).

Additionally, the industry argues that groundwater cannot be polluted by hydraulic fracturing because of "redundant layers of steel casing and cement" used in the drilling process, "state of the art monitoring technologies," and "rigorous oversight practices" (ANGA 2011; PiOGA, 2011). In sum, the industry insists that natural gas is a sustainably produced resource which will result in affordable access to environmentally responsible fuel for all, regardless of race, color or creed. The materials used are "clean," and furthermore, incapable of leeching into the water supply because of foolproof technological innovations. Far from increasing pollution, ANGA argues on their website that "natural gas represents the only clean energy option of adequate scale today to start now to make meaningful improvements over the next 10 years in our air quality. So breathe easy, America." (ANGA, 2011). In other words, oil and gas look at sustainability as a multi-scaled term, and argue that fracking the Marcellus Shale does more than just *not* pollute, it benefits communities socially, ecologically, and economically for generations to come.

"Family-Sustaining Jobs"

MSC asks Pennsylvanians to "witness" for their cause, by speaking about how Marcellus drilling is "improving our quality of life" in a series of promotional videos posted online (Marcellus Shale Coalition, 2009). Witnessing is a rhetorical tactic commonly used by EJ activists to testify personal accounts of environmental atrocities and lend a human face to injustice (Pezzullo, 2007). "The farmers around here have been working hard all their lives," says Greg McKelhaney in his posted video testimony. "Now they have the opportunity to have extra money, maybe retire. It's a shame it didn't happen years ago" (Marcellus Shale Coalition, 2009). Through this witnessing, the oil and gas industry is framed as concerned about the economic and social wellbeing of Pennsylvanian citizens, particularly the struggling independent farmer. ANGA posts similar witnessing videos to their website, including one from an Iraq veteran who couldn't find any work when he returned home until he headed to Pennsylvania. He argues, "as a veteran I'm very proud to work in an industry…that can help America achieve energy independence." The oil and gas industry are actively striving to make sure that, not only are basic needs met, but that citizens have expendable income and access to opportunity, whether that be new jobs or the choice to opt out of farming. Ironically, industry officials are working to prevent citizens from being able to opt-out of leasing their land for drilling through a controversial practice called "forced-pooling" by anti-fracking activists and "fair-pooling" by the industry (Skrapits, 2010). Forced pooling allows fracking beneath the properties of holdout landowners if a certain percentage of other landowners in the same drilling block lease their land. Perhaps unsurprisingly, oil and gas executives represent even this as a public and environmental good:

> Fair pooling "dramatically reduces above-ground disturbance" and allows gas to be collected in an orderly manner, Marcellus Shale Coalition spokesman Travis Windle said.
>
> "It's an absolute environmental winner, and that's why virtually every other energy-producing state in the nation has this on the books," he said.
>
> Windle said fair pooling is good for landowners - "Everyone's compensated for production, whether they have a lease or not, under a pooling statute" - and for consumers, who would benefit from more supply in the market (Skrapits, 2010).

"Community," a god-term for EJ activists, permeates the industry discourse as a buzzword. One PiOGA highway billboard shows a group of workers working in cheerful cooperation with one another, next to the text: "Natural Gas from Pennsylvania: New Jobs for Our Workers. New Growth in Our Communities." "Our commitment to community" is listed as the most important of MSC's guiding principles. "All across the commonwealth," MSC argues, "people are talking about the positive impact this natural resource will have on individuals, families, businesses, and the economy as a whole" (Marcellus Shale Coalition, 2010). Industry insists that costs are small, and greatly outweigh the benefits, which will be equally distributed across communities regardless of race, class, or gender. "From job creation to GDP growth, and from cheaper energy to industrial recovery," insists ANGA (2011), "it is clear that natural gas abundance will have wide-reaching positive impacts on America's economy."

The MSC and other industry rhetors define sustainability in broad and scalar terms, emphasizing intergenerational considerations and the interdependence of economic, social, and environmental concerns. For example, in Halliburton's (2010) yearly Corporate Sustainability Report, the corporation asserts that "sustainability is on our DNA," and include explanations of their "ongoing commitment to our employees and the communities in which we work and live" (p. 1). MSC assures readers that "we value the communities where we do business," and that natural gas drilling will have "positive impacts" on "families, businesses, and communities in many parts of Pennsylvania" (Marcellus Shale Coalition, 2011). Guiding principles in the quest for sustainability, according to the 2010 Halliburton report, include such items as "developing technologies and conducting operations in a safe, ethical manner with minimum harm to the environment" as well as more economically-driven principles like "delivering superior value for our stakeholders" and "contributing to the economic and social benefit of our employees and communities in which we operate" (p. 2). In a promotional pamphlet lauding their creation of "family-sustaining jobs," MSC insists that, "while the energy and environmental benefits of clean-burning natural gas cannot be overlooked, development of the Marcellus Shale is expected to have significant employment impacts for decades to come" (Marcellus Shale Coalition, 2011). The industry knows sustainability is about more than ecology, the enthymemic reasoning implies, and the industry is thinking about sustaining future generations. Again the oil and gas industry appropriates one of the key principles of environmental justice, developed from a declaration of the Iroquois Confederacy that "in our every deliberation we must consider the impact of our decisions on the next seven generations." "If we're only smart enough to not kill it with over regulation," Ron Morris (2011) cautions during his weekly Marcellus Shale Radio Broadcast, drilling for natural gas will be the economic boon this region desperately needs for generations to come. What this simplified argument overlooks, however, is that jobs in oil and gas retrieval are rarely long-term, while environmental effects almost always are.

Frack Local, Think Global

Within the industry narrative, natural gas doesn't positively affect just the region: it has potential nationally and globally. Aubrey McClendon insists that cheap, abundant reserves of natural gas "have potential to transform manufacturing, transportation and other sectors, and can help to revive a national economy that is struggling with persistent low grown and high unemployment" (Hurdle, 2011). "We are the world's leading producer of this clean energy source," ANGA (2012) asserts, and therefore "our nation is the envy of the world." We can export our energy expertise in natural gas, once again taking position as world leader, the industry insists. "As the world's demand for energy steadily increases," Halliburton asserts, "the oil and gas industry is developing the technologies to unlock the earth's resources cleanly and efficiently" (Halliburton, 2010, p. 16). "Our people, our technology, and global infrastructure [are] all intertwined with our expanding success in sustainability," Halliburton (2010) claims (p. 5). One of the key principles of environmental justice is understanding the interdependence of the local and the global, taking a scalar approach to sustainability. At least on the surface, Halliburton is addressing that principle when they claim

to be “leading the industry through innovation and good stewardship of *global* energy resources” (Halliburton, 2010, p. 2, emphasis ours). MSC similarly asserts that “the responsible development of the Marcellus Shale’s abundant resources continues to fundamentally reshape regional and global energy markets” (Marcellus Shale Coalition, 2011).

Perhaps the most common argument for natural gas production through fracking is that it will result in American “energy independence.” According to their guiding principles, the MSC “works to attract and retain a talented local workforce to become a part of history: the development of clean-burning, reliable, and abundant natural gas resources that will improve our energy security and national security for generations to come”(Marcellus Shale Coalition, 2011). Here, not only will fracking provide sustainable fuel and long-term sustainable jobs: it will be the source of national security and the bolstering of our foundering national economy. This, industry rhetorics insist, is the ultimate environmental and global good. On the weekly Marcellus Shale Talk Radio Program, guest Dick Heckman argues that if we create the demand for natural gas in this country, “you would never import another barrel of oil from the Middle East.” While EJ advocates reason that the choices we make in the present must be considered in conjunction with the needs of future generations, in a co-optation of this principle the oil and gas industry argues that natural gas offers energy security, and therefore a safer future for the nation. “This is red, white, and blue energy,” claims J. Brett Harvey, chairman of Consol Energy Inc. “Natural Gas from Pennsylvania” is “clean,” “affordable,” “abundant,” and, perhaps most importantly, “American” (ANGA, 2011; PiOGA, 2011; CNGNow, 2011). CNGNow, the industry organization devoted to raising awareness about compressed natural gas conversion urges readers to both “Go Local!” and “Declare Energy Independence” by supporting natural gas infrastructure (CNGNow, 2011). This isn’t local for local’s sake, however; local production is linked to global infrastructure, international politics, and the globalized neoliberal economy. In addition to claiming that fracking is the ultimate environmental solution, however, industry rhetors also actively debunk the claims of local and national EJ activists working to regulate or ban fracking.

“Fracktivists” vs. “Factivists”

One often-quoted industry rhetor is Aubrey McClendon, chief executive of Chesapeake Energy Co. During the 2011 Marcellus Shale Insights Conference, McClendon argues during his keynote address that the choice is clear: “We can follow a path to economic ruin built on fantasies about the viability of wind and solar and the risks of natural gas. Or we can seek to safely build on the reality of the Marcellus Shale American Gas Treasure.” McClendon and other speakers during the conference recurrently referred to the protestors outside as “extremists,” incapable of being reasoned with (Maykuth, 2011). EJ protestors are immediately discredited as short-sighted and impractical, overcome by fantasy and out of touch with reality. "I've asked a few of them from time to time to tell me about clean gas drilling,” McClendon continues, “and they tell me it doesn't exist. And so very simply they want no drilling. That's fine I suppose if you don't like heat in your home, electricity in your office, a job to go to and food on your plate” (Maykuth, 2011). EJ activists, then, have their head in the clouds and are not worried about basic needs of members of their community. Through co-optation of EJ discourses which advocate that preservation is not as important as fostering healthy relationships with the natural environment, the oil and gas industry assert that it is *they* who care for, and will provide for, local families. In contrast, the industry narrative insists, EJ protestors want Americans to live in a world where “it’s cold, it’s dark and we’re all hungry” (Rubinkam, 2011). Far from being concerned with justice, or practical sustainability, industry rhetors imply, these “fracktivists” are all members of selfish “NIMBY groups” (Chesapeake Energy, 2011).

EJ activists are also attacked on the grounds that their efforts are not productive. “All these people look like they just came out of Cuba, don’t they have jobs?” remarks one industry supporter of anti-fracking protesters (Maykuth, 2011). McClendon asks the crowd at Marcellus Shale Gas Insights, “remind me, what value have the protesters outside created? What jobs have they created?" (Chesapeake Energy, 2011).

Listening to the "fear-mongering" of activists has dire penalties, the industry reasons, because it will prevent community members from benefiting from "the natural gas our country so desperately needs" (Chesapeake Energy, 2011). Former Pennsylvania Governor Tom Ridge warned during the conference that "phony hysteria about environmental sustainability" could have disastrous national and international consequences, especially for "our dependence on foreign oil" (Rubinkam, 2011). In one New York Post editorial, the author sharply warns against "greenie luddites" trying to prevent progress "via a wildly disingenuous anti-fracking scare campaign" ("No reason," 2011). One DEP official who originally appeared in *Gasland* later calls the anti-fracking film "a deliberately false presentation for dramatic effect" and argues "no community should have to choose between its economic and environmental interests" (ANGA, 2011). This statement mirrors those of EJ advocates, who argue that economic justice and environmental justice are interdependent, while simultaneously masking the fact that neither costs nor benefits will be justly distributed from the fracking process.

Conclusion

Through their reframing efforts, the oil and gas industry has situated their role as a "sustainable" energy industry by employing EJ discourses. Building on ideas about community and non-market values, industry rhetoric makes normal the neoliberal project of natural gas production (in its current form) and its potentially deleterious impacts (Holifield, 2007; Jessop, 2002). EJ advocates insist that the local and the global are interconnected. Industry rhetors employ a globalized rhetoric of environmental justice, at once translating fracking into the neoliberal language of costs and benefits, and masking the unjust distribution of those costs and benefits.

According to PiOGA, the public relations campaign to improve public opinion of fracking through highway banners is working very well (PiOGA, 2011). One poll found that 62% of Pennsylvanians thought drilling should continue while only 30% thought is should not (Olson, 2011). *Economic benefits* significantly trumped *environmental impact* when those polled considered their response. While it is impossible to assess causation in such complex scenarios, what is clear is that the strong industry presence in Western PA has significantly impacted planning initiatives and the make-up of governing bodies tasked with investigating the true costs of fracking (most of whom are disproportionately staffed by industry voices). In 2011 and 2012, the Environmental Protection Agency first charged industry organizations in Texas and Wyoming for polluting water through fracking, then backtracked when industry rhetors publicly questioned EPA testing methods and insisted that contamination could be avoided through technological advancement (see Gilbert & Gold, 2012).

It is imperative for rhetorical, critical, and interdisciplinary scholars to analyze the neoliberal logics that permeate national and global understandings of sustainability and, increasingly, environmental justice. As scholars and advocates for environmental justice, one point of intervention lies in the interrogation of debates that are in-process, so that the underlying logics and narratives which discursively shape public perception and policy are made visible. One of the primary suppositions that EJ and the just sustainability paradigm make is that the benefits of resource (mis)use go mainly to the wealthy minority while the costs are disproportionately borne by the poorer majority. "This injustice is multiplied when we develop so-called solutions to our environmental problems whose costs are also borne by the poor" (McLaren, 2003, p. 21). In the case of fracking, an EJ narrative is being used to perpetuate just such an environmental injustice. Anti-fracking activists and the oil and gas industry agree on one point: fracking does impact local, national, and global communities in significant and longitudinal ways. Where the two sides differ is whether those impacts will be positive or negative and how risks and benefits will be (and are) distributed. The oil and gas industry is certainly better funded than local anti-fracking organizations, but traditionally EJ activists could use "weapons of the weak" to unmask the unfair uses of power by violating corporations, governments,

and other institutional entities (de Certeau, 1985). In the fracking debate, however, their rhetorical tools and topoi are appropriated and amplified by the industry through slickly produced videos, billboards, and scientific reports. Members of the public are left to determine which side represents the "best" version of a sustainable future of Western Pennsylvania. Each side frames their arguments as "fact," and the opposition's arguments as "myth," further diluting the potential for productive public dialogue. We hope this essay prompts further criticisms of neoliberal appropriation of EJ discourses and offers a potential point of intervention and rearticulation in the fracking debate.

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Citizen-Sourcing and Reframing Environmental Discourse: An Analysis of Frances Moore Lappé's *EcoMind*

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Frances Moore Lappé's environmental rhetoric in the book, EcoMind: Changing the Way We Think, to Create the World We Want, describes a paradigm shift in how we construct our relationship to and participate in our world as interconnected citizens. Applying Foss and Griffin's invitational rhetoric and McKerrow's critical rhetoric to a textual analysis helps elucidate how Lappé's rhetoric engages citizens to reframe both our view of the environment and our environmental communication towards our interconnections with ecology and each other. Additionally, a textual analysis of Lappé's blog reveals a particular form of crowd-sourcing named citizen-sourcing that hails and engages readers as citizens. Citizen-sourcing can be used to increase public engagement consistent with the goals proposed in EcoMind. In this citizen-attitude is an ethos that respects differing viewpoints while expecting to work together to solve problems and build creative local solutions.

Keywords: environmental rhetoric, citizen-sourcing

We have learned that we need more public discussion on environmental issues "for it is through the discursive struggle that we construct the alternative discourse that allow for alternative solutions" (Hendry, 2008, p. 316). Nisbet and Scheufele (2009) state:

> Yet public communication and engagement should not be conceived of as simply a way to "sell" the public on the importance of science or to persuade the public to view scientific debates as scientists and their allies do. To apply sophisticated approaches such as framing or deliberative forums to achieve these ends falls back into the trap of deficit model thinking and undermines longer term efforts at building trust, relationships, and participation across segments of the public. Importantly, if the public feels like they are simply being marketed to, this perception is likely to only reinforce existing polarization and perceptual gridlock (p. 1776).

This view adds pause to marketing-styled attempts to remold views on the environment. So the questions becomes how can we invite new conceptions of environmental communication that engage the public and offer new visions of flourishing future?

Computer mediated discourse is an increasingly popular medium for public discussion of political issues using, for example, social media and blogs. Frances Moore Lappé, a well-known American author of books on the environment and democracy (e.g., *Diet for a Small Planet)*, crafts an alternative discourse on environmental thinking and invites online participation for her recent book project, *EcoMind*. Richard Couto (2012) praises *EcoMind* as a way to overcome "the environmental stalemate" and refers to her "thought leaps" or new frames for discussing and viewing environmental concerns as "ecomindfulness" (p. 66).

Lappé has both robust ideas to contribute to how to talk about our environment and sustainability as well as a more democratic approach to completing her book project for its subsequent hardback publication.

Lappé's interactive approach to writing is unique and worth scholarly attention. Lappé offered an initial paperback release of her most recent thesis as *Liberation Ecology (2009)* with a poll including questions like: "With what do you disagree?" and "What is missing?" She directed her audience to her blog at her website smallplanet.org. The blog is now available at liberationecologyblog.wordpress.com. After posting weekly discussion questions on the blog and receiving 116 comments between November 2009 and November 2010, Lappé revised *Liberation Ecology* over the next year and published the hardback version as *EcoMind*. Lappé (2011) describes this cooperative process as "making a better book" and it inspires her to continue her efforts to create a shift from dystopian environmental rhetoric to reframing the discourse to what is possible (p. xiii). While the feedback on the blog shapes her arguments and revises her language to improve the book, this paper argues through a textual analysis that the process also creates a stronger rhetorical ethos and more engaged citizen/readers.

Lappé (2011) describes *EcoMind,* as a "crowd-sourced" book. In their meta-analysis, Estelles-Arolas and Gonzalez-Ladron-DeGuera (2012) define the evolving term of crowd-sourcing as including: 1) a task that needs a "resolution of a problem"; 2) an initiator gets a "solution"; 3) "a participative distributed online process that allows the undertaking of a task for the resolution of a problem"; and 4) "an open call" (pp. 7-10). Lappé's process of writing a book and asking for public online feedback to improve that book fits into this understanding of crowd-sourcing. However, this paper takes a step further to argue that her participatory process for writing and supporting social movement rhetoric is *citizen-sourcing*, a particular form of crowd-sourcing that hails readers as citizens.

First, in this multi-layered textual/critical analysis, we'll explore Lappé's rhetoric of a necessary paradigm shift in how we construct our relationship to our world and its relationship to citizenship. Next, we'll investigate contemporary ideas about citizenship. Third, we'll examine the citizen-sourced blog entries for how they exemplify this contemporary ethos of citizenship. This paper will help us to see how *citizen-sourcing* can be used to increase public engagement consistent with an ecomindfulness of a collaborative worldview of possibilities and civil courage.

Creating an EcoMind

Lappé's *EcoMind* is a rich resource of examples of the theories and practices of contemporary sustainability models that work with and in nature instead of exploiting nature. To summarize her main points, the first thought leap, or new frame, of her book advises using the principles of growth that nature uses through localizing (valuing interconnection) and using ecological methods of farming and business. The second thought leap focuses on meeting human needs for beauty and comfort using natural foods, building healthy families, and sharing resources. The third thought leap emphasizes the need to recognize the multiple renewable resources (including human capacity for inventiveness) and possibilities for community change through projects like Transition Towns that reduce the greenhouse gas effect while moving away from sources like coal and oil. The fourth thought leap is to recognize that while humans can be selfish and greedy, we are also able to be cooperative and fair in our sharing of the commons and need transparent governing in order to do so. The fifth thought leap notes that while freedom is a good thing, people love rules that make sense to us when we know how they help us create structure in our lives and prevent harm. The sixth thought leap is to reconnect with nature through understanding the benefits of time spent outside, natural beauty, and encouraging gardens in urban spaces for health and fun. The last thought leap argues that it's not too late for humans to work together democratically to decentralize power so that billions of citizens can contribute their experiential knowledge as engaged citizens to working

toward more ecological solutions. These thought leaps shift the frame and our ideological language (Lakoff, 2010) toward shared resources, empowerment, and interconnections with one another and with nature. Lappé's approach is also emulating the call from Lakoff (2010) to "talk at the level of values" and "tell stories" that will provide the needed frames for ecomindfulness (p. 79). Within this reframing, we'll discuss the themes that emerge through the application of several rhetorical theories and away from apocalyptic rhetoric that overemphasizes disaster scenarios.

Method

In order to understand the relationship between the process and the product, this analysis investigates Lappé's rhetoric in her texts, her first writing, *Liberation Ecology* and the second, *EcoMind*, as well as undergoing a textual analysis of the *Liberation Ecology* blog. An application of Foss and Griffin's (1995) theory of invitational rhetoric and McKerrow's (1989) theory of critical rhetoric elucidate some of the finer points of how Lappé's rhetoric and the citizen-sourcing process engages citizens to reframe environmental communication. In the analysis of the blog, the blog postings and all of the comments were analyzed applying the idea of a citizen ethos to the artifact. This analysis begins with investigating the inviting tone set through the initial book and the blog.

Invitational Rhetoric

Lappé's citizen-sourcing process of rhetorical revision could be seen as an example of employing invitational rhetoric in support of creating space for multiple voices to envision environmental rhetoric. Invitational rhetoric is a discursive practice: ''an invitation to understanding as a means to create a relationship rooted in equality, immanent value, and self-determination'' (Foss & Griffin, 1995, p. 5). Lappé invites us to participate in her blog to create a sense of, in Foss & Griffin's terms, "equality, immanent value, and self-determination" in her relationship with her readers. By inviting her readers' critiques and contributions, this example of invitational rhetoric is part of a multi-step project that seeks to develop effective rhetoric in support of a paradigm shift. In some ways, because of the focus on creating understanding by visioning a new framework, Lappé participates in environmental discourse as invitational rhetoric. Invitational rhetoric is a component incorporated into the rhetorical projects of social movement rhetoric that seeks social change such as in an analysis of the AIDS quilt as invitational rhetoric (Bone, Griffin, & Scholz, 2008). The AIDS quilt, like the Liberation Ecology Blog, invites participation, values each participant and allows for self-determination.

These ideas are exemplified in both the Liberation Ecology Blog and *EcoMind.* Her invitations to critique her ideas on the blog acknowledge the value of sharing diverse views when she asks for contributions. Toward the end of *EcoMind*, the chapter, "An Invitation—Thinking Like an Ecosystem," Lappé (2011) asks her readers to nurture their inquisitiveness and to keep asking: "What conditions enhance life?" and "What specific conditions bring out the best in our species?" (p. 174). Her answer is offered as a hypothesis, a partial answer, not a foregone conclusion. Her answer is that "three conditions—the wide and fluid dispersion of power, transparency, and an assumption of mutual accountability—are at least a good part of the answer" (p. 174). She allows this open-endedness to invite further thought. She encourages self-determination by asking her readers to consider "The power of action: What is one thing I learned in *EcoMind* that I want to act on right now to align my life with the world I want and make me more powerful?" (p. 200). The invitational rhetorical elements in her project are consistent with her message of acknowledging growing, sharing and cooperation—not just as environmental ideals, but also as part of her rhetorical project.

And yet as a project designed to promote a new paradigm of thinking about the environmental movement, Lappé's invitation also seeks to promote social change and thus steers back toward critical rhetoric and using discourse to challenge hegemonic thinking. In addition to creating a sense of equality and connection with readers, the writings also uncover power in discourse.

Critical Rhetoric

The relations of power in Lappé's discourse recognize how existing frames limit our understanding and how shifting frames empowers both our understandings and our sense of agency. McKerrow (1989) states: "In practice, a critical rhetoric seeks to unmask or demystify the discourse of power" (p. 91). McKerrow further explains, "The aim is to understand the integration of power/knowledge in society—what possibilities for change the integration invites or inhibits and what intervention strategies might be considered appropriate to effect social change" (p. 91). Lappé's reframing challenges environmental rhetoric to provide alternative frames that can empower citizens instead of making them feel small and inconsequential in the face of the statistical evidence of global warming. Lappé's project is an attempt to bring about social change, a more active and localized approach to improving our relationship with the environment. Her intervention is to shift thinking away from pessimistic dystopian and apocalyptic scenarios and toward interconnections and possibilities.

Lappé's rhetoric approaches environmental politics with a view that symbols can create shared meaning and reflects McKerrow's (1989) position: "Rather than focusing on questions of 'truth' or 'falsity,' a view of rhetoric as doxastic allows the focus to shift to how the symbols come to possess power—what they 'do' in society as contrasted to what they 'are'" (p.104). Lappé (2011) argues for a constructionist reality that is "mutually created and ever changing" (p. 16). She argues that thinking (and our discourse) can engage in a paradigm shift to more creatively respond to creating lives and livelihoods in tune with nature.

This ecomindfulness is based on a combination of attention to environmental psychology and linguistics in the following examples. She argues that our ideas need "reframing," and we need to pay close attention to metaphor. For example, she replaces in her project the phrase "disempowering ideas" with "thought traps" and "empowering ideas" with "thought leaps." Thought leaps do not *necessarily* negate the former thoughts, but rather, offer a discourse that provides a different lens. Ecomindfulness addresses both reframing and how rhetoric can support self -determination.

Lappé (2011) questions some of the most common phrases used in environmental rhetoric such as "scarce energy" (p. 11). She does not argue the falsity of the state of certain natural resources, only that with a different perspective one might include human ingenuity as a resource and that the term obscures the natural resources like wind energy that will not deplete. Lappé (2011) notes the limits of "no growth now" campaign and attempts to shift the frame from growth versus no growth to "a democracy accountable to the citizens" with "economies harmonizing the meeting of real human needs with nature's generation and regeneration" (p. 30). The alternative frame asks us to seek "flourishing" communities with "ecological vitality, resiliency, and the dispersion of social power" (Lappé, 2011, p. 42). She emphasizes the need for and success of the commons in that we need to "value what we share as much as what we own" (p.127). The rhetoric exemplified attends to the power of the frame plus values of self-determination and equality.

Lappé not only challenges our labels and frames for environmental politics and policy but also provides many examples as backing for her claims of the de-centralized empowered groups. She describes examples such as women's groups in India that use and promote sustainable farming and the "Local First" movement. She provides examples of the "commons" managed for grazing livestock in Europe. Her approach is consistent with Brulle's (2010) description of how social movement rhetoric develops around the language of a particular frame or cultural worldview that can be shaped and promoted through

interactions that is "centered on the broad-scale mobilization of civil society and citizen participation" (p. 87). While her reframing engages in a dialectical exercise of naming the negative and offering an alternative, more positive frame, her book might not go deep enough.

Lappé's rhetoric attempts to invoke the frame that humans are part of nature. Her language challenges what Lakoff (2010) refers to as "the idea that man is above nature in a moral hierarchy" (p. 74). The call for ecomindfulness is a powerful shift towards thinking of ourselves as part of the ecological system.

However, Lappé's reframing does not specifically critique or reframe the mind/body dualism. Her rhetoric repeats the metaphors "embedded in nature" and stating "With an eco-mind, we move from 'fixing something' outside ourselves to re-aligning our relationships within our ecological home" (p. 16). Her language suggests seeing and thinking about our unique human selves amongst the natural world, *embedded*, up tight or within it, yet it does not go all the way to say we *are* nature. The metaphor *to align with* indicates to support and follow the same lines as, but not to be nature, to be natural bodies/organisms. At one point she explains that we "not only exist *in* a habitat, we *are* a habitat," but that metaphor is not repeated throughout the book (p. 16). She refers to "human nature" throughout the book, yet that term connotes ways of being human not humans as nature. What if the title was *EcoMind/Body*? Unfortunately, that would still invoke the frame of the mind/body dualism. Nevertheless, overall, Lappé's rhetoric seeks frame sustainability rhetoric to spotlight existing practices like cooperation and communities building and recognizing interconnections.

Contemporary Citizen Ethos

As we consider the environmental movement to be a grassroots movement, it requires citizen participation. As our environmental understanding becomes more global, the old ideas of citizenship as a display of patriotism and attending to local and national elections seems to no longer provide a complete picture. Stephen White (2009) writes a definition of a democratic citizen for our contemporary times. He explains that a citizen ethos includes "central liberal virtues such as self-restraint, moderation, and reasonableness" and less emphasis on traditional delineations of citizenship as an obligation to obey the law or patriotism (p. 7). This is not to squelch diverse voices, but to think of citizenship as a relationship with one another and not only to an ideal.

Virtues such as these can play a role in blogging, particularly when a blog has a moderator, in this case The Small Planet Team, to maintain the conversation within guidelines of civility. Recent research on incivility and blogs by Anderson, Brossard, Scheufele, Xenos, and Ladwig (2013) indicates that uncivil comments on blogs shaped readers perception toward scientific information that tended to reinforce preexisting beliefs. Furthermore, Anderson et al. (2013) state, "While the Internet opens new doors for public deliberation of emerging technologies, it also gives new voice to nonexpert, and sometimes rude, individuals" (p. 11). Thus, hailing readers as citizens becomes even more significant in the blogosphere when discussing the environment.

In one of the blog postings by Lappé, she specifically calls on the "voices of citizens" to help solve problems. By hailing her readers as citizens, Lappé invokes a frame of the collective power of those who live and work together in their communities with shared and natural resources. Imbued in this citizen-attitude is an ethos that respects differing viewpoints while expecting to work together to solve problems and build creative local solutions.

Analysis of the Liberation Ecology Blog

In her project, Lappé hails readers as citizens to participate in crafting a more understandable and persuasive book that reframes how one views environmental challenges and sustainability. The act of

inviting feedback builds Lappé's ethos as a rhetor because her sharing of power is consistent with the themes of interconnection and empowerment in her rhetoric. As she seeks to encourage citizen participation in local solutions to environmental problems, she opens the door to that participation in crafting ecomindfulness environmental rhetoric. The Liberation Ecology Blog invitation asks participants to contribute their critiques and to supplement the discussion with their own ideas to create a citizen-sourced book. This is inherently a more democratic and egalitarian process than writing a book with the help of a few early readers and an editor. The invitation to participate in the book project asks readers to make their ideas public and to become part of a community of respondents. As the community respondents share their knowledge they also lead the community as citizens when they share their knowledge and experience and recognize and value other's knowledge by commenting on each other's postings. Citizens respond with comments reflecting their understanding of the rhetorical situation, following an ethos of politeness and civility norms of a modern citizen ethos.

When reading the blog comments, one first notices how a citizen ethos encourages taking responsibility and creating community. Most contributors identify themselves with their given names, not screen names as is typical in comments sections of other blogs and online news outlets. By identifying themselves, they can establish connections with the author by referencing having met Lappé in the past. Furthermore, contributors often reference their own roles as community leaders and teachers. Thus, they have the potential to be resources for others by using their given names. A group called the Jamaica Plains Roundtable posted multiple comments on the blog. This group was comprised of 6 individuals that were reading and discussing *Liberation Ecology* together and jointly posting to the blog. Their effort to work together on the responses further expresses taking responsibility and creating community around the themes of ecomindfulness.

Secondly, one senses the ethos of valuing connection through polite and friendly salutations, requests and praise. Niceties were often added. Contributors used letter formats not usually found in blogs. Salutations such as "Dear Frances" or "Frances," suggest a relationship of friendly respect. Further evidence of the contributors' civility is in the *sincere* use of the word "please." One contributor politely requested: "Please drop the metaphors of "hard-wired" etc." Several contributors offered gratitude; one wrote, "THANK YOU, Frankie" using Lappé's nickname. The Small Planet Team moderating the blog also modeled gratitude giving thanks for the contributors' ideas and examples. Furthermore, incivility in the form of name-calling (e.g., "idiot") was absent or possibly removed by the moderator.

Third, the citizen ethos invokes cooperation and collaboration to further Lappé's goal. The majority of contributors took on the responsibility of crafting a more persuasive ecomindful rhetoric by attending to the rhetorical cannons of style, reasonable arguments and avoiding logical fallacies, and arrangement. Most of the suggestions emphasize creating more understanding through identifying philosophical underpinnings and articulating ideas clearly through improvements on specific word usage. One comment that led to changes in Lappé's semantics was to avoid the term "hardwired" for how we think about the world. In the revision, Lappé substituted "softwired" instead. Another comment suggested she avoid over-generalizing that there are "no central commands" in nature, but rather to emphasize the democratic qualities of an environment in balance. Many contributors commented that they did not like the original title of the book, *Liberation Ecology*, because it was misleading or "preaching to the choir." Some offered examples to increase the breadth of arguments through inclusivity of evidence, for example, by including Cuba as an example of a sustainably developing country. Contributors asked for more visual representations of the ideas. These could include text boxes, summarizing charts, and graphics in the book. They also requested videos on each reframed idea on a website. The smallplant.org website now includes a page of resources for educators such as charts, PowerPoint slides, and videos of France Moore Lappé speaking on C-Span and TED talks as well as a guide on how to present an EcoMind workshop on your own. (Smallplanet.org also provides links to research in the book's endnotes to create transparency and build credibility as well

as providing an email address for critics or skeptics to challenge the author on her sources.) Thus, even after the blogging project has ended, Lappé continues to invoke cooperation through her website.

While the feedback on the blog was qualitatively rich, only a relatively small number of people (63) participated in the blog considering the popularity of the environmental movement in the U.S. Also, her blog generated fewer comments overall than one would find on popular blogs such as the Huffington Post. Furthermore, respondents' comments supported others' comments, however little debate occurred among participants. Perhaps since the tone of the invitation was set that this was "feedback" specifically for Frances Lappé, respondents felt that comments should be directed at her. Team members other than Frances posted the Small Planet Team responses, which were typically infrequent, even when messages were directed to her specifically. Had Lappé been personally responding more regularly to blog comments (as journalists and other bloggers do) the volume of participants and comments might have increased. While the smaller numbers of active participants shows a limited scope, the participants offered high quality, sometimes lengthy or multiple responses, that demonstrate a deeper engagement than one would typically find on other blogs.

Discussion

What is unique about writing a book and asking for responses and then using those responses to shape the new edition of the book? Citizen-sourcing helps to create a stronger ethos of the rhetor and rhetoric by vetting it first with the audience. This use of citizen-sourcing is effective on several levels: engaging citizens in productive discourse, collecting diverse perspectives, offering more information and backing for claims, creating a strong ethos of the rhetoric of *EcoMind* through consistency of message and process. Furthermore, Lappé was encouraged by the feedback to continue working on her project. When readers are hailed as citizens, they provide respectful and useful feedback. Readers become more engaged in the democratic process as they participate with their voices and this furthers a grassroots style of activism. This process also reinforces the invitational rhetoric through valuing other's unique positions in the world and offering ideas in a way that honors others lived experiences.

How has the Internet been used here to evoke more citizen participation in constructing environmental communication? Lappé tapped into her network of like-minded readers through the Internet, and computer-mediated communication offers an audience space for their voices. Her readers are hailed as citizens who can participate in shaping the future through their rhetorical contributions to the project. The process of responding to the call could create a stronger sense of citizen agency beyond the book project. Citizen-sourcing provides an active response to resisting the hegemony of the dominant view of an apocalyptic future. Citizen-sourcing creates relationships and offers an alternative to a marketing-style approach to environmental communication.

While the citizen-sourcing approach works well, there is room for improvement. Lappé briefly mentions her blogging contributors in the introduction to *EcoMind* referring to the book as "crowd-sourced," but their contributions and voices are not referenced in the main body of the book. The process did not greatly change Lappé's narration of the book as the sole author. Perhaps the value of the citizen-sourcing could be better highlighted at times throughout the book to make more transparent how that process enhances her own ideas and could create an ongoing public conversation. Citizen-sourcing as a tool for social movements could also be improved through more networking capabilities, creating more buzz, and more interaction from the initiator(s).

Further research could include textual, rhetorical analysis of other blogs that engage in political discourse to reveal if this citizen-sourcing is utilized and how effective it is for doing cooperative, deliberative political engagement online.

Conclusion

Frances Moore Lappé invites online public discussion to enrich an alternative discourse on environmental thinking. Citizen-sourcing is a fertile approach to encourage participation and living democracy through computer mediated communication, and it is consistent with the theme of shifting paradigms toward innovations that are mindful of the natural systems in which we live by emphasizing our own participation in the process of envisioning and creating flourishing communities. We can encourage this citizen-sourcing through recognizing its ethics of civility and potential to disperse decision-making power to citizens.

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Eco-Jokes and Their Relation to the UnCO_2nscious: Larry David's "Curb Global Warming" Campaign and Other Environmental Comedies

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In Jokes and Their Relation to the Unconscious (2003), Freud posits that jokes are not manifestations of joy, but mechanisms to release anxiety. This paper uses psychoanalysis to analyze the eco-jokes in popular culture and examines their relation to the (apocalyptic) anxiety underlying the climate change discourse. I focus on Larry David's comedic speech at the 2005 TBS "Earth to America!" event and his "Curb Global Warming" sweepstakes campaign: David extends his selfish, irritated, and neurotic TV persona from Curb Your Enthusiasm to an environmental advocacy campaign and hopes to "get America laughing—and, more to the point, learning—about global warming" ("Comedian," 2005). But, is climate change a joking matter? Do eco-jokes help the public better manage their anxiety and enable environmental actions, or, do they trivialize the issue of global warming and distance the public from the impending danger? I analyze the techniques and psychodynamics of eco-jokes and explore the potential of using comedy to increase public participation in environmental affairs.

Keywords: Psychoanalysis, the unconscious, jokes, comedy, global warming, anxiety, climate denial, Larry David, Curb Your Enthusiasm

"Good evening, ladies and gentleman. I am pleased to announce that after a lifetime of indifference to man and nature, I have changed. I am now only indifferent to man. Yes, my friends, I've become 'Nature Boy' Larry, committed activist."

During TBS's 2005 comedy extravaganza "Earth to America!" Larry David, the co-creator of *Seinfeld* and the creator and star of *Curb Your Enthusiasm*, opened his speech by announcing his transformation from a "radical narcissist" into a "radical environmentalist." David, with his trademark glasses and bald head, portrays a neurotic, selfish, irritated (and irritating) Jewish man who fusses over daily minutiae, violates implicit social boundaries, and delivers forced apologies (Kaplan, 2004). *Curb Your Enthusiasm*, just like *Seinfeld*, is a show "about nothing": it features David's obsession with the "tiny indignities of modern life" ("Comedian," 2005) and his ultimate indifference to significant values in life, such as family, friendship, community, religion, etc. The TBS speech, however, seemed to mark a complete turnaround in his identity: He not only joined a virtual march to increase climate awareness, but also surrendered his Toyota Prius to be the grand prize for a "Curb Global Warming" sweepstakes ("Larry David," 2005). How can such a character obsessed with triviality become a spokesperson for global warming, arguably the most significant issue that affects human welfare? Does such comedy run the risk of trivializing the issue of global warming and distancing the public from the impending danger? Is climate change, after all, a joking matter?

Larry David is just one among many comedians who think it is. In popular culture, increasing attempts have been made to use comedy to promote environmental participation. The TBS event Earth to America! featured a full evening of eco-jokes by prestigious comedians such as Will Ferrel, Jack Black, Tom Hanks, Steve Martin, and Ben Stiller in order to "get America laughing—and, more to the point, learning—about global warming" ("Comedian," 2005). On the other side of the Atlantic, British comedians Marcus Brigstocke, Rob Newman, and Mark Watson did stand-ups at climate activist events in hopes to "wrestle some humor from climate change" (Russell, 2008). Rather than using the traditional doomsday scenario to frighten the public, eco-comedians believe that the better way to educate the public about environmental affairs might be to make them laugh. In Grist.org's interview with Larry David prior to the airing of "Earth to America!" the journalist commented that "environmental activists have a reputation for taking themselves too seriously – they're wracked with save-the-world complexes and riddled with paranoia about the consequence of their every action." He suggests to David, "If only you could start some kind of Funny Camp for activists, so they would annoy everyone less" ("Comedian," 2005).

In evoking words such as "complexes" and "paranoia," the journalist is already treading in psychoanalytic territory. He raises a key issue that concerns the public's lack of response to climate communication—an issue not on the level of knowledge, but on the level of desire. As news, documentaries, scientific reports, and films frequently adopt an apocalyptic framework to warn the dangers of global warming, the doomsday scenarios stir up intense anxiety in the public. This anxiety triggers the defense mechanism in the collective psyche, which sometimes takes the form of denial, "global warming is not really happening," "climate activists are just paranoid," or "they are annoying everyone." In proposing a "Funny Camp for activists," the journalist makes us wonder: Can climate denialism be treated with a "laughing therapy"? Can comedy help the public better manage their apocalyptic anxiety and motivate them to take actions? Or are jokes and humor simply another "form of denial, escapism or trivialization" (45), as the psychoanalyst Joseph Dodds (2012) warns us? To answer these questions, it is helpful to turn to Freud.

In *Jokes and Their Relation to the Unconscious* (2003), Freud states that jokes are not manifestations of joy, but mechanisms to release anxiety. Laughter results from the sudden release of psychic energy (or tension), which is previously blocked by mental barriers and inhibitions (p. 142). The freeing of energy produces a certain type of pleasure and is perceived as an enjoyable experience. Similar to dreams, jokes can be read as the gateway to the unconscious: they use various symbolic techniques—what Freud calls "joke-work"—to weave repressed desires into a façade of absurd reason and faulty logic; the absurdity bypasses the censorship of critical reason and allows for the momentary fulfillment of unconscious wishes. As collective cultural artifacts, jokes bear the psychic imprint of a particular historical period and offer us a great specimen to examine the psychopathologies of our time.

This paper aims to unpack the "joke-work" in Larry David's environmental-themed comedy. I examine the techniques and psychodynamics of David's jokes and explore the potential of comedy to increase public participation in environmental affairs. My analysis shows that Larry David's eco-comedy, on the one hand, functions as a therapeutic response to the public's apocalyptic anxiety and, on the other hand, provides a social critique of the obsessive rhetoric of popular environmentalism and the tyrannical superego embedded within. Inspired by Larry David's work, I propose the notion of *trivial environmentalism*—the much-needed communication therapy that allows us to come to terms with our unconscious attachments to environmentalism, no matter how trivial, selfish, or absurd they might seem. Finally, I discuss the limits in using comedy to promote environmental participation and examine the "over-the-line" cases when jokes are used as a form of denial and portray climate change as a big hoax to laugh over.

Psychoanalysis and the UnCO_2nscious of Environmental Media

Born on the clinical couch during the Victorian era, psychoanalysis has been increasingly used to analyze the psychological problems that underlie contemporary environmental crises. In seeking an explanation for the lack of environmental public participation, Rene Lertzman (2008) debunks the myth of "public apathy" and argues that those who seem to be "apathetic" might in fact suffer from a deeper anxiety or loss. This loss ("not only of loved ones, but also of a place, species, or favorite tree") can trigger the psyche's defense mechanisms (e.g. "denial, projection, paranoia, grandiosity or an acute sense of inferiority," p. 16) and forestalls their environmental actions. Lertzman suggests that we focus on finding ways to better manage the public's anxiety, as their problem might not be "caring too little, but perhaps caring too much" (2008, p. 16).

Applying Lertzman's theory to media studies, we must ask: what role do media play in generating the public's anxiety? In highly mediated societies like the U.S., environment-related anxiety largely derives from popular media. Due to the invisibility and complexity of ecological crises, most environmental threats are difficult to perceive without the facilitation of mass media (Cox, 2010). But the mediated discourse on the environment, overwhelmingly, is written in fear and alarm. From daily news to scientific reports, the public is constantly warned about the ever-expanding CO_2 level in the atmosphere; political commentaries and documentaries frequently report about the failure of national governments to achieve agreements on collective actions; environmental NGO advertisements repeatedly evoke the metaphor of the ticking clock or the tipping point to stress the urgency of the impending crisis (Russell, 2008); eco-disaster films portray vivid apocalyptic scenarios and promote nihilism that threatens to demolish the entire planet (Dodds 2012, p. 40). The rhetoric of the carbon footprint, furthermore, relegates the anxiety to an individual level and urges consumers to measure the consequence of their every action.

Due to their overwhelming anxiety, the public often resorts to defensive mechanisms to cope with the crisis. A common form of defense is denial. "Climate skeptic" campaigns, heavily funded by industry and conservative think tanks, amass large audiences by casting doubt on the scientific consensus of global warming (Begley, 2007). Joseph Dodds (2012) categorizes climate denialism in three positions: "1. It's not happening; 2. It's not my fault; 3. There's nothing we can do about it (so I can just get on with my life as usual)." These three claims "progressively accept more of the reality of the ecological crisis but all result in inaction" (p. 43). Their relationship, according to Dodds, highly resembles the absurd logic accounted in Freud's "broken kettle" joke. A man borrowed a kettle from his neighbor and returned it broken; he defends himself by saying: "*In the first place, I didn't borrow a kettle at all; in the second, the kettle had a hole in it already when I took it over; in the third, I gave it back to him all in one piece.*" (Freud, 2003, p. 51). Freud uses this joke to illustrate the principal "logic" of the unconscious: it knows no negations or contradictions. Although the statements contradict one another, they coexist side by side with the sole purpose to deny fault. For Freud, the unconscious consists of wishful impulses that seek instantaneous fulfillment, but does not subject them to the scrutiny of critical reason. Borrowing the format of the "broken kettle" joke, Dodds creates a brilliant joke in which the climate denialist would say: "There is nothing wrong with the climate kettle," "There was a hole in the planet when you gave it to me," or "There is nothing we can do about it" (2012, p. 43). Dodds' eco-joke vividly illustrates the unconscious mechanism of the denialists: that they would find all means to renounce ecological reality in order to rid themselves of the unbearable anxiety and to avoid admitting fault.

While Dodds uses the form of a joke to explain the psychic functioning of climate denial, he does not go so far as to explain why this "climate kettle" joke is funny. In other words, he has yet to theorize why the unmasking of unconscious wishes in a joke format would trigger laughter. This paper will supplement this

lack. According to Freud, laughter results from the sudden release of psychic energy that was previously subject to repression (2003, p. 142). A joke makes us laugh because it temporarily lifts our psychic inhibitions and fulfills our unconscious wishes that are otherwise censored by critical reason. Since it costs us psychic energy to stay "reasonable" and "logical" all the time, we take pleasure in regressing to a state of "nonsense" whenever possible. This theory explains why we find Dodds' "climate kettle" joke funny: as the "ecologically sensible" people, we (the "climate worriers") rack our brains to confront the brutal ecological reality; by manifesting the absurd logic of the denialists, this joke temporarily gives free pass to an unconscious wish shared by all of us—that maybe climate change *never* existed. In laughing out loud, we are able to liberate ourselves from the apocalyptic anxiety and, for merely a few seconds, ignore the distressing fact that "the climate kettle *is* broken, by *us*, and thus we must make *a world of changes* to fix it."

Joke Techniques: Topicality and the "Rediscovery of What is Familiar"

After realizing that jokes are the fulfillment of unconscious wishes, we must proceed to ask: How do jokes allow for the expression of unconscious "nonsense" in a socially acceptable, respectable, or even intelligent format? The key, as Freud stresses, is to analyze the "joke-work," the symbolic mechanisms that weave repressed desires into a socially acceptable joke form. In *Jokes* (2003), Freud lays out a large variety of joke techniques, such as word play, double entendre, modification of familiar sayings, allusions to quotations, faulty logic, absurdity, representation by the opposite, etc. Instead of enumerating all the techniques, I will highlight a key technique relevant to the overarching success of Larry David's comedy—*topicality*. Unlike the "perennial" jokes that are funny regardless of their contexts, topical jokes are the ones only appreciated during a specific occasion by a specific audience. "[They] contain allusions to persons and events which were 'topical' at the time, aroused general interest and kept it alert and alive. After this interest had died down, after the affair in question had been settled, these jokes too lost a part of their pleasurable effect" (Freud, 2003, p. 118). Topicality belongs to a larger category called the "rediscovery of what is familiar," or "re-cognition." "Rediscovering something familiar when we might have expected something new," Freud writes, is highly pleasurable, as it leads to the saving of psychic energy, which would otherwise be spent on making new impressions, and converts it into laughter (2003, p. 116).

Topicality and the "rediscovery of what is familiar," to a large extent, explain Larry David's comedic success. Named by *The New York Times* as "a sage for our time" (Bryant, 2008), David in his television shows (both *Seinfeld* and *Curb*) portrays everyday scenarios and mundane activities that most audience members engage in on a day-to-day basis. His plots address the heart of contemporary neuroses, from race, gender, LGBT, and disability issues, to religion, aging, sex, and death. His eponymous character, suffering from "honesty Tourette's" (Bryant ,2008), spends his day observing and naming implicit social norms (e.g. "upstreaming" "chat and cut") and, when it works to his own benefit, criticizing those who violate them. In a sense, Larry David gives voice to the collective unconscious "tidbits" which are repressed from social dialogue due to their pettiness. "Deep inside, you know you're him," reads the DVD cover of the first season of *Curb* (2008) with an image of a crowd all wearing the heads of David. Watching him is pleasurable precisely because he unmasks the social unconscious that many share but dare not say (much like what the "broken climate" joke does).

In the same vein, David's eco-comedy also employs the techniques of topicality. Global warming is the topic of our times. It touches the core of collective anxiety and easily evokes strong emotional responses from the audience. But topicality here also applies to the reference to David's cult persona. Take the title "Curb Global Warming" for instance: when global warming and Curb Your Enthusiasm converge, the two

familiar subjects form a sharp contrast and generate our expectation for something new. What would global warming look like from Larry David's eyes? Has the climate crisis created a "new Larry" that we do not know about? This contrast sets up a strong intrigue and entices the audience to watch his eco-comedy. The next section will analyze two examples of Larry David's eco-comedy: his "Curb Global Warming" sweepstakes campaign with mtvU and his "Stop Global Warming" commercial for MSN. Since the effects of these jokes directly owe to the audience's prior knowledge of his television persona, I will first briefly introduce his character in *Curb Your Enthusiasm* and then dissect how his eco-comedy achieves a topical effect by restaging his familiar character.

Larry David and the Dilemma of Misplaced Enthusiasms

As the second situational comedy created by Larry David, *Curb Your Enthusiasm* premiered on HBO in 2000 and has run eight successful seasons until now. On the show, Larry David stars as a fictionalized version of himself, "a semi-retired sitcom mogul" who "ambles through his inordinately comfortable life, routinely managing to annoy or infuriate everyone around him" (Kaplan, 2004). Much of his social conflicts can be attributed to his unique personality. Fetishizing over trivial details, he discounts traditional moral rules and ignores significant relationships in life (e.g. he hung up on his wife's near-death call to keep the attention of a cable guy; he picked up a prostitute just to use the carpool lane). He installs himself as the guardian of the minutest social norms and protects them passionately when it works to his own benefit (e.g. he complained to a fellow customer in an ice cream store for taking too long to sample all the flavors; he confronted a driver for parking outside of the marked line). Although he is extremely selfish (e.g. he decided to leave his wife behind during an alleged terrorist attack; he waited at the bedside of a coma patient everyday for him to die so he could take his kidney), he still strives to make a virtuous name for himself (e.g. he dated handicapped women in wheelchairs just to appear noble; he pretended to have tackled a violent passenger on the plane when in fact he tripped over his shoelace). Selfish, hypocritical, and obsessed with triviality, Larry seems to possess all the characteristics opposite from those of an ideal environmentalist. How on earth could such a person be transformed into an activist?

The answer is that he was forced into it. Larry David's troubled relationship with environmentalism started with Cheryl David, his fictional wife on *Curb*. Modeled after Laurie David (his real-life wife at the time, the environmentalist and producer for *The Inconvenient Truth*), the character of Cheryl is an avid environmentalist and a member of the National Resource Defense Council (NRDC). Under her pressure, Larry was forced to use post-consumer toilet paper at home, donate money to the NRDC and had a whole wing named after him. Most of these noble gestures, nevertheless, quickly backfired. After complaining about the roughness of the toilet paper to no avail, Larry secretly switched the brands and enraged his wife. After his donation to the NRDC, he was infuriated when he found out that Ted Danson upstaged him with an "anonymous" donation and decided to revoke his name. Larry's involvement with environmentalism is never complete: he participates in it merely to enhance his image in the eyes of others, but his egotism ultimately puts him at odds with the cause of the movement and defeats the purpose of his actions.

Attempting altruistic acts that end up defeating their purpose is a recurring theme of *Curb* (and is not limited to the environmental cause). Throughout the show, Larry David constantly gets involved in charitable events that he does not care for (e.g. buying Girl Scouts cookies, hosting Hurricane Katrina victims, donating to Parkinson research funds). Despite his initial agreement to participate in these events, he usually refuses to concede his bottom line and to fully comply. His refusal to comply with the desire of others often leads to his downfall (e.g. being attacked by girl scouts, being hated by Michael J. Fox, being expelled from NYC by major Bloomberg) but it constitutes great comedic material for the show. As predictable as it is hilarious, Larry's stubbornness functions like a time bomb: it starts to tick as soon as he

is forced into social commitments, and detonates right before his scheme is about to succeed. The hilarity of such a plot device can be explained by the rule of "re-cognition," as it allows the audience, who are well acquainted with his inability to compromise, to finally end their anticipation. In fact, Larry David's world is one of conflicts and antagonism, covered under a thin layer of courtesy and good will. While almost every episode begins with a cheerful, harmonious social veneer, it always descends into a state of total dysfunction (as Hollywood stars descend to verbal obscenity and fistfights like the "out of control" guests on the Maury Povich Show). As the "other shoe" falls, the audience is brought back to "rock bottom" and is able to release their anxiety—the anxiety about the ultimate incommensurability between an individual's desire and the social expectations of him.

In television interviews (Marin, 2000), Larry David once explained that the meaning of the show's title, "curb your enthusiasm" indicates his complaint that many people "live their lives projecting false enthusiasm," which he interprets as to imply that "they are better than you." In fact, Larry David's main problem with society is misplaced "enthusiasms." Since there is an ultimate mismatch between his personal passions (triviality and self-interest) and socially sanctioned passions (altruistic causes), any attempt to compromise the two will be inevitably met with failure. His "noble" actions are doomed to fail, as he always does the "right" thing for the "wrong" reason. Larry David, however, is not alone. His quandaries strike a chord with the collective unconscious and reflect a common dilemma that many face: In a neoliberal society where social responsibilities are relegated from the government to the level of the individual, bourgeois consumer-citizens are constantly pestered by fundraisers, benefit dinners, and petitions for causes to which they are not personally connected (e.g. breast cancer, AIDS, sick children, abandoned animals, disaster relief, etc.). Despite their lack of passion, many are still guilted into giving away money and time in exchange for the feelings of moral righteousness and social approval. Watching Larry being forced into commitments, in a sense, awakens an unconscious sentiment of reluctance that we often experience when petitioned by various social and political causes. It is pleasurable to watch his dilemma because it echoes our discontent about the overwhelming moral and political obligations imposed on us in a neoliberal society. Environmentalism, unfortunately, also falls into this category: as mainstream environmental media issue many macroscopic warnings about the intangible future of an extra-sensorial "planet," they often fail to establish emotional connections with individuals' private passions and pleasures. Underneath their apocalyptic visions and messianic admonitions lies a disembodied injunction issued from the superego (or, super*eco*; see Li, 2010): "thou shall not." While the superego motivates actions through guilt, it induces immense anxiety in the subject. Larry David's bold and, almost heroic, refusal to comply with social norms functions as a protest against the tyrannical super*eco* and temporarily releases us from its psychological reign.

Object of Analysis No.1: "Curb Global Warming" Campaign

Despite his failed environmental attempts on *Curb*, Larry David continued to wrestle with the super*eco* outside of the fictional frame. In September 2005, he and mtvU (MTV's college network) collectively launched the "Curb Global Warming" sweepstakes to give college students, who signed up for the Stop Global Warming Virtual March, a chance to win his hybrid car ("Larry David," 2005). It did not take the fans long to realize that Larry was, again, *forced* into these commitments. Laurie David, his real-life environmentalist wife, not only founded the Virtual March, but also gave away Larry's car without his consent. "Perfect fodder for a *Curb* episode" ("Larry David," 2005), this story seamlessly blends into the plots of Curb: Larry's reluctant compliance to his wife's demand evokes the "same marriage dynamic between the Davids on screen" ("Larry David," 2005). Toyota Prius, the master symbol of "conspicuous conservation" (Sexton & Sexton, 2010), is an important prop on *Curb*; it epitomizes Larry's neurotic

relationship with environmentalism and becomes the perfect hinge between his fictional character and his "real life" character. The most noticeable linkage, of course, is the naming of this campaign: it creates a topical joke for those who know too all well about Larry David's problem with imposed enthusiasms and transfers the audience's familiarity with *Curb* to this new environmental campaign.

Thanks to Larry David's fame, this campaign attracted considerable media exposure. MTV, ABC, and the Associated Press all took zest in reporting about his new misfortune and circulated pictures of him reluctantly handing over his car keys to an exulted UCLA medical student—the winner of the sweepstakes. Accompanied by the caption "Watch Larry Lose His Car," mtvU's promotional video showed Larry searching fanatically for his Prius in the parking lot only to be told that his wife had given it away. This news story allows the audience to take pleasure in Larry's suffering—i.e. being forced into commitments. But more than just another episode from *Curb*, it shifts the audience's role from passive onlookers, who simply stand on the sidelines and watch the "disaster" unwind, to active participants, who directly join in to inflict pain on him. By calling on the public to sign the virtual march and win Larry's car, the campaign openly invites the audience to participate in the punishment of Larry David. In fact, it provides a great example for the increase of public participation through comedy: Instead of pleading for sympathy for some distant suffering characters (e.g. the near-extinct polar bears or the disappearing rainforests), this campaign allows us to derive pleasure from punishing this familiar TV character (i.e., Larry David), with whom we have an imagined, intimate relationship.

As mentioned above, Larry David is not just another friend; he is the alter-ego who bravely speaks for our unconscious. In this sense, our desire to see him punished manifests a certain type of masochism. But, in fact, this masochism is already present in contemporary environmental culture: stringent carbon-footprint calculations and minimalist, anti-consumerist campaigns constantly try to persuade the guilt-laden eco-citizens to deprive themselves of material enjoyments to fulfill the demand of the super*eco*. In this campaign, Larry David offers himself as the scapegoat for this type of masochism—he becomes the target for the otherwise inward-directing aggression and temporarily releases the audience from the strict eco-regime of their lives.

But the golden rule of this type of comedy is that Larry never fully gives in to the other's desire. After reluctantly acknowledging his wife's decision to give away his Prius, he refused to admit any personal commitment to environmentalism. During an interview with Grist.com, he commented on his support for the Stop Global Warming Virtual March, the event to which he sacrificed his car: "Virtual March is perfect for the lazy man to do something good without having to expend any effort" ("Comedian," 2005). During a QA session in the UCLA classroom prior to the delivery of his car ("Stand In", 2008), a student asked him why he chose to drive a Prius in the first place. Defiantly rejecting his wife's answer "to reduce carbon emission," he insisted that the Prius was the only car that did not have a console and thus gave him enough legroom during driving. When finally handing the car key over to the winning student, he said, "I'm still waiting for the moment when I'm supposed to feel good about this" ("Stand In", 2008). Larry's sarcasm signals his effort to maintain an ironic distance from the popular ideology of environmentalism. In a typical hysterical gesture of disavowal, he indicates that, while he may have succumbed to the other's *demand*, he refuses to surrender to the other's *desire*. "You can force me to take environmental actions, but I'm still not an environmentalist."/ "You can have my body, but not my soul." This ironic distance marks his ultimate resistance to the environmentalist ideology and recapitulates his misalignment with the desire of the society. In the title of "curb global warming," one also can detect an undertone of sarcasm—he sees global warming as another cause of "imposed enthusiasm" and begs one to "curb" global warming so that environmentalists can leave him alone.

Object of Analysis No.2: MSN "Stop Global Warming" Commercial

The second eco-joke I will analyze is Larry David and Cheryl Hine's "Stop Global Warming" commercial on MSN.com ("Larry David and Cheryl", 2007). Launched in 2006 as another effort to promote Laurie David's Stop Global Warming Virtual March, it links environmentalism with another trivial subject—being bald. Both the fans of *Seinfeld* and *Curb* are well acquainted with Larry's obsession with baldness. Baldness is not only a part of his signature appearance, but also an important identity for him. On *Curb*, Larry is repeatedly referred to as the "bald man with glasses." He and other characters on *Curb* regard baldness as the first identifying feature in a person's appearance, even more important than race (e.g. a restaurant owner cannot tell Larry away from a black, bald man in a police lineup because "I only remember bald"). Larry claims that "all bald men are brothers" and insists that they should not fight against each other (e.g. he tries to dissuade his wife's divorce lawyer, who is bald, from working against him). He also criticizes men who shave their heads as dishonest and tries to expel them from the "bald community." These "bald jokes" are funny for the same reason stated above: they reveal tiny truths that are otherwise unacknowledged in mainstream culture. Indeed, some people do regard baldness as unattractive and hair loss triggers intense anxiety that has contributed to a multi-billion dollar industry (e.g. Rogaine, wigs, toupees, hair transplants, etc.). However, society generally views the unfavorable treatment of the bald as too trivial to be qualified as a type of discrimination. Also, due to the associated feelings of shame, baldness is usually shunned from conversations outside the clinical or commercial settings and becomes a part of the collective unconscious. By making jokes out of the "baldness complex," Larry David exposed the social discrimination impinged on the bald and unleashed another tiny piece of the social unconscious. His "stop global warming" commercial resumed this signature routine.

This commercial clip is less than 2 minutes long, with Larry David and Cheryl Hines presenting everyday tips to stop global warming. Larry first broke the subject: "Would you like to help stop global warming? All you have to do is to take shorter showers." Cheryl followed by providing statistics: "Showers account for 2/3 of all water heating cost. Just cutting down your shower time can save 350 pounds of CO_2 and $99 per year." Larry complemented her for being "smart" and then unleashed his aberrant enthusiasm: "Let me tell you something: the bald—have been pioneers in water conservation. We don't spend all that extra time shampooing and rinsing our hair. It's one of the many selfless acts we bald men perform to make our world a better place." "Hmm," puzzled by this digression, Cheryl caught up with her thought seconds later: "well, you can also install low flow shower head. Using less water in the shower means less energy to heat the water, saving 350 pounds of CO_2 and $150." "Wow," Larry pretentiously acknowledged her words and continued his own way: "I'll tell you something else: the bald—also don't have use for plastic combs, and no hair dryers either. That's got to save on electricity. Come on. Plus there are no environmentally damaging health products, uhh? Are you following what I'm saying?" Embarrassed by the complete irrelevance of his talk, Cheryl politely tried to steer the presentation back on track: "Yes, that's fantastic… the point is, with a little conservation, we can make a big impact on the planet." Seeming to have lost all control, Larry gives in completely to his narcissistic rant: "OK. People. Pay attention: We have *got* to go bald—*all* of us. Walking around with a full head of hair is like driving an SUV or dumping toxic sludge into a river. It's irresponsible." He indignantly pointed at the camera and shouted: "Hey! You hair people, shame on you! Shame—on—you!" Cheryl walked off the screen in utter disappointment. Left alone, Larry did what he does best and delivered another forced apology: "What? Oh… oh, you don't like that? Sorry!"

First of all, this comedy short applies to the rule of the "rediscovery of what is familiar": 15 seconds into the commercial, the audience realizes that Larry is on with his baldness again. But a closer look reveals that this joke takes on a slightly different direction: instead of pleading for sympathy or complaining about the discrimination against the bald, it flipped the traditional hierarchy and argued for the superiority of the bald.

Since the bald demand less hair care, they allegedly leave less impact on the environment. A quick Freudian diagnosis would identify this as a *tendentious joke*. Unlike *innocuous jokes*—jokes that do not contain offense toward any social party and simply reply on word play—*tendentious jokes* fulfill an unconscious wish, usually an obscene or aggressive one, and allow one to attack others without the censure of cultural etiquette (Freud, 2003, p. 128). Aggression is clearly observable in this case: When Larry David shouted "You hair people! Shame on you!" he unleashed the anger of the bald towards the "hair people" without any disguise. In addition to the release of aggression, according to Freud, a tendentious joke also enlists the symbolic complicity from the third party and "creates an army of foes for its enemy, where once there was only one" (2003, p. 128). In this case, Larry's indignation transformed the audience into the symbolic allies of the bald—even if they are not bald themselves—and allowed them to identify with his anger.

But if we only read this joke through the bald-hair antagonism, we have just scratched the surface of its complex mechanism. Since tendentious jokes are usually not funny for the group they target, it becomes curious why the "hair" audience would laugh at this "bald" joke. This answer is that there is another set of psychodynamics that address a much broader audience group that undercuts the bald-hair dichotomy—i.e. the "climate worriers." For those concerned about global warming, Larry's baldness rant simply serves as a displacement of (or, digression from) their real source of their anxiety—the super*eco* that threatens to bring the apocalypse. The bald joke's function can be called, using Freud's words, *fore-pleasure*: "[U]sing the fore-pleasure of the pleasure afforded by the joke, [a tendentious joke] puts itself at the service of tendencies and intentions to produce new pleasure by lifting suppressions and repressions" (2003, p. 131). By lifting a trivial social taboo, the bald joke produces a small pleasure which, in turn, unlocks a greater pleasure by suspending the repression global warming places on the audience's psyche. Diverting the train of thought from a grave topic to a trivial one was previously introduced as the *displacement* technique; but this is not a simple removal of attention but an attack at the direct source of anxiety in order to undermine its psychological hold. I will now look closely at the interchange between Larry and Cheryl to further shed light on the displacement technique.

At the beginning of the video, Cheryl, who plays the "straight man" of the comedy duo, evoked concepts such as CO_2 emissions and energy cost and injects anxiety into a simple daily chore like taking a shower. "Just cutting down your shower time can save 350 pounds of CO_2 and $99 per year," "Using less water in the shower means less energy to heat the water, saving 350 pounds of CO_2 and $150." Despite her soft voice and cheerful mood, she urges the audience to mathematically calculate the ecological impact of their showers and quantify their economic cost down to single dollars. Bordering on obsessive compulsiveness, this injunction points to an inexorable superego that constantly watches over our shoulders and measures the consequences of our every action. Larry, who plays the role of the "funny man," however, took Cheryl's ultra-rational logic and pushed it to its limit: If the length of shower time is an effective measurement of one's eco-friendliness, then "the bald are the champions in water conservation," then, conversely, having hair is irresponsible and is no different from "driving an SUV or dumping toxic sludge into a river." From the eco-friendliness of shorter showers to the moral irresponsibility of the hair people, Larry David grappled with the hint of insanity in Cheryl's statement and amplified it into absurdity. If Cheryl is the voice of the superego, then Larry is its *obscene supplement*—a term Slavoj Žižek (1997, p. 73) used to describe the underside of the Law which always harbors an ulterior motive in all the "justice" it demands. For Žižek, the obscene supplement is corrupt and hedonistic, but it is indispensable in sustaining the normal functioning of the Law. No matter how noble the Law seems, it is always driven by some ignoble motives. By "splitting hairs" to argue the superiority of the bald, Larry David exposes the competitive desire that underlies the obsessive demand to quantify one's environmental impact. It brings to light the social antagonism that underpins the system of eco-footprint measurement and an impossibility to resolve the historical aggression between different social groups under the banner of environmentalism. The exposure of the

unconscious supplement of the Law is not only subversive but also therapeutic. It challenges the authority of the rhetoric of eco-footprint measurement and temporarily uplifts the intensive gaze of the super*eco* from the obsessive subject.

Conclusion: Trivial Environmentalism and Jokes as Eco-Therapy

In *Psychoanalysis and Ecology at the Edge of Chaos* (2012), Dodds questions the role that humor plays in environmental communication: "Is it a form of denial, escapism or trivialization, or can comedy help to counter the preachiness many people associate with environmentalism?" (p. 45) Intending this to be a rhetorical question, he states his propensity towards the second option: "jokes are in fact very serious things [and] should be a message taken on board by climate campaigners, as perhaps a more comic method might reach parts that the tyrannical green superego (Randall 2005) just cannot reach" (Dodds, 2012, p. 45).

While I agree with Dodds about the significance of eco-jokes, I argue that the distinction between trivialization and "serious" communication is a false dichotomy. Larry David's eco-jokes, as my analysis shows, traverse both categories: on the one hand, they focus on the trivialities of environmental culture and address the subtle neurosis and daily dilemmas of an eco-citizen/consumer's life; on the other hand, they manifest larger psychopathologies in popular environmentalism and shed light on why conventional strategies of environmental communication (especially apocalyptic rhetoric) sometimes fail to achieve expected results. Viewed from a psychoanalytic perspective, trivialities are always fraught with psychic and cultural significance. The basic methodology that Freud invented was to interpret seemingly minor details (e.g. dreams, jokes, slips of the tongue) and read them as symptoms of deeper psychological disorders. Assuming the interconnectedness between the psychic system and the ecological system, psychologists (Lertzman 2008, Dodds 2012) and communication scholars (Killingsworth and Palmer 1995; Giblett 1997, 2008) apply psychoanalysis to eco-criticism and analyze how psycho-cultural symptoms could manifest distress in the ecological system and vice versa. Eco-jokes are examples of such symptoms. Although they often dwell on trivialities, they are suggestive of the deeper anxiety underlying popular environmental culture, which sometimes could prevent the public from taking meaningful collective actions and thus exacerbate the environmental crisis.

Contrary to Dodds' point that jokes can "reach parts that the tyrannical superego cannot reach," I argue that the tyrannical superego is in fact at the heart of eco-jokes. Larry David's work simultaneously functions as a critique of, and a therapeutic response to, the tyrannical superego embedded in the injunctions of popular environmentalism. From the meticulous scheme of eco-footprint calculation to the incessant solicitation of donations and petitions, environmental rhetoric is often structured around the obsessive demands of the superego and tries to guilt eco-citizen/consumers into action. Larry David, the "king" of ulterior motives, nevertheless, exposes the obscene underside of the superego. Always doing the "right" thing for the "wrong" reason, he takes on seemingly altruistic and noble actions for selfish and ignoble reasons. His misplaced enthusiasm is hilarious because it resonates with many of us who became affectively attached to environmentalism, not for "true" concerns of an all-encompassing, universal "nature"--a concept, according to Morton (2009), ecology could very well do without-- but for certain trivial or selfish pursuits of our own desires. In popular environmental culture, many "noble" actions could be driven by less "noble" motivations, such as the self-righteousness of Wholefoods shoppers, the masochism of anti-consumerists, the violent aggression of eco-terrorists, the exhibitionism of eco-stunt-writers (e.g. the "no impact man"), and so on. On the contrary, those who have refrained from taking environmental actions might not be as "selfish" or "ignoble" as they seem. According to Lertzman (2008),

many who appear apathetic to the environmental movement might in fact suffer from certain deeper, unconscious loss related to the ecological crisis, which ranges from the "loss of loved ones" to the "loss of a place, species, or a favorite tree" (p. 16) Highly personal or "trivial" in nature, the experience of this loss can "lead to numbing and a chronic sense of melancholia" and, if not properly acknowledged, can trigger the psyche's defensive mechanisms such as denial or splitting.

In response to Lertzman's call, and inspired by Larry David's work, I propose to add the notion of *trivial environmentalism* to environmental/climate change lingo—the communication therapy that allows us to come to terms with our unconscious attachments to environmentalisms, no matter how trivial, selfish, or absurd they might seem. This "joking cure" aims at addressing the unacknowledged impulses repressed by the dominant rhetoric of "altruistic" or "noble" environmentalism and releasing the public's unconscious anxiety in order to promote environmental participation. Jokes are a wonderful medium for conducting such therapy on a massive scale. However, one word of warning must be raised. Despite the potential therapeutic effects of eco-jokes, there are limitations to the use of this approach. For this, we must revisit the Grist interview with Larry David mentioned in the beginning of the paper. In the interview, Larry mentioned a comedy skit, which he had planned to open the TBS event *Earth to America!* with, but had to abandon later. The skit was about him sitting around a campfire with little kids and telling scary stories about global warming; the kids would "all start screaming and crying and the parents would come and yell at me." However, the skit "didn't fly" because "it actually came true with Katrina… 'Cause part of that story was gonna be hurricanes, you know, the kids having to live in underwater homes. So I couldn't do it" ("Comedian," 2005). Larry David ruled out the joke because the apocalyptic vision it portrays has "become true." A joke can only be funny if the audience is already distanced from the source of anxiety—geographically, temporally, or behind a fictional frame. Any joke that is too close, too soon, or too real will face sneer at best or anger at worst. Depending on different audiences' relationships to the source of anxiety, a single joke can produce very different emotional responses.

To conclude, I argue that jokes are a medium that could be used to either encourage or discourage environmental participation. They are certainly a form of denial and trivialization, but when done right, they can serve as criticism and therapy. The key question is, as the journalist from Grist.com pointed out, how to "walk a fine line between using comedy to make this scary issue [environmental crisis] feel manageable and accessible on the one hand, versus mocking or trivializing it on the other" ("Comedian," 2005). Evoking the wisdom of psychoanalysis, I propose that one can "walk the fine line" by properly maintaining the distance between the eco-subject and the core of her desire—the apocalyptic anxiety. According to Lacan (1977), the unconscious opens and closes and we dance around the traumatic core of our desire, but a good comedian must master the rhythm of the unconscious.

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Policy Issues Dominate U.S. Environmental News: A Content Analysis of Seven U.S. Newspapers' Coverage of Environmental Issues from 1970-2010

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This project examined the focus of environmental news frames used in seven American newspapers (four national and three local) between 1970 and 2010 following the first Earth Day and the creation of the Environmental Protection Agency. During this time newspapers were a primary source of news. Based on gatekeeping and agenda-setting theory, and source credibility, the content analysis of 2123 articles examined the environmental topics within the articles (environment or environment paired with another topic such as health, policy, economy, etc.), seven possible risk perception dimensions used in the story (risk/benefit, voluntary/involuntary, etc.), and the primary source of information. The national newspapers typically reported an environment issue paired with policy; local papers reported a single environmental issue. A Chi-square test found significant differences between national and local newspapers' use of risk dimensions. National newspapers focused on the risk dimensions of voluntary/involuntary, social trust/no trust, man-made/natural, risks/benefits, and catastrophic/chronic. Local newspapers focused on the control/no control and familiar/new risk dimensions.

Keywords: environmental communication, risk perception dimensions, agenda-setting, gatekeeping

Introduction

Stone tablets from as early as 1800 B.C. have been found to contain information for farming. These tablets covered topics such as best practices for sowing, irrigation, and harvesting; in short, how humanity could effectively alter the environment for their benefit. For centuries, this type of information was shared verbally and improved farming practices slowly crept across the landscapes. Eventually, in the 17th century, the process became more formalized with the establishment of the Royal Society in 1660. The society's goal was, "promoting knowledge of the natural world through observation and experimentation, which we now call science" (Royal Society, 2012). In 1799 the goal of the society focused on "improving landlords."

Just as patrons had supported art and music in other parts of Europe, the British supported scientists by providing lab space and equipment to individuals who wished to pursue research in this discipline but who lacked the resources to undertake the research themselves. Almost as a secondary thought, the researchers initiated a series of public lectures for upper and middle-class citizens and established the

scientist-public partnership that we are familiar with today. This method of communicating about agriculture grew in the U.S. during the 19th century (Ray, 2005).

Over time, a number of individuals advocated on behalf of the environment beyond its relationship to agriculture. For example, J. Sterling Morton, a newspaper editor, and the U.S. Secretary of Agriculture under President Cleveland, established Arbor Day in 1872. In 1947 Marjory Stoneman Douglas, a journalist, published the acclaimed book, *River of grass,* about the Everglades. And then there is Rachel Carson's 1962 book, *Silent spring*. While much has been written about Carson's book, both pro and con, there is no question that the book contributed to the change in the public's perception and attitude toward our relationship with the environment (Shea, 1973) and the formation in 1967 of the Environmental Defense Fund (Hynes, 1989). The environment was now represented as its own entity apart from its relationship with feeding and housing people.

This project explored how information about environmental issues was conveyed to the American public via newspapers between 1970 and 2010. During this span of 40 years, there has been an increased interest in the environment and our relationship to it.

Role of Newspapers in Environmental Communication

In the 1970s, the market penetration of newspapers was at 100 percent, down from 123 percent in the 1920s (journalism.org, 2004). At this time, most households received at least one daily newspaper and many households got a morning and an evening paper. Newspapers were a primary channel of communication for learning about local, regional, national, and world events.

Additionally, between1956 to 1986, there were only three national television networks and many people did not have access to all three. Twenty-four hour cable news began with CNN in 1980, but this news outlet did not really take off until the 1984 election cycle (Museum of Broadcast Communications, 2012). The internet did not overtake newspapers as a primary news source until 2009 (Mindlin, 2009). Thus, newspapers remained a primary news source during the onset of environmental news coverage through the early 2000s.

Topics such as the implementation of the Clean Air Act in 1970, and the Clean Water Act in 1972, provided not only a comprehensive policy approach to dealing with what had previously been a hodgepodge of environmental issues, these topics were now newsworthy. The establishment of the Environmental Protection Agency gave substance to environmental issues, and became a legitimate source of information for reporters. Additionally, during the 1970s, a series of environmental catastrophes provided a focal point for our new-found interest in the environment and at times gave the issues a human connection that had been absent, which made it prime for news coverage. For example, there were stories about toxic chemicals (Love Canal, 1976), nuclear power radiation (Three Mile Island, 1979), and the 1973 oil crisis.

Related Media Theories

The media theories of gatekeeping, agenda setting/framing and source credibility are functions of newspaper production and help to explain how coverage of environmental issues is/was supported. Gatekeepers determine what information is available to the public thereby setting an agenda. How the information is framed, and the source of the information can influence readers' responses to the information.

Simply put, gatekeeping is the decision-making process that determines what available information is published and what available information is not (Lewin, 1951; White, 1950). These decisions are based in part on perceived newsworthiness, time constraints, and cultural relevance of the content (Shoemaker, 1991; Shoemaker & Reese, 1996). This is critical in newspaper production where there are deadlines and a finite amount of column inches although studies have shown that with new technologies there has been a shift away from the centralized gatekeeping role (Williams & Delli Carpini, 2004).

The amount of environmental news coverage has always been low and in recent years, it has comprised between 1-2 percent of the overall coverage (PEW Research Center, 2012). This may be explained in part by the fact that environmental news tends to be unobtrusive, unless catastrophic in nature, and because most reporters lack a background in science and complex systems (Cox, 2010).

Gatekeeping is a subjective practice utilized by newspaper publishers and editors to provide what they deem is the most relevant news to their subscribers, thereby boosting or maintaining their subscriber numbers and ultimately advertisers. Gatekeepers determine which types of events they think people want to know about (Shoemaker & Cohen, 2006). Hence, as the environmental movement gained traction in the 1960s and 1970s, content related to prevailing environmental practices and policies began to appear in the newspaper dailies. However, catastrophic events are naturally newsworthy. Oil spills, nuclear accidents, and extreme weather have been featured prominently on front pages with the accompanying photos. Over time, as these stories have played out due to their long-term effects or litigation, the content has been moved further inside the news pages although it has still been viewed as newsworthy content and included.

Closely tied to gatekeeping is agenda setting (McCombs & Shaw, 1972). At its core, agenda setting tells us what to think about, not what to think about it. Therefore, if the gatekeeper includes the content, we are informed about a topic. The relationship between what is emphasized in the media through continual coverage and placement is related to what the public sees as important news, or the salience of the topic (Weaver, 1980). Thus, certain issues are moved from the media agenda to the public agenda. The increased amount of environmental news coverage in the 1970s succeeded in making the environment more of a mainstream topic and moved it from the sphere of discussion within scientific and environmental activism communities to the general public. Even if the media consumer was not immediately impacted by a specific story, the news worthy angle of environmental issues made it relevant.

While first-level agenda setting is theoretically somewhat neutral, second-level agenda setting is not. Second-level agenda setting emphasizes the characteristics associated with a topic. Environmental issues are ripe for attribute-based news coverage because of our idyllic views that the environment is pure and pristine even if these views are somewhat unrealistic. This symbolism, and anything that detracts from these images, is inherently newsworthy.

Environmental issue attributes, or frames, help to explain how the public interprets social reality (Reese, 2001). Environmental issues are often framed as urgent (Exxon Valdez and BP Oil Spill) and beyond our control, thus leading to the perception that there is an inherent risk to people because the environment is at risk; even if the unfolding events are geographically removed. These frames relate to our cultural understanding of the environmental issue (Tankard, et al., 1991). For example, the explosion of the Deepwater Horizon in May 2010 was a story editors passed through the gate and published. Thus, the salient environmental issue of fossil fuel development was placed on the agenda. The attributes of human loss, water pollution, impacted wildlife, etc., were some of the attributes used to emphasize the environmental impact because of our dependence on fossil fuels. It also offered a framework to tie the salience of the issue into our cultural norms. Over time the environmental frames of this situation grew to include the related issues of the economy, health, policy and law.

Media outlets could not survive without the implicit trust we place in them. Credibility is the perceived "trust" and level of "expertise" associated with the source (Hovland, 1951). The concept of credibility has also been defined primarily in three ways: (1) message (or story), (2) source (or organization), and (3) media (or channel) credibility (Sundar, 1999). Print newspapers (versus on line versions) in particular have been found to be credible sources of information (Kiousis, 1999).The level of credibility the news consumer attaches to the source is important especially if environmental risks, and the perceptions of such risks, are employed in framing the content.

Environmental Risk Perception

Risk perceptions provide a natural framework for news reporting. They can provide the "so what" angle for a news story. Risk perception is subjective. It is a judgment that people make about the characteristics and severity of a risk. It is the likelihood that an individual will be put in the path of danger and the magnitude of that danger (Rayner & Cantor, 1987; Short, 1984). These perceptions are not necessarily rational and the perception of risk does not evaporate in the presence of evidence (Slovic, 1987). Furthermore, these perceptions are not unified (Thompson & Dean, 1996).

Kahneman and Tversky's Prospect Theory (1979) found that experts and lay people evaluate risks differently and come to different conclusions. Experts use data to produce a probability, or how likely something will occur if certain conditions are met. Non-experts develop their risk perceptions based on other factors such as the voluntariness of the risk, the immediacy of the effect of the risk, knowledge about the risk, control over the risk, the chronic or catastrophic nature of the risk, whether the risk is common or something we dread, and the severity of the risk (Fischhoff, Slovic, Lichtenstein, Read & Combs, 1978). Additional considerations include proximity of the risk and trust in the source of information about the risk (Heath, Sheshadri & Lee, 1998).

A 1978 study by Fischofff, Slovic, Lichtensein, Read and Combs explored the perception of risk. They developed a scale of risk dimensions. The dimensions were voluntary/involuntary, familiar/new, control/no control, and chronic/catastrophic. Other risk perception studies have explored perceptions of including risks/benefits (Alhakami & Slovic, 1994), social trust/no trust (Cvetkovich & Löfstedt, 1999; Renn & Levine, 1991) and origin (man-made or natural)(Covello, Sandman & Slovic, 1988).

Risk perception dimensions provide the second-level agenda-setting attributes that support dramatic news angles and make the story news worthy. News stories can amplify the perception of risk, especially among heavy media users although there is no consensus as to whether the media and reported content are causally linked to risk perception (Dawson & Lyons, 2003; Wahlberg & Sjoberg, 2000)However, hazardous situations receive headlines and continued exposure making it familiar (Adams,1993).

Based upon the framework of the role of the media in communicating environmental news, this study proposed the following research questions and hypotheses that explore how information from newspapers from 1970 – 2010 may have influenced our views of the environment:

RQ 1 Did the environmental news article focus on a single environmental topic or was the environment paired with another topic such as health or the economy?

RQ 2 Which risk perception dimensions were utilized most often in environmental news articles?

RQ 3 Which source of environmental information (scientist, politician, government agency) was used most frequently in the news articles?

H1a National newspapers will utilize *voluntary/imposed* risk dimensions significantly more often than local newspapers.

H1b National newspapers will utilize *trust/lack of trust* risk dimensions significantly more often than local newspapers.

H1c National newspapers will utilize *natural/man-made* risk dimensions significantly more often than local newspapers.

H2a Local newspapers will utilize *control/no-control* risk dimensions significantly more often than national newspapers.

H2b Local newspapers will utilize *familiar/new* risk dimensions significantly more often than national newspapers.

H3a There will be no significant difference between national and local newspapers in utilizing the *risk/benefit* risk dimension.

H3b There will be no significant difference between national and local newspapers in utilizing the *catastrophic/chronic* risk dimension.

Methodology

A content analysis was conducted to evaluate the environmental news coverage in seven newspapers between January 1, 1970 and April 30, 2010. The start date was selected to coincide with the year of the first earth day. Ironically, the end date came just at the onset of the 2010 BP oil spill in the Gulf of Mexico that began with the explosion on the Deep Water Horizon oil rig on April 20, 2010.

Content analysis is "a research technique for the objective, systematic, and quantitative description of the manifest (and latent) content of communication" (Adelaar, 2006, p. 11). Content analysis has also "been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding" (Stemler, 2001, p. 1). This method is ideally suited to evaluating second-level agenda setting of environmental content and the perception of environmental risk. This study utilized a combination of directed and summative content analyses (Hsiu-Fang & Shannon, 2005). Risk dimensions were used to develop the categories of analysis but specific terms were not counted. The overall tone of the news article was evaluated to determine the risk dimensions.

Seven newspapers were selected for use in this study: three "local" newspapers, *St. Petersburg Times*, *Denver Post* and the *San Francisco Chronicle*; and four "national" newspapers were also examined: *New York Times*, *Washington Post*, *USA Today* and *Christian Science Monitor*.

The analyses examined the primary environmental topic (land, water, air, system), issue frame (environment as a single issue or environment plus another issue such as health), perceived purpose of the article (awareness of issue, call to action/public consensus, call to action/individual behavior), geographical focus of the article (local, regional, national, international), risk perception dimension utilized (risk/benefit, voluntary/imposed, familiar/new, control/no control, chronic/catastrophic, natural/man-made and trust/lack of trust), and the primary cited source of the information (scientist, politician, agency, corporation).

A search for environmental news articles in LexisNexis focused on the natural environment (versus work environment, etc.). If available, 100 articles were downloaded from each decade. The total number of articles for the decades was divided by 100 and a random sample start point was used to establish systematic sampling.

A Cohen's Kappa was produced for the two coders to determine inter-coder reliability across the various analyses (Cohen, 1960). Kappa statistics are appropriate for testing whether agreement exceeds chance

levels for nominal ratings. Reliability was excellent: topic, K = .98, issue frame, K = .95, perceived purpose of the article, K = .92, geographical focus, K = .91 and risk dimension addressed, K = .89 and primary cited sources, K = .97. Scores of .80 are desirable (Landis & Koch, 1977).

Results

A total of 2123 articles were downloaded representing between three percent (*New York Times*) and 16 percent (*USA Today*) of the environmental news coverage in the selected newspapers over the 40-year period (see Table 1).

Table 1. Environmental Articles in U.S. Newspapers,1970 -2010 Downloaded from LexisNexis.

	NYT[1]	WP	USA Today[2]	DP	SFC	SPT	CSM
	1/25/1970[3]	1/10/1977	1/4/1989	1/2/1994	1/7/1989	6/2/1987	6/5/1981
1970 -1979[4]	2876	568	--	0	0	0	0
1980 -1989	1647	1977	122	0	167	355	1353
1990 - 1999	1558	1484	789	789	1621	855	1376
2000 - 20010	1813	1829	646	773	1689	654	1677
Total articles available	7894	5858	1557	1562	3477	1864	4406
% of articles reviewed	3%	6%	16%	13%	75%	14%	7%
Number of articles reviewed	410	410	260	210	260	263	310

1 Newspapers included: New York Times (NYT), Washington Post (WP), USA Today, Denver Post (DP), San Francisco Chronicle (SFC), St. Petersburg Times (SPT), and Christian Science Monitor (CSM)
2 USA Today began publication January 4, 1982.
3 Date of first environmental news story in this analysis for each newspaper.
4 Analysis started on January 1 of each decade through December 31 of each decade, e.g., January 1,1970 – December 31, 1979, except for the 2000s which ran through April 30, 2010.

RQ 1 Did the environmental news article focus on a single environmental topic or was the environment paired with another topic such as health or the economy?

The articles were evaluated to determine if the focus on the article was on an environmental topic such as water, air or land only versus pairing the environmental topic with another issue such as health, policy, law, economy, weather, etc. As depicted in Table 2, the articles in two of the local newspapers, the *San Francisco Chronicle* (37.1%) and the *St. Petersburg Times* (76.4%), predominantly focused on the environment only. The other local newspaper, the *Denver Post* (34.2%) and the remaining newspapers' articles predominantly focused on the environment and policy (NYT = 28.5%, WP = 24.1%, USA Today = 32.5%, Christian Science Monitor = 34.6%). It appears that the national newspapers integrated policy and environmental issues.

Table 2. Environmental Issue Focus within Newspaper.

	NYT[1]	WP	USA Today	DP	SFC	SPT	CSM
Single Environmental issue	22.8	19.5	5.2	7.4	37.1	76.4	7.8
Environment and health	17.1	10.6	16.5	5.7	7.3	7.2	5.8
Environment and policy	28.5	24.1	32.5	34.2	5.2	10.6	34.6
Environment and law	11.7	13.7	6.8	17.4	15.5	3.0	17.5

Environment and economy	8.2	6.5	22.9	17.8	1.7	1.9	16.8
Environment and weather	1.2	1.5	.8	1.0	4.7	.4	1.3
Environment and Opinion[2]	5.0	8.0	10.0	12.1	4.3	.4	12.0
Environment and Other	5.5	16.2	5.2	4.4	21.0	0	4.2

1 Newspapers included: New York Times (NYT), Washington Post (WP), USA Today, Denver Post (DP), San Francisco Chronicle (SFC), St. Petersburg Times (SPT), and Christian Science Monitor (CSM)
2 Opinion pieces are comprised of op-eds, guest op-eds and letters to the editor.

The articles were also evaluated to determine if the focus of the articles changed between decades (see Table 3). The environment *and* policy remained the primary focus of most news stories in the 1970s and 1980s. Then there was a shift to a single environmental focus in the 1990s and 2000s but the focus on the environment and policy occurred in the 2000s as well.

Table 3. Environmental Issues Focus by Decade.

	1970 - 1979	1980 - 1989	1990 - 1999	2000-2010[1]	% of Environmental Issue Coverage total
Single Environmental issue	.8	4.7	8.6	9.6	23.6
Environment and health	1.0	3.3	3.1	3.0	10.4
Environment and policy	2.3	6.9	6.6	9.2	25
Environment and law	1.0	2.7	4.6	4.3	12.6
Environment and economy	.4	1.9	4.4	3.7	10.3
Environment and weather	0	.3	.4	.7	1.5
Environment and Opinion	.3	1.8	3.1	2.4	7.5
Environment and Other	.4	.2	3.3	3.4	9.1

[1] This decade includes publication through April 30, 2010.

RQ 2 Which risk perception dimensions were utilized most often in environmental news articles?

The coders identified the risk dimensions that were most utilized within the story. The risk/benefit risk dimension framework was used most often in the SFC (24.1%) and the *Washington Post* (35.4%). The familiar/unfamiliar risk dimension was found most often in *Denver Post* (19.2%) and *Christian Science Monitor* (19.5%). The natural/man-made risk dimension was found the most frequently in the *New York Times* (27.8%); the voluntary/ not voluntary risk dimensions was used the most often in *USA Today* (21.9%); and the control/no control risk dimension was used the most on in the *St. Petersburg Times* (34.5%).

RQ3 Which source of environmental information (scientist, politician, government agency) was used most frequently in the news articles?

Politicians accounted for one-third of the sources for both the local (36.7%) and national newspapers (32%). Beyond that, local newspapers used scientist the most frequently as a source (30%), and national newspapers used agency statements/quotes the most frequently (25.2%).

In order to evaluate whether H1 – H3 were true, the researchers first looked at the most frequently occurring risk dimension across all seven newspapers. Risk/benefit was the primary risk dimension comprising 23.6% of the articles followed by natural/man-made (17.5%), familiar/new (17.2%),

imposed/voluntary (16.1%), trust/lack of trust (11.2 %), control/no control (8.3%), and catastrophe/chronic (4.9%).

A chi square test was calculated comparing local and national newspaper coverage and the seven environmental risk dimensions. There was significant evidence to indicate a relationship between local/national newspaper coverage and type of risk perception dimensions ($\chi^2(6) = 43.50$, $p < .001$). Additional post hoc tests were conducted comparing expected and observed frequencies by risk dimension.

H1a National newspapers will utilize *voluntary/imposed* risk dimensions significantly more often than local newspapers.

This was confirmed. In fact, this relationship was a strong contributor to the chi square. *Voluntary/imposed* risk contained less than expected local newspaper coverage ($n = 99$ [26%], $p = .01$) and more than expected national coverage ($n = 280$ [74%], $p = .04$).

H1b National newspapers will utilize *trust/lack of trust* risk dimensions significantly more often than local newspapers.

This was confirmed. In local newspapers, *trust/lack of trust* environmental risk was covered 84 times (30%) and in national newspaper coverage was counted 196 times (70%), ($\chi^2(6) = 43.50$, $p < .001$).

H1c National newspapers will utilize *natural/man-made* risk dimensions significantly more often than local newspapers.

This was confirmed. In local newspapers, *natural/man-made* environmental risk was covered 150 times (36%) and in national newspaper coverage was counted 263 times (64%), ($\chi^2(6) = 43.50$, $p < .001$).

H2a Local newspapers will utilize *control/no-control* risk dimensions significantly more often than national newspapers.

This was confirmed. In fact, this relationship was a strong contributor to the chi square. *Control/no-control* risk contained more than expected local newspaper coverage ($n = 102$ [52%], $p < .001$) and less than expected national coverage ($n = 95$ [48%], $p < .001$), ($\chi^2(6) = 43.50$, $p < .001$).

H2b Local newspapers will utilize *familiar/new* risk dimensions significantly more often than national newspapers.

This was confirmed. In local newspapers, *familiar/new* environmental risk was covered 148 times (37%) and in national newspaper coverage was counted 258 times (63%), ($\chi^2(6) = 43.50$, $p < .001$).

H3a There will be no significant difference between national and local newspapers in utilizing the *risk/benefit* risk dimension.

This was not confirmed. In local newspapers, *risk/benefit* environmental risk was covered 182 times (33%) and in national newspaper coverage was counted 258 times (67%), ($\chi^2(6) = 43.50$, $p < .001$).

H3b There will be no significant difference between national and local newspapers in utilizing the *catastrophic/chronic* risk dimension.

This was not confirmed. In local newspapers, *catastrophic/chronic* environmental risk was covered 45 times (39%) and in national newspaper coverage was counted 70 times (61%), ($\chi^2(6) = 43.50$, $p < .001$).

Discussion

This study examined a variety of factors that may contribute to citizen views of environmental issues based on access to information through newspapers. Newspapers have been a primary source of information during the 40-year span of analysis in this study. Limitations to the study are that only seven of the hundreds of newspapers were examined although the authors attempted to select local and national newspapers that would contain representative coverage of environmental news during this time period. Across the four decades examined in this study, environmental news coverage has consistently comprised between 1 and 3 percent of overall news coverage in newspapers (PEW Research Center's *2012 weekly news interest index,* 2012).

In the United States environmental issues really began to take hold as a mainstream topic in the 1970s following the first Earth Day and the establishment of the Environmental Protection Agency. It has now been 40-plus years since the Environmental Protection Agency was formed and the First Earth Day was celebrated. We have been exposed to decades of environmental news coverage although overall environmental news stories comprised between only two to three percent of the total news coverage. In 2011 environmental stories comprised about only one percent of all news (journalism.org, 2011).

During the past four decades we have come to understand more about how humans and their activities impact the environment. Much of the environmental news content has focused on risks/benefits and imposed/voluntary aspects of environmental issues. Understandably, the environmental issue focus of local and national newspapers differ. The use of risk perceptions dimensions provided a framework for media outlets to deliver environmental issue information to its readers.

Risk perception dimensions by their very nature assist in making a story newsworthy. Editors and publishers evaluate potential content based on its newsworthiness and relevancy to its readers. Content that is selected (or makes it though the gatekeeping process) helps to set the public agenda (agenda setting). Risk perception dimensions provide the "so what" angle (second-level agenda-setting) and are often the focal point of the story. Third party sources (politician, agency or scientist) may add credibility to the message as these entities are not typically perceived to be self-serving, but rather fact-based or public servants, within the environmental issues framework.

With an eye toward factors that would impact how gatekeepers assessed potential content, the authors hypothesized that there would not be significant difference in the presence of the risk/benefit dimension or in the catastrophic/chronic dimensions but neither hypothesis was confirmed. In fact both dimensions were found far more frequently in the national newspapers. This may be explained by the fact that the national newspapers focused on the environment *plus* policy while the local newspapers focused on a single environmental topic. In this sample, the focus on a single environmental issue, or an environmental issue paired with policy, comprised 48.6 percent of the message frames found within the news stories. Environmental issues plus health or the economy comprised 20.7 percent of the overall sample although this level of connectedness has increased in recent decades.

The focus on policy in relation to environmental issues in some ways removes the salience of the issues from the reader. Policies are developed and regulated by politicians and agencies with which we have very little interaction. In some ways, environmental issues may seem to be beyond our control and that we have to trust in others to minimize the potential risks. The focus on big environmental crisis (Exxon Valdez, BP oil spill) rather than environmental gains, such as the improvements to the Penobscot and Williamette Rivers, the introduction of the Endangered Species Act, the reduction of acid rain, etc., continues to frame environmental issues as being beyond our control, policy driven and in place of a participatory process by citizens.

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Assessing the Cognitive Autonomy of Audiences Towards Environmental Media Messages

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Environmental issues are the subject of an increasing appropriation by the public, primarily through media messages. In this context, the citizens' ability to adopt a critical stance towards these messages has become crucial. We study the factors that affect the citizens' critical judgment towards forest-related media. The research presented in this paper seeks to assess the individuals' degree of cognitive autonomy towards forest-related media, and how it is influenced by their prior experience of forests. In this paper, we present a preliminary experiment requiring participants to read and react to three posters from different forest stakeholders. Fifty-two students (aged 16 to 20) from two schools (one rural and the other urban) participated in this study. Results show that subjects had a limited cognitive autonomy towards the media that were submitted to them, and that their degree of cognitive autonomy was not affected by their level of forest experience.

Keywords: Environmental communication, forests, media literacy, cognitive autonomy

Introduction

Environmental issues are the subject of an increasing appropriation by the general public. The citizens' opinions on these issues may be significantly impacted by the strategic media messages that represent the natural environment and aim at raising their awareness, convincing them, and influencing them. We study the appropriation of these messages by the public in the specific context of tree- and forest-related communication. This paper presents the preliminary results of a study funded by the Public Service of Wallonia (Belgium), as a part of a European research programme entitled "Trees and forests: policies and communication (XIVth to XIXst centuries)."

Forests can be considered in a multitude of ways: as a place for recreation and leisure, as an ecosystem to be protected, as the earth's "green lung" playing a central role in the sustainability of the human environment, but also as an essential resource for our economies that needs to be managed responsibly and sustainably. There is actually not *one* forest, but *many kinds of* forests, the nature and situation of which can vary dramatically, depending on their location and on their usage.

The public's perception of forests is sometimes at odds with their actual state. For example, European citizens generally believe the forest surface to become smaller in Europe over the years, whereas it is in constant growth (Rametsteiner & Kraxner, 2003). There also seems to be a paradox between the positive image people have of forests and their products, and the negative image that the timber industry suffers from (Suda & Schaffner, 2004): although a majority of people like forests, and appreciate wood as a

natural material, they tend to see the laying of trees as a crime against the environment instead of as the sampling of a constantly renewed resource. More generally, the public seems to consider that the protection of the environment (including the preservation of biodiversity and the halt of deforestation) is not compatible with its exploitation as a resource. When faced with this apparent incompatibility, people generally tend to favour the second alternative: protecting the trees.

Furthermore, this opposition can only be strengthened by the type of media communication commonly adopted by both environmentalist associations and public and private institutions in charge of forest management. Media messages sponsored by these organisations typically follow the standards of advertisement: they rely on visuals more than on text, and use slogans with simple messages or “shock” images that tap into their audiences’ emotions rather than their rationality. These messages position their audiences as targets to be impacted, whose opinions only result from past media exposures, each organisation working to have their message override those of others, perceived as competitors.

Such communication strategies implicitly place their audiences in a "passive" and "massive" position. Indeed, a simplified universal message can only be assumed to be effective if its audience is viewed as a "mass" of identical individuals who react similarly to the same messages. In this view, the audience is also considered as passively receiving and assimilating messages that they are not expected to be critical about. The opinion of a "massive and passive" audience would then correspond to the mere reproduction of the messages they have been submitted to. This oversimplification of environmental media communication impedes the understanding and appropriation by the public of a complex concept such as that of sustainable management, which allows to articulate the different (economical, environmental, social) functions of forests : bio-diverse ecosystems to be protected, “green lungs” playing a key role in the viability of the human environment, places of leisure and rest, and economically important resources exploited in a responsible and sustainable way.

The research presented in this paper adopts an alternative view of media users. It aims at evaluating under which conditions the public is able to behave as active and competent media users, who can critically evaluate the representations of trees and forests in the media, situate the institutions that produce them with respect to one another, and articulate multiple viewpoints on forests into a coherent and complex vision.

Media Literacy and the Cognitive Autonomy of Audiences Towards Forest-Related Media

The concept of media literacy (Aufderheide & Firestone, 1993; Silverblatt, 2001) enables us to define the public of environmental communication from this new perspective: as active users, competent in reading and evaluating forest-related media messages. We define media literacy as the set of skills that enable people to evolve in the contemporary media environment in a critical and creative, autonomous and socialized way (Fastrez & De Smedt, 2012). Media literacy includes the ability to *access* media, to *understand* and to critically *evaluate* media contents and different aspects of media, and to *create* communications in a variety of contexts (Aufderheide & Firestone, 1993; Bekkhus & Zacchetti, 2009; Buckingham, Banaji Carr, Cranmer, & Willett, 2005; Hobbs, 2010). In this research, we focus on the second aspect: the understanding and critical evaluation of media messages by individuals. It is, moreover, the aspect that appears as the most important in the definitions of media literacy available in the literature (Brandtweiner, Donat, & Kerschbaum, 2010; Tulodziecki & Grafe, 2010; Silverblatt 2001; Thoman, 1993), and the one aspect on which existing assessment tools have primarily focused (Arke & Primack, 2009; Hobbs & Frost, 2003; Quin & McMahon, 1993; Thoman, 1993).

Several studies explicitly associate media literacy and critical thinking skills (Alvermann & Hagood, 2000; Arke & Primack, 2009; Feuerstein, 1999; Kellner & Share, 2007), or more generally a critical approach of media (Silverblatt, 2001).

We have proposed a definition of media literacy competences in terms of four types of media-related tasks (Fastrez & De Smedt, 2012):

- reading (decoding, understanding, and evaluating media),
- writing (creating and diffusing one's own media productions),
- navigating (searching for specific media and exploring the diversity of media supplies),
- organising (categorising media with ad hoc typologies)

These tasks are applied to media as informational, technical and social objects. Media are informational objects as they are designed to represent things (real or imaginary) different from themselves through the use of different semiotic systems. They are technical objects as they were produced though a technical process, or as their usage involves a technical process. They are social objects as they weave social relationships between members of society.

In this study, we will use the phrase "cognitive autonomy" to refer to the individual's ability to critically understand and evaluate media messages, as a part of their media literacy. The media literacy competences involved are related to reading and organising media in their informational dimension (e.g. what does this message say? What issue does it address? How does it frame this issue?) and their social dimension (who made this message. What were their intentions? How could different people interpret it?).

The question underlying by the notion of cognitive autonomy is the following: is the public able to see through the representations of forests in the media to detect persuasion strategies that they can distance themselves from? Or, on the contrary, do their own representations of forests result directly from their exposure to media, as they are unable to step back and identify these strategies?

Specifically, we define cognitive autonomy towards the media as the abilities required to (1) *understand* (i.e. identify the meaning of messages and the expressed points of view), (2) *contextualize* (i.e. identify the authors and their intentions, and situate them in their context), (3) *compare* (i.e. situate and contrast different messages and the intentions of their authors) and (4) *make critical judgments* (i.e. position themselves with respect to the expressed points of view) about media messages.

This study attempts to assess the subjects' degree of cognitive autonomy in the specific context of their reception of tree- and forest-related media.

Research Questions

Two research questions motivate our research:

1. To what extent is the public cognitively autonomous towards tree- and forest-related media?
2. What are the factors affecting this form of cognitive autonomy?

Specifically, this study presented in this paper attempted to evaluate the relationship between the subjects' degree of cognitive autonomy and their prior experience with forests. Do the subjects who have greater prior experience with forests show a greater degree of cognitive autonomy towards forest-related media? Are they more easily able to distance themselves from the representations of forests in the media? Are they more prone to consider the forest from seemingly opposite standpoints such as its preservation and its exploitation?

Method

Participants

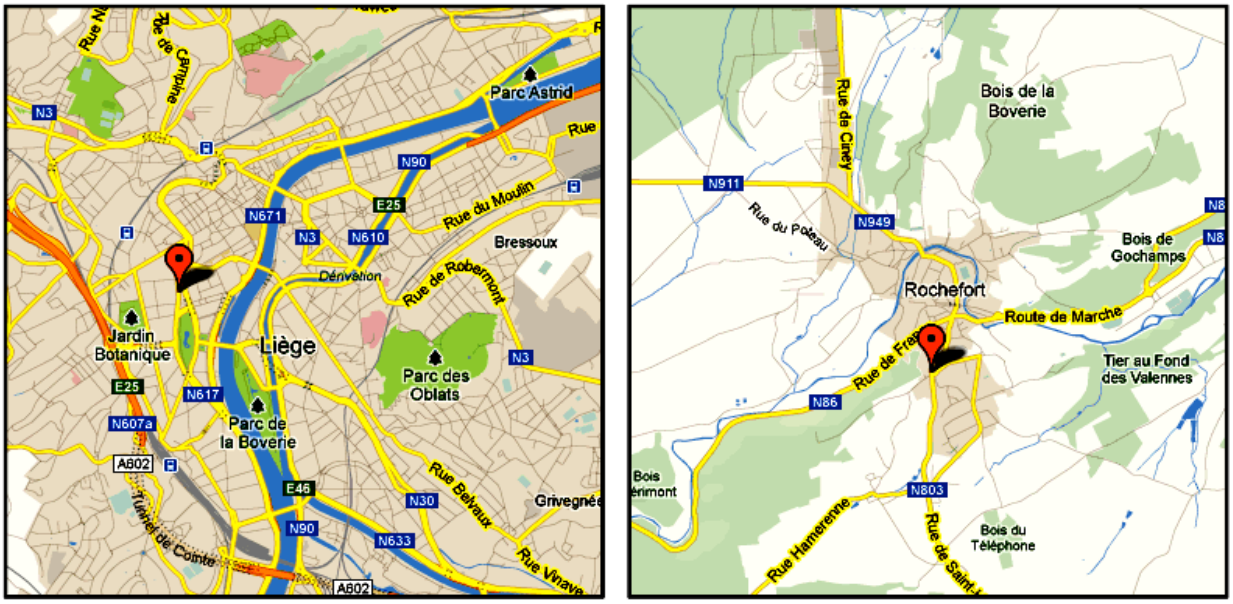
Fifty-two high school students (M_{age} = 17.25 years, age range: 16-20 years) were recruited in two Belgian French-speaking high schools, one urban (Athénée Léonie de Waha, Liège) and the other rural, with forests nearby (Athénée Royal de Rochefort, Rochefort). Table 1 details the composition of our sample.

	N	Age		Gender		Grade	
		Mean	Std dev	Men	Women	11th	12th
Athénée Léonie de Waha (urban school)	29	17,10	1,012	12	17	29	0
Athénée Royal de Rochefort (rural school)	23	17,43	1,037	14	9	9	14

Table 1: Sample composition.

This age range was chosen as young people are particularly targeted by environmental communication (Janse, 2008; Potter, 2004; Rametsteiner, Eichler, & Berg, 2009; Rametsteiner & Kraxner, 2003), and they embody the future public that may be affected by the changes in wood and forest stakeholder communication strategies, in a medium-term future. Subjects participated in the study as part of their presence in school, and were not compensated for their participation.

The two schools were selected in order to compose a sample of respondents with different profiles with respect to their prior experience with forests. Figure 1 depicts the geographical environment of the two schools.



Athénée Léonie de Waha **Athénée Royal de Rochefort**

Figure 1: Geographical location of the two high schools.

Materials and Procedure

Subjects were instructed to fill out a two-part questionnaire. The first part included seven questions on socio-demographic variables (such as age, gender and parents occupation) and nine questions on prior experience with forests, which were used to compute the respondents' Forest Experience Score (FES – see below). These questions focused on the number of forest visits the respondents made in the past year, the length of their longest visit, the types of activities they engaged in (e.g. camping, harvesting, observing, playing, wandering), and the extent to which they stayed on marked trails and paths.

The second part required subjects to read and react to three posters on trees and forests. The first poster was produced by *Greenpeace*, on the topic of deforestation reduction in the context of the 2009 Copenhagen climate summit. The second poster was produced by the French *National Committee for the Development of Wood* (CNDB) to advertise a partnership between *France Bois Forêt* (a French forestry interprofessional organization) and the French Ministry of Agriculture and promote the use of wood as a sustainable material. The third poster was produced by the *Forest Stewardship Council* (FSC) and supported by the *World Wildlife Fund* (WWF) to promote FSC's activity and label, and encourage its audience to buy FSC-certified wood and paper.

Questions in the second part of the questionnaire probed the respondent's understanding of each poster and its message, as well as their ability to identify the institutions that produced them, their intentions, and the types of people the posters were not intended to. Additional questions required the respondents to assess the compatibility between the three poster's messages, and to position themselves with respect to these messages.

Results

In this section, we present the results from the questionnaire data analysis. Results are presented in the order of our research questions: first the assessment of the subjects' cognitive autonomy (in terms of understanding, contextualization, comparison and critical judgment), and then its relationship to their level of prior forest experience. Our hypotheses are that:

1. the subjects can show a certain degree of cognitive autonomy towards the media.
2. this degree of cognitive autonomy is positively correlated with the subject's level of forest experience.

Description of the Posters

Subjects were asked to describe each of the posters. Their answers were noted according to the presence of one or two of the two core components of the poster (identified by the researchers), yielding scores ranging between 0 (no core component present in the answer) and 2 (two core components present in the answer).

Description scores	Greenpeace		CNDB		FSC	
0	5	(9.8%)	2	(3.9%)	4	(7.8%)
1	37	(72.5%)	20	(39.2%)	27	(52.9%)
2	9	(17.6%)	29	(56.9%)	20	(39.2%)
Total	51	(100%)	51	(100%)	51	(100%)

Table 2: Distribution of description scores for each poster.

As it appears in Table 2, the subjects' ability to describe the posters is limited, since only a minority of subjects achieved a score of 2/2. The *Greenpeace* poster appeared to be the most difficult to describe.

Understanding of the Posters' Messages

Subjects were asked to summarize the core message of each of the posters. Their answers were noted according to the presence of one or two of the two core ideas the poster expressed (identified by the researchers), yielding scores ranging between 0 (no core idea present in the answer) and 2 (two core ideas present in the answer).

Understanding scores	Greenpeace		CNDB		FSC	
0	17	(33.3%)	18	(35.3%)	16	(31.4%)
1	28	(54.9%)	28	(54.9%)	30	(58.8%)
2	6	(11.8%)	5	(9.8%)	5	(9.8%)
Total	51	(100%)	51	(100%)	51	(100%)

Table 3: Distribution of understanding scores for the each poster.

As it appears in Table 3, the subjects' ability to understand the messages conveyed by the posters is limited, since only a minority of subjects achieved a score of 2/2.

Contextualization: Identification of the Author

Subjects were asked to identify (i.e. to name and describe) the authors of each poster (two for the *CNDB* and *FSC* posters, and one for the *Greenpeace* poster). Table 4 shows the results for this question.

Author identification	Greenpeace		CNDB		FSC	
No author identified	1	(2%)	14	(27.5%)	1	(2%)
Authors partly identified	8	(15.7%)	35	(68.6%)	39	(78%)
Authors correctly identified	42	(82.4%)	2	(3.9%)	10	(20%)
Total	51	(100%)	51	(100%)	50	(100%)

Table 4: Distribution of author identification for each poster.

Only a minority of subjects failed to identify the Greenpeace poster's author. However, students struggled to identify *both* authors in the *FSC* and *CNDB* posters.

Contextualization: Qualification of the Author

Subjects were asked to select descriptors of the posters' authors in a list including the following items: "a non-commercial association," "an environmentalist NGO," "consumers," "a political party," "a governmental agency," "industrials," and "forest owners." Their answers were scored according to the following principles:

Greenpeace poster	Score
• "an environmentalist NGO" or "a non-commercial association, an environmentalist NGO"	2
• "a non-commercial association"	1
• Any other selection	0
CNDB poster	**Score**
• "forest owners, industrials, a non-commercial association"	2
• Two correct items out of three or "a non-commercial association"	1
• Any other selection	0
FSC poster	**Score**
• "a non-commercial association, an environmentalist NGO, industrials"	2
• Two correct items out of three or "a non-commercial association"	1
• Any other selection	0

Table 5 shows the results for this question.

Author qualification	Greenpeace		CNDB		FSC	
No author qualified	19	(37.3%)	33	(64.7%)	27	(52.9%)
Authors partly qualified	3	(5.9%)	18	(35.3%)	23	(45.1%)
Authors correctly qualified	29	(56.9%)	0	(3.9%)	1	(2%)
Total	51	(100%)	51	(100%)	51	(100%)

Table 5: Distribution of author qualification for each poster.

Respondents performed similarly to the question requiring them to identify the authors of the posters, although their ability to qualify them correctly was weaker. Once again, the authors of the CNDB and FSC posters were more difficult to qualify than Greenpeace.

Contextualization: Identification of the Author's Intentions

Subjects were asked to select descriptors of the intentions of the posters' authors in a list including the following items: “to inform,” “to convince,” “to fight,” “to raise awareness,” “to entertain,” “to sell,” “to be obeyed,” “to get noticed,” “to obtain help,” “to seduce,” “to instruct,” “to denounce,” and “to scare.”

The answers to these three questions were coded based on the following principles:

- Greenpeace poster:
    - Correct answers: to inform, to convince, to fight, to raise awareness, to denounce, to scare, to get noticed;
    - Neutral answers: to be obeyed, to obtain help;
    - Erroneous answers: to entertain, to sell, to seduce, to instruct.
- CNDB poster:
    - Correct answers: to inform, to convince, to fight, to sell, to instruct;
    - Neutral answer: to raise awareness;
    - Erroneous answers: to entertain, to be obeyed, to get noticed, to obtain help, to seduce, to denounce, to scare.
- FSC poster:
    - Correct answers: to inform, to convince, to fight, to raise awareness, to sell, to seduce;
    - Neutral answers: to be obeyed, to get noticed, to instruct;
    - Erroneous answers: to entertain, to obtain help, to denounce, to scare.

The answers were combined into one single score (ϵ [-1;1]) using the following formula:

$(Ncs_i / Ncs) – (Nes_i / Nes)$

where:

- Ncs_i is the number of correct selections in the list;
- *Ncs* is the total number of correct items in the list;
- Nes_i is the number of erroneous selections in the list;
- *Nes* is the total number of erroneous items in the list;

Figure 2, Figure 3 and Figure 4 show the distribution of these scores for the three posters.

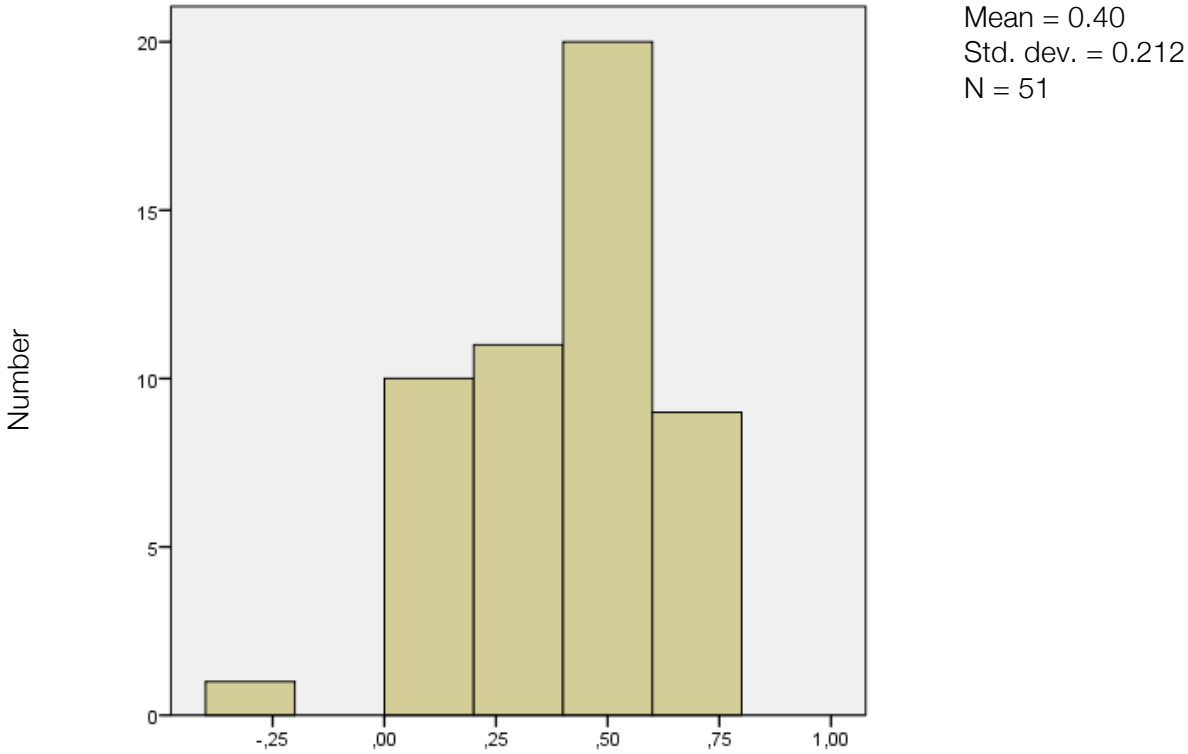


Figure 2. Distribution of author intentions identification score (Greenpeace).

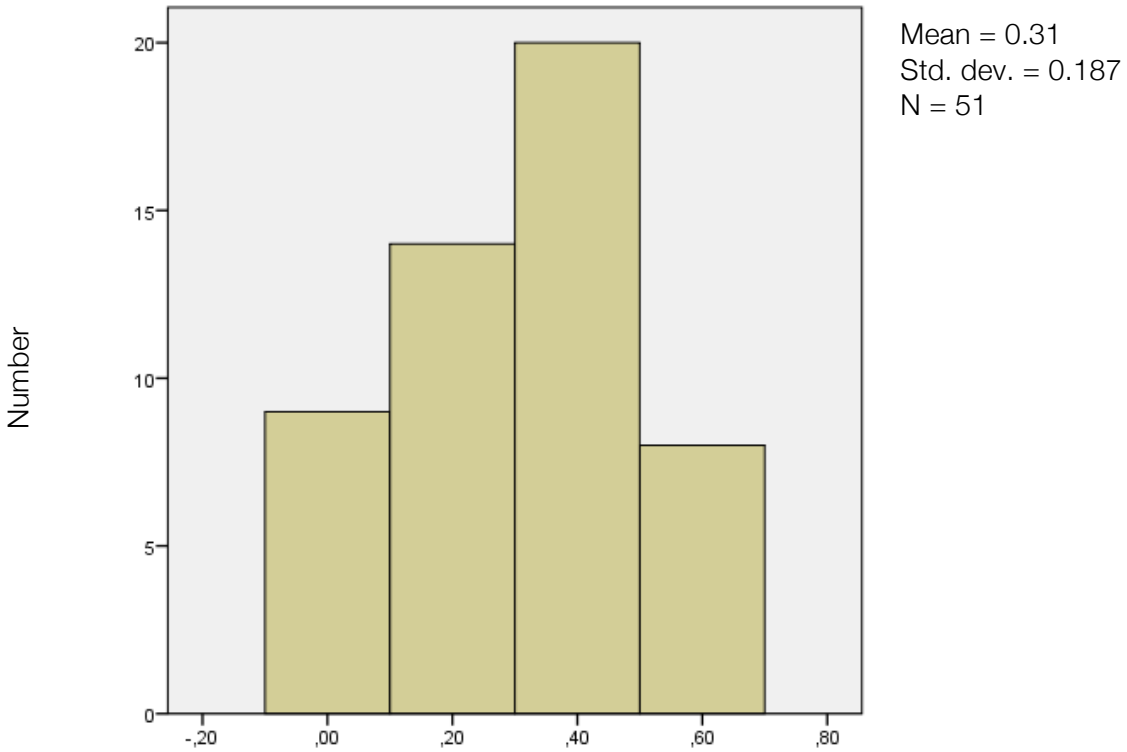


Figure 3. Distribution of author intentions identification score (CNDB).

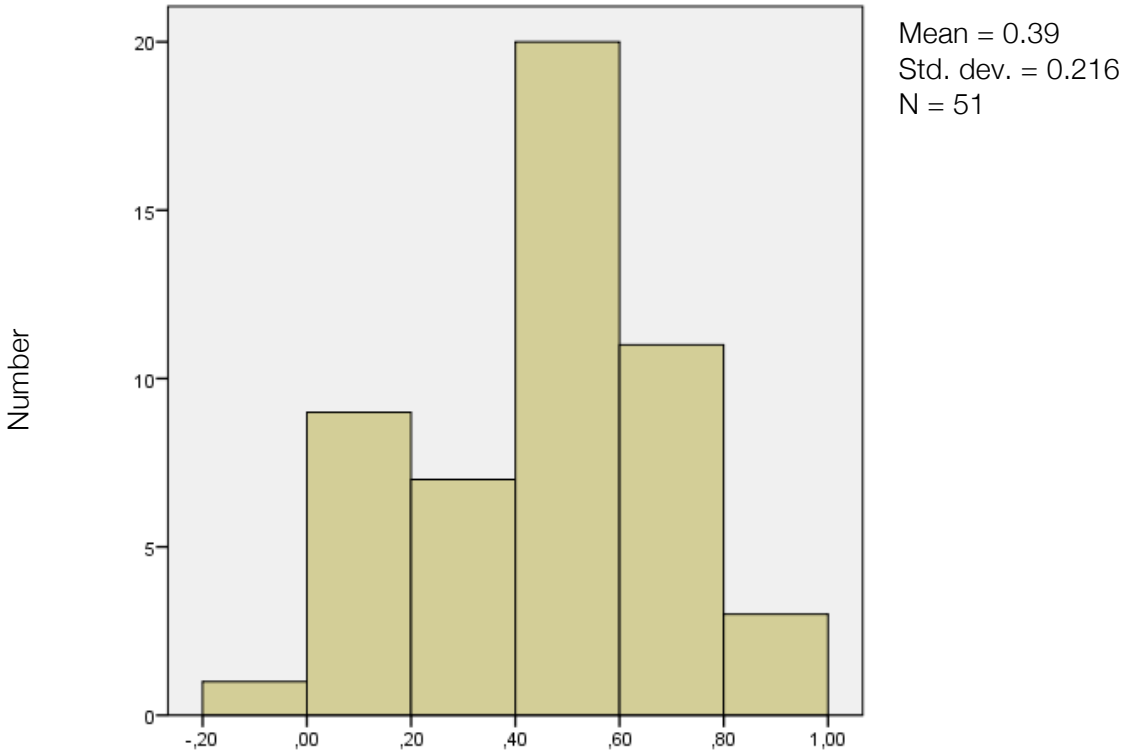


Figure 4. Distribution of author intentions identification score (FSC).

Respondents obtained mostly positive scores, which reveal their ability to identify, at least in part, the intentions of the authors of the three posters.

Contextualization: Identification of the Posters' Non-Audience

Subjects were asked to describe the people that did not belong to the three posters' intended audience. Their answers to these open questions were coded according to the following principles:

Answer type	**Score**
"no one", "the people affected by the message" (e.g. "those who buy wood" for the FSC poster), "the people with opposite opinions" (e.g. "those who encourage the use of fossil energies" for the CNDB poster), "children".	0
"the people who are not affected by the message"	1
"the people who are already convinced by the message", "the members of the institution that produced the poster"	2

Table 6 shows the distribution of answers according to this coding.

Non-audience identification score	**Greenpeace**		**CNDB**		**FSC**	
0	40	(78.4%)	41	(80.4%)	44	(86.3%)
1	5	(9.8%)	2	(3.9%)	2	(3.9%)
2	6	(11.8%)	8	(15.7%)	5	(9.8%)
Total	51	(100%)	51	(100%)	51	(100%)

Table 6: Distribution of non-audience identification scores for each poster.

The vast majority of respondents failed to identify who the three posters were not intended to, thereby demonstrating their difficulty in determining the limits of their intended audience.

Comparison of the Posters

Subjects were asked to identify potential contradictions between the posters' messages, for each possible pair of posters. Their answers were assigned one point for each correct description and justification of the contradiction or compatibility between each possible pair of posters. Hence, the highest possible score was 3. The correct answers were:

- The Greenpeace poster *does* contradict the CNDB poster: the latter encourages the use of wood as an ecological material, whereas the former claims that laying trees is detrimental to the environment.
- The CNDB poster *does not* contradict the FSC poster: both promote the use of wood as a material, even though the latter encourages a responsible use.
- The FSC poster *does* contradict the Greenpeace poster: the former encourages a responsible use of wood as a material, whereas the latter suggests trees should not be laid at all.

Table 7 shows the results for this question.

Comparison score	$N_{Subjects}$
0	6 (12.5%)
1	25 (52.1%)
2	7 (14.6%)
3	10 (20.8%)
Total	48 (100%)

Table 7: Distribution of comparison scores.

Only a fifth of the subjects were able to correctly compare the posters' messages.

Learning from the Posters

Subjects were asked whether they had learned anything from the posters. Their answers were coded according to the poster(s) the respondent had learned something from. Table 8 shows the results for this question.

Poster cited	$N_{subjects}$
None	39 (75%)
CNDB	5 (9.6%)
FSC and CNDB	1 (1.9%)
Greenpeace	1 (1.9%)
All	6 (11.5%)
Total	52 (100%)

Table 8: Distribution of posters the respondents learned something from.

Most subjects declared that had not learned anything from the posters. Within the group of respondents who declared they had learned something, the CNDB poster was the most frequently referred to.

Critical Judgment: Poster of Choice

Subjects were asked the following question: "If you had to choose a poster to show for a better future, which one would you choose? Why?" Table 9 shows the distribution of the respondents' answers to this question.

Chosen poster	$N_{subjects}$
None	1 (2,1%)
Greenpeace	24 (50,0%)
CNDB	8 (16,7%)
FSC	14 (29,2%)
All	1 (2,1%)
Total	48 (100,0%)

Table 9: Distribution of chosen posters.

The Greenpeace poster was chosen by one subject out of two, which makes it the most frequently chosen poster, followed by the FSC poster

We expected the subjects to make their choice based on the three posters' messages. However, their answers were divided into two categories: those whose choice of poster was based on the persuasion techniques it used ("because this poster shocks" or "because this poster is the prettiest"), and those based on the message content ("because this poster advocates stopping deforestation"). A third category failed to choose or justify their choice. Table 10 shows the results for this question.

Justification of choice	$N_{Subjects}$
Persuasion techniques adopted	17 (37%)
Message content	21 (45,6%)
No justification	10 (17,4%)
Total	48 (100%)

Table 10: Distribution of choice justifications.

Less than half of the subjects made their choice based on the posters' contents.

Critical Judgment: Agreement with the Posters' Messages

Subjects were asked whether they agreed with the following statements, each of which corresponds to the message of one of the three posters.

- Statement #1 (CNDB): "*Wood is a sustainable material that can help fight climate change*".
- Statement #2 (FSC): "*It is possible to preserve forests while buying wood*".
- Statement #3 (Greenpeace): "*Stopping deforestation worldwide is necessary to curb climate change*".

Table 11 shows the results for this question.

Agreement	Statement #1		Statement #2		Statement #3	
Disagree	11	(22.9%)	10	(20.8%)	14	(29.2%)
Neither agree nor disagree	10	(20.8%)	10	(20.8%)	12	(25%)
Agree	27	(56.3%)	28	(58.3%)	22	(45.8%)
Total	48	(100%)	48	(100%)	48	(100%)

Table 11: Distribution of positions towards the three statements.

The majority of subjects expressed their agreement with statements # 1 and # 2. Statement #3 had a lower agreement rate, even though it corresponds to the message of the Greenpeace poster, which was the poster chosen most often "for a better future."

Table 12 shows the results for tests of independence (Pearson's chi-square tests) between the distributions of positions towards the three statements, by pair of statements.

	Statement #1 x Statement #3	Statement #2 x Statement #3	Statement #1 x Statement #2
χ^2 (dl = 4)	0.199	0.705	7.010
Sig.	0.995	0.951	0.135
N	48	46	46

Table 12. Tests of independence between agreements to the three statements.

Results show that the agreement to each statement is independent from the agreement to the two others: for any given respondent, agreeing with one statement is not related to (dis)agreeing with another statement.

Considering that these three statements are not all compatible between one another, and should have yielded non-independent judgments, we computed a score estimating the coherence of each respondent's positioning relative to all three statements, according to the following rules:

- Statement #1 and #2 are considered to be compatible, but in compatible with statement #3.
- Each respondent having expressed the same position (agreement or disagreement) towards statement #3 and one of the other two statements receives a coherence score of zero points.
- Each respondent having expressed the same position (agreement or disagreement) towards statements #1 and #2 and the opposition position towards statement #3 receives a coherence score of two points.
- Each respondent having expressed a given position (agreement or disagreement) towards statement #3, the opposite position towards one of the other two statements, and a neutral position towards the last statement receives a coherence score of one point.

- Each respondent having expressed the same position (agreement or disagreement) towards statements #1 and #2 and a neutral position towards statement #3 receives a coherence score of one point.
- Each respondent having expressed a given position (agreement or disagreement) towards any of the three statements and a neutral position towards the two others receives a score of one point.

Table 13 shows the distribution of these coherence scores.

Coherence score	**$N_{Subjects}$**	
0	25	(52.1%)
1	16	(33.3%)
2	7	(14.6%)
Total	48	(100%)

Table 13: Distribution of coherence scores.

Results show that the majority of subjects positioned themselves incoherently with respect to the three statements. Only one subject out of six expressed a fully coherent position.

Forest Experience Score

In order to evaluate the relationship between the respondents' prior experience with forests and the different components of their cognitive autonomy towards forest-related media, a Forest Experience Score (FES) was computed for each respondent, based on the following formula

$FES_i = ECDb_i \sqrt{(ACb_i * PC_i)} + ECDf_i \sqrt{(ACf_i * PC_i)}$

where:

- $ECDb_i$ is the estimated cumulative duration of the respondent's visits in Belgian forests in the past year (in hours—see appendix 1);
- $ECDf_i$ is the estimated cumulative duration of the respondent's visits in foreign forests in the past year (in hours—see appendix 1);
- *ACbi* is the forest activity coefficient for stays in Belgian forests ($\in$ [1,2], with 1 corresponding to activities involving light interaction with the forest, and 2 corresponding to activities involving intense interaction with the forest—see appendix 2);
- ACf_i is the forest activity coefficient for stays in foreign forests ($\in$ [1,2]—see appendix 2);
- PC_i is the “use of marked trails and paths” coefficient ($\in$ [1,2], with 1 corresponding to "allways uses marked trails" and 2 to "never uses marked trails"—see appendix 3).

Figure 5 shows the FES distribution, grouped by high schools.

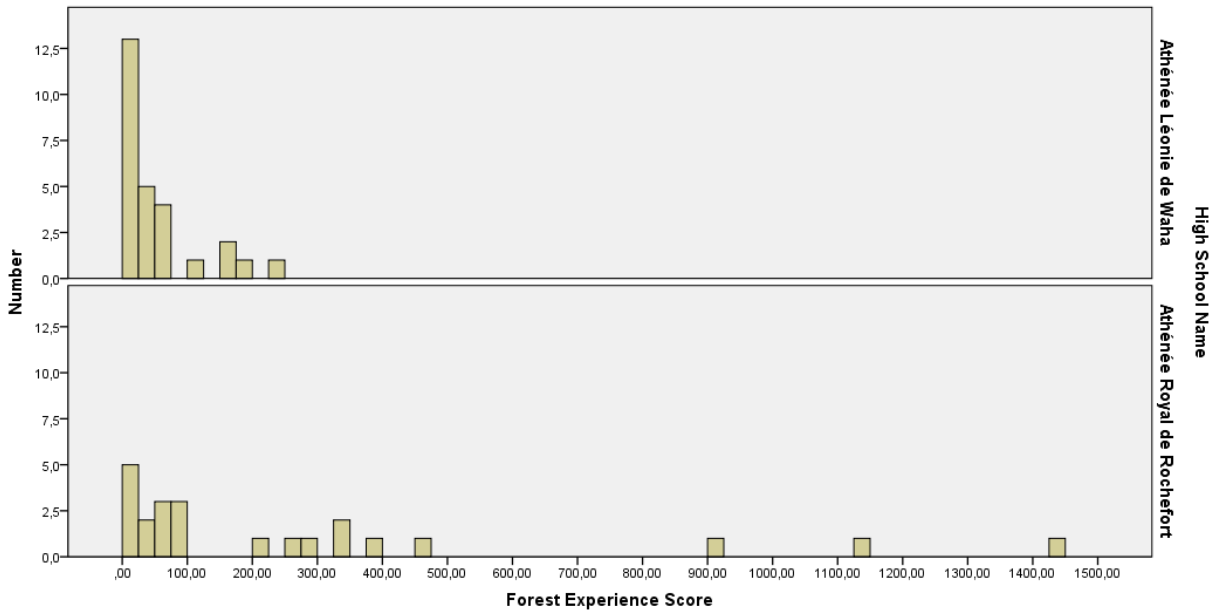


Figure 5: Distribution of the Forest Experience Score within the two high schools.

This distribution was significantly different between the two schools (Mann-Withney's U test: p = 0,005), which confirms the relevance of their choice as a means to recruit respondents with varied prior forest experience profiles.

The FES distribution did not differ significantly between boys and girls (Mann-Withney's U test: p= 0,567), neither was it correlated with the respondents' age (Kendall's tau-b = 0,130; p = 0,232) in our sample.

Relationship Between Cognitive Autonomy and Prior Experience of Forests

We evaluated the relationship between our respondents' cognitive autonomy towards forest-related media and their prior experience with forests by performing a number of analyses crossing the FES and with the different variables presented in the previous sections of this paper. Table 14 summarizes the variables used in these analyses, as well as the correlation and association tests that were used.

Variable crossed with FES	Test
Poster description score	Kendall's tau-b
Poster message understanding score	Kendall's tau-b
Author identification score	Kendall's tau-b
Author qualification score	Kendall's tau-b
Author intentions identification score	Kendall's tau-b
Non-audience identification score	Kendall's tau-b
Statement of having learned something from the posters (yes/no)	Mann-Whitney U test
Poster of choice "for a better future"	Kruskal-Wallis test for independent samples
Type of poster choice justification	Mann-Whitney U test
Agreement with statement #1, #2 and #3	Kendall's tau-b
Coherence score	Kendall's tau-b

Table 14: Variables used in correlation or association tests with the FES

Contrary to our expectations, only two of these analyses returned statistically significant results:

- The message understanding score for the FSC poster was positively correlated with the FES (Kendall's tau-b = 0.227; p = 0,049).
- The author intentions identification score was positively correlated with the FES (Kendall's tau-b = 0.299; p = 0.005).

Subjects with higher prior forest experience appeared to better understand the FSC poster's message, as well as the intentions underlying its design. No other significant correlation or difference between groups with respect to the FES was found.

Discussion and Future Work

The results of this preliminary study are twofold. On the one hand, subjects demonstrated a limited degree of cognitive autonomy when asked to understand, contextualize, compare, and make critical judgments about forest-related media messages.

Respondents understood the posters in part, and were able to identify their authors to some extent, although they seemed to have a hard time qualifying them correctly. Greenpeace seemed to be the easiest author to identify and qualify, even though in the case of the FSC poster, most of the text that appeared on the poster was dedicated to the explanation of the Council's mission.

Furthermore, respondents were more able to detect the authors' intentions than to identify the limits of their intended audiences. When it comes to comparing the posters' messages, two thirds of the respondents were unable to describe more than one relationship between them correctly.

The critical stances the respondents made towards these posters were often inconsistent. The Greenpeace poster was chosen more often than the two others as the one to be "shown for a better future" (mostly on the basis that it was shocking), even though it had the lowest agreement rate of all three posters, and was almost never cited as being the source of learning something new. Moreover, the positioning they showed towards the statements summarizing the posters' messaged was mostly incoherent.

It is likely that, compared to other types of messages, poster-type messages like those used in our questionnaire are information vectors that fail to support the public in developing coherent and complex views on forest-related issues.

On the other hand, the hypothesis that the level of prior experience with forests influences the degree of cognitive autonomy towards forest-related media was invalidated, as almost no statistically significant relationship could be found between these two sets of variables.

Following the preliminary study presented in this paper, we conducted a larger survey based on the same research protocol with a revised questionnaire. The tests involved a sample of 145 students from three high schools: two general education schools (one located in a urban area and the other in a rural one), and a third school offering a curriculum in agro-forestry, in order to further investigate the role of forest experience, in terms of formal education in addition to informal interaction with the forest milieu. The data collected for this second study are currently under analysis.

The research presented in this paper is the first step of a longer research project, with a double intended contribution. On the one hand, it aims at producing methods for assessing how citizens develop a critical stance towards strategic media messages. On the other hand, it seeks to determine the factors that may positively influence the cognitive autonomy of media users, supporting them in building a complex and organized understanding of forest-related issues presented in the media.

We intend to consider four such factors. The first two are related to the media user profile of individuals: (a) the intensity of their media practices and (b) the media education which they have benefited from. The second two are related to their knowledge and experience of forests (c) their experience of the forest (as evaluated in the present paper) and (d) their education in the field of forestry. Our goal is to provide a theoretical model of the respective effects of environmental knowledge and media education, as well as the interaction of these two factors, on the cognitive autonomy of individuals towards representations of the natural environment in the media.

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Appendices

Appendix 1: Estimated Cumulative Duration of Forest Visits

The estimation of the total yearly duration of our respondent's forest visits relies on their answers to four questions:

- For visits in Belgian forests:
    1. "Last year (these last twelve months), how many times have you been in a forest?"
    2. "What was the duration of your longest forest visit last year?"
- For visits in foreign forests:
    1. "These last five years, have you been in a forest? If yes, how many times?"
    2. "What was the duration of your longest foreign forest visit these past five years?"

We used the distribution of the longest forest visit durations in our sample to calculate an estimation of the cumulative duration of each of our respondents' visits. This estimation prevents us from assuming that all visits of a given respondent had the maximum duration they indicated.

Longest visit duration	**$N_{subjects}$**
Less than an hour	4
One hour	9
Half a day	23
One day	10
More than one day	6

Table 15: Distribution of longest Belgian forest visits in our sample

We assumed that the distribution of a given respondent's *n* forest visits follows the cumulative distribution that can be calculated based on the distribution of the longest forest visit durations in our sample (e.g. see for the longest Belgian forest visits), limited to the possible durations for that respondent. For example, if a respondent declared that he went to a forest 20 times last year, and that his longest visit was half-a-day long, we compute the duration of his visits as follows:

Visit duration	Proportion of visits	Estimated cumulative duration
Less than an hour (0,5h)	4 / (4+9+23) = 0.111	0.1111 * 20 visits * 0,5 h = 1,11 h
One hour (1h)	9 / (4+9+23) = 0.25	0.25 * 20 visits * 1 h = 5 h
Half a day (4h)	23 / (4+9+23) = 0.638	0.638 * 20 visits * 4 h = 51,11 h
Total		1,11 h + 5 h + 51,11 h = 57,22 h

This computation was applied to Belgian forest visits as well as to foreign forest visits, and yielded two estimations:

- $ECDb_i$: the estimated cumulative duration of the respondent's visits in Belgian forests in the past year;
- $ECDf_i$ *:* is the estimated cumulative duration of the respondent's visits in foreign forests in the last five years, divided by five in order to obtain a yearly average;

Appendix 2: Forest Experience Scores: Forest Activity Coefficient

Answers to the question “For what reasons did you visit a forest last year?” and “For what reasons did you visit a forest abroad these last five years?” were coded into scores, according to the degree of interaction with the forest they indicated:

Answer from the questionnaire (multiple choice in the list)	Score (STA)
To observe (the fauna, the flora, ...)	5
To harvest wood, to pick fruits, to hunt, etc.	5
To go camping	4
To play (roleplay, boy scouts / girl scouts, etc.)	4
To practice a sport (running, biking, horseback riding, trailing, etc.)	3
To follow a guided tour	2
To go for a walk	2
To pass through it on my way to another destination	1

Based on these scores, the activity coefficient (*ACi*) was computed for each respondent using the following formula:

$AC_i = 1 + ((STA_i - 1) / (\max \{STA_1, \ldots, STA_n\} - 1))$

where STA_i is the highest score for a given respondent’s different forest activities. This coefficient exists between 1 and 2.

Appendix 3: Forest Experience Scores: forest trail use coefficient

Answers to the question “Last year, whenever you were in a forest, you circulated...” were coded into scores, according to the degree of interaction with the forest they indicated:

Answer from the questionnaire (single choice in the list)	**Score (SC)**
Always on marked trails and paths	1
Very often on marked trails and paths	2
Often on marked trails and paths	3
Sometimes on marked trails and paths	4
Rarely on marked trails and paths	5
Almost never on marked trails and paths	6
Never on marked trails and paths	7

Based on these scores, the “use of marked trails and paths” coefficient (*PCi*) was computed for each respondent using the following formula:

$PC_i = 1 + ((SC_i - 1) / (\max \{SC_1, \ldots, SC_n\} - 1))$

This coefficient exists between 1 and 2.

Posters



Press Coverage and Framing of Climate Change Issues in Nigeria: A Boost or Constraint for Participation Opportunities?

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Nigeria faces a lot of environmental problems such as extensive gas flaring, deforestation, and desertification with serious consequences on climate change. How are these issues covered and framed by Nigerian newspapers? Content analysis of systematically sampled, 438 issues from 4380 issues of four purposively selected dailies between 2007 and 2009 shows dominance of climate politics/economics issues (61.2%), foreign sourcing of reports (63.4%), straight news formatting of reports (83. 6%) and framing in terms of mitigation (55.2%). We conclude that coverage and framing constrain opportunities for popular participation in climate change discourse. To improve the situation, Nigerian newspapers should broaden the scope of climate change coverage and framing, widen local sourcing of reports, diversify the formats of reporting, and frame the issues more in the mould of adaptation to boost involvement of people in climate change discourse through monitorial, supportive and collaborative strategy in agenda setting agenda.

Keywords: Media, West Africa, Climate Change, Discourse, Framing

Introduction

One of the ways through which the media inform and educate the public about issues is framing and agenda setting. Framing is important in terms of how a message is shared and how it is received. Also, frames and agenda regulate how the society shapes reality. Furthermore, agenda setting captures the way in which policy makers and power elite receive and then formulate (frame) science information, which are then presented by the media following their inbuilt structural framing devices.

The questions that agitate this study are these: to what extent are climate change issues captured by Nigerian national dailies? How is climate change framed in Nigerian newspapers? To what extent could the coverage and framing of climate change issues boost or constrain popular involvement in climate change discourse in Nigeria?

Literature Review/Theoretical Framework on Framing and Agenda Setting on Climate Change

To Milstein (2009), environmental communication theory is based on the assumption that, our communication has a powerful effect on the way we perceive our environment. To this end, in media

studies of environmental communication, framing theory is frequently used to examine media coverage of the environment. This is also true of agenda setting theory.

Hansen (2010) cites Gitlin (1980) as defining frames as, "principles of selection, emphasis, and presentation composed of little tacit theories about what exists, what happens, and what matters" (p. 190). Hanson also cites Entman (1993) as stating that framing is to "select some aspects of a perceived reality and make them more salient in a communication text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation for the item described" (p. 190).

This explanation becomes even clearer where Nisbet (2009) states that framing interprets the story and sets a specific train of thought in motion. Frames tell why an issue is a problem, the causes, and the solutions. He identifies the following frames in his typology of frames applicable to climate change: (a) Social progress, (b) Economic development and competitiveness, (c) Morality and ethics, (d) Scientific and technical uncertainty, (e) Pandora's box/runaway science, (f) Public accountability and governance, (g) Middle way/alternative path, (h) Conflict and strategy and (i) Public health frame.

Some parallels can be seen between Nisbet's typology of frames and Lassen et al.'s (2011) grouping of recent discourses on climate change. Discussing the role of citizen participation in climate change discourse, they suggest that three discourses are especially prominent. These include discourses of (a) ecological modernisation, (b) green governmentality (c) civic environmentalism. Beyond discourse, opinions, and perception are important, for discourses are grounded in knowledge, attitudes, opinions and perceptions. Lorenzoni and Hulme (2009) studied the views of lay people in England and Italy concerning climate change and found four categories of views: Denying, (b) Doubting, (c) Uninterested and (d) Engaged. Closely related to the framing theory is the agenda building or agenda setting theory. First explained by McCombs and Shaw (1972), Hansen (2010, p. 184) states that it "refers to the power of the media to influence public perception of the relative prominence and importance of different events and actors/agencies." To this end, Mare (2011) explains that in modern societies, the media are an indispensable avenue of obtaining information and are crucial in moulding awareness and concern as far as climate change issues go. This role is critical in setting the public agenda. Finally, because of the capability of the media to educate, Mare (2011, p. 8) concludes that, "the media sector is often seen as having a special responsibility in promoting development communication, disaster warning and disseminating information to the most at-risk communities in the context of climate change."

Method

This study involved content analysis of four national dailies in Nigeria: *ThisDay*, *Daily Trust, The Guardian* and *The Punch* from January 2007 to December, 2009. The study universe was 4,380 issues of the four newspapers selected for reasons of availability, regularity of publication, wide distribution/circulation and relevant content in addition to ownership and geopolitical focus. The period chosen coincided with the increased tempo of activities and discourse on climate change, both nationally and globally. The systematic sampling technique was adopted in selecting 10% of the population. The newspaper article constituted the unit of analysis and the coding sheet the instrument of data collection. The parameters for coding included frequency of climate change coverage, format of presenting climate change articles, the content categories included climate change issues in Nigerian newspapers, framing of climate change in Nigerian newspapers, and sources of climate change reports. The data obtained from newspaper content analysis are presented in tables and analysis done in percentages and interpreted based on research objectives.

Discussion of Findings/Conclusions

The study does show that the analysed newspapers reported climate change issues at about 31 percent. This would constitute a media agenda that could influence both public and policy agenda on climate change. However, the media agenda were dominated by the politics and economics of climate change. For people and especially ordinary people to participate more and get more involved in climate change discourse, the narrative, discourse, frame and coverage of climate change issues must pay significant attention to natural climate change occurrences, socio-cultural issues, as well as climate science itself. These are narratives and discourses that individuals, communities, groups, farmers, fishers, drought affected, grazers, women, youths can readily identify with because they are personally and directly affected.

Secondly, as the study shows, framing climate change mainly in terms of mitigation (this occurred at the level of 55%) shuts out a greater majority of people because the people are about helpless since they lack the funds, knowledge or other resources to mitigate. However, if climate change issues are framed more in terms of adaptation, this can readily permit more groups of people at family, community and national levels to engage in the discourse on climate change because they can take action such as tree planting or adopting new methods of farming, grazing, and fishing.

Thirdly, the study shows that the analysed newspapers sourced their reports mainly from outside the country to the tune of 63%. This is a huge constraint on participation opportunities. Sourcing reports from within Nigeria would open up opportunities for Nigerian people to relate their experiences of climate change. Internal sourcing of reports would also allow newspapers to document what people and communities are doing to cope with climate change. It would equally allow groups, non-governmental organisations, community based associations, faith-based groups, environmental protection activists, donor groups, intergovernmental agencies the opportunity to voice their frustration; successes and challenges in climate change palliative activities.

Fourthly, the study shows that the dominant format with which the selected newspapers presented climate change issues was the news report format to the tune of 84 percent. This is another major constraint to participation opportunities. People particularly, common people participate in media discourses through letters to the editor, opinion articles, columns, interviews and vox pops. Newspapers themselves involve people and give more depth to the treatment of issues when they syndicate columns, present editorials and deliver indepth analysis and features. For the commons to participate and get more involved in climate change discourse, newspapers must create copious avenues through the dedication of more newshole for letters, opinions, features, columns, interviews, vox pop, etc. Apart from monitoring the landscape and presenting climate change reports, this sort of role envisaged here is both supportive and collaborative. Only in this way can the media boost involvement and participation in climate change discourse. Climate change issues should be seen as a present problem that can be addressed with committed action by people, groups, communities and governments.

Recommendations

Based on the findings of this study, it is recommended that:

1. As Nigerian newspapes and journalists place emphasis on the politic and economic of climate change, equal if not more attention should be paid to climate change as it affect the lives, work, livelihood of Nigerians and all the activities they should engage in to adapt to climate change.

2. Rather than concentrate on mitigation measures to address climate change effect, newspapers in Nigeria should, in keeping with the economic status of Nigeria, use their information mature channels to inform, educate, and disseminate knowledge about how the different sections of the Nigerian society can adopt climate change adaptation measures.
3. In sourcing for climate change or environmental information, newspapers and journalists in Nigeria should recourse to local, national and regional sources such as community people, government officials, experts, books, reports and other publications. Foreign experts, news agencies, and publications should serve as supplementary sources.
4. To give readers and other stakeholders more say, deeper involvement and greater participation in climate change issues; Nigerian newspapers should not limit the genre of the discourse to news. They should open up avenues for editorials, columns, opinions, interviews, and supplements.

It is believed that if these suggestions are followed, Nigerian newspapers would not only cover climate change issues as frequently as they are important, they would also give the diverse issues the deep breadth of perspectives they deserve, variegated genre and sourcing as would engender the participation and involvement of greater numbers of ordinary people and communities in the discourse on climate change; but would permit the press to frame climate change as a present problem that is amenable to solutions if people and communities are well informed and motivated to act in environmentally friendly ways.

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Participatory Art Exhibitions: Public Pedagogy and Global Climate Change

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This paper analyzes the pedagogical address of a travelling art exhibition called U-n-f-o-l-d and its role in the New Generation program run by Cape Farewell. This organization was initiated by British artist David Buckland, in response to his fascination with the predictive power of mathematical climate change models and the need to communicate climate science to a broader public in an emotionally engaging way (Buckland & Lertzman, 2008). The New Generation program attempts to reform society's understanding of the cultural responsibilities and possible scope of art education in relation to climate change. Building on emerging research on art and sustainability (Kagan 2011; Gleiniger, et al., 2011) and visual climate change communication (Doyle 2011), this paper theorizes the "pedagogical pivot point" (Ellsworth, 2005) of the U-n-f-o-l-d exhibition. It shows how the potentiality of this place of learning about a sustainable response to climate change lies in its open ended framing of sustainability, which must be both found within the exhibition narrative and created by visitors and art students in response to critical gallery education programming.

Keywords: Climate Change Communication. Art Exhibitions. Sustainability. Tipping Points. Pedagogical Pivot Points

Introduction

This paper analyzes the pedagogical address of a travelling art exhibition called *U-n-f-o-l-d*, which was co-curated by artists David Buckland and Chris Wainwright and organized by a transnational nonprofit called Cape Farewell. Cape Farewell was initiated by British artist David Buckland, in response to his fascination with the predictive power of mathematical climate change models and the need to communicate climate science to a broader public in an emotionally engaging way (Buckland & Lertzman, 2008). The foundation of the organization is annual expeditions that bring artists, scientists, educators and other creative communicators together to research the impacts of climate change in the Arctic (2003-2005; 2007-08; 2010), the Andes (2009) and the Scotish Islands and Faroes (2011) (Cape Farewell Website). "Over 140 arts-based practitioners have taken part in these voyages, openly engaging with more than 45 scientists, creating artworks, exhibitions, books and films that have toured worldwide" (Buckland, 2012, 1). For instance, *U-n-f-o-l-d* brings together twenty-five artists, musicians and other creative practitioners who participated in Cape Farewell art/science expeditions to the High Arctic (2007 and 2008) and the Andes (2009) (Bieler, 2012). Since opening in Vienna in 2010, the show has travelled to seven locations, most recently at Liverpool John Moores University, Liverpool, in Spring 2012.

I analyze the *U-n-f-o-l-d* exhibition in the context of Cape Farewell's practice of art and science collaboration and their project of introducing this practice to art students through various educational programs. This exhibition is part of a broader effort to reform society's understanding of the role of art and art education in responding to climate change, which is sometimes referred to as *New Generation* and also includes collaborating with UK art schools on the *Short Course* UK program of art & ecology courses. Within this purview, I focus on the role of gallery education programming in adapting this touring exhibition

to site-specific contexts. By drawing on Elizabeth Ellsworth's theory of the "pedagogical pivot point" of art exhibitions as the times and spaces that deepen participation across boundaries of interiority and exteriority (2005), I show how the pivot point of *U-n-f-o-l-d* lies between the sublime, tipping point landscapes of the High Arctic and the Andes and the interior motions of the learning self, as it searches for an affective and ethical response to this sublime aesthetics and attempts to locate this response in relation to place-based meanings of sustainability. This pivot point opens up a participatory engagement with the qualitative connotations of sustainability across a range of scales and spatial contexts.

U-n-f-o-l-d responds to the challenge of sustainable exhibition design and curatorial practice by not only honestly mapping its own carbon footprint but, pedagogically, by inviting the imagining of the journey towards sustainability (Bieler, 2012). The potential of this place of learning about sustainability is paradoxical, in the sense that it imagines an ethics of sustainability as something that must be found within the narrative of the exhibition, but also as something that must be created by local artists, students and audiences in response to place-based meanings of sustainability. At this crossroads, "Sustainability" flickers: from energy conservation and a deeply reflexive green consumerism to gleaning the abject waste of urban modernity.

Context and Exhibition Design

The title of the exhibition, *U-n-f-o-l-d*, reflects the expeditionary practice at the core of the international Cape Farewell Project, and the idea that lines of travel – the dash connecting the letters of unfold – are productive of novel ways of knowing climate change. The anthropologist Tim Ingold has argued that "a way of knowing is itself a path of movement through the world: the wayfarer literally 'knows as he goes,' along a line of travel" (2007, p. 89). The curation of *U-n-f-o-l-d* similarly follows lines of travel, from expedition to exhibition: artists are given an open-ended invitation to participate in a journey, without any obligation to produce new work, and their unfolding creations become the basis for subsequent exhibitions (Buckland & Wainwright, 2010; Bieler, 2012). This curatorial process begins with the curation of expeditions (Buckland, pers. comm. Sept. 2011), and the three expeditions informing the *U-n-f-o-l-d* show brought together distinct groups of artists, musicians, comedians and other communicators to dialogue with climate scientists in diverse High Arctic and South American locales.

The curation of the highly diverse group of artists from the 2007, 2008 and 2009 trips was negotiated in relation to a dichotomy between raising awareness and artistic autonomy, wherein the question of how to balance between artistic autonomy and communicating the urgency of the climate crisis became a central curatorial preoccupation (Buckland & Wainwright 2010). Mrill Ingram argues, "Many climate-change scientists will recognize a parallel sense of conflict between science and activism" (Ingram, 2011, p. 134). This tension between the perceived autonomy of science and art and the desire to raise awareness of CC is the complex ground for CF's boundary work, which manifests in a curatorial concern for maintaining the integrity and independence of both creative processes (art + science) while raising awareness, and a mirroring of the multidisciplinarity of climate science with a diverse array of artistic voices (Bieler, 2012). *U-n-f-o-l-d* includes everything from singer-songwriter compositions to landscape photography, performance and conceptual art.

U-n-f-o-l-d employs a modular, flat pack exhibition design that is made possible by the large percentage of two-dimensional artworks in the show. Buckland and Wainwright explain, "when planning the Unfold exhibition we wanted it to have a 'flat pack' feel to both facilitate its compactness and touring profile in a manner that would minimise the carbon footprint of a world touring exhibition" (2010, p. 7). The design is also an ethical response to the question of artworld unsustainability and the question of how to implement sustainable practices within the institutional context of the museum or gallery (See Kagan, 2011; Smith,

2007). Stephanie Smith says, “if we are going to show art that addresses CC or other topics related to sustainability, we should consider ourselves ethically bound to thoughtfully assess how we make use of resources” (2007, p. 14). The “flat pack” design responds to this challenge by exemplifying artworld sustainability as the mapping of carbon footprints and the efficient conservation of resources.

The Pedagogical Address of *U-n-f-o-l-d*

The pedagogical address of *U-n-f-o-l-d* invites the learning self to vicariously travel to far away places in the High Arctic and the Andes, where the multiplicity of carbon, as a boundary object between art and scientific field research, is “staged” against the background of these sublime landscapes. It probes what is called “Giddens’ paradox”: people will not seriously address climate change until its dangers become evident at the level of everyday life, by which point the consequences will render intervention futile (Bieler, 2012; see Giddens, 2009; Urry, 2011, pp. 14-15). In its interrogation of this paradox, *U-n-f-o-l-d* gambles that there is still a role for the sublime – from conceptual deconstructions of the sublime to the “digital sublime” of carbon footprint mapping – in communicating the need for behavior change in the present to avoid future climate catastrophe. Like the visual climate campaigns of Greenpeace (see Doyle, 2011), this curatorial pedagogy frames climate change as a future catastrophe that is already present but, crucially, as a catastrophe that we can still avert for the benefit of future generations. So, what distinguishes this show is not so much its overall framing of the climate crisis but, rather, the way in which it creates a pedagogical pivot point between the embodied and creative motion of learning subjects and a multifaceted interrogation of the shifting terrain of the sublime in the age of the anthropocene.

In a meditation on the inversion of the sublime in the era of the anthropocene and its affective and ethical consequences, Bruno Latour asks, “How to feel the sublime when guilt is gnawing at your guts?” (2011, p. 3) In a fascinating response to this question, *U-n-f-o-l-d* invites us into an ambient realm between affect – guilt, melancholy, hope - and the negation of the romantic sublime and then draws us into a contemplation of the intensification of the “digital sublime” of carbon footprint mapping in order to spark an ethics of sustainability. For instance, in Michèle Noach’s *Through The Ice, Darkly* (2010), the cracks of geological time are seen from the viewpoint of a tourist who witnesses the sublime scale of Norwegian glaciers circa 1890-1930, then, as the viewer shifts position in front of the 3D lenticular print, travels to see their presently decreased mass (Bieler, 2012). This negation of the Romantic sublime in front of the gaze of the modern tourist is brought into dialogue with conceptual works that probe the limits of the sublime, such as Nick Edwards’ *Expedition to the Source of the Dollis Brook in search of the consequences of the ideas of the Sublime and the Beautiful* (2009), as well as wide ranging photographic interrogations of sublime vistas, like David Buckland’s *Discounting the Future* (2008, text by Amy Balkin).

In harmony with these interrogations of the sublime, Robyn Hitchcock and KT Tunstall sing an adaption of George Harrison’s *Here Comes the Sun*, called *There Goes the Ice* (2010): “There goes the world, Turning, All round itself, Burning ice, Alive… alive.” These lyrics are an apt soundtrack for the global sweep of the show: from oil exploration along the Madre de Dios River in the Peruvian Amazon, as Adriane Colburn explores in *Forest for the Trees* (2010), to Disko Bay, where Sunand Prasad’s *Greenhouse Gas* (2008) illustrates the space occupied by the average monthly per-person emission of carbon dioxide in the UK (Bieler, 2012). These creative probes of the global sublime of “burning ice” raise the question, what constitutes an ethical relation to the sublime landscape when the viewer is confronted with the terror of anthropogenic forcing rather than the natural terror of the romantic landscape? While a variety of works in the show deconstruct environmental ethics, the most fascinating of these works is Sam Collins’ *Sometimes the Journey is Better than the Destination* (2010). The crates used to transport the works in *U-n-f-o-l-d* among university galleries in Europe, North America and China are installed alongside computer monitors with GPS tracking of the exhibition’s global journey (Bieler, 2012). While the ‘digital earth’ of a

disinterested perspective from the outside is commonly deployed in the political aesthetics of climate change (Yusoff, 2009, 2010), this work situates the global movement of the exhibition itself within this networked imaginary of the whole earth. The "remark" of this installation points to the excess of the show by asking us to consider the mathematical sublime of a "digital earth," of GPS tagged and carbon footprint mapped commodities, and the ethical response of a low carbon exhibition design. "The *re-mark* is that which differentiates foreground from background, scent from smell, sound from noise and place from space in ambient poetics" (Morton, 2007, pp. 47-54). In this re-mark, the show is differentiated from the global circulation of commodities by modestly proposing an ethics of sustainability and a practice of low carbon, sustainable exhibition design.

Critical Gallery Education Programming

U-n-f-o-l-d was designed to adapt to local art and art student contributions. The curators explain, "we anticipated that, in addition to the core works in the exhibition, the various venues would select, or represent, local artists' contributions, and that they would undertake a responsibility for the public engagement with the work by organizing workshops or related events" (Buckland & Wainwright 2010, p. 7). I see this site-specific dimension of *U-n-f-o-l-d* as central to its "pedagogical pivot point" because it brings the notion of sustainable exhibition design and the pedagogical address of the show into dialogue with local artists, audiences and discourses of sustainability. The performance of this show in university galleries creates a fascinating dialogue between its global ambitions and site-specific, art student explorations of sustainability. Let us take the Newlyn and New York City shows as an example.

At its showing at Newlyn Art Gallery, Cornwall (2010), education programming was coordinated with the nascent planning of Short Course Cornwall. This collaboration between Cape Farewell and University College Falmouth began with a series of mini expeditions around the themes of the journey, climate change communication and archipelagos and eventually led to an exhibition called *Heva! Heva!* Exhibited at the Eden Project, in 2011, this show probed ecological concerns in the Cornwall Region, from sustainable agriculture and plastic seas to natural pigments, in a wide range of media.

At its stop at Parsons The New School, in Fall 2011, the programming of *U-n-f-o-l-d* included a wide variety of art and science networking events and visual climate workshop called *Down the Gowanus: Climate in Concrete*. This project was led by an art collective called the Canary Project and included a canoe expedition down the Gowanus Canal in Brooklyn, a notorious brownfield site, and an exhibition of student artworks in response to the trip, called *Fieldnotes from the Gowanus.* This show was an invitation to pause and glean the depths of the Gowanus, to look for sustainability beneath the toxic reflection of oil sheens.

The production of student art exhibitions in dialogue with Buckland and Wainwright's curatorial pedagogy of art and sustainability is a central dimension of its pedagogical pivot point.

Conclusion

The long-term conversation between art student exhibitions and the pedagogical address of *U-n-f-o-l-d* involves a fascinating dialogue on the role of the artist in reimagining the journey to sustainability on local and global scales. As a place of learning about sustainability, the potential of this show lies in the paradox between what is found and what is created: have we found an ethics of sustainability in response to the planetary sublime, or, do we have to create our own vision of sustainability in relation to site-specific contexts? This paradoxical potentiality is central to Elizabeth Ellsworth's theory of the "pedagogical pivot point" of art and design projects and is what D.W. Winnicott calls transitional or potential space.

"Transitional spaces, phenomena, and objects are potential because nothing makes them inherently or inevitably transitional. Their users must both find transitional space (thanks to, say, an artist's design or performance) and create it" (Ellsworth, 2005, 60). The transitional space of *U-n-f-o-l-d* is about deepening participation across the difficult boundary between exterior landscapes of 'burning ice' and the interior motions of the learning self as it searches for an ethical response to these deteriorating, iconic landscapes that also do justice to inter-related, site-specific concerns of social and ecological sustainability. The potentiality of this "transitional space" is its role as a catalyst for the creation of art and ecology projects and longer duration conversations about the role of the artist and art school in a just and sustainable response to global climate change.

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The Green Economy: Discourse and Problem Map

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This poster will map competing discourses of the green economy. The poster will be based on the paper: "Re-Imaging the Commons as 'The Green Economy'". It will illustrate different ideas on what a green economy would entail and situate these proposals in relation to different economic approaches to the environment. As a resource to navigate the confusing terrain of conflicting discourses, the poster will help environmental communicators clarify assumptions, theories and interests associated with the various discourses. It will also highlight problems with the UN's version of the green economy. In stark opposition to green economics as proposed by green economists (with its focus on participation and democratic processes), the UN's green economy will close deliberations on the commons by privatizing 'ecosystem services' – thereby taking environmental decision-making out of a political sphere and into the marketplace.

Key words: Green economy, commons, ecological economics, discourses, illustration

Discourse and Problem Map of 'The Green Economy'

While the rhetoric accompanying the launch of the United Nations Environment Programme's (UNEP) green economy at the Rio+20 in June 2012 suggests that the UN is serious about addressing the environmental problems, a wide variety of social movements are less convinced by the proposed policy mechanisms. Civil society responded at Rio+20 with a plethora of critical responses. In naming its programme the 'green economy' the UNEP implies a reframing of the entire economy along green lines. The language even suggests a connection to a particular school of economic thought concerned with the environment, that of green economics. The programme itself, however, is largely concerned with attempting to protect the environment by establishing policies that will quantify and trade ecosystem services. This will be done in ways that reflect specific policy prescriptions of different schools of economic thinking on the environment, namely environmental economics and ecological economics. Since green economics is a field with radically different policy prescriptions to what is proposed, the naming of the new project creates severe confusion with contested definitions of the "green economy." In this poster, the UNEP's green economy programme will be referred to as the 'UN's GEP' to avoid confusion with what green economists have been describing as 'green economics' for over a decade.

Method

This poster will make complex arguments accessible through structuring information to highlight relevant details and display the contours of various discourses on the green economy. Conceptual maps, also known as visual cognitive maps or knowledge maps are a means of making multi-dimensional information and complex arguments accessible through the use of visual language (Horn 1998). Visual theorist and practitioner Robert Horn describes how knowledge maps can illustrate "logical structure and visual

structure of the emerging arguments, empirical data, scenarios, trends and policy options… and help keep the big picture from being obscured by the details" (2001, p.5). These illustrations are ideal for sharing mental models and discourses. By displaying the structure of complex issues, conceptual maps facilitate communication. This poster will take the form of a "discourse and problem map" to reveal issues associated with the green economy.

Objectives

The poster will be based on the paper: "Re-Imaging the Commons as 'The Green Economy.'" This poster will illustrate contested ideas on what a green economy would entail and situate these new proposals in relation to different economic approaches to the environment. It will compare ideas on what the green economy means and how the UN's GEP blurs these distinctions. In an attempt to clarify competing discourses, the poster will illustrate specific philosophical, methodological and political problems in regards to the UN's GEP. It will include risks associated with the new programme. The posters will also suggest strategies for communicating the contested nature of the proposals and exposing obfuscations.

In stark opposition to what green economists have traditionally conceived of as the green economy (with its emphasis on democratic decision-making on environmental issues) the UN's GEP will close deliberations on the commons through valuing nature according to economic logic and then using market-based mechanisms to address environmental problems. These new processes will exclude all but the most wealthy among us from decision-making regarding the management of nature. While scientists and environmentalists involved with this project aim to find a means of enabling political and economics policies to acknowledge the value of the environment, submitting nature to the logic of the market is an extraordinarily dangerous enterprise. Instead, green economic theory argues that the economic system must submit to the logic of the ecological systems that provides the geophysical context for economic systems to exist in the first place.

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Nature Incorporated: the Commons in a Spreadsheet

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In the conference theme the organizers express their frustration over the way in which the stakeholder engagement model of participation has reproduced "the instrumental ways of the past decades." Confirming their frustration, this paper demonstrates, through empirically based analysis of the language of "sustainable" business, how current models of CSR are leading corporations to develop a language for managing the commons as a resource, within their own spreadsheet-based systems of operation.

Keywords: The commons, nature, CSR, communication, language

Introduction

In the conference theme the organizers of COCE 2013 express their frustration over the way in which the stakeholder engagement model of participation has reproduced "the instrumental ways of the past decades." Confirming their frustration, this paper illustrates the way in which business corporations, as opposed to humankind, 'conceptualize' the natural landscape. There is clearly an epistemological difficulty in the notion of the business corporation – an inanimate object, 'conceptualizing' nature. However, the way in which nature is represented by a self-styled green corporation has enormous consequences for the commons. This paper presents a few examples of the way in which green business uses language as it represents itself and its relationship with the commons.

Patterns of Wording

The linguistic evidence employs a mechanistic analysis and comparison of the language used by two distinct language communities: (i) green business in the UK and (ii) British-based radical NGOs which are critical of business's impact on the commons. The language used by these two communities was downloaded from their websites into two language databases. Using a reference database of standard British English known as the British National Corpus (BNC) and a PC-based analysis programme called Wordsmith Tools (Scott, 2008), I prepared reports which compared the physical positioning of individual words within the linguistic discourse of their respective community. These reports revealed different, but consistent patterns of wording between the two language communities. In Figure One there is a comparison of the way in which the word RISK is used by the two groups in which I have highlighted representations of (i) the effects of a risk occurring (in grey) (ii) the source of the risk (in red) and (iii) the process of managing risk (in yellow).

	Environmental NGOs – random twenty-line contextualized concordance report for RISK	
1	the need for tighter controls of such chemicals to ensure that we minimise our risk of exposure. However, the statistical analysis does identify the following	
2	5 times greater than for non-smokers. "Radon poses an easily reducible health risk to populations all over the world, but has not up to now received widesprea	
3	ed rape crops alone next spring in the name of science. These farm-scale trials risk irreversible genetic pollution of the environment and the contamination of	
4	erroneous assumption that pro-poor development automatically reduces disaster risk, so the development community already owns the problem. Competition • Tea	
5	ry, all companies except British Energy are ranked with respect to their carbon risk profile and performance. Rankings were based on: ??CO2 emissions per unit	Not counted
6	birds in relatively small groups – never more than 200 – this helps reduce the risk of feather pecking. "And if we do see feather peaking we'll hang up some ca	
7	tner. By coming together they have combined their expertise and mitigated the risk of being over exposed. Figure 4: ACF Partnership/Structure SEnU NRU ACU*	
8	ost and least stable atmospheric conditions is:- The number of individuals at risk of exposure relates to the distance from the incidence and population densi	
9	ryngeal or lung cancer was found, nor was there evidence of increasing cancer risk with closer proximity to the incinerators. More recently, Elliott et al.13	
10	up most of these pollution episodes - disguising the health threat to those at risk from this kind of pollution. It is only when levels get really bad, as they	
11	at risk? The health of up to one in five people in the UK is particularly at risk from air pollution. These include young children, pregnant women, the elde	
12	associated with emissions to expensive option overall (Table 14). air and the risk of damage to human health", omitting water and amenity impacts "because of	
13	ries, and is incre a s i n g . Men born with this defect are also at a higher risk for testicular and bre a s t cancer (Paulozzi, 1999). • Testicular cancer	
14	llow leachate to threaten groundwater and surface water; where gas may pose a risk to nearby buildings; where habitats may be destroyed; or where pests and t	
15	ntracts which make it difficult to increase their recycling rates, they run the risk of not meeting their statutory recycling targets. This could occur them a p	
16	that they have refused loans or used their financial influence to minimise the risk of serious environmental, social or ethical impacts from a potential or exi	
17	e value of IFI finance is much greater, as their involvement reduces political risk and encourages the flow of further private finance. In spite of overwhelm	
18	vironment and put the livelihoods of 1500 local fishermen and their families at risk. (Sawit Watch email posting 26/Jan/2000) The human cost The impact of	Port[2]
19	s not 'what comes out at the other end' but what goes on inside the gut. So the risk of a health problem arising from the transfer of GM genes, such as antibiot	
20	ter efficiency targets and be designed to avoid or cope with the rising flood risk from climate change. Further reading www.environmentagency. gov.uk/ sav	

	Green business – random twenty-line contextualized concordance report for RISK	
1	cupiers, Land Securities continues to be heavily engaged in the conducting of risk assessments and audits across our investment and development portfolios as	
2	be involved in customer business to receive induction training. Staff in high-risk areas receive additional training, as well as annual reminders, to help th	
3	05/06. For example, at operating company level, we will use the results of this risk analysis to identify higher risk suppliers with which to conduct a more det	
4	tone of our risk management approach has been the update of the environmental risk review conducted by consultants, SustainAbility. This document helps to s	
5	xample thousands of our employees cannot start work without first conducting a risk assessment of the work area and receiving a safety document. Our safe syst	
6	s to protect the health and safety of our employees in a number of areas that risk assessment had identified as key. The progress made is reflected in our i	
7	risis management and business continuity. Increased management involvement in risk identification and control will be a key theme in 2004. • Scottish Courag	
8	dous substances introduced for use should be those that represent the lowest risk possible. MATERIALS CONTINUED Performance Indicator 2001 Performance (glo	
9	g and Supply have launched several tools to provide assistance with assessing risk and designing controls. These tools include guidelines, technical informat	
10	mers who want to continue smoking while also potentially reducing their health risk. There was no evidence that PREPs were more appealing to consumers wanting	
11	advisers who carry out independent checks on our management of environmental risk and our corporate governance of environmental issues. We have also estab	
12	for pursuing natural attenuation UK Division Maintain the Contaminated Land Risk Matrix and conduct further survey work at a minimum of two higher risk sit	
13	blic support the necessary funding for scientific research will be limited. The risk that without adequate funding there will be a migration of talent to places	
14	t for removal to the top of the footings there is less safety and environmental risk. The fishing obstruction remains, but that is the same for both the option	
15	as sector and other business unit risk management and compliance boards. The Risk Oversight and Compliance Council and boards assist in the identification a	Not counted
16	oduct if there is insufficient data or if we consider the risk to be high. Our risk assessments take into account both the inherent properties of chemicals (ha	
17	ypt – developed an innovative road safety campaign, with two aims: minimise the risk that IGH companies experience RTAs and reduce the number of RTAs in the Idk	
18	ncrease plant recoveries by approximately 3%. Ferrous Metals An environmental risk was identified at the phenol dam at the Highveld Steelworks in 1998. Both	
19	all high risk grid and primary transformer substation sites identified in our risk assessment. Chart 9.1 shows the oil loss figure from underground cables w	
20	e Environmental Performance 2000" study, managed by the Safety & Environmental Risk Management Rating Agency (SERM). Each company taking part was provided w	Not counted

Figure 1: A comparison between environmental NGOs and green business of their usage of the word RISK

With reference to figure one, the NGOs have nineteen out of nineteen effects, highlighted in grey shading, and they are detailed: "feather pecking, testicular and breast cancer, the lives of 1500 local fishermen" and "rising flood risk." By contrast, the green business effects are few – six of eighteen – and they are general; "environmental risk, health risk" and "a migration of talent." Second, in nineteen of nineteen lines the NGOs identify a clear agent, highlighted with red shading, which is the source of the risk; "such chemicals, radon, farm-scale trials" and "the transfer of GM genes," whereas the lines in the green business report are almost without agents. The agent is mostly unclear, the consequences are similarly uncertain, and the connection between them is unproven. But the texts of green business contain representations of a comprehensive corporate apparatus for ensuring that, whatever the risk may be, it is under control. Seventeen of eighteen concordance lines include some representation of a management process, highlighted in yellow. The examples include "assessments and audits, analysis, assessing risk and designing controls" and "minimize the risk." In the report for the NGOs there are just nine of a possible nineteen references to managing the risk. Moreover, the reduction of risk at which the NGOs aim will, in two cases, be achieved by "tighter controls" (line one) or "refusing loans" (line sixteen), i.e. by removing the source of the risk. Full details of method and results can be found in earlier published work (Brown, 2008). These different patterns of wording point to differences in the way that green business "conceptualizes" the commons and its relationship to it.

A Socially Constructed Commons

An important finding is that green business is developing a language which will enable it to manage the natural landscapes in which it has its operations. If one examines their respective listings of the top 500 one-word keywords, the NGOs have a respectable selection of words which make what I have dubbed "fleshy" or "fibrous" representations of some aspect of the commons, whereas green business, in marked contrast, has virtually none.

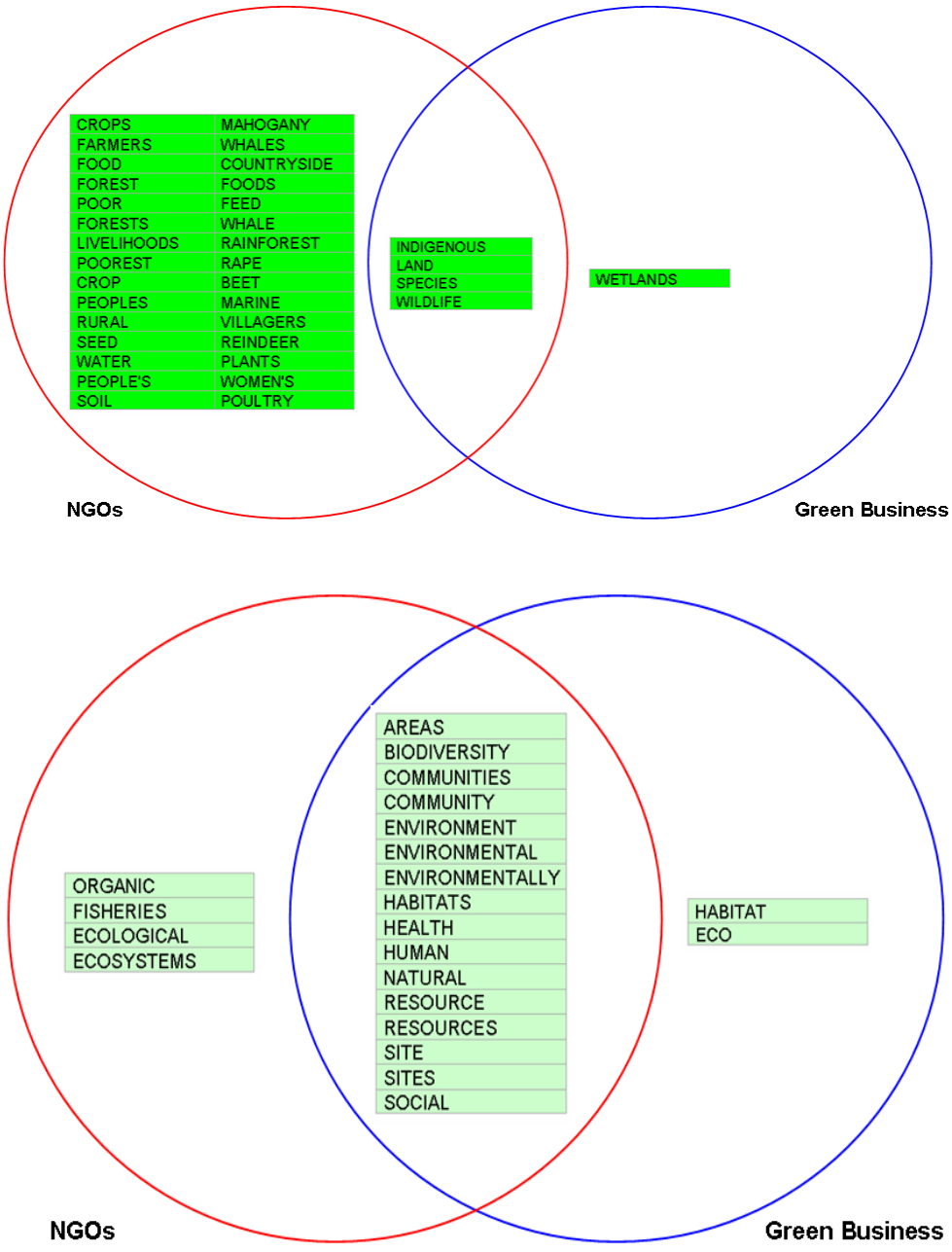


Figure 2: A comparison between environmental NGOs and green business of their usage of (top) 'fleshy and fibrous' and (bottom) socially constructed words to make representations of the commons

The language that green business does use is a vocabulary of a socially constructed commons. This linguistic evidence suggests that green business is building knowledge of a socially constructed natural landscape, making representations of the commons in terms which suit its instrumental agenda. It is interesting to note that the environmental NGOs also use these representations of the natural landscape, perhaps in order to have a meaningful dialogue with business. The great virtue of this type of socially constructed language is that it is quantifiable. The units of meaning can be defined by green business in ways that allow for measurement, comparison and, ultimately, management.

Incorporating Nature: The Commons in a Spreadsheet

In *The End of Nature* (1989), Bill McKibben observes the man-made increase in the concentration of carbon dioxide in the atmosphere. Extrapolating from this, he argues that the increasing scale of our cultural processes of production, distribution and consumption will commit mankind to managing the commons (McKibben, 1989, p. 172). The management processes will be instigated in an attempt to mitigate the worst consequences of the damage that we inflict. The linguistic evidence suggests that this is exactly what green corporations are doing, as they make their response to environmentalist criticism. The term I use to describe this process, *incorporating nature,* is intended to convey the same sense of a commons that is brought under managerial control as McKibben's hypothesis, made over 20 years ago.

In addition to acquiring knowledge about the socially constructed landscape, green business is also working to understand the relationships which exist, between its own productive landscapes and the commons. In figure three I have inserted what is intended to be pictures of (i) a common (on the left) and (ii) a green corporation's productive landscape (on the right). They are intended to symbolise object-reality 'out there'. Over the two pictures I have pasted words with a light green background over the commons, and a pink background over the productive landscape. These are statistically significant examples of the socially constructed language of representation which I found in the texts of green business.

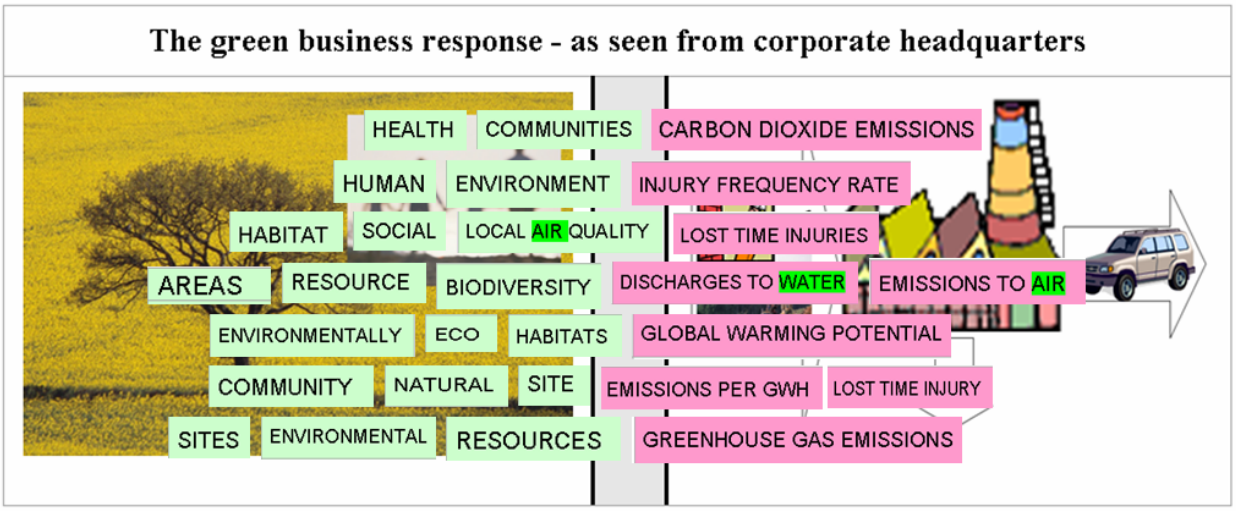


Figure 3: Socially constructed representations of the commons and socially constructed representations of the agents of damage

These terms can be quantified by green business. This sort of language provides the corporation with the means to construct models which form a bridge between the two landscapes. It measures and therefore quantifies, for example, "emissions to air" (see Figure 3) and can calibrate this against the amount of

electricity it generates, so that its pollutant impact per unit of production is understood: “emissions per GWH.” It has also defined a boundary around the commons in which it operates, called it a “habitat” and measures its health using a set of quantifiable criteria. In this way it can establish cause-and-effect relationships which enable it to manage the commons. The term *manage* is used here in a limited sense. The knowledge which green business is acquiring is mostly concerned with damage limitation.

Managing Nature: Business as Usual

As an economist colleague at my business school remarked, we should not be surprised to discover that the sincere response of green business is to *manage* the commons; the corporation really cannot do anything else. A good deal of confusion about the nature of a business corporation is caused by erroneous representations of them in texts. When making representations of businesses, their interests and their activities, there is a common tendency towards anthropomorphism. This is no doubt promoted by the media specialists whose salaries are financed by corporations. I imagine that there are plenty of studies which demonstrate that presenting ExxonMobil in human terms makes consumers more predisposed to purchase its petrol. The pronouns *we* and *our* appear with great frequency in the texts of green business which I have studied, implicitly suggesting that, for example, the mining and minerals giant Rio Tinto is really just a group of people who have got together for some public-spirited, civic purpose.

However, as Joel Bakan has pointed out in *The Corporation* (2004), this juridical “person” has no capacity for moral judgement when conducting its transactions. It cannot think as a human being thinks. Rather than a person, the metaphor which provides a more accurate representation of Rio Tinto and every other business corporation, green or otherwise, is that of the Excel spreadsheet. Behind the glossy images and the mostly sincere officers of the green corporation, there is a model of the business which operates in the language of numbers. The business corporation has taken advantage of free trade and free movement of capital in order to spread its operations geographically across the planet. In addition to its displacements in space, today’s corporation is also obliged to allocate its resources and reap its returns on a time scale of several years. The senior officers manage an organization which is dispersed over space and time to the best of their ability. However, they cannot experience at first hand the plethora of operations for whose management they are responsible. They are reliant on reports coming in to corporate headquarters that contain information of which they can make sense. These reports cannot contain a language of aesthetic experience from the local plant manager. Representing the quality of the output from the refining process in words such as *tolerable, most satisfactory* or *sublime* is not helpful to senior management at corporate headquarters. The essential operational information, whether output from the distillation column or pollutant effect on the commons, must be communicated in numbers.

Our current version of Corporate Social Responsibility is a consciousness-raising exercise. It provides the senior officers of a green corporation with useful knowledge about the negative consequences of its operations. It gives them a sound basis on which to take *moral* decisions, which only human beings can take, that can countermand the spreadsheet logic of the corporation’s models. They have the ability to intervene and some limited room for manoeuvre. However, the single-minded pursuit of accruing financial capital which remains the only objective of the corporation is unchanged. The spreadsheet-driven machine continues to push ahead regardless. In the current practice of CSR the commons continues to be ignored in the all-important profit and loss account.

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Paradise and poverty: How Cultural Identity Supports Environmental Journalism in Jamaica and Nepal

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Jamaica and Nepal both suffer from environmental crises that are complicated by the push to compete in a globalized economy. A need exists for the local media in low-income countries to raise awareness of environmental problems. This study poses the questions: What contextual factors, forces and actors constrain journalists in poor tourist economies like Jamaica and Nepal in their quest to report on health, science and environmental issues? And how does cultural identity support the process? As findings show, advocacy journalism, gender inequality and other factors play a major role in news coverage in nations such as these in the south.

Key Words: journalism, environment, Jamaica, Nepal, developing countries

Introduction

The developing countries of Jamaica and Nepal are both known as top vacation destinations due to their spectacular natural beauty and exotic cultures. Although very different from each other, they are equally small and impoverished. This makes them especially dependent on tourism dollars to bolster their economies. Unfortunately, both also suffer from environmental degradation, a trend that threatens to ruin their appeal. More importantly, these countries can be considered "at risk" from an environmental and health standpoint (Muturi, 2008; Muturi & Mwangi, 2009). The local media help to raise awareness of health, science and environmental issues (Kopkind, 1980; Hansen, 1993, 2010; Acharya & Noronha, 2010), yet the job is complicated by the push to compete in today's globalized, profit-motivated economy. As noted in the research of Shoemaker and Reese (1991), as well as others, multiple forces can play a role in effecting coverage.

Trends may best be understood within a "contextual" framework (Mody, 1988; Burch, 2001; Wilkens, 2003). Contextualism facilitates examination of the local historical, political, cultural, economic, and technological conditions of a country in order to better comprehend how media institutions and their players function. For instance, local government and political parties have historically controlled the mass media in the Caribbean, yet foreign companies also play a major role (Lent, 1991). It is through explicating a national and international context that scholars may better deconstruct how and why news content is created.

This study poses the questions: What contextual factors, forces, and actors constrain Jamaican and Nepali journalists' ability to report on health, science, and environmental issues (H/S/E) in lower income nations such as these? What are there similarities between countries that depend on tourism in their struggles to cover these issues? And, how does cultural identity foster that coverage? Studying Caribbean and Asian journalism merits analysis, especially since it continues the groundbreaking work of other major scholars in the field (Brown, 1979, 1987, 1990b; Brown & Sanatan, 1987; Burch, 1995, 2009; Arya, 1999;

Maxwell, 2000; Poudel, 2001; Tanka, 2001; Adhikari & Sapkota, 2002; Boulay, Storey & Sood, 2002; Satya, 2003; Thapa, 2005; Media Foundation Nepal, 2012). Further, this research offers a unique contribution to the field of communications because the literature lacks comparative case studies on H/S/E reporting in these regions.

Contextual Factors, Forces and Actors

Scholars note that many elements constrain news production (White, 1950; Breed, 1955; Tuchman, 1978; Gans 1980; Sigal, 1986; Shoemaker & Reese, 1991). For instance, much has been written about Caribbean and South Asian mass media as they relate to the theories of globalization and cultural imperialism (Lent, 1977, 1981, 1990a, b; Hazzard & Cambridge, 1990; Cuthbert & Pidgeon, 1981; Mody, 1986; Brown & Sanatan, 1987; Surlin, 1990; Brown 1995; Dunn, 1991, 1994, 1995a; Surlin & Soderlund, 1995; Burch, 2002, 2009; Frohlick, 2004; Shooting the Messengers, 2005). These constructs can help inform an understanding of the state of health, science, and environmental reporting. Critical theorists define globalization as a trend toward increasing economic interconnectivity between nations, which has led to Western domination in the media marketplace. This domination has been described as a form of imperialism in which "media inequalities reflect broader issues of dependency of developing nations" (Thussu, 2006, p. 63) upon the west (Thussu, 2006; Schiller, 1976; Boyd-Barrett, 1977).

While current literature reflects important trends that counter arguments over the simplicity of theories on cultural imperialism, such as cultural proximity and glocalization (Straubhaar, 1991), scholars remain concerned about the effects of globalization on local news content. Due to the Googleizing of culture, media outlets in many developing countries have been forced to compete with a Western media agenda (Dunn 1995b; Brown, 1990a, 1995, 2001).

Development of communications technology in Jamaica is a factor of either loans or partnerships with outside interests representing former colonial powers (Lent, 1975). These dictate terms and conditions that push economic structural adjustment, such as privatization of the media (McCormick, 1997). The role of mass media in Jamaica has historically been influenced by political ideology and socio-political dynamics within the media environment (Brown, 1998). These kinds of factors have begun to constrain newsmakers in Nepal as well (Verma, 1988; Burch, 1995; Weaver, 1998; Ramaprasad & Kelly, 2003). As Dunn (2004) notes, lack of regulation to protect the public interest is of tantamount concern.

Historical context may also help explain the role culture is seen to play in news coverage of H/S/E issues in the regions. Beginning in 1494, Spanish colonizers conquered the island of Jamaica quickly wiping out its entire Indian population. By the time the British arrived in the 17th century, there was no indigenous culture left with which the local inhabitants could identify (Lent, 1990b). Based on an inhumane slave economy, Jamaica remained under foreign rule for approximately 300 years until it gained its independence in 1962. Although predominately a Christian population, to foreigners, its society is typically stereotyped as Rastafarian in nature (King 1999), based on a religious movement begun in the 1930s associated with Reggae music and marijuana consumption. In contrast, the often-impassable mountains of the Himalayas helped Nepal protect its culture from the outside world for a time. Consequently, until recently, ancient religious traditions remained intact fostering an extremely complex culture (exemplified by over 92 languages spoken). Today, both Jamaica (population 2.7 million) and Nepal (27 million) boast proud, unique identities. For travelers each are equally branded as hip, tourist paradises (King, 1999**;** Burch, 1995, 2009).

Jamaica and Nepal remain among the poorest of countries in their regions thus reporting on H/S/E is an enormous challenge (World Bank Report, 2013). Jamaica has earned the reputation of being one of the most violent countries in the Americas due to unemployment and drug trade (Barnes, 2006). Since the

1990s, Nepal's violent democracy demonstrations started a civil war, which resulted in a Maoist-controlled government and on-going political upheavals. Instead of health, science, or the environment, these topics dominate news coverage in both nations respectively.

In 1974, the Government of Jamaica established the Caribbean Institute of Mass Communication (CARIMAC) in response to demand from media practitioners and others. CARIMAC identified common problems in communications in the 1980s. These included: a) lack of access to mainstream media for large segments of the population; b) ownership and control of media outlets that limited participation of citizens in media activities; c) the need for more technically trained personnel in the broadcast media in particular; and; d) the problem of cultural penetration through the influx of externally generated media into the region (Koirala, 1994; Brown, 1998). Many of these problems manifest in developing countries around the world.

Scholars have studied the relationship between mass media and the environment (Hansen, 1993; Rogers, Dunwoody, & Friedman, 1986). The news media have the potential to set a nation's agenda on H/S/E issues (McCombs & Shaw, 1972). What constraints do reporters in such small developing countries face and how do these factors hinder success in raising public awareness of problems? What are the similarities between small countries in terms of the coverage of these issues? And how does cultural identity play a role in creating differences in coverage?

Research Questions

(R1) What was the training and gender makeup of reporters in the field?

(R2) What did they think of the quantity and quality of coverage of the issue & (prominence/public interest/sensationalism)?

(R3) What kinds of constraints played a role in their ability to cover the issue & (advertisers/internal vs. external politics/ownership and competition; & freedom of information act/libel laws/death threats)?

(R4) What were their attitudes toward advocacy and objectivity in reporting?

(R5) To what extent did financial compensation play a factor is their ability to stay & in the field (thereby encouraging veteran journalists to develop)?

Methods

Data collection was conducted in Jamaica and Nepal (translated when necessary) by using a convenience sample informed by local leading health, science, and environmental reporters (N=42). To help avoid bias, the reporters were chosen from both a snowball sample and at random. In-depth interviews and focus groups were conducted with journalists who were asked to discuss their opinions on the state of health, science and environmental journalism in their countries. Respondents worked in major media houses in print, radio and television. Each was asked similar open-ended questions from an extensive list based on Shoemaker and Reese's (1991) hierarchy of external and internal influences on news content, and tested in Burch's (2001, 2002) India studies.

Questions covered the following:

Educational background, training, attitudes on objectivity vs. advocacy, concerns over conflicts of interest, sources used, political pressures, gender bias, financial constraints, etc.

Twenty-eight hours of data was coded using the method of Discourse Analysis, which facilitated a close reading of the respondents' interview commentary (as text) (van Dijk, 1988). Repeated patterns were identified and organized in order to address the overall research questions of the study.

Findings

(R1) What was the training and gender makeup of reporters in the field?

Journalists interviewed had anywhere from three to 25 years of experience in print, radio and/or TV journalism and all said the would like additional training in the field. A few worked for government agencies as public information officers too as was common in the regions. They were comprised of nine females and three males in Jamaica. In Nepal, 5 out of the 30 journalists interviewed were woman.

(R2) What did they think of the quantity and quality of coverage of the issue in the press?

As Table 1 shows, H/S/E issues are rarely placed on the front page or at the top of the news hour in Jamaica and Nepal, unless they are disaster stories. Other than natural disasters, H/S/E issues were considered secondary to coverage of crime and politics. Thus, Jamaican reporters rated the quantity of H/S/E coverage low.

Table 1

Question 2 – Journalists' Ratings of Coverage

	Quantity of Coverage	Quality of Coverage
Jamaica	Low	Low (unless disaster)
Nepal	Pre-1990s – Low Post-1990s – High	Low

Nepali journalists said that the quantity of coverage depended on the time period whether it was before or during the country's political revolution. They reported that the coverage that did exist on the topic was quite strong after the 1990s when democracy was declared. Both countries' reporters declared that space constraints limited the quantity and quality of coverage of this issue severely.

(R3) What kinds of conflicts of interest or constraints played a role in their ability to cover the issue?

Health is covered extensively in both countries, however, there is no actual H/S/E beats in either place so reporters who cover these issues must do so along with their general assignments.

Sources included officials in related government agencies and international banking institutions, as well as foreign news agencies. Demonstrators also received a lot of attention in the media.

Media routines effected performance. For instance, deadline pressure played a key role in reporters' abilities to cover the beat. They attributed this to a "lack of resources" since there were so no reporters dedicated to the beat. They did report that there was funding to travel throughout the country and local bureaus helped them to cover rural issues, through the rise in cell phone penetration. In Jamaica, half of the respondents said stories were focused on local issues while the other half said articles were franchised from foreign sources such as wire services. In Nepal, much of the news was local or developed in India. All

agreed that they needed to convince their editors what was important before anything could reach the public.

Table 2
Question 3 – Constraints on Reporting

	Libel threat	Censorship	Advertiser pressure	Threat of arrest or death
Jamaica	Yes	No	No	No
Nepal	No	Yes	Yes	Yes

As Table 2 shows, almost all respondents in Jamaica were quick to agree that threats of libel suits was the number one way that stories were killed in the media. Reporters said they either self-censored or were actually involved in lawsuits where their stories had been featured in complaints against their media outlets. This was not a problem exclusive to the H/S/E beats however. In contrast, libel was not a concern in Nepal given the strong protections of journalists provided in the current Nepali Constitution. Still, ever since the monarch-declared state of emergency when all information exchange was cut from November 26, 2001 to August 2002, journalists in Nepal remain cautious about their freedoms (Shooting the Messengers, 2005).

(R4) What were their attitudes toward advocacy and objectivity in reporting?Table 3 shows that over half the journalists called themselves advocates of the environment, although all also stated they applied objectivity in their coverage.

Table 3
Question 4 – Attitudes on Advocacy and Objectivity

	Advocacy	Objectivity
Jamaica	Supported	Supported
Nepal	Supported	Supported

"Moonlighting," in which journalists wrote for more than one media outlet at a time, was not unusual and there is no code of ethics against the practice. Some journalists had arrangements where they wrote for both a media outlet and an environmental advocacy group. When asked about this they said they did not perceive that as a conflict of interest.

(R5) To what extent did financial compensation play a factor is their ability to stay in the field?

As reflected in Table 4, the majority of respondents said that the pay scale for journalists is a major problem (particularly at the beginning levels). Consequently, there is a lot of turnover of professionals in the field. Many reporters die in poverty.

Table 4
Question 5 – Financial Compensation for Reporters

	Compensation
Jamaica	Low
Nepal	Low

Discussion

As noted above, Brown' work through CARIMAC (1998) identified problems in media communications that the data from this study tends to confirm as well. These include the effect of media ownership and competition within a global marketplace on content, as well the need to provide much more professional training. The study also discussed additional factors that help to identify the qualities of H/S/E reporting in the regions.

In terms of identity of the press, the question arose in Jamaica whether the soft nature of the H/S/E fields has de facto left the issues in the hands of more female journalists then males, a seemingly "sexist" constraint. Journalists pondered on the "more nurturing tendency of women" and their attraction to the topic, especially health. H/S/E stories are considered soft news in Jamaica and male counterparts were said to be more drawn to hard news stories, such as crime and politics. This was not the case in Nepal. If there was any truth to the notion of the Jamaica findings then it would be of value to compare women's status in the newsroom in Jamaica with that of society as it relates to power. Are so-called "women's issues" (like health) the kind that can command front-page attention in a society with a high incidence of rape and domestic violence against women and girls (Barnes, 2000; Sexual Violence Against Women and Girls In Jamaica, 2006)? In Nepal, woman's issues could be ghettoized into a category of development and sustainability as well.

Women have found equal footing with men in the professional sphere in Jamaica and Nepal and have traditionally played a role in journalism, according to participants in the study (Lent, 1990a). The problem of a lack of front-page attention to H/S/E issues may be much more subtle than overt discrimination as it relates to the topics women choose to report. For instance, in DeBruin and Ross's (2004) study, "Gender and newsroom culture: Identities at work," gender discrimination was discussed as a problem in Caribbean journalism among interview participants, although subjects did not always interpret it that way. Thus it is difficult to say if more male journalists covered H/S/E in the Caribbean whether the public would consider those issues as more important. One male respondent in this study said he felt like women are more "attuned to these problems because they are better nurturers (of nature)." Other males in the study agreed with this statement, saying they did not find this to be sexist attitude, just a fact. This perspective reflects a clear bias against woman, even if it remained unrecognized as such. Also, in Nepal and Jamaica, a few women said they may have to drop out of the profession if they fulfilled their family obligation to marry and have children. This gender-related factor could certainly effect media content in the long run.

Regarding the quantity and prominence of news coverage, it is no surprise that journalists feel crime stories and political news dominate coverage over H/S/E issues. Crime and poverty-related violence are important issues to the general public since they may experience an immediate impact. As one Nepali reporter said, "human life is more important than the environment." Within journalism, violent events are also the kinds of stories that typically tend to be sensationalized, and thus sell papers. Likewise, political stories fall into the same domain, especially during this period of Nepal's recent history. H/S/E stories tend to unfold slowly (i.e. global warming), and require a certain literacy in scientific concepts. These may not hold the public's interest, especially in subsistence societies with high poverty rates. Thus stories of this kind may not often make the front page or the top of the lineup in broadcast news. The bottom line pressures to remain competitive are even that much more extreme in Third World countries, where H/S/E stories may seem a luxury that media outlets feel they cannot afford.

Most journalists in the study gave their fields a grade of "C" or "D" for quality of news coverage of H/S/E issues. Radio in Nepal was viewed as the strongest form of communication about H/S/E issues in the rural village areas, although TV was becoming stronger (when electricity was available). Both countries' literacy rates would play a factor in which type of medium was most popular (Nepal, at 60.3 percent, Jamaica at

88 percent) (CIA World Factbook, 2013). As for education of the public, one reporter from Jamaica felt that the media was failing in its job as "guardian of natural wealth." It is an uphill battle. He illustrated the point:People used to practically riot when people were claiming that they had the & rights to keep people off their beaches (due to development). It doesn't happen & anymore…These days, although you can't live more than 25 miles from the & sea in Jamaica, most Jamaicans can't swim. I think that's an incredible statistic & if you think about it…. so they would protect their own bloody beaches if they & could swim.

Although unlikely that all Jamaicans ever may have known how to swim, it is hard to sell the idea that ocean access is important on an island given that most of your audience is living a subsistence life in the urban city of Kingston.

It is interesting to note, that, while H/S/E reporting would benefit from improvement, the quality of disaster stories (like Hurricane Ivan in 2004) is highly regarded among the press in Jamaica. Coverage of disasters since is an area of great pride among those reporters especially given their 95 percent telecommunications penetration rate and the ability to use cell phones to communicate across the island (CIA Factbook, 2013). This is not so in Nepal, where the Himalayas can make cell phone communications impossible. As with the Western press in general as well, the biggest criticism among all the respondents was lobbied at the short attention span of the media in times of crisis, wherein long-term follow-up coverage is generally based only on public interest.

Motivation for reporting on H/S/E issues is key a problem, according to all respondents in the study. Reporters noted that the countries need more talent dedicated to the H/S/E fields and at present, there are simply not enough journalists who care about the topic. Environmental reporting takes investigative skills. One must go beyond the typical press releases generated by government and industry on a daily basis. One ray of light, as several respondents noted, is how just one or two people, especially in small countries, can energize the beat. Thus, while very few reporters focus all their energies on H/S/E coverage, those who do can have a notable impact, especially in inspiring others to follow suit.

A few journalists note that as long as government agencies refuse to put their resources toward conducting environmental impact reports, journalists from cash poor newsrooms will have a tough time accessing information needed to develop highly sophisticated H/S/E stories. As a counter argument, government spokespersons argue that even when they seek out the press, journalists do not take them up on offers to share information. This may relate to what informants said were the main obstacles to strong H/S/E coverage, which was a lack of commitment by media outlets to the topic. As long as journalists' duties are divided between several beats, excellence in coverage will be limited. Media outlets are going to have to pay reporters what they are worth, according to informants. Only then will reporters be able to stay in the field, increasing the quality of coverage and subsequent public interest in the not so "sexy" topics of health, science, and the environment.

In terms of professionalism, like the findings of Brown and Sanatan's 1987 UWI report on the state of the media, this study showed that some journalists in the Caribbean and South Asia continue to consider training a key concern, especially in dealing with the scientific jargon and such. The study's data showed that informants' knowledge about issues considered relevant in the region varied in strength. Given, the complexity of problems, reporters would only benefit from further training and funding for training for personnel by media outlets needs to become a priority.

Both Jamaica and Nepal have enjoyed relative freedom of the press compared to non-democratic countries (Press Focuses on Global Poverty, 2006; Stephens, 1991, Nepal Press Freedom, 2010). Still, despite constitutional guarantees, Jamaican journalists' rights are not absolute, and Nepal's government has violated press freedoms repeatedly raising strong concerns about the countries' commitment to true democratic values.

Jamaican journalists are forced to self-censor under existing libel laws wherein businesses often threaten to sue (Cut Secrecy, 2006; Watson, 2007). In 2006, the Press Association of Jamaica said that journalists limit their own press freedoms in response, and that they need to make more use of the local freedom of information Acts (Sheil, 2006). As referenced by comments of the participants in this study, H/S/E reporting in Jamaica has a long way to go in applying those freedoms to coverage of Jamaica's critical issues today.

In contrast, libel was not a concern in Nepal, perhaps because British libel law did not set the agenda there in the way that it did in formally colonized countries like Jamaica. According to the Jamaican participants, this issue was the number one constraint upon reporters in covering H/S/E in their country. Consequently, journalists in Jamaica are well versed in libel law, where truth is the primary defense. Accuracy in H/S/E reporting is a quality issue and one considered sacrosanct in all areas of journalism. Whether or not the concerns over threats of libel suits had lead to greater accuracy in reporting in Jamaica is beyond the scope of this study. What the data show is that libel concerns threaten H/S/E reporting, and without stronger protections for all journalists, the problems will continue there.

Conflicts of interest, especially those generated by the dealings of board members of media outlets invested in non-media industries, can have a chilling effect, especially in tourist-based economies. It causes reporters to self-censor since industry concerns force papers to focus more on competition than the public interest. As the data show, one famous Jamaican journalist experienced most of the problems associated with this issue probably because he had started in the business before official ethical codes became the norm in post-independence Jamaica. Also, he refused to succumb to conflicts of interest. He has the reputation of being the most outspoken journalist among all the interviewees (a self proclaimed "muckraker"), but he also happened to be a witness to the extremely divisive political years in the early development of the country. As a commentator by profession and a trailblazer in the area of environmental and social activism, he was highly vulnerable to the kinds of attacks more cautious journalists today may not experience. About this reticence, another reporter in the study from the Caribbean hypothesized that today's journalists are not offered bribes for the following reason: "Maybe that means we're not doing enough investigating or we're not stepping on enough toes, you think?"

A big problem in Jamaica was a concern over possible conflicts of interests of media outlet board members with outside ties to non-media industry, confirming Lent's 1991 findings**.** Those members would be more concerned with economic efficiencies and country debt than the public interest. Several journalists had left one outlet to work elsewhere because of this problem. All participants in Nepal said corruption in society was prevalent and in the media industry well. For instance, one respondent spoke of the time the Ministry of Agriculture took all its advertisements from one business, thus they were unlikely to admit any negative information about that company. Conflicts of interest in terms of payola or freebies and advertiser pressure were rarely an issue in journalism depending on the medium and topic area. Still, regarding coverage of H/S/E issues, top journalists are often offered VIP passes at hotels or events, but those that accepted them said they did not influence news coverage. In contrast, one Jamaican journalist said the acceptance of any gifts created a clear conflict of interest and was unethical. Reporters said pressure from advertisers was not their concern and felt insulated from influence by their editors, although some disagreed. Advertisers have threatened to remove ads from a publication when the content cast their products in a negative light. In Nepal, one interviewee said, "They try to buy the reporter."

In Jamaica, with the exception of one highly experienced reporter, none charged their media outlets with political bias, nor did they ever get fired or were threatened with violence for covering a story, but a few had heard of others that had lost their jobs based on differences of opinion with management. These "stories" usually could not be traced back to a particular reporter, thus became somewhat legendary. A few participants said these instances produced a subtle chilling effect and self-censorship. In Nepal, H/S/E

was just not seen as important during the recent period of anarchy. Reporters were faced with death threats, harassment, and attacks from constituents and the Maoist government on a daily basis (Nepal Press Freedom, 2010). It was always difficult to get information during the civil war and reporters needed the army's permission to discuss stories. Some were blacklisted. It was nearly impossible to write about protecting the endangered rhinoceros population since the government had no control over poachers. At least 17 journalists have been killed since 1990 for reporting on all kinds of topics (Committee to Protect Journalists, 2013). During data collection of the study, one female journalist was dismembered for her long time coverage of the controversial issue of dowries in marriage. The media called a general strike and a protest was held. These had become a monthly occurrence due also to other injustices and attempts to censor the media.

Scholars have examined the use of media as a tool for national development noting that Third World countries traditionally participated in media campaigns (Mody, 1986; Fisher, 1990; Cambridge, 1992). Consequently, there is a tradition of activism in the press in developing countries that manifests as development journalism. Jamaican and Nepali journalists integrate that approach into their values toward so-called objective reporting keeping stories critical of business and government. Journalists refer to this style of reporting in which the media focus on development concerns as taking on more advocacy issues. A majority of journalists in this study identified with the advocacy role of reporters covering environmental issues. Several wrote for news outlets and environmental NGOs at the same time, yet all said they were easily able to separate those practices from their professional standards toward objectivity. As the Caribbean media scholar Aggrey Brown explains about the approach, "It isn't a case of embracing subjectivity, as much as it is a debunking of a once dominant monocultural objectivity" (personal communication, September 15, 2010).

Likewise, the perception that a conflict of interest in coverage of H/S/E stories was not assessed to be a problem. As one study participant said, "I personally think that journalism is such a powerful profession…that nothing is wrong if it serves the purpose of persons who wouldn't ordinarily have a voice." This is similar to Burch's (2002) findings of journalism in India in which a "Development Journalism" ethic was applied within a democratic society (Siebert, Peterson, & Schramm, 1956). As one Nepali reporter in the study said, "They definitely say you know you have to be balanced. The editor…was pretty strong on being objective and all of that…but at the same time…I didn't get that much flack for them knowing I had an agenda with the environment stuff."

Logan and Kerns (1985) identify the degree to which journalistic attitudes have begun to adopt a hybrid of western and developmental news traditions (Hachten, 1981), noting a shift toward western newsgathering styles and professionalism since the 1980s. The balance of the advocacy/objectivity stance may be related to the natural evolution of development news within today's modernized business context as news becomes more localized in content.

Finally, among the top issues that reporters from both countries said affected H/S/E coverage was the high turnover of experts in the field due to low pay. Most had two jobs (one that was non-journalism related) and worked long hours. Many were paid once they produced (as freelancers). One reporter from Jamaica summarized the problem of poverty and the press with stark clarity, "Journalism don't pay. It's not the worse job but it's not the best paying job either. We're struggling man."

Conclusion

This study identified a variety of conditions that may have affected health, science, and environmental reporting in two small countries that are both extremely popular as tourist destinations. Between 1990 and 2006, Nepal found itself embroiled in a civil war. During part of this time, its monarch declared a state of

emergency, which gave license for a media blackout. Today terrorism, intimidation, arrest, torture, and assassination for political activity continue, although life is a bit more hopeful (Ramaprasad, 2005; Adhikari, 2008; Dixit, 2006). In Jamaica, crime, debt, and political unrest have created unsettled conditions in that country as well, leaving Jamaican journalists with many challenges yet to overcome.

As is the case in many small, low-income countries, Jamaica and Nepal have had to counter the pressure upon media content against large outside influences (Jamaica – USA; Nepal – India, China and the West). Resistance to cultural dominance has been strong in Jamaica for instance (Cuthbert, 1981), but pressure to assimilate large nations' political ideologies may be stronger. To illustrate the point one Jamaican respondent in the study said, "When the U.S. sneezes Jamaica catches a cold.' Thus, the trend toward globalization continues supported by trade agreements, and World Bank and IMF policies related to development projects and debt (Brown, 1990a). This is not a path that will necessarily improve the state of H/S/E reporting in struggling, tourism-dependent economies. As McChesney, Newman, & Scott (2005) asserts, corporate control over the media will not serve the public interest, but instead a bottom line of profits.

By examining the political, economic, cultural, historic, and technological forces at play between two very different societies, a portrait of health, science, and environmental journalism in developing countries emerges. This study can provide a framework for Third World journalists to understand how their cultural identities can foster successful reporting. While not generalizable to other countries, the findings may help to build hypotheses for future studies on this important subject. The hope is that it will motivate locally-based guidelines for the improvement of news coverage in the future in the Caribbean, Asia and beyond.

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Communicating New Perspectives of the Commons Through Art

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Art can be used as a vehicle to support global communication and understanding to environmental matters. This presentation will be a brief explanation of how I am using creativity to communicate issues regarding debates about the commons. Topics will include water conservation, land management, and the protection of ecosystems. This presentation will display how art about the environment can influence public awareness towards environmental and sustainability concerns. My art is designed to embody the results of research through environmental interaction and the studying of land management, water conservation, and a variety of eco-systems such as spring peeper frogs from vernal pools, fiddler crabs from marshland and bees that pollinate the grand earth.

Keywords: Environmental Sustainability, Water Conservation, Land Management, Protection of Ecosystems, Environmental Art

Art can be used as a vehicle to support visual global communication and understanding of environmental matters. This presentation contains a brief explanation of how artists use creativity to visually communicate the debates related to environmental issues surrounding the commons. Topics will include water conservation, land management, and the protection of ecosystems. It will display how art about the environment can influence public awareness of biodiversity and the necessity to protect the natural environment.

Artists and designers are integral components of a healthier planet. Artists communicate and express themselves through forms such as media, sculpture, painting, video, installation, graphic design, illustration, performance and photography. Designers provide practical solutions for creative and functional ways to live. These include products, graphic design, landscapes, architecture, and much more. Environmentally conscious artists and designers create work that requires scholarly research concerning the health of our natural surroundings and the vulnerability of species that influence our future existence. Their art is accomplished by combining science, aesthetics, and a variety of techniques into a reality that is modeled in ways that communicate environmental activism.Environmental art and design is likely to transform the way people value the natural environment so they will also support its protection. Creative people can bring communities and the environment together. They can encourage more ethical and moral practices towards the respect and preservation of the earth. With this in mind, I propose that art can be a vital component of a mechanism to save our environment.

Simply inspiring others to appreciate the natural environment through art still exists but today artists are also expressing alternative ideas and feelings about nature. Contemporary art about the environment can effectively combine social and natural history enabling the viewer to appreciate a healthy environment. Artists have found themselves in the practice of the “artist as naturalist.”

Many creative people have a unique ability to affect positive environmental change. This is crucial at a time when humans are imposing an overwhelming burden on the earth’s air, water and food supply. The human population’s insatiable hunger for natural resources such as oil, minerals, natural gas, and wood is

leading to an unbalanced eco-system. The consequence of this quest is nothing less than disappearing species, undrinkable water and air that is not safe to breath while contributing to the accelerated warming of the planet. As people become more distant to our land, innovative techniques to bring communities and the environment together are needed. Artists' new ideas and ability to make connections across various disciplines make the artist's role invaluable in solving a variety of environmental problems. Through collaboration and the guidance of experts in various fields of environmental study, artists can actively engage, enlighten, and educate their communities about their natural environment.

My work is designed to embody the result of extensive research and personal passion toward the environment. I am concerned about effects of natural resources and eco-systems through various stakeholders. The forms I create are metaphorically composed of specific materials and media into art that represent or challenge reality. Through environmental interaction and studying a variety of eco-systems such as vernal pools, marshlands, ponds, rivers, streams and suburban backyards I am inspired to create works that depict my visual interpretation of the unique characteristics of each of these eco-systems. Some distinguishing characteristics that have led to some of my creations are spring peeper frogs, honeybees, and fiddler crabs. Beyond biodiversity my work also highlights the significance of the non-living aspects of the environment such as water conservation and land management. During a critical point in time, with our planet precariously balanced on the verge of great environmental impairment, areas such as water conservation, land management, and the protection of ecosystems are vital to the continuation of all living things.

My most recent work comes in the form of a large-scale sculpture expressing the critical necessity for clean water. Appearing as a contorted fence lifting off the ground, "Water Has No Boundaries" is a sculpture that rolls across the floor like a flowing stream fragmented from the landscape. Inspired by the need for clean water the sculpture uses 1000 samples of water that were collected and preserved in glass bottles from 60 locations from Eastern Pennsylvania to the Hudson River Valley of New York. Each bottle is labeled and corresponds to a range of locations on a map to further reinforce that water has no boundaries. It conveys that all water is ever moving and can easily flow into another body of water. The sculpture raises the viewer's consciousness of the fragile connectivity of all bodies of water. The significance of this piece is that it demonstrates the crucial stakes of protecting even the smallest body of water. The value of water to all living things is well understood however the idea that all water is connected is often lost on many people. The hope is that this piece will give people pause the next time they encounter pollution on any body of water, from a large river to the smallest mountain stream. It is intended to impact the psyche of all who view it and make them aware that they are stakeholders who play a valuable role in protecting water regardless of its size or location.



Darlene Farris-LaBar, Water Has No Boundaries, 900+ Glass shrink wrapped bottles filled with water from 60 various locations, fencing material, The map shows the various locations where the various samples came from.

"Rhythms of a Whole," at Sykes Gallery, Millersville University of Pennsylvania was an environmental art installation that integrated sound, video, watercolor paintings and sculpture. This show was developed as the result of research outlining the importance of bees to the environment. The bee is a transport for the continuation of life for most plant species. Pollination is one of nature's best examples of the co-dependency that exists between different forms of life. As the bee collects nectar for its own posterity it gives continued life to the plants it visits. These plants provide a large part of the foundation of all living things. Without them as a food source and their oxygen creating respiration all living things would cease to exist.

The sculpture is constructed of simple brown paper bags that are used by most people as a way to package food for their children. The 2000+ bags were connected and spiraled in large circular forms. The bags were chosen to create the honeycombs because they represent the food storage of the brood in a hive. In recent years there has been growing evidence of the deleterious effect of chemicals being transported back to the hive as the adults deliver the nectar needed to feed their young. The idea that the adult bee is unknowingly destroying its own youth as it attempts to provide life-sustaining nectar demonstrates a cruel irony. The brown bags, used to feed children, make a frightening connection to the harmful effects of chemicals on humans. Since bees are ever flying across boundaries hopefully this piece will promote an awareness and understanding of these small, vulnerable, very important creatures to the existence of all species. It is to create a sense of understanding that all people must consider the impact of pesticides.



Darlene Farris-LaBar, "Rhythms of a Whole" at Sykes Gallery, Millersville University of Pennsylvania was an environmental art installation that integrated sound, video, watercolor paintings and sculpture to show the importance of bees to the environment.

The exhibit called "Symphony on Shallow Waters" is an exhibit about vernal pools and the spring peeper frogs that inhabit these vulnerable bodies of water. Vernal pools are temporary oasis for amphibians that provide the required elements for the continuation of these species. At first glance they appear to be nothing more than a large puddle on the edge of the forest resulting from the spring thaw. However, upon closer observation it becomes evident that these pools are the breeding ground for much new life providing protection from natural predators such as fish. Due to rapid and often unchecked development,

along with pollution, and the filling in of wetlands these vernal pools are in great peril. Without vernal pools, spring would not have those harmonic sounds of the tiny spring peeper frogs. Even more distressing is the threat to numerous other amphibians and the resulting effect on the food chain if these species cease to exist. This exhibition was a compilation of sound, video, educational signage, watercolor studies and sculpture intended to entice the senses and communicate a better understanding of the immeasurable value of vernal pools as a habitat for many important species.

Additional work in this same show was designed to provide an understanding of life in the shallow waters of a saltwater marsh. The focus of this work was the unique and entertaining fiddler crab. The medium used for this show consisted of video and lenticular art. Movement was the inspiration to this work. The fiddler crab employs a unique rhythmic swaying motion during its mating ritual. The emphasis of this swaying is on the large bright yellow claw of the crab. Also emphasized is the sudden retreat back into their individual private dwellings in the sand. These movements can only be appreciated through the use of video, photography and lenticular art. The lenticular art was of particular significance. It allowed the viewers to interact with the crab by moving themselves back and forth in front of the piece. This simulated the traditional movement of the actual mating ritual.



Darlene Farris-LaBar, Symphony on Shallow Water, Sculpture composed of an old dock, the artists boots, marsh grass and video of tadpoles, sound composed of spring peeper frogs, watercolor paintings/illustrations and lenticular art also were included in the exhibition.

The sculpture called “Importance of Something Minor” is a large-scale sculpture that represents land mass and territories. The hundreds of flowerpots are pieced together like a blanket and placed over a landscape-like form. Each flowerpot maintains its own identity while acting as a part of a whole. It can be thought of as a land mass mosaic. It offers varying perspectives acting as a small hill for humans yet equaling a mountain for insects. People claim ownership of land often disregarding the value it has to other walks of life. A person may see such a small hill as somewhat insignificant yet it is capable of being a vast

valuable land for smaller living creatures. The purpose of this piece is to encourage thought and discourse about the responsibility of land ownership.



Darlene Farris-LaBar, Portable Landscape, Mountains for Insects, 300+ flower pots sounds composed of bees and monks, video of bees, watercolor paintings/illustrations

In conclusion, by providing an experience of the natural environment through art it may be possible to create more stewards of that environment. This information, to often, is presented in a mundane fashion that loses the interest of the audience. By combining scientific research with visually stimulating imagery a new level of interest can be attained. The mind begins to formulate new pictures that it would have never been able to conjure up on its own before this experience. The imagery holds the imagination of the viewer allowing for the science to take hold in the long-term memory, thus leaving an indelible impression that the viewers will carry with them indefinitely.

I view my art as a way to provide this environmental imagery experience that will raise questions about the human relationship with the Earth. Its intention is to inspire creative thought and educate the public about alternative ways to communicate sustainability and environmental awareness. Today, more than ever, there is a need for newer tools of communication to address major environmental and sustainability problems. It is my desire that my work will become a catalyst for in depth conversation pertaining to protecting the natural environment. Only through raising awareness and sparking discourse on this important topic can it be expected that people will start to make better decisions. It is my profound desire that my art may accomplish these goals.

Blowin' in the Wind: How Collaborative Governance Communication Can Reduce Wind Power Siting Disputes in the United States

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Renewable energy technologies must be implemented in order to reduce reliance on fossil fuels. Americans are unfamiliar with wind turbines and wind power farms. The physical characteristics of wind turbines make them visible and potentially noisy. Studies have shown that when a technology is unfamiliar, subjective risk perceptions occur. Unaddressed risk perceptions may lead to NIMBY (Not In My Back Yard) opposition. NIMBY opposition to wind turbine farms has resulted in litigation. Proposed wind power siting operations in the U.S. have been delayed, often by many years, due to drawn out legal battles (Cape Wind, Spring Valley). A communication strategy to identify and address risk perceptions, and thereby reduce lawsuits and expedite wind turbine siting, is collaborative governance. Collaborative governance includes participatory planning, negotiated rule making and facility siting negotiations. When these strategies have been used to reach consensus, opposition, has been reduced leading to a quicker permitting process.

Key words: collaborative governance, environmental communication, risk perceptions, NIMBY, wind power

Introduction

Long gone are the bucolic days of Hans Christian Anderson's windmills. Wind power farms cover an extensive amount of land and the structures can range up to 400 feet each (General Electric, 2010). The placement of these structures has triggered perceptions of risk and given rise to wind power NIMBY (Not in my backyard) movements nationwide (Rossomando, 2011). One organization cited the NIMBY mindset as one of the top five threats to the growth of renewable energy worldwide (International Energy Agency, 2008).

This project provides an overview of the existing wind-siting issues in the U.S. and discusses how collaborative governance provides a communication framework to identify and address community-held risk perceptions thereby reducing NIMBY sponsored litigation and ultimately reaching consensus in wind power siting.

U.S. Energy Resource Overview

Fossil fuel resources are finite. The peak oil producing years will culminate in 2014. By 2050 all but 10 percent of the easily, and relatively inexpensive, oil will have been extracted from the ground (Scientific American, 2010). Access to coal is predicted to last only another 70 years at the rate we are using it in the

U.S. to generate electricity (Perez & Perez, 2009). The environmental impact that occurs from producing and transporting these fuels disrupts human, animal and fish populations (Dabbs, 1996). Runoff and land alteration to accommodate pipelines and delivery routes add to this negative impact.

The U.S. imports almost half of its oil costing nearly $49.1 billion in annual defense outlays to defend the flow of Persian Gulf Oil – the equivalent of adding $1.17 to the price of a gallon of gasoline (Sandalow, 2011). To ensure access to the oil that fuels our economy, the U.S. maintains a continuous presence in the Middle East, which is a source of bipartisan debate (Institute for the Analysis of Global Security, 2012). Legislators, agency administrators and communities continue to struggle with choosing the best technologies and methods for producing reliable energy. Wind is one such option.

Risk Perception

Research shows that opposition to wind farms arises from overblown perceptions of their impact on the natural and human environment and that living near a wind farm frequently dispels these concerns (Aitken, 2010). Opposition arises because maintaining the status quo is almost always preferable (Nolan, 2011). Research shows that risk perceptions are not necessarily rational and the perception of risk does not evaporate in the presence of evidence (Slovic, 1987).

Experts and lay people evaluate risks differently and come to different conclusions about the reality of the risk (Kahneman & Tversky, 1979; Sjoberg, Moen & Rundmo, 2004). Risks are evaluated objectively by experts as a probability. Non-experts evaluate risks subjectively (Slovic, Finucane, Peters & MacGregor, 2002).

Risk perceptions are not unified (Sjoberg, 2000). Individual perceptions may differ based on access to information, perceived credibility of the information, or simply incompatible interests (Thompson & Dean, 1996). For example, studies indicate an overwhelming acceptance by local residents in Sweden of wind turbines in their towns yet a small minority are annoyed by them (Chapman, 2011).

Risk communication studies show that the perceived hazard itself, plus the outrage an individual feels about it, contributes to risk perception (Sandman, 2012). Therein may lie the reason for the slow adoption of wind power; individuals focus on the potential hazard and disregard information about the potential benefits

NIMBYs

NIMBY (Not In My Back Yard) positioning is unique to the United States as a social movement that recognizes a need for development but objects to the currently proposed location for the development (Burningham, 1993). Research on NIMBY groups has shown them to be well organized, thoughtful and effective (Pastor & Pastor, 1992). NIMBYs generate participation from people who are on the periphery who are not initially opposed to the site by highlighting the physical proximity of what is being proposed and amplifying the potential perception of risk (Haggett, 2011).

Wind Power Lawsuits

The three main points of litigation for wind power projects are visual aesthetic and visual impact (strobing and flickering), the potential affiliated noise, and safety of wind power operations. The examples below highlight how wind power siting projects have been subject to NIMBY-driven litigation.

Cape Wind Project

In July 2001, the Cape Wind Associates unveiled their plan for a wind farm of 170 turbines to be sited in Nantucket Sound. The lawsuits began immediately based on the perceived negative visual impact, loss of commercial and recreational fishing and tourism, and the desecration of tribal land. To date, all of these lawsuits have been dismissed or settled. The project was finally permitted in January 2011.

Rankin v. FPL Energy, LLC

In 2005, Taylor County, Texas neighbors sought an injunction based on their belief that the operation of the wind farm construed a public and private nuisance based on loss of aesthetic appeal of the area. This case was brought after the wind farm was up and running. The trial court and court of appeals said the homeowners' case was based on aesthetic concerns and emotional reaction. The homeowners did not prevail.

Burch v. Nedpower Mount Storm

In 2007, seven individuals in Grant County, West Virginia brought suit because the proposed facility would be an eyesore that created excess noise and killing birds and bats (Butler, 2009). The suit was dismissed by the Circuit Court siting the certificate granted by the Public Service Commission (PSC) of the facility did not abrogate the circuit court's jurisdiction to hear landowners' common law nuisance claim. This was later overturned by the Appellate Court.

Settlements

Not all lawsuits make it through the court process to a decision. Many cases have been settled. In March 2012 the Spring Valley Wind project settled a lawsuit by reaching an agreement, together with the Bureau of Land Management, the Center for Biological Diversity and Western Watersheds Project. However, as of this writing there are lawsuits pending against wind power projects in at least eight states.

Collaborative Governance

Identifying citizen's concerns may reduce the number of NIMBY groups that arise around wind power siting projects because their concerns are acknowledged even if the outcome is not the most desirable one. Establishing communication channels early in the process allows risk perceptions to be identified and addressed using plain language.

There is precedent in wind power siting for using a collaborative governance approach but these practices are not yet widely adopted. Nolan (2011) outlines three distinctive processes that fall under the collaborative approach as it applies to wind power siting: participatory planning, negotiated rule making and facility siting negotiations. A combination of these approaches may best serve the community's interests.

Participatory planning includes citizens in an advisory role in making policy decisions where the participant need not have technical experience or knowledge in order to develop guidelines before the permitting process begins (Nolan, 2011).

Negotiated rule making is designed to obtain additional input from the public beyond the existing public comment phase. Perhaps most germane to this discussion is the facility siting negotiation process. In this process local citizens are involved so that "mitigations are tailored to meet local conditions and should take

the form of pre-application negotiations." A combination of these collaborative approaches should address the risk perceptions held by the local citizenry and reduce future lawsuits. It may, however, extend the permitting timeline.

These pre-emptive communication strategies have already been used in some areas. A Canadian company was directed to 'conduct further' discussions with the area landowners before giving approval for a transmission line between Alberta and Montana (Gable, 2012). Many of the landowners supported the line and based on subsequent alterations to the plan, previously opposed citizens then supported it.

Another "success" story involved collaboration as part of the permitting process (Nolan, 2011). Sherman County, Oregon, was ideally suited for wind power development both in terms of wind and the economy. Using collaborative governance, the entire siting-to-operation process took 10 months (Nolan, 2011).

Conclusion

Wind power is a viable energy option with supporters and detractors and provides its own unique set of challenges as a form of green energy. There is little hope of stopping one of these projects based on a nuisance claim but that does not stop the neighbors from trying. Why is that?

Expanses of wind power are new to us and individuals form risk perceptions about this unknown technology. Due to its newness, the benefits are unknown, the placement of these structures is not voluntary and the only controllable feature typically comes in the form of an injunction or lawsuit. What fails to occur with most wind power siting projects is communication with community members at the outset. Collaborative governance may be the strategy that most satisfies the participants, thereby reducing litigation.

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Credibility at Stake? "Clean, green" New Zealand in the News

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Media coverage plays a crucial role for perceptions of places and is one of the main conduits through which national image travels. This is an important factor for New Zealand whose global reputation as "clean and green" is of enormous economic value, especially through its tourism and food exporting sectors. To ascertain the vulnerability of that reputation, this paper analyses coverage of NZ's environmental performance in Australian, UK and US newspaper coverage between 2008 and 2012.The analysis revealed that the country is no longer in the spotlight as a "clean, green" environmental leader, but has become a player the global community largely ignores in the environmental arena. Implications of the generally uncritical - but also not favourable - coverage are discussed.

Keywords: Environmental Reputation, New Zealand, Media Reputation, Newspapers, Place Brand Credibility

Introduction

Nations and places when perceived as "imagined communities" (Anderson, 1983) are essentially the product of discourses (Dryzek, 2006) and as such rely on the media to provide the "pictures in people's heads" (Lippmann, 1922; see also Danis & Stohl, 2008). Particularly for those without a first-hand experience of a specific place, the media are a main carrier of country reputation and one of the main conduits through which national image usually travels (Anholt, 2010). In the case of New Zealand, such images consist of a "clean and green" pristine natural environment, largely thanks to the country's long-running "100%Pure" tourism campaign. In recent years, NZ's environmental credentials have been put into question (e.g. Bertram & Terry, 2010; "It's not easy," 2010; Joy, 2011), stirring fear about a potential loss of the credibility of its global positioning. The apparent lack of connection between branding and practice has been brought to the fore most strongly by the issue of climate change, where rhetoric no longer can prevail, but concrete and prescribed action is demanded of signatories to the Kyoto Protocol (Roper, 2012). The findings presented here are the result of research conducted to find out to what extent fears over a loss of NZ's "clean, green" reputation are warranted.

Study Design and Methods

Findings presented here are the result of software-assisted thematic discourse analysis of 14 major Australian, UK and US newspapers with articles about NZ and carbon emissions, published between January 1, 2008 and December 31, 2012. Considerable changes occurred during this time period: political discourse in NZ experienced a shift from a focus on sustainability to economic growth (Roper, 2012; Tapia Mella, 2012); while globally public debate about climate change had moved from "is the climate changing?" to "what should we do about the changing climate?" (Good, 2008). The three countries included in the study represent NZ's strongest allies and trading partners. Articles were downloaded from

the Factiva database, checked for relevance (excluding, for example, sports reports or obituaries) and imported into data analysis software NVivo (version 10). Using different tools and queries provided by the software, articles were assigned attribute values, such as country, year, newspaper, type of article, author position, date of publication, and thematic analysis conducted following a top-down and bottom-up coding approach. First, most frequent keywords relevant to the research were identified and references to those saved in nodes (thematic "containers"), from which most salient themes and positions were established through close reading (inductive, bottom-up). References to specific keywords and themes were also coded and assigned attribute values for their tone, i.e. whether they maintained a favourable, neutral or unfavourable stance regarding different aspects of NZ's environmental performance. Because the assignation of tone of coverage is the result of subjective judgement, it should be perceived as merely indicative with the purpose to gain an overall impression of news coverage.

Findings and Discussion

From a total of 230 articles referring to New Zealand and carbon emissions between January 2008 and December 2012, 71 related to NZ government and politics. Among those, 84 percent were from Australian newspapers, followed by the UK (10 percent) and the US (6 percent). Apart from the importance of geo-political and cultural proximity for the amount and nature of news coverage (Hansen, 2010), the high number of references to NZ and carbon emissions in Australian newspapers was tied to political debates about a proposed carbon tax in Australia taking place mid-2011. Coverage in the years preceding and following this debate was significantly smaller (Figure 1).

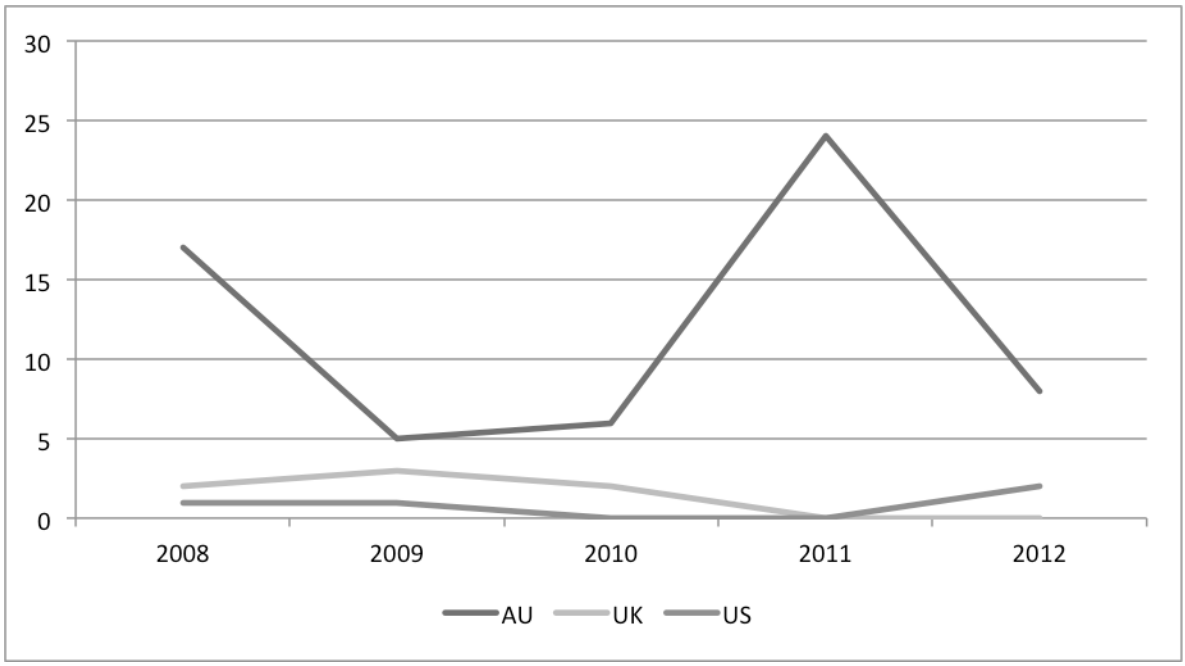


Figure 1: Change in amount of coverage

During this debate, references to NZ and carbon emissions were mostly favourable (see Figure 2), especially regarding political leadership and the emissions trading scheme (ETS), whose appraisal as example to follow by Australian Prime Minister Julia Gillard supported the Australian government's policy agenda.

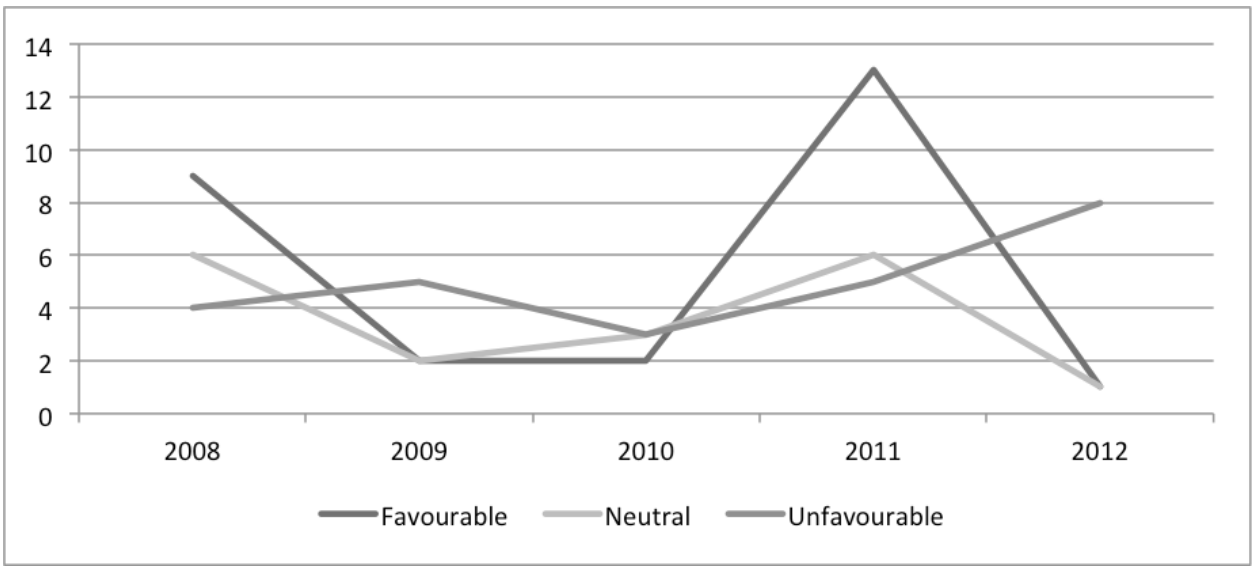


Figure 2: Change in tone of coverage

In fact, the question of political leadership with regard to reducing carbon emissions was a frequent theme in Australian coverage. Governments of both countries, it seems, are reluctant to be seen as leading efforts to reduce greenhouse gas emissions by pricing carbon emissions. For instance, unlike former NZ PM Helen Clark's insistence on making New Zealand a global leader in environmental sustainability, her successor, PM John Key clearly did not share those ambitions, referred to in the *The Australian* (4 March 2009) saying that NZ does not want to be a global leader in climate change. Interestingly, this did not stop his Australian counterpart, Julia Gillard, from urging Australians to follow "the gutsy kiwi lead" on carbon pricing (*The Australian*, 21 June 2011). That by then NZ's ETS had been delayed and watered down to near insignificance (e.g. Bertram & Terry, 2010), apparently did not matter, and paradoxically may even have helped Gillard's later introduction of the scheme. Once New Zealand's ETS had ceased to play a role in Australian domestic politics, in 2012 Australian coverage of NZ's political leadership and carbon emissions rapidly decreased and became increasingly unfavourable in tone (see Figures 1 and 2).

Judging from the predominantly favourable coverage in 2008 and the change in tone in subsequent years, much of NZ's perceived political environmental leadership overseas can be traced back to former PM Helen Clark, whose commitment to making NZ carbon neutral and for having ratified the Kyoto Protocol earned her appraisal from various newspapers, including *The Canberra Times* and *The Sydney Morning Herald* in Australia and *The Independent* in the UK.

It is striking how little overseas news coverage followed NZ's declaration at the Doha climate conference in December 2012 not to commit to a second term under the Kyoto Protocol. Not even the public denunciation of the NZ government as 'Colossal Fossil' and most unhelpful in global climate change negotiations by the International Climate Action Network (2012), an umbrella group of 7,000 civil society organisations, created much overseas media coverage.

In the US and the UK, major newspapers provided very little coverage of NZ's political environmental leadership related to carbon emissions during the five years analysed However, some articles *did* exclusively focus on NZ's environmental performance, most notably an opinion piece by journalist Fred Pearce in *The Guardian* (12 November 2009), in which he fiercely criticized NZ for showing "the most shameless two fingers to the global community" by selling itself round the world as "clean and green," while at the same time proclaiming that it "would not try to be 'leaders' in climate change." Three years

later, *The New York Times* (17 November 2012) used the premiere of NZ-produced feature film *The Hobbit* to revisit the country's environmental credentials stating that its 'clean, green' positioning indeed increasingly "clashes with realities."

Conclusion

Several conclusions can be drawn from the preliminary findings presented above. First, the apparent link between the tone of coverage in mid-2011 and the carbon tax debate in Australia is in line with Bennett's (1990) observation that the way a specific issue is covered in the news usually reflects the framing put forward by political elites. Second, following Carvalho (2005) that what we find in the press is as significant as what is absent, it is striking that both NZ's decision not to commit to a second round under the Kyoto Protocol and its very unflattering "Colossal Fossil Award" during the DOHA climate conference in December 2012 went largely unnoticed by those major overseas newspapers. This suggests that NZ is no longer in the spotlight as a "clean, green" environmental leader or "first truly sustainable country," as former NZ PM Helen Clark had envisioned, but instead has moved to a player the global community largely ignores in the environmental arena.

Last but not least, considering the importance of mass media coverage in bringing environmental issues to the attention of the public (e.g. Anderson, 2009; Hansen, 2010, Hansen 2011; Lester 2010), non-coverage makes NZ's environmental performance a non-issue (McManus, 2000) in the global mind. If media coverage plays a crucial role for people's perceptions of places, as Anholt (2010) maintains, then little or no coverage of NZ's environmental credentials is a lost opportunity to keep its "clean, green" reputation afloat.

Further Research

While analysis of coverage of New Zealand and carbon emissions in the major newspapers in Australia, the UK and the US provided an overall impression of overseas news media perceptions of "clean, green" NZ, other influential media, such as TV, radio, films, magazines and social media need to be analysed to allow for a more comprehensive picture. It would also be useful to find out more about the different forces that influence coverage, such as editorial decisions, and how the tone of coverage was influenced by lobbying and PR.

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The Carrot or the Stick Approach? Effective Delivery of Behavioural Changes Towards Energy Conservation and the Use of Renewable Energy in Local Communities

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In recognising the poor uptake in past campaigns aimed at increasing pro-environmental behaviour, the environmental campaigner is increasingly looking towards guidance tools, which can deliver sustainable and effective programmes of behavioural change in the community. With this in mind, this study develops a simple five-step checklist, based on the findings of key desktop studies and recent environmental campaigns undertaken across Europe. In doing so, the intention is to provide an effective guidance tool to enable a more effective delivery of campaigns to target audiences and to avoid some of the pitfalls associated with such campaigns.

Keywords: environmental conservation, renewable energy, behavioural changes

Introduction

The application of social marketing tools, which are able to secure buy in to the masses, is the ultimate challenge facing the environmentalist today. Moreover, with the increasing uncertainty and unpredictability in the global economic market, in recent years, the focus of attention has shifted somewhat, despite the continual global threat from anthropogenic pollution.

The widely adopted approach of using environmental information to raise environmental awareness and therefore the adoption of pro-environmental behaviour, has been reported to be ineffective, with energy demand from the UK domestic sector predicted to rise by 4% by 2030, based on projected energy demand figures for 2015 (Department of Energy and Climate Change, n.d.; Kollmuss & Agyeman, 2002; Heiskanen et al., 2010; Skeg & Vlek, 2009; Howell, 2011; Corner & Randall, 2011). Hence, there is increasing interest in tools that are able to facilitate pro-environmental behaviour, i.e. behaviour which minimises the environmental impact of human activities through conservation of natural resources and prevention of anthrogenic pollution.

This paper attempts to provide guidance for the implementation of community initiatives focusing, primarily, on promoting pro-environmental behaviour through a five-step process based on the findings of key theoretical studies of behavioural change and case studies taken from previous campaigns on this subject matter.

Although the original intention of the study was to focus primarily on the implementation of environmental campaigns in the UK, the process is not geographically restrictive in its application. Indeed, the case studies taken from the MECHanism toolkit, a European wide initiative under the Seventh Framework Programme Energy Theme developed through the Changing Behaviour project (Changing Behaviour

Consortium Project, 2012), serve to demonstrate its benefits to a wider audience and substantiate the findings of the study.

Methodology

The formulation of the guidance tool, through the desktop study, comprises two parts, which are as follows:

1. A review of key behavioural models, desktop studies and case studies taken from past environmental campaigns from across Europe, established through the European Seventh Framework Programme Energy Theme on Changing Behaviour
2. Identification of the key drivers, based on the above, towards pro-environmental behaviour.

In doing so, the intention is to capture the salient points from both theoretical studies of behaviour change and past campaigns that focused on promoting behavioural change in the community.

Results and Discussion

A review of key theoretical behavioural studies and environmental campaigns from across Europe leads to the identification of drivers towards pro-environmental behaviour. The complexity of human behaviour and the promotion of behavioural change warrants solutions which address the issue from an internal and external perspective, hence the selection of theoretical models which encompass these aspects.

Of the theoretical models reported, the Ajzen's Planned Behavioural Theory, Transtheoretical and Social Cognitive Theory Models, each provide a different perspective regarding the influencing factors towards behavioural change, i.e. rationalised intention, emotional willingness and social influence on human learning and development.

In the case of Ajzen's Planned Behavioural Theory model (Ajzen, 1991), developed from the theory of reasoned action, (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), the central premise is the individual's intention to perform a certain behaviour, with the intention fueled by both internal and external factors, e.g. motivation (internal) and social norms (external) (see Figure 1). Although critics of the model (Diekmann & Franzen, 1999; Heiskanen et al., 2010; Barr, Shaw & Coles, 2011) claim that this is an oversimplification of human behaviour and is too individualistic, the model, alongside other studies, highlights the importance of such influences as: self-efficacy, motivation, values, attitudes, infrastructure, political climate, economics, social and cultural norms (Kollmuss & Agyeman, 2002; The Chartered Institution of Water and Environmental Management, 2012/2013; Skeg & Vlek, 2009; Heiskanen et al., 2010; Grob, 1995; Clark & Moore, 2003).

In particular, the issue of self-efficacy or "perceived behavioural control" is a subject which is pertinent to campaigns which are attempting to promote behavioural change through raising awareness of the impact of climate change (Heiskanen et al., 2010; Semenza et al., 2008; Allen & Ferrand, 1999) . The problem is further complicated by, the often reported, public's cynicism regarding governmental involvement and the perception of climate change not being an immediate threat. These comments are also reflected in recent UK surveys on attitudes towards climate change (Diekmann & Franzen, 1999; Department of Environment, Food and Rural Affairs, 2011; Barr, Shaw, & Coles, 2011; Maibach, Roser-Renouf, & Leiserowitz, 2008; Poortinga et al., 2011).

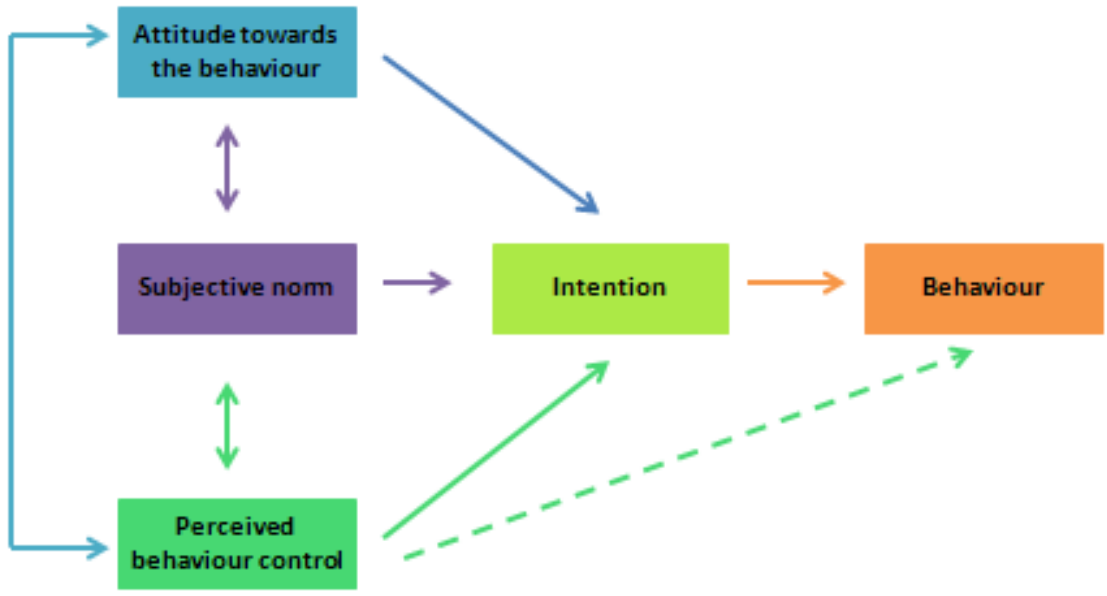


Figure 1: A pictorial representation of the Ajzen's planned behavioural theory (Ajzen 1991)

In sharp contrast to Ajzen's Planned Behaviour Theory, the Transtheoretical Model, a model developed from an integration of over 300 reported theories on psychotherapy and research into behavioural changes amongst smokers (Prochaska & Velicer, 1997), recognised the wide spectrum in the level of willingness shown by individuals towards behavioural changes. Prochaska and Velicer (1997) attempted to capture this through their six-stage model which is summarised below (see Figure 2):

1. Pre-contemplation – the stage at which the individual(s) is/are unlikely to take action in the forseeable future (next six months).
2. Contemplation – the stage at which the individual(s) is/are likely to make a change in the foreseeable future, i.e. the next six months.
3. Preparation – the stage at which the individual(s) is/are intending to take action in the immediate future and have already made the commitment by taking some action in the past year.
4. Action – the stage at which the individual(s) has made specific changes in their lifestyle, within the past six months, to accommodate the behavioural change.
5. Maintenance – the stage at which the individual(s) is/are working to prevent a relapse in behaviour.
6. Termination –a stage reached where the individual(s) will continue to adopt the behaviour change, irrespective of any obstacles or barriers introduced (self-sustaining).

The model defines the process as a series of stages, as opposed to a single event, and highlights the habitual nature of human behaviour - an occurence often overlooked by campaigners (He, Greenberg, & Huang, 2010; Bekkum, 2011; Semenza et al., 2008).

In the case of the Changing Behaviour Project: "Green Energy Train in the Hague" (Changing Behaviour Consortium Project, 2012), the inability of the campaigner to monitor energy savings in the apartment

blocks of over 200 householders meant that there was no immediate correlation observed between the consumer's behaviour and energy usage. Therefore, the critical transition from precontemplation to contemplation could not be established for those who were unaware of the impact of their behaviour. Furthermore, a sustained programme of continual improvement could not be established as no benchmark could be set. Hence, the need for a continual measuring and monitoring programme with specific, measureable, achievable, realistic and time-bound targets.

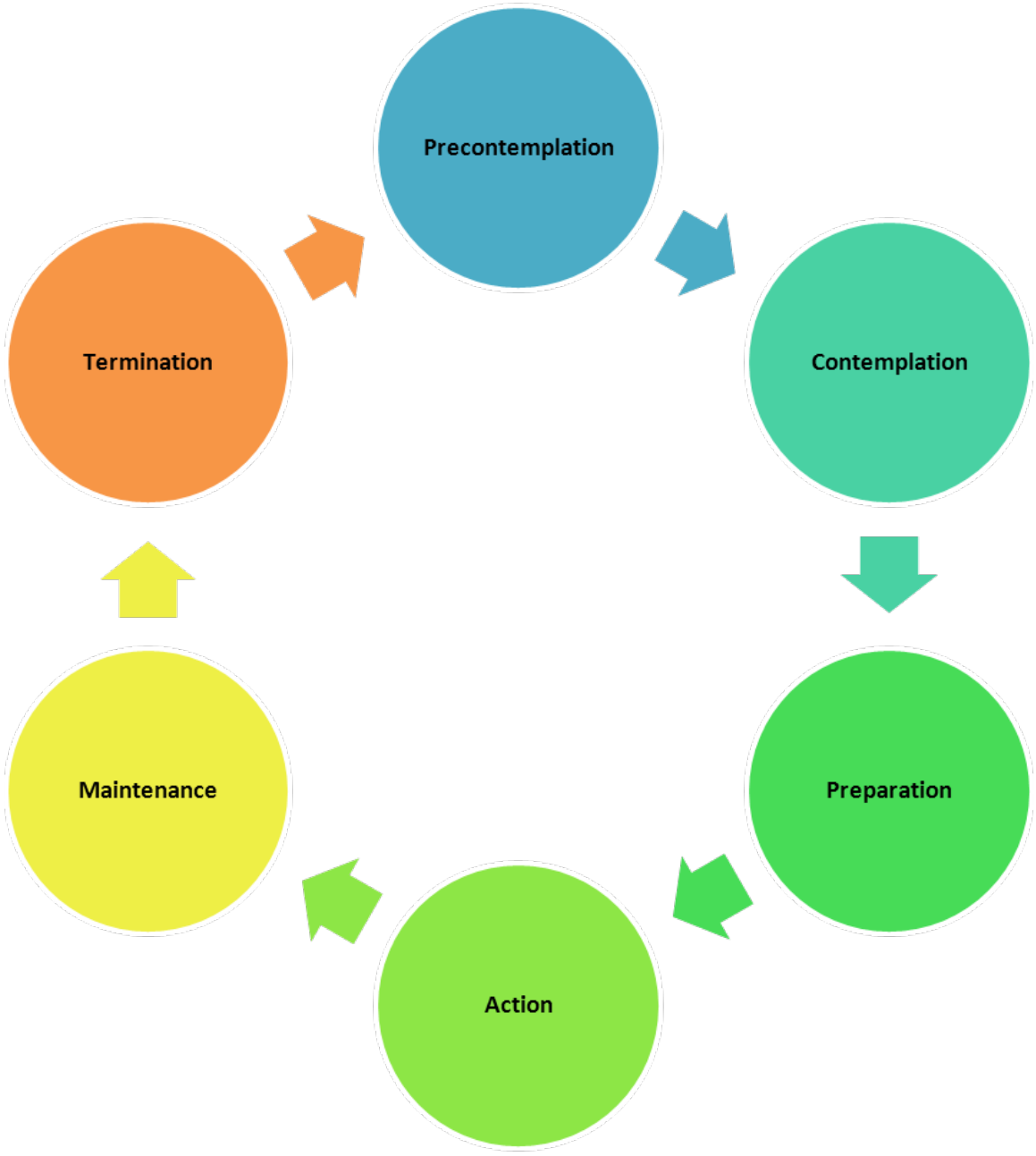


Figure 2: A pictorial representation of the trans-theoretical model (Prochaska & Velicer, 1997)

In recognising this transitional process towards behavioural change, He, Greenberg and Huang's informative study (2010) which investigated the development of energy feedback technologies, e.g. smart

meters, provided a clear framework to enable the implementation of a multi-intervention strategy. Their simple but effective demonstration of the application of the model at the various stages, offered a practical solution to the problem. Ironically, in the case studies produced from the Changing Behaviour programme, one sees examples of the application of the model at the various stages of "behavioural willingness" but no campaign attempts to incorporate strategies of engagement at each transitional phase. For example, the "Off, Really Off" behavioural campaign, established in Germany, had a clear objective which was to primarily highlight to the consumer the inefficient use of the standby mode on household electrical goods. In doing so, the intention was to empower individuals to take action over energy usage by highlighting the environmental benefits and economic benefits, i.e. aiding the transition from the precontemplation phase to contemplation (Changing Behaviour Consortium Project, 2012). However, there was no clear strategy outlined to enable continual development, leading to a potential relapse into old habits or even stagnation.

Finally, the Social Cognitive Model (see Figure 3), unlike the two previous models, recognises the influence of social learning in changing behviour and is particular pertinent to environmental campaigns targeting the more impressionable of society, i.e. those of pre-pubescents age, as highlighted in the Active Learning Energy Education campaign conducted in Greece (Changing Behaviour Consortium Project, 2012).

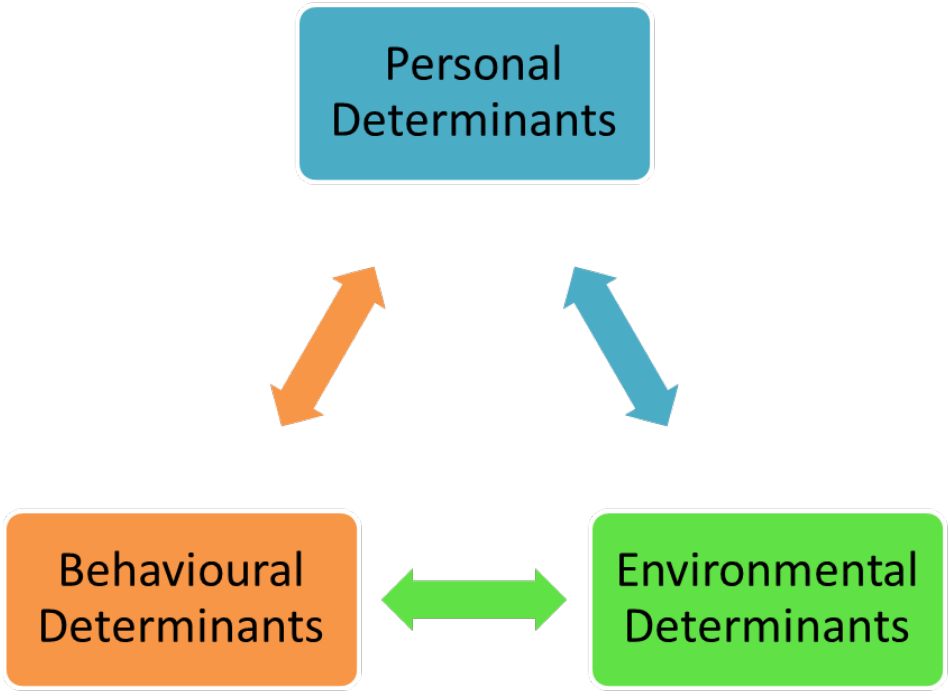


Figure 3: A pictorial representation of Bandura's social learning theory model (Bandura, n.d.)

In this model, the hypothesis that human behaviour is formed primarily through observational learning, leads to a model of observational learning, which is based on attentional (those significant features of the modeled behaviour selected by the observer), retentional, motor reproduction (what the authors refers to as: "the conversion of symbolic represenation into the appropriate action"), and motivational processes (Bandura, 1976).

Despite the complexity involved in understanding human behaviour and the processes involved in facilitating behaviour change, both theoreticians and practitioners have found some commonality in terms of identifying some of the underlining factors that faciltate behavioural change.

Many of the drivers are often not directly environmentally related, with many highlighting such influences as: motivation, beliefs, values, attitude, self-efficacy, social dynamics, political climate and infrastructure, as being critical components to the successful implementation of campaigns designed to appeal to a mass audience.

First and foremost, at the core of the campaign, should be an understanding of the target group or audience and through this knowledge, the development of a multi-interventional campaign, which encompasses the needs of the vast majority of the target audience whilst achieving the key environmental objectives of the campaigner, needs to arise. The five step checklist (see Figure 4), in building upon the work of Darnton (2008), provides a clear step-by-step process to enable the capturing of the audience's needs. In addition, the inclusion of an objectives and targets programme promotes a sense of self-efficacy by providing a direct correlation between one's actions and the immediate consequences. Thus, providing a programme of continual improvement.

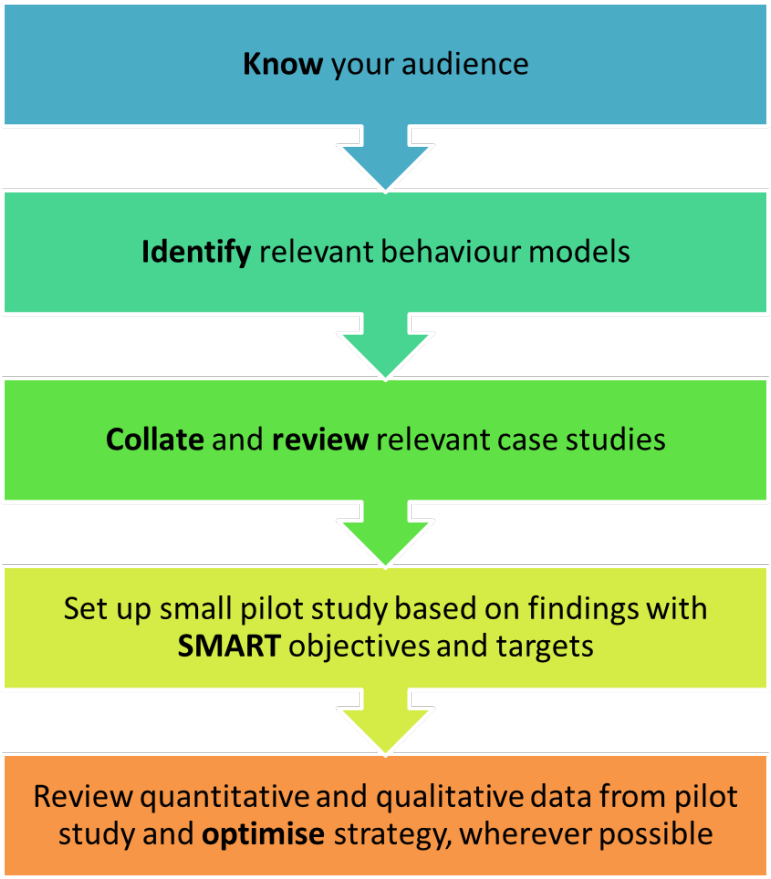


Figure 4: Five-step process for implementation of environmental campaigns promoting pro-environmental behaviour

Conclusion

In undertaking a review of some of the key desktop studies and campaigns associated with behavioural change, a simple five-step checklist was developed to assist in the implementation of an effective environmental campaign promoting pro-environmental behaviour. Through the development of the checklist, the intention is promote more fluidity in the process of engagement and strive to build upon the

successes of previous campaigns by widening the target audience and level of engagement. At the core of the approach is the target audience and acknowledgement given to the diversity in the drivers towards behavioural change and the internal, external and social determinants that facilitate continual sustained development.

Acknowledgements

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Hunting Elk on YouTube: An Ecocritical Perspective on the Nature-Human Relationship in User-Generated Media

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This paper explores environmental communication on YouTube. It is argued that YouTube is a pivotal object of study because user-generated media is where public understanding of environmental issues can be captured. The aim is to show that YouTube contributes to maintaining public ideas of what kind of place nature is and how humans should relate to it. The theoretical framework consists of ecocritical theories, in particular Greg Garrards (2012) theory about how well-established tropes are used to strengthen ecocritical perspectives in various narrative discourses. The result of an analysis of the narrative structures and tropes in 30 YouTube videos about Swedish elk-hunting shows that these videos contribute to a public understanding of nature as a male domain that serves to please male rather than human needs and in which nature is subordinated to man.

Key Words: Environmental communication, User-generated media, YouTube, Ecocriticism, Ecocritical analysis

Introduction

This paper displays the relevance of studying environmental communication on YouTube. In user-generated media, unlike traditional media such as news papers, television and film, the public has the role of both producers and consumers (Molyneaux, Gibson, O'Donnell & Singer, 2008). Studies have shown that this further engagement in various political topics (Askanius, 2010; Östman, 2012). There is no reason to believe that questions of environment are less engaging. On the contrary, there are reasons to expect that traditional media as vehicle of environmental communication is on the verge of getting out of competition by user-generated media. However, user-generated media has so far been largely left out from studies of environmental communication, especially in comparison with the quite extensive scientific attention that has been given to environmental discourse in news media (e.g. Allan et al., 2000; Anderson, 1997; Carvalho, 2007; Hansen, 2010; Lester, 2010; Olausson, 2009) and documentary film (e.g. Berila, 2010; Bousé, 2000; Minister, 2010; Mörner, 2012; Sandgren, 2007; Sørenssen, 2001).

Opened in 2005, with several European local versions opened in 2007 and 2008, YouTube rapidly became an enormous user-generated arena for all kinds of competing perspective on culture, politics and society. More than 4 billion clips are shown daily and more than 800 million users visit YouTube each month (www.youtube.com). It is argued in this paper that YouTube is pivotal for capturing public understanding of environmental issues and public environmental engagement. In particular, the aim is to show that YouTube contributes to maintaining ideas of what kind of place nature is and how humans should relate to it.

Theories

Our study takes off in ecocritical theories that explain how diverse ideological perspectives operate within narratives about human encounters with nature. Narrative is here understood as "one of humanity's most enduring, if not inescapable tendencies" (Bousé, 2000, p. 19) to make sense by structuring data into patterns of cause and effects. Narratives help to make the outcome of whatever "happens" in different kinds of text to appear transparent, inevitable and indisputable. Thereby narratives also serve ideological purposes and perspectives (Bordwell, 2008; Bousé, 2000). In particular, we are guided by Greg Garrard's (2012) theory about how tropes are used to strengthen ecocritical perspectives in various narrative discourses, from environmental debates to poetry. Tropes are rhetorical figures that communicate meaning that is different from their literal meaning. One example of a frequently used trope within environmental communication at large is apocalypse, which originates from the writings of the Iranian prophet Zarathustra around 1200 BC and is a prominent trope in for example the Bible and disaster movies. Another trope is wilderness, which was first constructed in American literature in the early 19th century, later epitomized the western movie and is today "the most potent construction of nature available to New World environmentalism" (Garrard, 2012, p. 66). While apocalypse brings forth a disastrous nature-human relationship caused by human greed (Buell, 1995; Garrard, 2012; Murray & Heumann, 2009), wilderness' core of meaning is that humans are obliged to tame the nature (Garrard, 2012; Ingram, 2000; Norwood, 1996). Dwelling is yet another trope. It has celebrated the local, traditional and familiar in western culture for the last 2000 years, starting in Virgil's writing, and has also been used for advocating both slavery and Holocaust (Garrard, 2012). Today, the dwelling trope is common in for example commercials for agricultural products and some (Swedish) reality shows about farmers and country life.

All of these tropes have, along with several other tropes, been transferred from one discourse to another throughout the years without completely losing their original meaning. Consequently, their meanings are deeply rooted in western culture and are passed from one generation to another with only minor, contextually motivated adjustments. In accordance to Garrard, this paper suggests that it is possible to "predict which [trope] will have a desired effect on a specific audience at a given historical juncture" (Garrard, 2012, p. 16) and that this is even more likely when tropes operate in user-generated media such as YouTube.

Materials and methods

YouTube provokes what Grusin calls a *divergence culture*; that is, YouTube is niche-oriented and fosters "multiple points of view rather than the small number of viewpoints represented by broadcast television" (Grusin, 2009, p. 66) and, one can add, news papers and other traditional media. YouTube consists of several niches, each of which attracts users with similar interests and is potentially contested and open to diverse views on the one and same phenomenon. The empirical material in this paper consists of one such niche, namely Swedish elk-hunting. Hunting is a phenomenon that continuously gives rise to competing ideas about the relation between humans and nature. When structured into a narrative, hunting takes the form of either a well-established story about heroes (hunters and dogs) that righteously defeat their antagonists (wild animals) (Le Guin, 1996) *or* a likewise well-known story about deserving victims (wild animals) that try to escape cruel villains (hunters and dog). Thus, videos about hunting are likely to communicate an either anthropocentric or ecocentric perspective at a narrative level. Analysis of the tropes helps to explain why and how the perspectives are maintained.

The focus on elk-hunting rather than other kinds of hunting has several reasons. Firstly, elk-hunting is definitely a separate niche in a Swedish context. The elk-hunting season, which occurs in the autumn, is practically holy. 260,000 out of approximately nine million Swedish inhabitants hunt and most of them are

devoted to hunting elk (www.regeringen.se/sb/d/8943). Consequently, the YouTube elk-hunting niche is likely to attract many users. Secondly, elk-hunting is less a subject of discussions within various environmental movements than for example wolf-hunting and bear-hunting. This means that the tropes at work in the elk-hunting videos are likely to be subtle and thus relevant to analyse: They do not simply support arguments for or against hunting but encapsulate public understanding of how and why humans should relate to nature in one way or another. Consequently, they provide us with knowledge that goes beyond knowledge about public opinion about hunting.

Yet another reason for focusing on elk-hunting is that the amount of videos about this particular phenomenon on YouTube is large but still manageable. A search for "älgjakt 2012" ("elk-hunting 2012") resulted in 128 videos. 29 of these videos dealt with mainly other topics than hunting and thirteen focused mainly on other kinds of hunting. Fourteen videos consisted of monologues, dialogues and interview about hunting and four turned out to be music videos with lyrics with included elk-hunting. Ten of the videos dealt with dog training, fourteen consisted of either one shot (of the camera) in which nothing happened or only sound and twelve of them consisted of one single, usually unfocused and shaky shot (of the camera). Finally there was one extra copy of one of the remaining 30 videos which were analysed with regard to their narrative structures and tropes.

Results

The analysis demonstrated that the narratives of the user-generated videos about elk-hunting on YouTube communicate a thoroughly anthropocentric perspective that is a belief in (hu)mans' superiority towards nature. There is only one exception and that is a minor and more or less accidental one: A hunter on stand whose camera captured an elk while he himself had fallen to sleep expresses a deep respect for the animal and takes a temporal ecocentric point of view on nature.

In the remaining 29 videos, mainly two tropes are at work: Wilderness and dwelling. Wilderness is used in a handful of videos to portray hunting as an adventurous mission. It comes into play by brief shots (of the camera), close ups, editing that creates suspense and mysterious music. In accordance to wilderness noted exclusion of women (Norwood, 1996), there are only men in these videos.

Dwelling is by far the most common trope in this study. It is visually present in the slow pace of editing and long takes of shooting teams drinking coffee, hunters on stand and dogs holding elks at bay. It is also present on the soundtrack, in the hunters' rural accents and ways of expressing themselves. All in all it communicates a relaxed, non-urban life style where (hu)man rule the nature and women are absent. The latter is not an original feature of the dwelling trope. However, dwelling has always suggested separate spheres for men and women and the Swedish elk-hunting videos are no exceptions.

To conclude, the Swedish elk-hunting videos on YouTube are available in a potentially contested niche that is dominated by an anthropocentric and androcentric view on the nature-human relationship. Through their most prominent tropes they celebrate nature as a space for male adventurers and dwellers. Consequently, they contribute to a public understanding of nature as a male domain that serves to please male rather than human needs and in which nature is subordinated to man. It remains to find out if this particular understanding is contradicted in other YouTube niches.

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www.regeringen.se/sb/d/8943

www.youtube.com/t/press_statistics

Media's Role in Informing Public Opinion on Environmental Health Risk: Motivating Health Informed Policy?

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Media coverage of issues shape the way the public understands health issues and risk, as well as how they engage with their representatives to influence policy decisions. In a rapidly changing media environment, publics are influenced by the information flows between media outlets, as well as by the content and framing of media messages. This pilot study identifies media network patterns that shape public exposure to information about environmental health risks inherent in proposed legislation, and reveals meaningful differences between new and traditional media outlets in reporting on, and framing health risks of the proposed policy. The results of this study suggest a need for traditional media to enhance coverage of environmental health risks to better allow for an informed public to engage in the policy making process. This research also identifies the key role that new media coalitions play in filling the information gap left by traditional media.

Keywords: Media Ecology, Network Analysis, Environmental Health Risk, Mixed Methods

Introduction

Environmental health risks occur in the setting of a local and social community, and are embedded in a policy environment that often dictates human health exposures (Brown et al., 2001). Research has demonstrated that environmental and policy approaches are far more effective in influencing public health outcomes than the individual focus common in research (Brownson et al., 2006). Public health depends to a large extent on their knowledge and understanding of health risks, and their ability to influence exposure to these risks by influencing policy makers.

The media has been the primary source in influencing the public understanding of health risk information, (Martinson & Hindman, 2005) and political knowledge (Eveland, Hayes, Shah, & Kwak, 2005). Public influence is a "two-stage process: the media first influence citizens, who in turn influence the elected and appointed public officials who represent them" (Kennamer, 1992, p. 105), creating a foundational role for the media in filling the critical health information needs of the public.

Similar research on message construction of environmental health risk information identifies a media deficiency in providing meaningful contextual information to allow the public to understand health risks (Crow, 2010) or to form opinions on policy issues (Crow, 2011). Research has identified that "information sufficiency" (Griffin, Dunwoody, & Gehrmann, 1995) is critical to inform the at risk public. The media in the most basic sense barely reports on environmental health issues. For example, in a comprehensive content analysis, research on the largest environmental health risk in the US (i.e., breast cancer) made up just 4% of the media content in a one-year period, with less than 1% of that content specifically addressed

prevention strategies (Atkin et al., 2008). This leaves open the question of how prevalent, contextualized, and accurate, reporting on environmental risks are.

Environmental Health Communication

Communication of environmental health issues is particularly difficult. To understand the health risks of iron mining, reporters must understand geology, hydrology, toxicology, and public health. In this case, natural minerals (sulfates) found in the rock overburden interact with oxygen, water, and microbial processes to form sulfuric acids. These sulfuric acids leach heavy metals from surrounding rock into drinking water, dramatically increasing exposures to regional residents. Similarly difficult, to communicate cognitive impairments caused by methyl mercury; reporters must understand the mercury cycle, and basic developmental neurology.

A recent report to the Federal Communications Commission on the Critical Information Needs of the American Public (2012) identified a "*severe shortage of research* that directly addresses weather and how the critical information needs of the public are being met, particularly in the area of health information… and local political coverage, especially under emerging demographic and media conditions." (Friedland, Napoli, Ognyanova, Weil, Wilson, 2012, p. vii). Currently the media is in a transition in which traditional media is declining (Starr, 2004), and alternative forms of media are emerging. The FCC report concludes; in regard to local health problems and the new media environment, this "*area is virtually untreated in the literature that we examined, and one of the most important areas for investigation*" (FCC Report, 2012, p. 17, emphasis in original).

Media Ecologies

Society is in a transformation in which emergent processes are enacted by organizational forms that are built on informational networks (Castells, 2000). The structure of communication within the larger community explains a great deal about its capacity for participation in the democratic process (Friedland, forthcoming), and its influence on the health risks of proposed policies. Therefore, to identify a community's capacity for being engaged with the policy making process, it is necessary to understand the media ecology of environmental health communication. To explore this issue, this study utilizes a combination of network analysis, content analysis, and frame analysis.

"Network analysis is an analytic technique that enables researchers to represent relational data and explore the nature and properties of those relations" (Monge & Contractor, 2003, p.35). Network analysis has been shown to be an effective tool for assessing community capacity among organizations to effectively address public health issues (Provan, 2005).

Semantic network analysis, a form of content analysis, is a systematic technique to identify the meaning structure of concepts in a set of documents (Doerfel & Barnett, 1999; Doerfel & Marsh, 2003). Semantic network analysis software such as Catpac quantifies the texts being analyzed by identifying the most frequently occurring words in the texts and determining patterns of similarity based on the way they are used, and revealing interrelationships among concepts that co-occur in narratives produced by the media.

Research on public journalism has identified the role of the media in framing issues to engage public participation (Nichols, Friedland, Rojas, Cho, & Shah, 2006). To frame a story is "to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, a causal interpretation, moral evaluation, and/or treatment recommendation" (Entman, 1993, p. 52).

This study utilizes network analysis, content analysis, and framing research to identify the media ecology of the environmental health risks of a mining bill (AB 426) proposed by the Wisconsin legislature in 2011. Research was designed to answer the questions: Which agencies appear most central in this communication network, and are best positioned to disseminate environmental health information? What health risk content emerges in the media coverage of this issue? Is the health information framed in a way to engage public participation on a bill that will affect the health of their community?

Methods

This study utilizes a mixed methods approach to provide a case study analysis of the media coverage of health risk associated with a proposed mining bill, AB 426. All stories were selected between November 11, 2011 and April 23, 2012 from those that emerged under the search terms “Taconite Mine” and “Wisconsin” and “Health.” Of the ninety-nine stories that appeared, each was individually reviewed. To be selected the story needed to include at least one of the key words of “health”, “mercury”, “lead”, “selenium” “arsenic”, “mesothelioma”, “drinking”, “contaminat*” or “toxi*.” This yielded twenty-seven media articles that included health information.

Identified outlets included both traditional (n=9) and new media outlets (n=17). Both state-wide online news outlets (JSOnline) and local online news outlets (Ashland Daily Press, Ashland Current, Wauwatosa Patch) were represented. Non-governmental organizations (Sierra Club, The Nature Conservancy, League of Conservation Voters, and Clean Wisconsin) accounted for four nodes utilizing new media. Web sites were hosted by governmental organizations, both traditional (Great Lakes Indian Fish and Wildlife Commission-GLIFWC) and tribal (Intercontinental Cry). Industry was represented through websites (Wisconsin Manufacturers and Commerce, Gogebic Taconite). Two nodes consisted of hybrid news websites (Third Coast Digest, and Yahoo News). The majority of reporting was through Blog sites written by citizen journalists (Penokee Hills Education Project, Save the Waters Edge, Root River Siren, Z Magazine, Wisconsin Citizens Media Cooperative). Traditional media outlets accounted for one third of the outlets, while new media outlets accounted for two-thirds of the outlets represented.

Findings

This study is a pilot study designed to identify elements of the media ecology reporting on the health risks of a proposed mining policy. For network analysis, key constructs include: nodes, links, directionality, centrality, closeness, betweenness, and multiplexity. Lines, in this study representing informational links, are typically called “ties.” Arrows represent the directionality of these ties (See Figure 1).

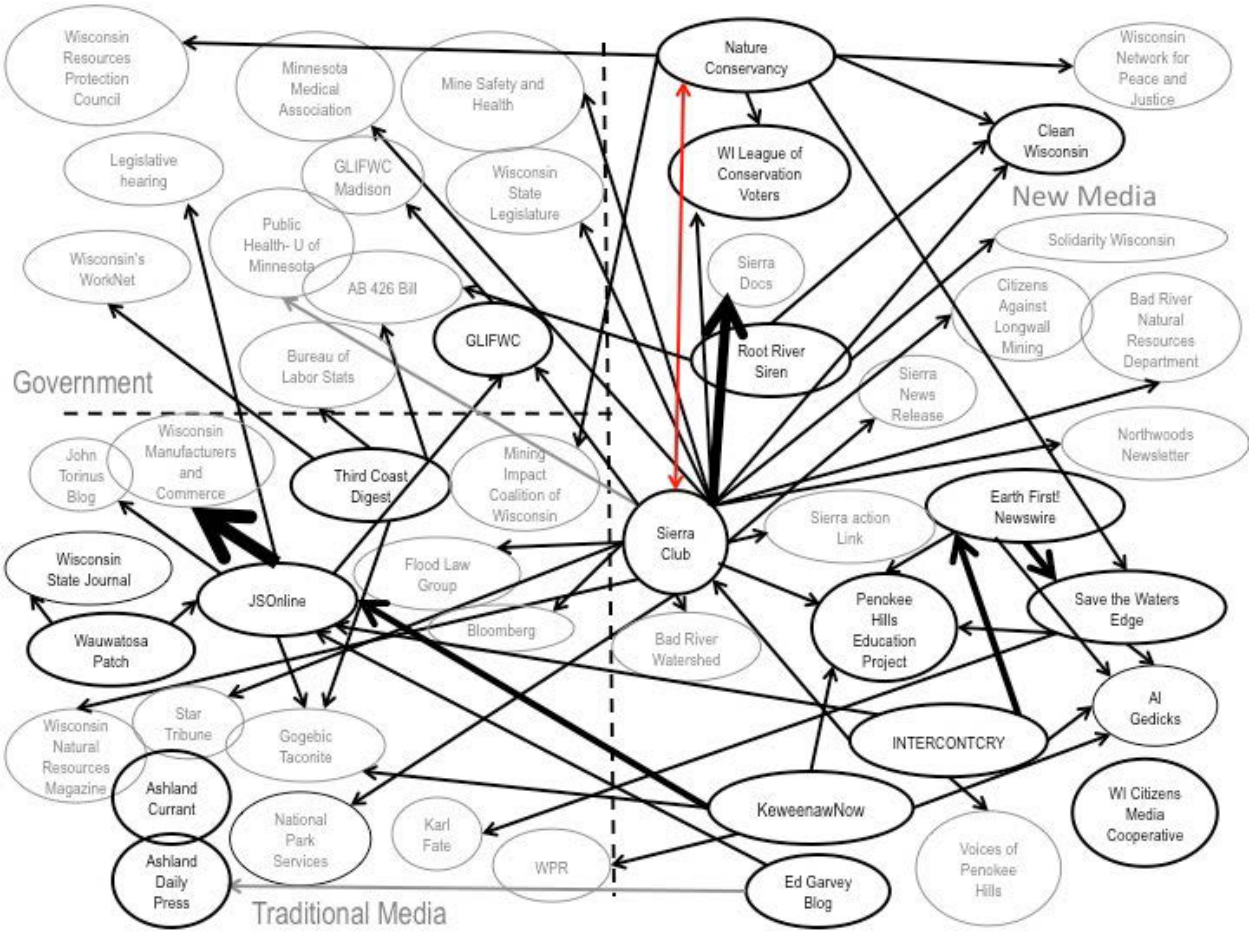


Figure 1. Network configuration of media outlets producing stories containing environmental health information (Dark circles). Gray circles represent informational links. Links depict informational ties to other media outlets. Width of lines indicates number of ties between nodes.

Insight into information flows is revealed by the "degree" of connections (number of ties), and provides insights potentially useful to public health organizations. In this study, Sierra Club (NGO) evidenced a broad range of links to informational resources including government (5), traditional media (4) and new media (11, including links to other Sierra Club projects). Reflecting information referenced on their site by other media providers (in-degree), JSOnline (a state-wide newspaper organization) evidenced the most in-degree (5), The Penokee Hills Education Project (4), academic researcher, Al Gedicks (4), and Clean Wisconsin (3). In traditional media, JSOnline evidenced eight out-degrees (references to other sites) linking primarily with lobbying groups (4), government (2), industry (1), and another journalist (1).

Reciprocity, or two-way relationships, are rare, with The Nature Conservancy and the Sierra Club being the only news outlets with an evidenced reciprocal relationship. However, measures of multiplicity (the extent that actors are linked together by more than one relationship) are more strongly evidenced in new media outlets. Clean Wisconsin (NGO) for example, is linked to the Sierra Club directly, but also through the Nature Conservancy. Multiplicity strengthens network ties, and provides a greater degree of stability should one outlet withdraw from the network (See Figure 2).

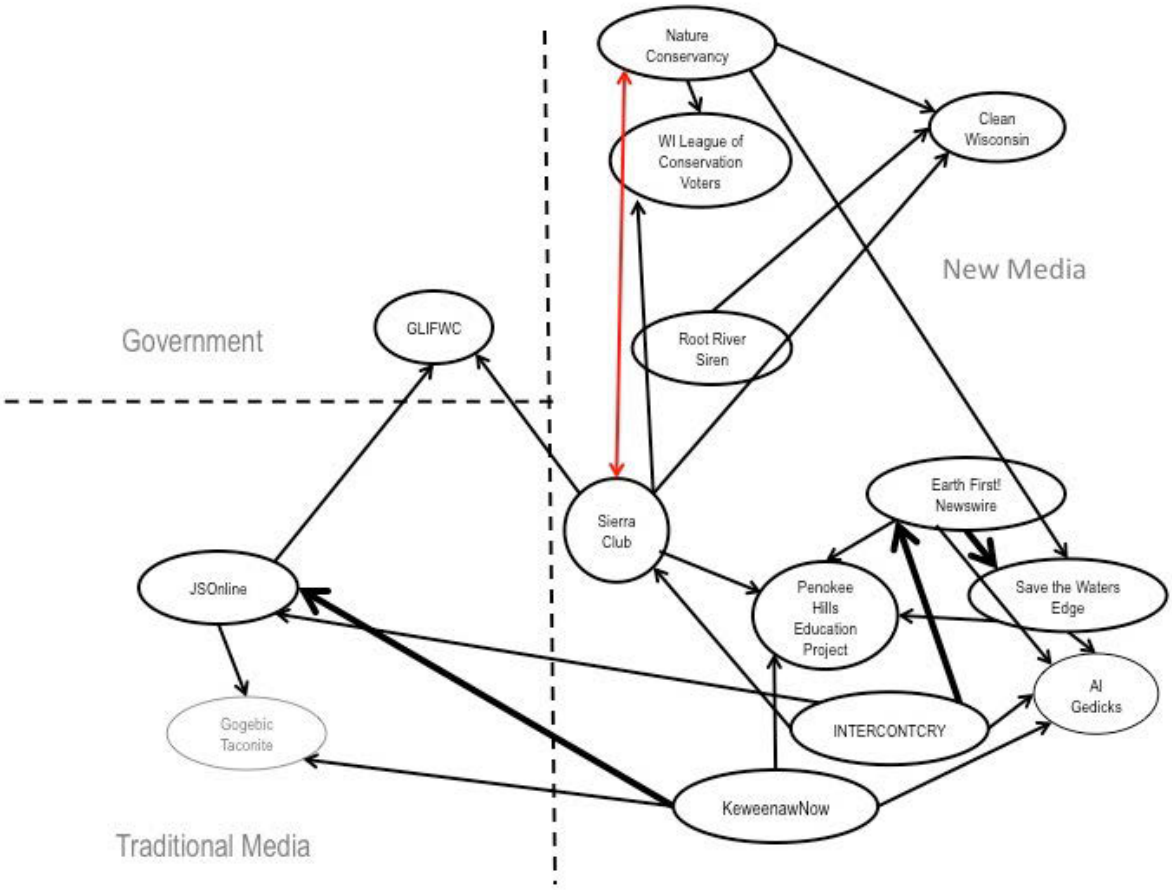


Figure 2. The multiplicity of ties between media outlets.

Actors who are more central to a network are measured by a combination of degree, closeness, and betweenness (how they mediate other relationships), and are visually represented as hubs. Removing a hub significantly disrupts the relational strength of the network. Removing the Sierra Club or JSOnline, for example would have a larger impact on the informational network than removing a media outlet with few connections.

Preliminary studies on content analysis and framing of this same data set add depth to network analysis data. Preliminary semantic network analysis shows a large disconnection between the words related to mining business (i.e., “iron,” “bill,” “G-tac,” “iron mine,” and “Gogebic”) and the words concerning health issues (i.e., “health,” “pollution,” “sulfide,” “clean,” “quality,” and “rice”). Of interest, the word “impact” is distant from the words that cluster with health issues, but sits close to the word “job” and the word group capturing mining business. This potentially reflects the dominant media frame of linking mining with jobs and economic impact, while minimizing the connection of health issues and mining.

Preliminary framing research reveals that frames found to be effective in mobilizing public engagement including the investigative frame and the problem solving frame (Nichols et al., 2006) are used significantly more by new media outlets than traditional media.

Discussion

On complex environmental health risk, new media appears to play a predominant role in the creation and dissemination of stories on environmental health risk and in framing information in ways that will more likely engage the public in civic action. Historically, many of the new media groups in this study were a part of an environmental coalition that allied with Native American tribal governments to successfully advocate for a "mining moratorium" which was passed into law in 1998. In this study, almost twice as many stories on the health risk of mining emerged from these new media groups than from traditional media outlets. In addition, the new media groups were more likely to recommend other new media outlets as information resources. In contrast, old media groups disproportionately linked to pro-mining groups, government or industry as information resources.

Network analysis revealed distinct differences in patterns of relational, and informational ties between traditional news and new media outlets. Information ties of new media appear to be of greater number and evidence more multiplexity of ties than do traditional media-who are underrepresented in reporting on the environmental health risk of this proposed legislation. Preliminary content analysis reveals that "job" as a construct clusters closely with constructs identifying the mining issue and with "impact" being more closely tied to economic issues than concepts related to health. Of interest, only one governmental agency reported on health risks (i.e., GLFIWC), and public health was not represented as having produced *any* information that was reported in the mainstream media over the five-month period in which the mining bill was being discussed.

Taken together, these findings point to the need for an expanded role of public health and community leaders in engaging traditional media in informing the public of environmental health risks of new policies. In addition, strength of new media coalitions for disseminating information was revealed as well as relational links, which could be further developed to enhance public education on both health risk and civic engagement.

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Crossing Borders: Immigration and Agriculture in the Press

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This study uses content analysis to examine the frequency and scope of attention paid to the role of immigrant labor in US agriculture within press coverage of immigration. The study examines newspaper articles from 2006-2011 drawn from 12 U.S. newspapers (representing the four US/Mexico border states, the top fruit and vegetable producing states, and two national papers). Overall, less than 9% of the articles offered any mention of agriculture in their reporting on immigration, though significant regional variations were discovered. A second content analysis attended more closely to the sources cited and topics found within a 20% sample (n = 112) of the relevant articles. Government officials and law enforcement sources were quoted nearly three times as often as immigrants themselves. Business leaders were cited four times as often as farmers. Crime and terrorism appeared as a prominent theme—more so than discussion of field workers' wages, working conditions, housing, or physical and mental health.

Keywords: migrant labor, illegal immigration, media framing, news coverage, content analysis.

During his 2008 campaign for the presidency, then-Senator Obama promised to introduce broad-ranging immigration reform to Congress with the multiple goals of providing undocumented immigrants with a path to citizenship, securing the border, and punishing employers who hire undocumented workers. In June 2012, the Obama administration began to address that promise by announcing its "deferred action" policy (Deferred Action for Childhood Arrivals or DACA), providing temporary relief from deportation for children who were brought to the United States by parents or other relatives before they turned 16. More substantive and permanent solutions to immigration reform have yet to be introduced, but tackling this issue appears to be a central legislative goal for President Obama's second term. Many observers argue that given the importance of Latino voters in the 2012 election, immigration reform may be more likely to succeed this time around despite Congressional partisanship.

With an estimated 11.1 million undocumented immigrants currently residing in the United States (Passel & Cohn, 2012), the need for immigration reform is clear. Immigrant labor plays a relatively small but significant role in the US economy overall (accounting for about 5% of the total US labor force)—and particularly in food production, both on US farms and in food processing and manufacturing facilities (Callan, 2011). As such, immigrant labor and immigration reform bear directly on both environmental and human rights concerns. The quest for citizenship—and thus the ability to speak out on matters of workplace health and safety[1]--deserves consideration in any effort to revisit the topic of participation in the Commons.

1 In 2012 the Bureau of Labor Statistics (U.S. Department of Labor) reported that agriculture remains one of the most dangerous occupations in the United States. Rates of injuries and illnesses rose in only two private industry sectors in 2011: agriculture (along with forestry, hunting and fishing) and the accommodations and food services sector, both industries heavily reliant on immigrant labor (1). Agricultural workers suffer the highest rates of occupational fatalities of any US industry. In addition to the same risks faced by other industrial workers (e.g. working with heavy machinery in physically demanding labor), farm workers face a unique

Although the H-2A or "temporary worker program" offers visas for up to 45,000 agricultural workers annually, this falls far short of the roughly 850,000 agricultural workers needed each year to work in fruit and vegetable production (Kandel, 2008). A recent National Agricultural Workers Survey indicated that at least half of all hired crop farmworkers are illegal immigrants. (Other studies indicate the figure may be closer to 80%.) Given that few Americans (less than 2% of the population) are directly engaged in farm labor, news sources potentially play an important role in informing citizens about where our food comes from and how it is produced. While immigration policy and agriculture are both covered with some frequency in the press, it is less clear how often news articles about either US immigration policy or agriculture explicitly connect the two topics and address our dependence on illegal (and cheap) labor for the foods we eat or raise awareness of the health and safety of immigrants laboring under models of industrialized agriculture.

In an attempt to better understand the extent to which newspapers link coverage of immigration with agricultural labor, this project sampled newspaper articles from 2007 – 2011 drawn from the top newspapers (by circulation) in the four US-Mexico border states (Texas, New Mexico, Arizona, and California), the top six states (after California) in total agricultural production as measured by sales of vegetables, fruits, and nuts (Florida, Washington, Michigan, Oregon, Georgia, Wisconsin) as well as two national newspapers, the *New York Times* and *Washington Post.*[2] The time period studied encompasses several important events and actions relevant to US immigration policy. Included among them are the defeat of George W. Bush's immigration reform bill in the Senate in June 2007, attention to immigration reform in the 2008 Presidential campaign, passage of Arizona's anti-immigration Senate Bill 1070 (entitled the "Support Our Law Enforcement and Safe Neighborhoods Act") in April 2010, subsequent boycotts as well as court hearings and rulings on its constitutionality, and passage of strict anti-immigration legislation in five other states (Utah, Georgia, Indiana, Alabama, and South Carolina) in the first half of 2011.[3]

Literature Review

One approach to examining media coverage of immigration has been to explore the agenda-setting function of mass media, or the extent to which the amount of press coverage of an issue correlates with increased perception of the relative importance of that issue. In their agenda-setting research, Dunaway, Branton, and Abrajano (2010) found significantly higher amounts of media coverage of immigration in border states than non-border states along with a corresponding perception of immigration as a "Most Important Problem" among residents of those border states. In a second study examining coverage of immigration in New Orleans following Hurricane Katrina, Dunaway, Goidel, Kirzinger, and Wilkinson (2011) identified an important caveat to agenda setting theory: "public concern [about immigration] increases as negative (and not total) coverage increases" (p. 929). Thus the tone of news coverage, and not simply its quantity, can play an important role in shaping public opinion.

While agenda setting seeks to establish broad patterns concerning the overall amount of news coverage on topics and corresponding public opinion, attempts to investigate the more specific content of news coverage and its potential influence on public perception has proven more difficult to demonstrate. Since

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set of other occupational hazards: pesticide exposure, heat and sun exposure, infectious diseases, musculoskeletal injuries, repiratory illnesses, skin disorders, and eye injuries (National Center for Farmworker Health, 2013).

2 Data drawn from the USDA Economic Research Data Service. Although Idaho ranks 5th among the states in vegetable production, it ranked 24th in fruit and nut production and thus was eliminated from this study. All states included in this study (with the exception of TX, NM, and AZ, e.g. three of the four border states) ranked within the top 11 states by value of receipts for both fruit/nuts and vegetable production. See "Monthly cash receipts from farming, by commodity group, 2012": Rk11fn--.xls and Rk11vg--.xls).

3 See "Anti-Illegal Immigration Laws in States" (2012).

its introduction by Erving Goffman in the 1970s, the concept of “media framing” has been intuitively attractive, yet has proven resistant to theory as well as to sound methodological investigation. Defined by Goffman as "schemata of interpretation" which allow an individual to make sense of information or a particular event or activity (1974, p. 21), media frames help organize information and facilitate understanding. Todd Gitlin argued that "frames are principles of selection, emphasis, and presentation composed of little tacit theories about what exists, what happens, and what matters" (1980, p. 6). Thus, complex issues are rendered more comprehensible through media frames that simplify and repackage them using familiar themes and tropes. But this process of selection and emphasis necessarily also entails its opposite: omitting altogether or downplaying some details or perspectives (Entman, 1993). As a result, scholars have argued that media framing helps to “promote a particular interpretation, evaluation, and/or solution” (Bell and Entman, 2011, p. 553) and in doing so serves as the “central process by which government officials and journalists exercise political influence over each other and over the public” (Entman, 2003, p. 417).

Studies examining newspaper coverage of immigration have attempted to explore media frames with the understanding that such frames can both “shape how the public perceives immigration and influence public policy regarding immigrants and immigration” (Chavez et. al, 2010, p. 111). Chavez, Whiteford, and Hoewe (2010) analyzed coverage of Mexican immigration in four major US newspapers from June 2008-June 2009. Although both the number and focus of stories varied widely among the four newspapers, overall the topics most frequently covered in the 160 articles included in their study were crime (50.6 percent), economics/business or jobs (30.6 percent), and legislation (28.1 percent). Kim, Carvalho, Davis, and Mullins (2011) focused their attention on how problem-solution frames in both newspaper articles and television stories from 1997 to 2006 specifically “present the questions of why illegal immigration is a problem, what the causes are, and how to fix the problem” (p. 292). Their findings also noted that particular stereotypes (e.g. associating illegal immigrants with crime) and simplistic solutions (tougher border control) tended to dominate articles from the border states—and may influence not simply public opinion on immigration reform but towards immigrants themselves.

Additional studies attempt to connect media coverage of (illegal) immigrants with subsequent public opinion. McKeever, Riffe, and Carpentier (2012) explored public perceptions of media as either favorable or unfavorable towards immigrants and their further judgments as to the likelihood of media coverage influencing others (third person effect). Stewart, Pitts, and Osborne (2011) analyzed the ways in which “media discourse can shape real and perceived intergroup threats” (p. 22), both among members of the dominant group made more fearful of outsiders and for members of an “out-group” expressing vulnerability to backlashes.

Far less scholarship has been devoted to media frames used in conjunction with agricultural laborers. Bauder (2005) teased out a number of contradictions in the ways in which migrant laborers in Canada are both valued and devalued in news articles. Similarly, Inouye (2012) explored the ways in which newspaper articles express a conditional acceptance of migrant workers (in both farm and domestic labor) that serves to perpetuate divisions among citizens and non-citizens and simultaneously maintain systems of unfree and inequitable labour. Linda Chavez (2006) explored “The Realities of Immigration” in comparison to its role as a wedge issue in the 2008 election campaign.

If only limited attention has been devoted to press coverage of agricultural workers, an extensive body of literature has been devoted to documenting the conditions of their labor. Angus Wright’s seminal work *The Death of Ramon Gonzalez: The Modern Agricultural Dilemma*, originally published in 1990 and again in a 2005 revised edition, explores the human and environmental consequences of modern, chemical-dependent agriculture. More recent studies on pesticide exposure among migrant laborers include Flocks (2012), Snipes et al. (2009), Schwartz and Pepper (2009), McCauley et al (2008, 2006). Other scholars

exploring the human toll of migrant labor include Eric Schlosser's (1995) study of strawberry workers, Jill Kilanowski's (2010, 2012) work among women migrant farmer workers in the Midwest, and Louise Ward's (2010) research into the stress of family separation experienced by migrant laborers. Philip Martin's work (2006, 2008, 2009) offers historical as well as economic analysis of the role of immigrant labor in U.S. agriculture. Together these sources help document the long hours, strenuous physical demands, dangerous working conditions, stressful lives, and low pay that characterize agricultural labor in the United States—so that consumers can purchase "cheap food" grown on large-scale, industrialized farms. But the question this paper asks is to what extent this information finds its way into newspaper accounts of immigration.

Methods

The study was divided into two portions. The first phase examined the amount of overall coverage of immigration within the newspapers and the percentage of these stories that devoted any attention at all to agricultural issues. Articles were identified using a headline search for the term "immigra*" for newspapers included in the study. LexisNexis was used to search the four newspapers included in its database (*Atlanta Journal and Constitution*, *Los Angeles Times*, *New York Times* and *Washington Post*). The remaining newspapers (*Albuquerque Journal*, *Arizona Star*, *Dallas Morning News*, *Detroit Free Press*, *Milwaukee Journal Sentinel*, *Oregonian*, *St. Petersburg Times*, and *Seattle Times*) were searched using the NewsBank database. Once articles with "immigra*" in the headline were identified, a second search was conducted within each article for the terms "farm* or "agricult*."

The second phase of the research entailed conducting a content analysis of a 20% sample of those articles that did include mention of farming or agriculture in the body of the article. The content analysis examined the following features within these articles: date, author, story length, immigration origin, sources cited, and topics mentioned. Each article was coded independently by two research assistants; any discrepancies in coding were worked out through discussion.

The research questions explored in this study are as follows:

> RQ1: To what extent does news coverage of immigration acknowledge dependence upon (illegal) immigrant labor in current agricultural practices? In other words, how often is the topic of agriculture/farming mentioned in news articles about immigration?
>
> RQ2: When agriculture is mentioned in news articles about immigration, in what ways is it addressed? More specifically, are details about farm laborers' working conditions, wages, housing, or health and safety included in the accounts?
>
> RQ3: Whose voices are heard in discussions of immigration and agricultural labor? To what extent are immigrants themselves given an opportunity to speak? To what extent are farmers' views heard?
>
> RQ4: What other concerns enter into press reports about immigration? How often are economic concerns, crime/terrorism, or the changes to community life introduced in these reports? Conversely, how often is immigrant labor paired with the myth of the American Dream?

Findings and Discussion

Coverage

For the first portion of the project, a total of 6,251 articles were identified through the headline search for Immigrant/Immigration. The *Los Angeles Times* (1,226), *New York Times* (1,102), and *Washington Post* (1,038) together accounted for more than half of these articles (3,366), with the *Dallas Morning News* adding an additional 936 stories. The amount of overall coverage on the issue of immigration, however, did not match up with more specific attention to agriculture. Overall, 9.4% of the articles on immigration included any mention at all of agriculture or farming, but the percentages varied considerably across the twelve newspapers.

Newspapers by REGION & YEAR	TOTAL	TOTAl w/ Agr./Farm	%
Border States			
Albuquerque Journal	165	11	6.66%
Arizona Daily Star	228	7	3.07%
Dallas Morning News	936	8	0.85%
Los Angeles Times	1226	140	11.41%
TOTALS	2555	166	5.50%
Pacific Northwest			
Oregonian	189	27	14.29%
Seattle Times	374	44	11.76%
TOTALS	563	71	13.03%
Southeast			
Atlanta Constitution	542	78	14.39%
St. Petersburg Times	184	31	16.80%
TOTALS	726	109	15.60%
Midwest			
Detroit Free Press	98	4	4.08%
Milwaukee Sentinel Journal	169	21	12.42%
TOTALS	276	25	8.25%
National			
New York Times	1102	87	7.89%
Washington Post	1038	97	9.34%
TOTALS	2140	184	8.59%

Table 1: Newspaper Article Totals (by Region)

When examined by region of the country, the southeastern states of Georgia and Florida devoted the highest percentage of articles on immigration to mention of agriculture (14.4% and 16.8% respectively), followed by the Pacific Northwest states of Washington (11.8%) and Oregon (14.3%). Significantly, these four states all appear within the ranks of the top ten states for the share of temporary hired workers on US

fruit and tree nut farms and vegetable and melon farms.[4] Additionally, 11.4% of the *Los Angeles Times* articles on immigration contained mentions of farming or agriculture, as might be expected of a newspaper representing the state ranked first in the nation for fruit and vegetable production.

The national papers of record, the *Washington Post* and *New York Times,* included mention of this topic in just 9.3% and just under 8% of their stories respectively, most closely matching the overall average.

Two surprising anomalies occurred in the coverage found in both the *Dallas Morning News* (*DMN*) and the *Arizona Star*. Fewer than 1% of the *DMN*'s 936 articles mentioned agriculture or farming, although Texas ranks seventh in the U.S. in fruit and tree nut production, and eighth in production of vegetables, melons, potatoes and sweet potatoes (USDA). Just 3% of the articles found in the *Arizona Star* (or 7 of 228 stories in total) mentioned agriculture or farming. Arizona ranks third in the nation in vegetable (including melon, potato and sweet potato) production (USDA). Arguably, Arizona's strict immigration policy might encourage newspapers in the state to downplay the role of immigrant labor in sustaining current agricultural practices.

These broad patterns of coverage offer some insight into connections made (or not made) between immigration and agricultural labor, but primarily as indicated by its omission. A better understanding of this coverage necessitated a closer look at the articles themselves.

Sources

Cox (2010) describes media frames as organizational strategies connecting "different semantic elements of a news story (headlines, quotes, leads, visual representations, and narrative structure) into a coherent whole to suggest what is at issue" (p. 181). The second phase of the study attempted to explore these organizational strategies through a content analysis of a random sample (20%) of those articles that did include mentions of agriculture or farming. This phase of the project examined the individuals quoted in the articles[5], attending to their occupations or other markers of their relationship to the story, and the topics covered, from historical context to specifics on work and living conditions experienced by immigrants as well as anxieties and aspirations expressed by US citizens and immigrants themselves.

The number of speakers in these articles who represented either national or regional/local government supports the contention that policy debates tend to be dominated by elites. Gans' 1979 examination of news argued that efficiency, power, and geographic as well as social proximity to journalists played key roles in the selection of news sources—and thus tended to favor public officials as sources. Bell and Entman (2011) argue this dominance can be attributed both to the tendency that "government sources provide the mass media with the majority of the political information they report, and journalists calibrate the range of opinions in their stories to represent what they perceive to be mainstream government debate" (p. 553). Schattschneider (1960) and subsequent scholars have also pointed to inequities in wealth and resources as favoring corporate and business organizations as news sources, especially in stories with an economic angle.

4 Florida ranks 2nd in share of hired workers in both US fruit and tree nut farms and vegetable and melon farms. Georgia ranks 8th in the latter of these categories. Washington and Oregon rank 2nd and 3rd respectively in the share of hired workers for fruit/nut farms and 3rd and 7th respectively for share of hired workers vegetable/melon farms.

5 Only direct quotations (not paraphrasings) were counted in this portion of the content analysis. A speaker—regardless of the number of times s/he was quoted—was only counted once.

SOURCES	
US Govt. NATIONAL (Pres., Congress, Cabinet)	51
US Govt. REGIONAL/STATE/LOCAL	64
Mexican Govt. (local or national)	2
law enforcement (includes ICE, police, attorneys, judges)	43
researchers/experts (includes journalists)	31
advocacy groups: anti-immigration	18
advocacy groups: pro-immigration	47
business (includes business organizations)	52
farmers	13
immigrants (1st gen., legal or illegal, 1st person)	55
U.S. citizen (non-immigrant)	31
foreign citizen (not residing in or citizen of U.S.)	13
health officials (doctors, nurses, etc.)	4
religious leaders	5
educators (teachers, principals, etc.)	6
published reports (includes bills, laws, newspapers)	51
other	54

Table 2: Sources/Direct Quotations

Sources cited in these news stories followed the patterns noted by previous scholars. Of the 540 total sources (unique, named individuals) quoted in these stories, slightly more than one fifth (115) were affiliated with either the national (51) or state and local government (64). These included the President, members of his Cabinet, Congressional leaders as well as state representatives, governors, and mayors. An additional 43 individuals were associated with law enforcement, from judges and attorneys to Immigration and Customs Enforcement (ICE) officials or local sheriffs and police officers. Government officials and law enforcement sources, then, were quoted nearly three times as often as immigrants themselves (represented by 55 individual sources), the group most directly impacted by immigration policy and best able to describe their motivations as well as their living/working conditions. Danielian's study revealed that "the great bulk of ordinary working people was little represented in the news . . . Farmers and professionals were heard from even less" (Danielian & Page, 1994, pp.1074-75). That pattern was repeated in this instance as business leaders (52 individual sources) were cited nearly as often as immigrants, but four times as often as farmers (13 sources). Such scant attention to farmers' views begins to reveal that although agriculture and farming were mentioned in these stories, it was rarely the dominant focus.

Themes

The sources cited clearly shaped the thematic content of these stories. Most stories focused on policy alternatives and law enforcement concerns. Perhaps not surprisingly, given the attention to legal issues, concerns about crime figured into 32 (28.5%) of these news articles with specific mention of terrorism appearing in an additional 6 stories. Kim et al. (2011) argue that "news organizations are for-profit organizations; the stories that attract a large audience become a regular choice (Wallack et al., 1993). In this regard, it is not surprising that media were most likely to refer to crime when talking about negative consequences of illegal immigration" (p. 310).

Some scholars have argued that the focus on crime in news articles about immigration may fuel public perception that immigration is causally related to increases in crime as reported in the National Opinion

Research Center's 2000 General Social Survey (Rumbaut and Ewing, 2000, p. 5). This perception persists despite considerable evidence that immigrants are less likely to commit crimes and to be incarcerated than native-born individuals[6] and that crime rates in the United States overall have actually declined at the same time that immigration has increased to its current level (Rimbaut and Ewing, 2000, p. 4).

THEMES	
A. U.S. POLICY DEBATES & LAW ENFORCEMENT	90
B. CONTEXT: HISTORY OR IMMIGRATION NUMBERS	51
C. ECONOMICS/COSTS ($ amt. for services, law enf.)	15
D. IMMIGRANT EXPERIENCE IN THE U.S.	
D1. personal narratives	23
D2. jobs (generic or other)	69
D3. farm or agriculture jobs	69
D4. food sector jobs	32
D5. wages (hourly or day)	36
D6. working conditions (hours, safety, etc.)	22
D7. housing (availability or conditions)	16
D8. personal health (mental or physical)	1
E. SOCIAL IMPACTS	
E1. social institutions (family, church, community)	21
E2. crime (drugs, gangs, prison)	32
E3. terrorism/terrorists	6
F. OTHER	7

Table 3: Themes Present in News Articles

Notably, crime and terrorism figured into more news articles (38) than did mention of farm workers' wages (36) and a nearly equal number of times than did mention of field workers' working conditions (22), housing (16), or physical and mental health (1) combined (n = 39).

The attention to crime and terrorism in these news articles also underscores analyses conducted by Streitmatter (1999), Branton & Dunaway (2009), and Ono and Sloop (2002) who discovered an "us vs. them" frame dominating news stories. Similarly, McKeever, Riffe, and Carpentier (2012) found that fully 60% of the participants in their study "agreed that immigration threatens traditional values and customs" (p. 433). Concerns about negative social impacts on communities as a result of increases in immigrant population were voiced in 21 (18.5%) of the articles included in the study. While such views were typically expressed by citizens, in some cases the individuals voicing these concerns were elected officials like Colorado's then-Representative Tom Tancredo (also campaigning for the presidency). "The impact of immigration," Tancredo is quoted as saying, "legal and illegal – on jobs, schools, healthcare, the environment, national security, are all very serious problems. . . . But more serious than all of them put together is this threat to the culture. I believe we are in a clash of civilizations" (Johnson, 2007). Such views represent a sharp departure from the historical image of America as a nation of immigrants, arriving in successive waves to build and rebuild the nation.

One theme that might be expected to appear in stories about immigration is the "American Dream." Twenty-three articles offered some form of personal narrative detailing an immigrant's experience in coming to the United States. Explicit mention of the American dream was found in just 18 (16%) of the sampled news articles. In many instances the dream was invoked as a direct counter to the situations that

6 The data presented by Rumbaut and Ewing (2007) found that native-born American males aged 18-39 are 8 times more likely to commit a crime than are non-naturalized Mexican-born males in the same age group.

immigrants actually faced. One news account detailed the case of Francisco Garcia who died in 2007 as a result of burns sustained in an accident at the Archer Daniels Midland BioProducts plant in Decatur, Illinois. A labor representative is quoted as saying that workers "come to chase the American dream, and for Francisco Garcia it was demolished all in a day's work" (Lyderson, 2009). An article reporting from Tulcingo Del Valle, Mexico, opens with the line "On most every street corner in this sun-baked town, dominated by a bright yellow church and a market cluttered with fresh produce, there are stories of sundered families and twisted versions of the American dream" (McKinley in Archibold, 2007). Immigrants to the United States were more than twice as likely to be stereotyped as criminals or potential terrorists than to be described as pursuing the American dream, willing to work hard in the hope of bettering their own lives or those of their children.

Conclusion

Immigration reform remains a pressing issue in the United States, one that years of debate and failed legislation have left to fester. News coverage of the issue serves to inform the public on policy options, and, in the process, helps to shape public opinion regarding policy—and regarding immigrants themselves. While the United States has long prided itself on being a nation of immigrants, the discourse in these news articles betrays that legacy. It may be significant that fully 106 of the 112 articles included in this study specifically mentioned immigration from Mexico and Latin America, while only nine articles mentioned immigrants originating from Europe. The perception of America as a land that historically welcomed immigrants does not appear to extend to current immigration flows from south of the border. As Stewart, Pitts, and Osborne (2011) noted, "illegal immigrant" serves as a metonym for Latino immigrants (p. 8).

Regardless of the need for immigration reform, it seems unlikely that legislation will be enacted in the near future without some shift in the framing that this topic receives in the press. Media frames which emphasize crime or anxiety about "the other" and deemphasize the vital and difficult work performed by immigrants—in agriculture, food processing, service sector work, and construction--are likely to continue to impede substantive changes to US policy. These barriers to legislative reform of immigration policy will continue to bar American workers from full participation in decisions that directly affect their health and safety—and, by extension, the health and safety of all Americans dependent upon current industrialized modes of agriculture.

Media frames surrounding immigration policy reform, then, must not only resist the temptation to engage public interest through a focus on crime, but must begin to more fully address working conditions that migrant laborers face in farm fields and food processing factories across America. The need to protect workers—and not simply make their exploitation as low-wage workers easier for agri-business concerns—must also begin to emerge front and center in policy debate if the American dream of citizenship, safety, and security is to have any hope of becoming a reality. The Commons, in this case, entails a recognition that caring for the land as well as caring for the people who labor on that land are inseparable goals in a democracy.

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Communicating Adaptation to Climate Change in Thailand: Communication Concepts for Practical Adaptation

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Impact of climate change is much severer and causes more damages to local communities who are one of the most vulnerable groups. Local communities need to know scientific knowledge on adaptation to climate change integrating with indigenous knowledge for sustainable solutions to promote food security and poverty reduction, understand how to communicate the integrated knowledge to enhance better understanding and participatory adaptation. This paper aims to find out what, how and why communication concepts can promote more effective adaptation to climate change of local communities in Thailand by reviewing related documents, analyzing climate change adaptation projects, and interview experts on community-based adaptation to climate change. The results show that climate change communication: credible and qualified sender, contents of risk, disaster and sustainability with scientific and local knowledge with right time and place, preferable channels to local people, community communication and participatory communication are crucial to practical communicating adaptation.

Keywords: communicating adaptation, climate change adaptation, communication concepts for adaptation, practical adaptation, adaptation in Thailand

Climate Change and Community-Based Adaptation

Climate change is a global circumstance having impacts to societies in various levels such as individuals, localities and whole regions. Local communities particularly farmers are more vulnerable to the impact of climate change because of facing floods, droughts, extreme temperature (Research and Development Institute, 2010).

Community-based adaptation (CBA) to climate change is a participatory community-driven approach to adaptation designed to empower and strengthen local capacity to respond to locally specific needs (International Institute for Environment and Development, 2009). Consequently, local communities play an important role in the promotion of public awareness of climate change. However, there has been not much on conceptualizing and analyzing adaptation communication (Heinrichs, 2010) and remains significant question regarding how to communicate climate change adaptation to local communities effectively (Moser, 2010), especially is significant for Thai society (Tangwisutijit, 2012).

This paper aims to find out how local agricultural communities communicate to reach adaptation measures, which can reflect the roles of related communication concepts for practical adaptation to climate change as well.

Data was collected by reviewing and analyzing CBA to climate change research reports carried out in Thailand focusing on agricultural sector, and interviewing five experts (three local people with direct

experiences, one academic expert and one international media expert) with at least five years experiencing on CBA to climate change.

CBA to Climate Change in Thailand: Practical Adaptation

Main Processes of Executing the Selected CBA Research Projects

According to reviewing official research reports and interviewing key informants, there were three research projects and one pilot research program related to agricultural CBA to climate change since the year 2009-2012. This paper focused on three research projects (from ten projects) from the pilot research program, carried out by Earth Net Foundation (EarthNet), with main responsibility of each project by the local NGOs and local people. The research program was granted by Thai Health Promotion Foundation, an independent state agency set up according to the Health Promotion Act 2001 and funded by 2% surcharge tax of tobacco and alcohol excise taxes. The selected projects were outstanding and meaningful to analyze and synthesize in terms of communication usage and variety perspectives.

EarthNet, a non-profit organization with main objective of promoting and supporting initiatives related to production, processing, marketing and consumption of organic food, natural products and ecological handicrafts (Green Net Cooperative. n.d.), played the role as a mentor and facilitator for the ten research projects. EarthNet guided four processes to execute the ten research projects as follows:

1. Raising awareness and perception of climate change adaptation for local people in the areas of study.
2. Analyzing risk and disaster because of climate change affecting local people: The important point to be analyzed was problems that might occur in the near and far future so as to find and plan appropriate adaptation measures for each local community. Some steps of this process were:
    a. analyzing past local climate and the future variability trend
    b. collecting monthly local data and knowledge in the past thirty years by using the questionnaire and local people forum (sharing and learning local people experiences about climate change, assessing the previous and present impacts and adaptation)
    c. brain storming about climate risk at present and the next ten years by local people with participatory process
3. Decision making and designing adaptation measures.
4. Executing and communicating adaptation measures.

The Three Selected Projects of Agricultural CBA to Climate Change

1) Klong Jinda Sustainable Agricultural Group: Agricultural Adaptation to Flood and Higher Temperature Project. Klong Jinda agricultural community, Nakhon Pathom province, is the well-known fruits planting group with some areas of rice growing. The community encountered the serious floods and has had the risk of flooding every year, and the higher temperature which has affected the fruits and rice growing, epidemics and pests etc. The group and Health Policy Foundation had initiated the pilot project of adapting to climate change as the following summarized details in Table 1:

Objectives	Channels of communication	Partners
1. To study impacts of climate change to farmers, adaptation and vulnerability.	- Meeting of working group - Questionnaire to ask opinions of local people about climate change and adaptation	Working group, Local farmers
2. To analyze vulnerability and risk.	- Questionnaire to ask vulnerability and risk to climate change - Animation clips, PowerPoint, photos of the local community	
3. To plan and experiment adaptation measures to cope with climate risk and generate food security.	12 experimental orchards (household adaptation)	
	Local people forum to design community risk map and plan to cope with flood (community adaptation)	
	Local people forum to review and summarize the work and expansion to other communities	
	Setting Klong Jinda Information center	
	Field trips to learn from each orchard	

Table 1: Adaptation to climate change of Klong Jinda Group

2) Ridgle Tillage Dry Seeded Rice Farming Experimental Project. The farming experimental project in Sanam Chai Khet and Tha Ta Kieb, Chachoengsao province, was to find out the appropriate adaptation rice growing method to cope with drought due to climate change. The project was experimented by local people and Promotion of Human Resources for Community Development Foundation, focusing on sustainable agricultural system and environmental and natural resources management to build capacity of local communities, as the following summarized details in Table 2:

Objectives	Channels of communication	Partners
To experiment guideline for farmers to adapt to climate change by the Ridgle Tillage Dry Seeded Rice Farming pattern	Meeting of working group, representative of local leaders and local farmers	Working group, representative of local leaders and local farmers
	Studying of local information, collecting climate risk information, previous patterns of rice planting and designing local map	Working group, local farmers
	Collecting of vulnerability to analyze and compare climate patterns in the past and present time, information were from local people experiences, comparing with statistics from the public organization	
	Organizing learning process of climate patterns to build learning and preparedness to climate change, and continuous organizing the activities every month	
	Experimenting rice growing with local wisdom application	

	Organizing learning process of organic agricultural school and design alternatives for adaptation to climate change	
	Organizing learning camp to build learning process about global warming and climate change for youths	Working group, representative of local farmers, youths

Table 2: Adaptation to climate change of the rice farming

3) Weather Forecast to Support Farmers to cope with Climate Variability and Climate Change Project. The weather forecast project carried out in Leng Nok Ta, Baak Ruae and Gud Chum districts in Yasothorn province, and the Green Net Cooperative in the province working with the local farmers was the coordinator of the project. The areas employed the weather forecast for local level, which had been supported by Center of Excellence for Climate Change Knowledge Management (CCKM) in order to support the decision and rice growing plan of the farmers.

Objectives	**Channels of communication**	**Partners**
1. To experiment guideline for farmers to adapt to climate change by the weather forecast for local level. 2. To study and synthesize lessons-learned from the experimentation of the weather forecast.	Developing questionnaire about weather forecast for local level that farmers desired	Working group, representative of local farmers
	Coordinating with meteorologists (to plan and design types of data and presentation for local weather forecast)	Working group, Meteorologists
	- Training how to use local weather forecast information - Training how to record rainfall	Working group, Meteorologists, representative of local farmers
	Designing sets of local weather forecast and communicating information to local farmers via SMS, announcement board, community radio	Working group, Meteorologists, local farmers
	Recording rice growing and productivity of local farmers (comparing with local farmers who did not use local weather forecast)	Working group, local farmers

Table 3: Adaptation to climate change of the weather forecast

Communication Concepts to Practical Adaptation: Reflection of Thai Society

The queries on who should be the key persons or groups and what characteristics of the persons or groups (senders) to communicate adaptation to climate change, what kind of media should be used for each stage of communicating adaptation, what should be the powerful messages and suitable channels of communication to be appropriate with media exposure and perception, and information seeking of local people will be proved by the climate change communication concept (Moser & Dilling, 2007; Marshall, 2010; Shome & Marx, 2009)

Main Coordinator of Each Project as a Crucial Personal Media to Promote Practical and Useful Projects

The main coordinator (NGOs staff) of three projects is a crucial personal media who possesses three qualifications: credibility, trustworthiness and communication skills, and can support to generate the practical project and results. These three qualifications are similar to the synthesized research projects about agricultural issues communication in Thailand (Kaewthep et al., 2000, 2001, 2006), a Thai well-known communication scholar. Result of the synthesis indicated the importance of personal media in Thai society communication that credibility of sender, admiration of sender, relationships between sender and receiver may be more meaningful than or close to the "media" and "message."

Techniques of Communicating Risk and Explaining Climate Change Technical Terms

In order to promote climate risk awareness and experiences sharing during the local people forum, the message of disaster, which the people have already shared their feelings and experiences before, can be the effective message. Then, the people can help together to imagine of the worst case/impact of climate change in the next five or ten years, and have collective and careful thinking of the alternatives to adapt themselves to climate change. Some technical terms about climate change such as "adaptation to climate change" can be explained to local people by relating to the word or direction of preparedness and sustainability, local people ways of life to care about their community environment and natural resources. "Vulnerability" can be explained by comparing with local people health, providing that if the people are unhealthy and lack of immunity, the people are vulnerable.

Personal Media, Local People Forum and Community Risk Map as an Integrated Communication System

The three projects of this paper employed personal media, local people forum and community risk map in the process of executing the project to promote more effective two-way communication and community dialogue leading to participatory communication. For personal media, it is significant to find the "actual/right communicators" who are accepted and paid respect by the local people. The communicators should be provided necessary adaptation knowledge and technologies, and then these communicators can extend what they learnt to the local people, and can act as a facilitator while having the local people forum to design the community risk map. Local people forum is like community arena for local people to share their information and experiences, and learn from each other. Moreover, designing their community risk map via the local people forum can help people to think of and understanding each other, and plan together to cope with climate change.

Community Communication and Participatory Communication as Key Concepts to Practical Adaptation

Community communication provides the core concept of using local media by and for local people, and participatory communication has the main purpose of raising proactive awareness and action of local people to manage local communities' resources and tackle their own problems (Tufte, & Mefalopulos, 2009; Sthapitanonda et al., 2006) are able to enhance more effective and practical communicating adaptation to climate change.

The three research projects and details from interviewing key informants of this study highlighted that "participatory action research" and "participatory communication" is a key approach and process for communicating risk to climate change, which can encourage local people to have a sense of belonging while participating in the project. These are also similar to the previous research projects about communicating adaptation to climate change (Indira et al., 2008; START, 2009; FAO, 2010; Flint, 2010).

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Mediated participation: The Case of Belo Monte Supporters and the Movimento Gota D'Água Dialogue on the Internet

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The environmental movement uses communication as one of its main mobilization actions. Information and Communications Technologies (ICTs) has recently been an interesting alternative to propose campaigns, mainly through institutional videos and digital social networks. This article examines the use of these instruments by Gota D'Água movement, specifically its main institutional videos that stirred the internet in late 2011, against the construction of the Belo Monte hydroelectric plant in the Amazon rainforest. In contrast, university students made response videos deconstructing the NGO speech in favor of the power plant. From the methodology developed by Dryzek (2005) the studied analyzed the discourses embedded in the videos demonstrating the conflicts in this environmental debate that took place in the new media "public sphere".

Keywords: environmental communication, environmental debate, environmental discourse, NGO communication, digital social networks

Currently, the advent of the resources of the information and communications technologies – ICTs - facilitated access to digital and virtual environments and broadened the possibilities for NGOs to communicate. This popularized the campaigns and debates around environmental issues. However, there is still much uncertainty about the changes caused by these new media interfaces and their results. Do the new media enlarge the possibilities for public participation? Do they increase mobilization and action around environmental causes? Could we affirm that there is a new "public sphere" mediated by ICTs? There are also doubts about the quality of these conversations, and its circulation, production and reproduction.

This paper investigates an example of communication strategy from the environmental movement that prioritizes the use of ICTs. The case study chosen was the environmental movement called Movimento Gota D'Água (Water Drop Movement), a set of environmental NGOs grouped in 2011 to defend the Amazon rainforest against the construction of a hydroelectric power plant. The key interesting features of this movement is that they promoted mediatized public debate about one of the main entrepreneurships of the Growth Acceleration Program (PAC) of the Brazilian Federal Government, both for its economic and environmental impact. The environmental licensing process and the construction of the Belo Monte hydroelectric power plant draw attention by media exposure, involvement of different stakeholders and controversial debates. Power generation in this region of Brazil is an old thread, because it is located in the Xingu River Basin, within the Amazon rainforest. But it was in 2009 that public debate was reactivated after the publication of the new project's Environmental Impact Assessment report (EIA) and followed up in 2010 with the granting of the preliminary license for its construction, deliberated by the Ministry of Environment.

This study is unique by the opportunity to identify and understand the discourses articulated by stakeholders in the mediatized “public sphere” about a plant construction and operation and its environmental impacts.

Movimento Gota D’Água and its opposites

It was composed by an association of environmental NGOs from the region: Movimento Xingú Vivo para Sempre (Movement Xingu Forever Alive) and Movimento Direitos Humanos (Human Rights Movement). Since the beginning, the movement presented itself in the web as “experts in communication” explaining that this specific competence would be used to “give voice to those who dedicate their lives to study the impact of today's decisions will have on tomorrow” (Movimento Gota D’Água, 2012, para.2). The campaign against Belo Monte was the first environmental campaign developed by them together. It aimed to protect the indigenous people, local communities and the rainforest from the impacts of Belo Monte hydroelectric plant construction. The movement was called as a bridge between the technical NGOs, artists and “activists like you.” The initial goal of the campaign was to get Brazilian society involved in the discussion of the significant impacts of Belo Monte construction and operations. The idea was to help citizens to understand the impacts for themselves and for the country. Since their launch, the campaign began on October 15th of 2011, they have their own website (in a blog format) and also featured on Facebook digital social networking and micro blogging Twitter. On October 30th, they published in the website their first video, a technical one. But it was the second institutional video called “É a Gota D’Água + 10” (It is the Drop of Water +10), released on November 15th, that made the campaign exploded. On November 22nd, there were already more than a million signatures. The goal of delivering the petition to the national congress was achieved with 1.35 million subscriptions at December 20th. Their videos were all presented in the Youtube digital channel.

This success also raised interesting movement in favor of the Belo Monte construction. One of the best example is the contrary campaign “Tempestade em copo d’água?” (Storm in a cup of water?) conceived by Dr. Sebastião de Amorim, an electronics engineer graduated from the Technological Institute of Aeronautics (ITA), current professor of statistics at the Engineering department at University of Campinas (UNICAMP), a São Paulo’s state owned institution. He recruited the help of volunteer students of Civil Engineering and a student of Economics at UNICAMP to make a video as a response in order to defend the construction of the hydroelectric plant and contribute to a national debate that would expand the discussion on the impacts including the positive ones and the correct investment and expected returns of the entrepreneurship. The motivation was given from the need to clarify misleading information disseminated by a "global video" (alluding to the actors and actresses who participated in the Movimento Gota D’Água and work at Globo Network, a Brazilian well known media company). The opposite group has an online website that offers more technical information along the video. One important document that supports the campaign is an article which details all of the arguments presented in the video signed by Dr. Amorin. (Tempestade em copo d’água, 2012) The apex of the media debate was the publication of a cover story in the Veja magazine called "The Knockout of the Stars" in early December, 2011. The NGO defended itself by publishing its replicas through videos developed by partner organizations responsible for technical support for the campaign.

Method

For the purposes of this article, the theoretical model of content analysis in environmental discourses in democratic societies developed by Dryzek (2005), was used. From the internet mediated debate around the Gota D’Água campaign against the Belo Monte plants, two videos were analyzed. One produced by

NGOs and positioned against the construction of the plant and other in favor of the power plant, produced by students of UNICAMP.

Dryzek's Framework for Environmental Discourses

Dryzek positions the environmental discourses in a political form, the social and environmental issues are the subject of politics and public policy targets. It is a subject that is constantly in dispute between totally different meanings, correspondingly to their speakers. The increasing conflicts faced today between social groups are necessarily disputes between discourses. While viewing the timeline of the environmental movement some authors may claim that there was an evolution of meaning for society, and therefore the society nowadays is more conscious about their environmental impacts. However, what Dryzek proposes to consider is that early environmental discourses still exist, explaining the complexity to manage the environmental crises today. And yet, the environmental problems are doubly complex by definition, already dealing with the intersection between ecosystems and human social systems. (Dryzek, 2005). Speech to the author is:

> a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent stories or accounts. Discourses construct meanings and relationships, helping to define common sense and legitimate knowledge. (p.9)

A paradox illustrated by Dryzek (2005) presents fundamental to understanding his reasoning. On the one hand he reaffirms the centrality of discourse in the constitution of man-nature relationship, however recognizes that what is socially interpreted is above all real. That is, the current environmental damage is real, whether they are recognized or not in social discourses. The pollution of the oceans continues to exist and kill fishes even if it does not make sense to people. One day there will be no more fish to feed these people and it is not possible to say whether they will establish a connection between the mortality of fishes and pollution. In fact, the effects of communication performed by individuals are distinct and perhaps disconnected from the social and environmental impacts produced by them.

Dryzek (2005) proposes an analytical framework for classification of environmental discourses with two dimensions. The first refers to the positions of speeches. There reformist posture inherently who always seek to change some condition, but not in its wholeness, speeches called "reformists." While others are called "radicals," they reflect an attitude of absolute support or rejection. The second dimension is the positioning ahead with industrialization, which aroused in the environmental discourses. There ones called the "prosaic" speech in which the industrial and socioeconomic model is given and you cannot change it completely, environmental issues are considered barriers. While the speech "imaginative" positions environmental issues as opportunities from the observing of new models of production. The combination of these two dimensions of analysis formats an initial schema for classification of environmental discourses, as illustrated later in this text. This scheme is detailed in subcategories that help the accuracy of the analysis. Each speech builds a narrative, a story in which elements of its constitution are suggested by the author as variables of analysis, as shown below.

The initial element are called "basic entities recogized or constructed" (Dryzek, 2005, p.17), referring to the ontology of discourse, which is recognized and valued as it is. For example, the recognition of the existence of intelligent ecosystems, human rights, shared management, human spirituality, among other concepts that differentiate completely the meaning and origin of production of environmental discourses. The second element “assumptions about natural relationships” refers to multiple insights about the relationships between environmental, social and human entities. Such as: market transactions, relationships of survival species and the functioning of natural systems with both cooperation and competition. The next element is the agent (individual or collective actors) and their motivations. There is

also recognition to non-human actors, a recent study area in the environmental communication field. And yet, the actors are checked in its context of performance that demonstrates what role is exercising in a specific moment. The fourth and final element of analysis is the key metaphors and rhetorical devices. The author lists seven metaphors as keys in environmental discourses as followed: (1) Earth as a spaceship; (2) medieval village that represents the "tragedy of the commons"; (3) nature as a machine that can be adjusted to the service of man, (4) nature is an self-managed complex organism; (5) human intelligence to non-human entities, such as ecosystems, conflict and war against nature, (6) nature as a mother or as a goddess, always in human form. (Dryzek, 2005, p.18)

Applying the variables of analysis, there are four areas of categorization of discourses established by Dryzek that can be identified: (1) global limits and their denial (survivalism and promethean response - growth forever); (2) solving environmental problems (administrative rationalism, democratic pragmatism and economic rationalism); (3) the quest for sustainability (sustainable development and ecological modernization); (4) green radicalism (green consciousness and green politics).

Results

Comparing the two waves of movements, favor and against the Belo Monte Hydroelectric plant. In the beginning of the Movimento Gota D'Água discourse they proposed the solution of environmental problems with emphasis on economic rationality. In a second moment, there is a transition to democratic pragmatism, where the call for public participation is the right solution. Finally, there is also a discourse that calls for awareness. Not yet a category of radical green but sustainable development, with appeal to future generations. However this condition discourses are destroyed in the video "Tempestade em copo d'água?" According to the classification proposed by Dryzek (2005), the two movements feature speeches characterized by solving environmental problems, centering on anthropocentrism. Both use of economic rationalism and the Movimento Gota D'Água also use the discourse of democratic pragmatism, where people will decide. While the opposite movement, seeking technical rationalism to deconstruct the arguments, showed the need to go to the real facts before make decisions.

The recognition of multiple discourses shows up an interesting result which suggests that an environmental campaign in itself carries the conflicts of the environmental movement. It is not possible to convergence in only one line of reasoning and /or ideology. It is necessary to continue the studies to verify the receipt and circulation of these discourses in social networks.

The contrast between the discourses of the NGO's institutional videos and the university students' videos tend to demonstrate how each stakeholder appropriates a specific discourse temporarily intending to defend its environmental theme. The Movimento Gota D'Água began his campaign with a focus on emotional appeal, but facing the loss of credibility answered with technical arguments to the "attacks" from the university students. The widespread media visibility produced an effect of clarification and compliance at first, but then the users themselves challenged and reshaped the institutional discourses. Moreover Veja magazine disqualified the NGO joining the movement of students and emphasizing the technical discourse instead of the journalistic discourse.

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An Urban Environmental Handbook

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Urban communities are dynamics spaces, shaped by an array of social and environmental changes. These built environments influence both human and non-human lives. They also shape how and the ways we relate to each other and our urban environment. I present a proposal for the creation of a handbook — an object that combines stories and photographs — that serves as a form of environmental communication to engage citizens within an urban community. This handbook allows for citizens to learn about their immediate locations and the world as a whole. It advocates for taking responsibility for the state of the urban environment, it engages visions of how the future could be, and it forges connections between people, in order to facilitate social change.

Keywords: chap/handbook, local urban communites, eco-storytelling

As a citizen of Göteborg, I received a publication in my mailbox in the summer of 2011. It was a colorful presentation of the city's current demographic issues. It described the history of the city and former "nature" of the city. I write nature on purpose, as I want to express this idea within the HANDBOOK project that I propose. But in my case, I want to address the natural nature of the city - or the city and its citizens' relationship to, let's say a *growing, blooming, living nature*. The Swedish publication about the city of Göteborg aimed to engage the citizens in the possibilities for local actions and called for higher awareness that everyone is a part of a living environment that is constantly changing and always in the need of adjusting to the larger picture or plans. Modern cities confront many challenges, especially in regard to demographic trends, but I argue that it is also important to focus on the way and how citizens relate to the environment. Focus needs to be placed on the lives of both human and non-human lives in the urban landscape and how humans take responsible for this place. This project illuminates how environmental communication plays a central role in how we understand our relationship to each other and the larger world. The goal is to bring the voices of citizens into the discussion about their immediate place and how it relates to the larger world.

The ecological problems that we confront are so vast and complicated. For this project, I chose to focus on the local environment in which people experience "nature" on a manageable scale. In creating a "*handbook for urban-environmental citizens,*" we can address broader topics (e.g. environmental degradation issues, climate-related changes, and efforts to advance sustainability), but do this in relation to the built environment that influences people's lives. The handbook that I propose will focus on different urban/nature projects in Salt Lake City and the voices that communicate these actions/initiatives. This project serves as a way to raise collected community-voices. It will combine visual/written communication.

I focus on peoples' relation to their immediate environment in order to broaden the conception of nature – so it is not something distant, but is a part of their neighborhood. This focus will help raise awareness and conscience of shared responsibilities. This handbook makes our build environments an arena where citizens meet and practice environmental communication; "Every city is also part of a spatial system that links localities into broader social structures and practices" (Endres & Senda-Cook, 2011, p. 260). It is within urban spaces that advocacy for praxis-based environmental communication can be done.

To direct a research method for this project I worked with some questions on urban-nature initiatives. This exercise served as a way to start communication when talking to both engaged citizens and people

outside this defined group who are still members of a community. The intent of the handbook is to build bridges within the community, given that people often have a sense of place, even if it is not fully articulated; "An awakened sense of physical location and of belonging to some sort of place-based community have a great deal to do with activating environmental concerns" (Endres & Senda-Cook, 2011, p 265).

1. When mobilizing communities - which communities are then chosen and who manage to develop/create something that will prevail after the event/action?
2. What are the less successful events/initiatives and why do they fail?
3. Who do we want to improve our cities for, and what de we see as *urban living* successes?

Public parks, open places, and vacancy within the built environment, all serve as places that allow for citizen to potentially engage in actions such as pocket parks, local gardening, temporary playgrounds or "seminars." These places are all examples of spaces that do and can be used for environmental communication within urban milieux. One might perceive urban places to communicate either engaged, encountered, inhabited or more impassive "messages or stories" – and how we will read our urban places relates to our connection to the urban settings. This will often be of a (physical) fluent "nature." This fluidity can be caused by cultural, temporal and personal perceptions that provide changes in how we perceive place and spaces "Byyond the fluidity of the physical and embodied aspects of a place, the concomitant symbolism of places is continually under challenge".(Endres & Senda-Cook, 2011, p 263).

Though the examples mentioned here might be immediate projects that could improve the local situation, they ideally should hold the potential to engage citizens in the process of change. It should open the eyes and hearts of citizens to recognition of "nature" in a wider scale. It helps people become aware of nature and the world in the immediate setting, recognizing a world that is often overlooked. For instance, people might care deeply about polar bears, while being less aware of the living-conditions of local animals, or the consequences/impact of their city dwelling on the environment as a "whole."

My aim is to explore to what extent the modern "urban improvement" approaches are successful at bringing nature into urban peoples' awareness. I want discover and expand on the values that mobilize citizens to deepen their relations to their given environment. This effort is necessarily and extremely important if we are going to explore our contemporary concept of "nature" and how this concept shapes our relation to the "natural world,"

"We do not just conceptualize nature — we are "nature with a concept of nature" - "The interdependency of human thought and the environment is a vast topic which has not been explored with anywhere near the same passion as the assertion of independence." (Rogers, 1998, p 246) (Griffin, 1995, Whole Earth Review No. 86).

The idea that guides the handbook is that "practicing environmental communication" is a way to approach or get in contact with people involved in activities, work or projects that benefit the environment of urban nature. The handbook will present these projects and actions that are taking place within the local community (in relation to environmental awareness). Collecting stories and turning them into an URBAN ENVIRONMENTAL HANDBOOK can be a way to perform praxis-based environmental communication.

I see this handbook as a way to engage in the strategy of local thinking, with possible international network potential. I wish to communicate the idea of local acts and successful ideas to broader networks. As the generation of future citizens and environmental voices grow up together with digital social media it seems important to focus on the visual aspects of environmental communication both as scholars and as citizens, the physical object of an handbook bridging the embodied local living and the potential of knowing, relating and caring for the wider natural environment - it is this mediation of a local places' potential to tie

into a more fluently “nature” of environmental. Beyond the fluidity of the physical and embodied aspects of a place, the concomitant symbolism of places is continually under challenge" (Endres & Senda-Cook, 2011, p 263).

The Benefit of the Handbook for General Citizens

For the general citizen an URBAN-ENVIRONMENTAL HANDBOOK would be an artifact of both written and visual information. It would be easily accessible and not take up too much time during a busy daily life. It can serve as a platform to reach out to other citizens in their home instead of relying on contacts that made at hearings/events. It can create an awareness of their surrounding or relationship to their environment.

A local handbook edition is a *place* where stories of people living in the city and already taking part of what exist as initiatives in their neighborhood can surface. The presentation of narratives is an extremely powerful approach when aiming to engage people. Knowing how someone got involved in local gardening is much more powerful if the person and the garden are already with in your vicinity and not presented as ideology or some practice that takes place far away. Knowing and caring about birdlife, both in the present and in regard to what has already disappeared, can create an awareness of wider environmental connections.

As the field of Environmental Communication by nature is about evoking, conveying – or telling – it is also natural that we look for ways to do so outside our own community of scholars. We may want to be in communication with people working out in the environment, and they might want us to bring their stories forth.Why and how citizens projects links to environmental communication? In general, a citizens project requires communication among many engaged parties, many work hours and long-term attention to build up solid projects. It involves tasks that emerge from the process of interact and generating new ideas. When we develop and work on projects that combine activists, artists and engaged citizens, we have to communicate outside our academic comfort-zone. Our ecological reality is complex and always changing. Nevertheless, people have to work with what exists, protecting existing nature, preventing pollution, and honoring human and/or non-human species habitants of our environment. We do not have to wait until the damage is done, we can come together to protect and celebrate what is present in our environment. Either way, we should act both as citizens and as scholars to engage and invent new ways to live with the “nature” around us. This will always involve communication.

Potential Visual Communication

A handbook is in the tradition of a slow media but has the validity of the written word. It can present images that tell a documentary story about what is happening in the city. It can reveal who wants to make change and how this change can happen.

The public information narrative can be provided both by laity and professionals, without going through corporate interests. These stories might be perceived as expressing biased political connotation if taken outside the realm of the local, but I believe if one focuses on the small-scale engagement, the vitality and the neighborhood/social benefits – rather than potential disagreements would prevail. A handbook can act as a local voice, unrestrained by whatever else might “shape” the local environment – this artifact would not perform calls for any kind of civil disobedience or satisfy the dire situation of the greater picture of environmental issues, but it might reach people and awake and make them aware of their privileges and responsibilities as citizens. This seems as a vital accomplishment for environmental communication, and of great importance for environmental sustainability.

Public Participation

This public scholarship involves collecting both written and visual evidence / signs / stories on existing actions and projects and communicating this information back to the neighborhood. To create and distribute an artifact like a handbook can provide citizens with knowledge, which they use to vitalize neighborhoods for further activities, and research on how projects and initiatives are developing in order to better live in the urban environment.

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Environmental Observatories and Citizens Participation: Virtual Public Arenas?

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Yarumo

I give a structured overview of the role that Environmental Observatories can play in information, participation, opinion making and decision making. Observatories investigated in this study are chosen from the Latin American region. From a symbolic interactionist point of view, social problems, like environmental problems, are products of a process of collective definition. As Citizens' or Governmental initiatives that continuously make information available on environmental aspects in the Internet, they may become virtual arenas. I specially intend to answer the following questions on Environment, Participation and Social Acceptance: 1. The Environment: How does the Environment that people can observe in these platforms look like? 2. Participation: How does the information exchange between actors, i.e. how does communication and participation triggered by these observatories look like? 3. The Role and Social Acceptance: Can Environmental Observatories (in Latin America) be characterized as "virtual public arenas" of the public sphere?

Keywords: Virtual public arenas, Digital Environmental Observatories, Information, Communication, Internet

Introduction

Open Access of data for Awareness and Participation are key concepts addressed in Principle 10 of the Rio Declaration (1992) denoting the need of information concerning the Environment and for what is it needed (United Nations [UN],1992a).

Agenda 21 shows in its Chapter 40 "Information for Decision Making" the scope of this "need situation" of environmental information, referring more exactly the role of Decision Makers and the function of information to meet broader objectives (UN, 1992b). The dynamic described lets guess but a linear and unidirectional information and communication process: a *two-step flow of communication*.

The dramatic changes in information and communication dynamics in the last two decades were brought about particularly by the Internet. This has led the proposal of renewed practices of public participation and information sharing. Virtual social networks are getting gradually central position on the definition, formulation and management of problems. Participation is therefore a key element in information collection, analysis, decision making and action.

The Virtual Arenas

From a symbolic interactionist point of view, social problems (like environmental problems) are described by Blumer (1971, cited by Hilgartner & Bosk, 1988) as products of a process of collective definition, and therefore competing for social attention. From this perspective, the relevance that environmental problems gain against other problems in the public sphere is product of a process of collective definition. This dynamic occurs particularly in public arenas, like the government institutions, the Media, political

organizations, NGOs, research community, private foundations, and others. “It is in these institutions that social problems are *discussed, selected, defined, framed, dramatized, packaged and presented* to the public” (Hilgartner & Bosk,1988, p. 59).

To what extent is Internet as Media in which the above mentioned actors inform and communicate a “public arena” in the sense of Hilgartner and Bosk (1988)? One may say that environmental social and institutional actors that arise in the digital space of Internet provide “virtual public arenas,” where environmental problems are being *discussed, selected, defined, framed, dramatized, packaged and presented* to the public. The “symbolic character” of these interactions in a digital space is emphasized here explicitly.

The Public in “Virtual Arenas”

In the Internet, the concept and reality of the “public” as the one that passively observed and received information, has changed dramatically and is somewhat diffuse now. Concepts like *“Mass Self-communication”* as proposed by Castells (2009) for the networked society, and “*ProdUsers”* proposed by Produsage.org (2007), make clear from the point of view of the individuals how they can involve themselves and participate in the definition and formulation of environmental problems. From the perspective of the traditional communicators, it describes how much *inclusion* as well as *participation* and *mobilization* opportunities (tools and structures) they offer in online communication sites such as “virtual arenas.”

To what extent do these new “virtual arenas” become effective parts of the public sphere, where the formulation and definition of social problems have a broader social impact? As Beck and Bohman concluded, “online communication itself does not generate a network public sphere,” and “the internet becomes a public sphere only through agents who engage in reflexive and democratic activity” (Beck, 2010, Bohman 2004 cited by Raupp, 2011, p. 9).

With respect to the communicative power of the networked public sphere, Friedland, Hove and Rojas (2006) argue “the new networked media system radically, even exponentially, increases the possibilities for reflexivity at every level of society (…) and they increase with each generation of society” (p. 24).

Environmental Observatories as Virtual Arenas

If Environmental Observatories (in the Internet) can be considered as virtual public arenas in the sense of Hilgartner and Bosk (1988) there arise the following important aspects to discuss about them and its potential in the definition and formulation of environmental problems: Reflexivity (and levels of reflexivity - first of the internal operators of it and second of the contributors), Democratic Activity, Management of Contributions, and Participation.

Descriptions of this kind of environmental communication spaces may not only help to support this point of view, but approach an interface of scientific based information and the communication framed by it. That is communication about the environment, the public involvement in this particular area, the different appropriate forms of this information (that is how the source and its resources lead to construct new knowledge and integrate it in the common schemas), its exchange and in particular cases its improvement through feedback.

In the sense of the interactionist point of view, these institutional environments as “virtual arenas” of the public sphere compete for attention not only in the broader scope of social problems, but between them,

because of the particular qualities of uncertainty of environmental issues (data [intrinsic] and effects [extrinsic]).

“Feedback among the different arenas is a central characteristic of the process through which social problems are developed” (Hilgartner & Bosk, 1988, p. 67). This can explain also (from a different perspective) processes of agenda setting, in which some problems dominates in many arenas of public discourse. It could mean, that the attention and relevance given to problems in public arenas is amplified or dampened as function of the feedback between them.

In controversial areas of sometimes very opposing opinions, like those in environmental problems,

> competing groups often struggle to impose definitions of a problem and, hence to influence policy. (...) Which interpretation of reality comes to dominate public discourse has profound implications for the future of the social problem, for the interest groups involved, and for policy. (Hilgartner & Bosk, 1988, p. 58)

In this case one can imagine the relevance that Environmental Observatories may acquire in the collective definition of Environmental Problems.

“Operatives” describe the role of the specialists in the collective definition of Environmental Problems. Their communication channels and the informal organizational structure that they shape explain how Environmental Problems are described in the cultural problem structure (the categories for describing social problems) of their societies’ public sphere. These also show the way in which environmental problems are described (for example scientific and technically) in case of most of the Environmental Observatories as E-government efforts. And these compete with other environmental problem definitions of other institutional arenas (may be an Environmental NGO or a community) or supports them.

Analysis

To describe Information and communication processes in Environmental Observatories of Latin America, two matrices of analysis were developed.

The first describes the scope of Information available, the other is related to the range of public participation in the sense of WEB 2.0 applications tools. In the sense of Hilgartner and Bosk (1988), the *formal characteristics* and content definition of the information available in the Environmental Observatories, describe how “operatives” of these arenas select, frame and define environmental problems. This aspect allow to show and discuss to which extend the public is sufficient and adequately provided with information to be involved in the process of collective definition of environmental problems.

The patterns of interaction as forms of participation available in these “virtual arenas” provide initial clarity to which range new “actors” in the role of external “operatives” of the Environmental Observatories in this case, are seen as involved in the process of collective definition of Environmental Problems in these “virtual arenas.”

CATEGORIES	
Form	Alphanumeric Data Data as Graphics, Special Distributions, Statistical Analysis (interactive)
	Georeferenced (maps and interactive maps)
	Analysed information: Documents, Articles, Publications
	Multimedia
	News Service
	Watches
Content	The Resources
	Themes
	Georeferenced
	Environmental Indicators

Table 1. Matrix of Analysis of Form and Content in Observatories

Participation and WEB 2.0 Principles

Castells (2009) concept of "Mass Self-Communication" refers to decision making as well as to action patterns of individuals in the networked society. This kind of communication involves actors in the process of generation and production of information and communication. The corresponding patterns of interaction as forms of participation in the observatories provide clearness with regard to the extent to which the public or audiences of these environmental digital media can be considered also as "external operatives" in the process of problem definition.

In this paper, participation is understood in a very broad view, in the sense of ways to influence problem definitions as well as decision processes and this view comprehends:

a) The right to be informed

b) The right to share (and produce) information

c) The right to hear and see it

Table 2 shows a scope of aspects related to participation that were analyzed in the Observatories under investigation in this study. They serve as examples for the reflection on their social role. These also show communication as interaction patterns in a digital or virtual arena, that may be related with those typical to characterize features and factors of communication actions

	CITIZENS PARTICIPATION IN ENVIRONMENTAL OBSERVATORIES						
	Participation as involvement in information generation	Participation - Scope / Limits	Interactivity in the Information Production and Publication	Feedback Previuously structured	Filter	Flow of Communication	Tools and Applications
PARTICIPATION AS A RIGHT TO BE INFORMED, TO SHARE (and produce) INFORMATION AND THE HEARING RIGHT, ALL TOGETHER AS WAYS TO INFLUENCE DECISION PROCESSES. (From the institutional level: Delegation and participation of power)	Informal involvement, (not regular - may have influence)	No restrictions	High Level	Not Structured	No	Multiple sources *Decision on ProdUser)	Web 2.0 (Facebook, Twitter, YouTube *ArcGis)
		Theme and Target-Group restriction	Middle Level	Not Structured	Moderated	One / multiple source(s), Two-Step Flow and multiple ways	Blog, Forum
		Theme restriction		Semi – Structured	Moderated	Multiple Sources, Two-Step * Multiple Ways	Ratings, Comments
		Target Group restriction	Low Level		Moderated	Two-way, one step	Chat, Email (inquieries and comments).
	Formal Involvement	Theme and Group Restriction	High Level	Structured	Moderated	Two-Step-Flow* / Two-way	Given by researchers
		Theme restriction		Structured	Mediated	Multiple Sources, One-way	Smartphones appl.
	Informal . Right to be Informed	Theme, space limit, Target Group restrictions	No	No feedback possible	X	One-way	Just Given Information

Table 2. Citizens Participation in Environmental Observatories

Three Web 2.0 Principles referred by O´Reilly (2005) are of relevance to this study:

1. The Web as a platform: as "an enabler between the user and his or her online experience."
2. Harnessing Collective Intelligence, where the collaborative principle is implemented but principally with the collaboration of the users.
3. Blogging and the Wisdom of Crowd. The knowledge and links of users become information that is made accessible and helpful for others.

Further Questions, Problems and Perspectives

There are many questions and aspects to study that emerge when analyzing and giving a picture of Environmental Observatories as "virtual public arenas."

1. The problems of restrictions and carrying capacities of the institutions (public or private) that operate Environmental Observatories.
2. If Environmental Observatories are effective instruments / profitable used?
3. How does the public as ProdUser in networked arenas realize to manage his own information necessities?
4. How does virtual communication interacts with social (group) communication? (Citizens Science).
5. To which extend can the concept of virtual public arenas explain the role of other forms of knowledge, different to the scientific one, in the collective construction of our views of the Environment (for example indigenous knowledge)?

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Politics, Logistics and Natural Resources: Cornerstones of the Sustainability Concept in Local Level Communication

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Heimo Tuomala
Bluehut

Communications is the way to make the sustainability concept a reality. The sustainability concept as such offers a solid basement for acceleration the values of the harmonized development of environmental, economic and social issues of any organization. But, in the local level, the cornerstones of the implementation are politics, logistics and natural resources. Sustainable development messages can sometimes conflict with messages made by politics and government bodies. In logistics the sustainability over time requires sufficient commercial benefits. Concerning natural resources, besides the sustainable planning and use of natural resources, the redistribution of income to the local level is a challenging issue. The communications mechanisms must be put in place and to find out if there is a need for much more coordination between actors. The lesson learnt by authors is that sustainability and environmental communication have to be positive and tailored to different local circumstances and cultural contexts.

Keywords: environmental protection, communications mechanism, sustainability adaptation, sustainability concept, sustainability communication

Introduction

A common factor in communication of environmental protection projects is that the concept of sustainable development can be interpreted in a number of different ways, depending upon a stakeholder group. It may be stated that instead of reaching consensus on a definition during the past decades, we have developed a better understanding of the complexities of sustainability.

To gain settled goals and results in implementation of environmental protection projects we have found out by our practical experience, gained in Finland and elsewhere, that politics, logistics and natural resources are the cornerstones, which formulates the sustainability concept locally. The efficient and participatory communication is – or should be - the glue which integrates all of them together.

The origin of the concept is based on authors' project management experiences from the past fifteen years. The gained practice was reviewed in accordance with the highlights of the relevant research literature. The collected literature was tested among eleven other experienced environmental project managers using peer-review method.

Methods and Key discussion Topics From Literature

The methods used in this micro study are a literature survey made by the authors and an interpretation of exploratory in-depth interviews of 11 experienced environmental project managers to provide more inputs for the literature and to peer review and the experience of the authors' and the highlights of the literature. The selected group is regarded as peer review group as all the interviewees also have a long experience in environmental project management. The main points from the literature are presented below as they show the topics of discussions in peer review sessions.

The study started with a literature survey. As stated before, the attempts to define sustainability have actually led to the more abstract picture, which preferably makes the implementation more difficult in the local or organizational level. And, on one hand, if we also take into consideration the politics, logistics and natural resources as additional cornerstones the picture comes even more complex, but, on the other hand, these cornerstones seems also be relevant anchors in local communities to expand sustainability thinking and actions.

In general, von Kutzschenbach and Brønn (2006, p. 320) highlight that sustainability communications is to improve the relationship between the organization and its public by not only changing what people know and how they feel about sustainable development issues and each other, but, by increasing the accuracy of their perceptions of each other's views. Thus, sustainability communications requires a systematic approach in which all the communication activities are directed towards achieving increased understanding between the organization and its relevant stakeholders about the issues. Local authorities and politicians play important role in sustainability communications as they compile and disseminate sustainability information through environmental policies or apply a sustainability risk assessment for key contracts to demonstrate their commitment to sustainability (Preuss, 2010, p. 220.).

Abbasi & Nilsson (2012, pp. 522-524) found out that 1) logistics environmental management, 2) green packaging/purchasing, 3) green logistics policies and strategies and 4) reverse logistics are major themes with an environmental and sustainable development focus in scientific literature. Their analysis of policy-related articles reveals that transport has been the main focus for policy making. What is lacking is the following; construction, analysis, and planning of scenarios from a micro (local, regional or industrial) perspective. However, Himanen et al. (2004, p. 705) truly emphasize that policies for sustainable freight transport have been paid much less attention than policies for passenger transport have. According to the Australian research (Thai et. al., 2011, p. 563) managers in logistics saw that the knowledge in managing with the stakeholders is one of the major field where they need support. It is self-evident that communication and sustainability concept are among the fields, which they should manage better in the future as the complexity of the supply chains as well as requirements towards sustainability are increasing in parallel. In supply chain management field the social sustainability can be formed into the four main categories of which the category of stakeholder participation includes information provision and stakeholder influence issues (Sarkis et al., 2010, p. 344). In successful supply chain management the importance of long-term relationships, communication and supplier development should be emphasized (Leire & Mont, 2010, p. 39).

Chukwuma (1996, p. 5) emphasizes the importance of the land use and landscape planning, which he sees essential for the survival and welfare of human being in the long run. Therefore, land conservation is an essential principle of land use planning. He sees communication's role important as he underlines the role of "cross-media approaches"; a close co-operation and intermediary mechanism between industry and environmentalists in solving environmental problems related to the natural resources. He also points out that it is essential to proceed to learn and monitor how to implement changes in our lives, culture and political system. Clifton (2012, pp. 586-587) criticizes the mainstream sustainable development approach

as advocated by business, and as is prominent in the political sphere, to consider this itself as a key problem. He is also of the opinion that using resources efficiently in the production process is something that all businesses need to aggressively pursue if we are to transition to a sustainable world. The problem is that unless this is coupled with a means to prevent efficiency gains being spent on more resource-consuming production and consumption that negates the gains achieved, then we are deluding ourselves into thinking that progress is being made. We see that this kind of big picture and long-term thinking are mostly lost especially in the local level.

Stave (2010, p. 2766) has developed and tested participatory system dynamics model which supports stakeholder learning and the perspectives of other stakeholders, and can help build social capital among stakeholders. As there are also complex feedback relationships between human activity and environmental systems, there is a lack for such frameworks and models like participatory system dynamics model. Parr (2009, p. 166) as well as Smith and Sharicz (2011, p. 77) emphasize that because of the nature of the sustainability, the process in all levels involve multiple stakeholders with different views and interests.

The second phase of the study process was to present the above mentioned topics to the interviews in their full format. Owing to the elite nature of the interview population which is required to be those in senior environmental project managers, the interviewee sample for this research was selected on convenience basis, i.e. from the authors' contact database. The interviewed persons were assessed to have relevant experience to act as peer-evaluation group members. Two of the persons were interviewed one by one and nine of them in three persons' groups. The scheme was to discuss the main points of the literature and compare it with the experiences of the interviewees. The articles referred in this paper were sent to the peer group before the session that the interviewees would have the possibility to compare own experienced deep enough with the research literature.

Interviewees were also encouraged to give proposals for any new idea and/or knowledge that they would think important to be included in daily operations. The sessions were made in January –February 2013 in the Southern Finland area. Each session was documented in the mind map format.

Main Results from Peer-Group Interviews

Communications is the way to make the sustainability concept a reality, but it is not always seen as an asset. The sustainability concept is a good common value basement and it usable in all parts of the world. Nine out of eleven saw that cornerstones of the implementation are politics, logistics and natural resources especially if we would like to achieve long term results. Two interviewees could not specify if the mentioned cornerstones are the key ones.

A common learning component seems to be important for project managers and this understanding has been developed after implementation of several projects. This refers to the importance of social learning and building social capital. If it would be possible in the beginning of the project to explore differences in local stakeholder perspectives, this would enable to help communication and implementation remarkably. All the interviewees noticed that these kind of human and learning aspects have become more evident after some years, not in the beginning of the career when the technical implementation itself required all the concentration.

According to the experts' experience, we cannot just add sustainable development to our current list of things to do, but must learn to integrate the concepts into everything that we do. From this point of view it is good to have some concrete cornerstones and focus work on those as it is limited time and resources what can be utilized during the settled project period.

The experts see the all kind of model development (e.g. Stave's) relevant for the further development but the role of the communication should be better indentified in those attempts and theory development. Much help for communication is got from any everyday life practice, which seems to serve as a tool for enlarging sustainable reality.

Discussion

The practitioners feel that there is a need for models and frameworks which consider the complexity of sustainability and help to take holistic perspectives into the action. In order to transform sustainability ideas and theories into the action the difficulties of interpreting the concept of sustainable development must be made priority issues for decision and policy makers in all levels, including local and organizational level.

It is found that the major proposed cornerstones – politics, logistics and natural resources – have been somehow problematic in implementation of local development projects and actions. Still, the role of the communication is not yet enough utilized – in practice and in theory - in combining the cornerstones as there is more trust in the technical preparations and planning and implementation of them according to the written documents. Based on this we would like to underline that communication is the glue – and the only reasonable way - to tighten politics, logistics and natural resource management. Besides, the successful sustainability adaptation with the help of professional communication makes sustainability concept more tangible and supports participation, conflict resolution and social knowledge, and at the same time, enables knowledge exchange in general-

When starting environmental projects, the first step is to put communications mechanisms in place.

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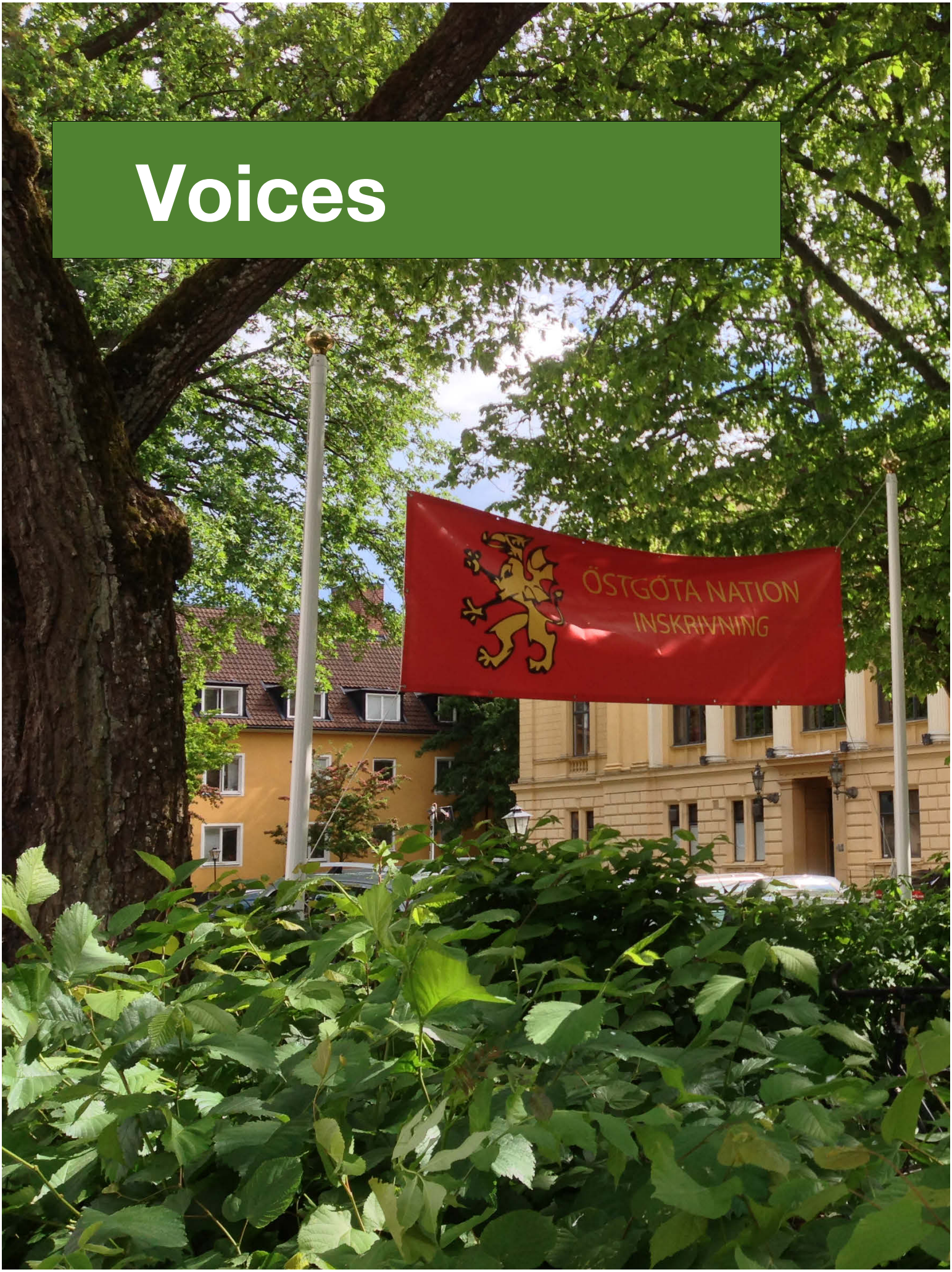
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Voices



Songs for COCE Conference Dinner at Östgöta Nation

Helan går

Swedish traditional schnaps song

Helan går,
sjung hoppfaderallanlallanlej.
Helan går,
sjung hoppfaderallanlej.
Och den som inte Helan tar
Han heller inte Halvan får.
Helan går!
Sjung hoppfaderallanlej!

Hell and gore
Chung hop father Allan, lallan ley.
Hell and gore
Chung hop father Allan ley.
Oh handsome in the hell and tar
and hell are in the half and four.
Hell and gooooooore...!
Chung hop father Allan ley!

Short story about how the American COCE veterans might feel right now

Melody: My Bonnie is Over the Ocean

My COCE is over the ocean,
my COCE is over the sea.
My COCE is over the ocean.
O bring back my COCE to me!

Bring back, bring back, O bring back
my COCE to me, to me;
Bring back, bring back, O bring back
my COCE to me.

The Bare Necessities

from the Jungle Book

Look for the bare necessities
The simple bare necessities
Forget about your worries and your strife
I mean the bare necessities
Old Mother Nature's recipes
That brings the bare necessities of life

Wherever I wander, wherever I roam
I couldn't be fonder of my big home
The bees are buzzin' in the tree
To make some honey just for me
When you look under the rocks and plants
And take a glance at the fancy ants
Then maybe try a few

The bare necessities of life will come to you
They'll come to you!

Look for the bare necessities
The simple bare necessities
Forget about your worries and your strife
I mean the bare necessities
That's why a bear can rest at ease
With just the bare necessities of life
With just the bare necessities of life

Songs for TOTE Conference Dinner at Östgöta Nation

Mamma Mia

By the Swedish pop legends ABBA

I've been cheated by you since I don't know when
So I made up my mind, it must come to an end
Look at me now, will I ever learn?
I don't know how but I suddenly lose control
There's a fire within my soul
Just one look and I can hear a bell ring
One more look and I forget everything, o-o-o-oh

Mamma mia, here I go again
My my, how can I resist you?
Mamma mia, does it show again?
My my, just how much I've missed you
Yes, I've been brokenhearted
Blue since the day we parted
Why, why did I ever let you go?
Mamma mia, now I really know,
My my, I could never let you go.

Auld lang syne

Should auld acquaintance be forgot
And never brought to mind?
Should auld acquaintance be forgot
And days of Auld Lang Syne.

For Auld Lang Syne, my dear,
For Auld Lang Syne,
We'll take a cup of kindness yet
For Auld Lang Syne.

And here's the hand, my trusty friend
And gives a hand of thine
We'll take a cup of kindness yet
For Auld Lang Syne.

For Auld Lang Syne, my dear,
For Auld Lang Syne,
We'll take a cup of kindness yet
For Auld Lang Syne.



Program

International Environmental Communication Association



12TH BIENNIAL CONFERENCE ON COMMUNICATION AND ENVIRONMENT

Participation Revisited: openings and closures for deliberations on the commons

6-10 June 2013 Uppsala Sweden

Sveriges lantbruksuniversitet
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Department of Urban and Rural Development
Division of Environmental Communication

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to the 12th biennial Conference on Communication and Environment (COCE) and the first Conference of the International Environmental Communication Association (IECA) taking place in Uppsala, Sweden!

COCE has been held every other year since 1991 bringing together educators, researchers and practitioners. It has promoted the sharing of interdisciplinary research regarding historical and contemporary perspectives on Environmental Communication.

COCE became part of the IECA when the latter was created in 2011 to further advance the field of Environmental Communication. IECA sponsors the journal Environmental Communication: A Journal of Nature and Culture, the Conference on Communication and Environment (COCE) and other educational and practical opportunities.

We hope your time in Uppsala is enjoyable and productive!

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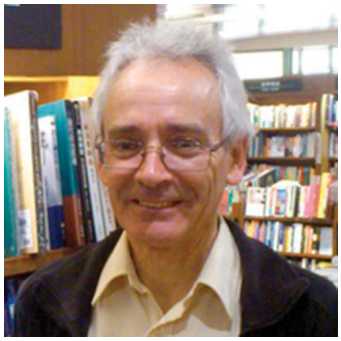
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11th COCE: El Paso (Texas)

Keynote Speaker and Social Events

Our Keynote Speaker

John Dryzek, Professor of Political Science & Australian Research Council Federation Fellow, ANU College of Arts and Social Sciences, Australian National University, Canberra, Australia.



Professor Dryzek is best known for his contributions in the areas of democratic theory and practice and environmental politics. One of the instigators of the 'deliberative turn' in democratic theory, he has published four books in this area, most recently *Foundations and Frontiers of Deliberative Governance* (Oxford University Press 2010). His work in environmental politics ranges from green political philosophy to stu-dies of environmental discourses and movements, and he has published four books in this area.

He is a member of the Scientific Committee of the International Human Dimensions Program on Global Environmental Change. His most recent work is on climate change, including two forthcoming books: *Climate-Challenged Society* (with Richard Norgaard and David Schlosberg, Oxford University Press) and *Democratizing Global Climate Governance* (with Hayley Stevenson, Cambridge University Press).

Social events during the Conference

Welcome reception, Thursday 6 June, at 17:30, Foyers of Undervisningshuset.
If you have registered for the welcome reception you have received one ticket for a beverage (beer, wine, juice). You can buy additional beverages in the bar. Cash only (SEK).

Poster exhibition and reception, Friday 7 June, at 17:30, Room N and the lower foyer of Undervisningshuset.
You have received one ticket for a beverage (beer, wine, juice). You can buy additional beverages in the bar. Cash only (SEK).

Conference Dinner, Saturday June 8, at 19:00.
The COCE conference dinner will take place at Östgöta Nation (address: Trädgårdsgatan 15). If you have registered for the dinner you have received a ticket at registration. If you haven't registered but wish to attend, please contact the conference secretariat for available tickets. The cost is SEK 500 + VAT.

Conference Program

	THURSDAY 6 JUNE	FRIDAY 7 JUNE
09:00		Plenary with Keynote Address
10:30		Coffee Break
11:00		**Parallel panels Session A**
12:30		Lunch
14:00		**Parallel panels Session B**
15:30		Coffee Break
16:00	Opening Plenary	**Parallel panels Session C**
17:30	Welcome Reception	Poster Exhibition and Reception
19:00		

Conference Program

FRIDAY 7 JUNE

LOCATION: UNDERVISNINGSHUSET: AULA

14:00	Registration opens
16:00	Opening Plenary Session
17:30	Welcome Reception

Overview

SATURDAY 8 JUNE	SUNDAY 9 JUNE	MONDAY 10 JUNE
Parallel panels Session D	**Parallel panels Session H**	Excursions
Parallel panels Session E	**Parallel panels Session I**	
	Closing Plenary	
Parallel panels Session F		
Parallel panels Session G		
Conference Dinner in Uppsala		

Thursday 6 June

Conference Program

FRIDAY 7 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	
PLENARY 09:00	**Keynote Address: Deliberation and Rhetoric in Environmental Communication** **John Dryzek**, Professor of Political Science and Australian Research Council Federation Fellow, Australian National University, Canberra	
10:30	Coffee Break	
LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION A 11:00	**Panel 1: Deliberative Approaches to PublicParticipation** Chair: Jesper Holm	**Panel 2: Recovering Multiple Rationalities for Public Deliberation** Chair: Hans Peter Hansen
	Post Rio Communication Styles for Deliberation: Between Individualization and Collective Action Jesper Holm (Roskilde U.) & Pernille Almlund	**'Dialogue for Nature Conservation'** Hans Peter Hansen (SLU)
	A Voice in the Wilderness: Cultural Barriers to Land Use Planning as Deliberative Democracy Matthew Hoffman (New York U.)	**Changes Towards a More Participatory and Deliberative NRM Practice - Conflicting Roles and Practices of NRM Administrators** Lotten Westberg (SLU)
	Participation, Learning and Sustainable Fisheries: The Case of Co-Management at Lake Vättern, Sweden Cecilia Lundholm (Stockholm U.), Christian Stör & Beatrice Crona	**Invited guests working in Swedish NRM**
	Establishing Bottom-Up Participation in Unfavorable Environments – The Polish Baltic Sea Fisheries Roundtable Christian Stöhr (Chalmers U. of Technology) & Ilan Chabay	
	Participate for Women's Sake? - A Gender Analysis of Swedish Deliberative NRM Projects Lotten Westberg (SLU) & Stina Powell	
12:30	Lunch Restaurant Syltan	

Friday 7 June am

UNDERVISNINGSHUSET: ROOM B	UNDERVISNINGSHUSET: ROOM C
Panel 3: Rethinking Community-based Conservation Chair: Paulami Banerjee Panel Discussant: Nadarajah Sriskandarajah	**Panel 4: Media Communication and Policies - Theoretical and Empirical Perspectives** Co-chairs: Daniela Kleinschmit & Viveca Sjöstedt
Joint Forest Management in India: A Case Study of East Sikkim, India Paulami Banerjee (Texas A&M U.)	**Media Communication on Climate Change in the Democratic People's Republic of Korea** Misun Park (Seoul National U.) & Hyowon Lee
Engaging the Community, Reclaiming the Commons: Case Study of a National Park in Mozambique Nícia Givá (SLU)	**Framing the Forests in a Changing Climate: A Comparison of the Media Perception in Sweden and Finland** Daniela Kleinschmit (SLU) & Viveca Sjöstedt
Hawksbill Regional Cup: Shifting Local Discourse to Save a Species in El Salvador and Nicaragua Michael J. Liles (Texas A&M U.)	**REDD+ Politics in the Media: A Comparative Analysis from Vietnam, PNG, Nepal and Indonesia** T.T. Pham (CIFOR), M. Brockhaus & M. Di Gregorio
Water Policy by Public Design on the Texas Coast Chara Ragland (Texas A&M U.)	**Potential for Policy Integration - How Stakeholders in Sweden Frame Bio-Energy from Forest Products** Viveca Sjöstedt (SLU) & Daniela Kleinschmit
	The Fuel of the Future Framed in the Swedish Press – A Discourse Analysis of Ethanol as an Alternative to Fossil Fuel Annika Egan Sjölander (Umeå U.)

Conference Program

FRIDAY 7 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION B 14:00	**Panel 5: Constructivity and Destructivity in Natural Resource Conflicts** Chair: Kaisa Raitio	**Panel 6: Critical Theory and Practice: Contributions to Alternative Democratic and Ecological Futures** Chair: Cristián Alarcón
	Participating in Each Other's Mind - Constructivity and Destructivity in Communication About the Commons Lars Hallgren (SLU)	**Linguistic and Material Turns and Social-Ecological Relations: Theorizing Environmental Communication** Cristián Alarcón (SLU)
	Discordant Connections: Gender and Grassroots Activism in Villages in India and Sweden Seema Arora Jonsson (SLU)	**From a Discipline of Crises to Studies for Hope: A Critical Theoretical Perspective on EC** Hans Peter Hansen (SLU)
	Pending Between Destructivity and Constructivity in Disagreements About Land Management in China Yuliu Chen (SLU)	**The Influence of Knowledge Premise on Local Participation in Natural Resource Planning** Mikaela Vasstrøm (Copenhagen U.)
	To Engage or Not to Engage? Deliberation, Conflict and the Risk of Co-option in NRM Kaisa Raitio (SLU) & Rebecca Lawrence	**Food, Common Spaces and the Collective Making of Urban Agriculture in Uppsala** Marina Queiroz (SLU)
	Process Literacy Across Shifting Rhetorical Frameworks in Internal Coalition Maintenance Deborah Cox Callister (U. of Utah)	**Enhancing Capacity for Communication About Climate Change: A Deliberative Systems Approach** Simon Niemeyer (Australian National U.) & Julia Jennstål
15:30	Coffee Break	

Friday 7 June pm

UNDERVISNINGSHUSET: ROOM B	UNDERVISNINGSHUSET: ROOM C
Panel 7: Negotiating Environmental Controversy Chair: Nils Peterson	**Panel 8: Garden, Landscape, Environment and Nation: Website Reps of Activist Space** Chair: Madeleine Hurd
The Value of Environment in the Controversy over Antibacterial Silver: A Swedish Case Study Max Boholm (U. of Gothenburg) & Rickard Arvidsson	**Landscape, Place, and Exclusion** Madeleine Hurd (Södertörn U.)
Hot or Not? Differential Associations of "Global Warming" vs. "Climate Change" Across the Partisan Divide Jonathon Schuldt (Cornell U.) & Sungjong Roh	**Narratives and Websites in the Construction of the Environmentalist Activist** Robert Hamrén (Södertörn U.)
Clashing Advocacy Coalitions and the Dynamics of Contesting Risky Technologies Patricia Paystrup (Southern Utah U.)	**Brown Tree Huggers 2.0 - Germany's 'New Ecological Right'** Steffen Werther (Södertörn U.)
Singapore Public Opinion of Nuclear Power After Fukushima Sonny Rosenthal (Nanyang Technological U.), Shirley Ho & Benjamin Hill Detenber	**'Another World is Plantable': Urban Activist Gardeners' Communicative Strategies** Heike Graf (Södertörn U.)
Biosphere Reserves, a Matter of Communication Processes, Developing Models for Sustainability Kristina Börebäck (Stockholm U.)	

Conference Program

FRIDAY 7 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION C 16:00	**Panel 9: Forest Commons and Cultural Aspects of Community Participation in Indonesia** Chair: Stacey Sowards	**Panel 10: Towards Systemic Governance: Lessons from Extension, Farming Systems and Environmental Communication** Chair: Magnus Ljung
	Gender Issues in Indonesian Conservation Efforts Victor Santana-Melgoza (U. of Texas at El Paso)	**The Didactics of Environmental Advisory Services to Farmers** Magnus Ljung (SLU) & Jenny Höckert
	Ecotourism as Alternative Livelihood for Conservation in Indonesia Adriana Salas, presented by Alejandro Alba (U. of Texas at El Paso)	**Economy as Challenged Rationality in the Argumentation of Farmers and Advisors** Hanna Bergeå (SLU)
	A Comparative Study Evaluating Conservation Education in Indonesian Provinces: Hinduism in Bali versus Islam in East Kalimantan Bianca Ramírez (U. of Texas at El Paso)	**An Ethic of Stewardship for Responsible and Safe Management of Pesticides in Ethiopian Agriculture** Tadesse Amera (SLU) & Nadarajah Sriskandarajah
	Intersections of Gendered Experience and Ecotourism in Indonesia: An Evaluation of Communicative Processes Between Tourists and Local Communities Stacey Sowards (U. of Texas at El Paso)	**Supporting Water Governance and Climate Change Adaptation Through Systemic Praxis** Chris Blackmore (Open U.), Ray Ison & Kevin Collins
LOCATION:	UNDERVISNINGSHUSET: ROOM N AND THE LOWER FOYER	
17:30	Poster Exhibition with Refreshments	

Friday 7 June pm

UNDERVISNINGSHUSET: ROOM C	UNDERVISNINGSHUSET: ROOM H
Panel 11: Communicating a Vision for Hunting within Wildlife Conservation Chair: Nils Peterson	**Panel 12: Ecocinema – Theory and Practice** Co-chairs: Salma Monani and Pietari Kääpä
The Changing Role of Hunting - From Subsistence to Ecosystem Stewardship? Camilla Sandström (Umeå U.), Sara Lindqvist, Therese Bjärstig & Emma Kvastegård	**Scoping Audience Studies in Ecocinema Research** Pat Brereton (Dublic City U.)
Wildlife Privatization as Identity Crisis Markus Peterson (Texas A&M U.) & Nils Peterson	**Reflections on Mixed-Methods Research in Ecocinema Audiences** Chao-Ping Hong (Dublin City U.)
The North American Model of Wildlife Conservation: Can It Move Beyond Hunting? Israel Parker (Texas A&M U.) & Andrea Feldpausch-Parker	**Transnational Ecocinema and Audience Studies: Case Studies from China and Finland** Pietari Kääpä (U. of Helsinki)
How Swedish Wildlife Management is Coping with Reintroduction of Wild Boar (Sus scrofa) Per Haglind (SLU)	**'My Backyard is Everybody's Backyard'. The Cultural Coding of Backyards in Audiovisual Responses to Gasland (Josh Fox, 2010)** Helen Hughes (U. of Surrey)
Gender Differences in Hunting Recruitment and Dedication in Denmark Shari Rodriguez (Clemson U.), Nils Peterson, Hans Peter Hansen, Colter Chitwood, Beth Gardner & Charlotte Jensen	**Film Festival Eco-imaginations and Practices: ImagineNATIVE 2012** Salma Monani (Gettysburg College) & Miranda Brady
	Trash Talk: Visualizing the Convergence of Ecomedia Studies and Media Ecology Stephen Rust (U. of Oregon)

Conference Program

SATURDAY 8 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION D 09:00	**Panel 13: Unifying Negotiation Framework – Improving Participation** Chair: Gregg Walker	**Panel 14: Commons and the Right of Public Access** Chair: Hanna Bergeå
	Teaching and Learning about Natural Resource Conflict Management and Decision-Making: The Unifying Negotiation Framework Approach Jens Emborg (U of Copenhagen), Steven Daniels & Gregg Walker	**The Future of Public Access: Representatives of Stakeholder Organizations as Brokers of Learning for Collaborative Conflict Management** Elin Ångman (SLU) & Lotten Westberg
	Contextualising Natural Resource Conflict through a Holistic Frame: The Unifying Negotiation Framework Jennifer Bond (U. of Copenhagen)	**A Contradictory Approach to the Right of Public Access – Exploring Relational Factors in the Case of Agritourism** Elvira Caselunghe (SLU) & Hanna Bergeå
	Seeking Progress in the Climate Change Negotiations: Insights from the UNF Gregg Walker (Oregon State U.)	**Protected Areas as Commons: Re-examining Access and Rights** Nícia Givá (SLU) & Nadarajah Sriskandarajah
	A South-North (Ghana-Denmark) Research and Practice Partnership: The Unifying Negotiation Framework and Doctoral Education Paul Sarfo-Mensah (Kwame Nkrumah U. of Science and Technology) & Jens Emborg	**Struggles for Water: Communication and Citizen's Participation in Colombia** Valeria Llano-Arias (U. College Dublin)
10:30	Coffee Break	

Saturday 8 June am

UNDERVISNINGSHUSET: ROOM B	UNDERVISNINGSHUSET: ROOM C
Panel 15: Research Capacity: What It Is and What Does Communication Tell Us About It? Chair: Nathan Stormer	**Panel 16: Engaging the Public in Energy System Transformation** Chair: Andrea Feldpausch-Parker
Interdisciplinary Research Capacity as Rhetorical Resilience Nathan Stormer (U. of Maine) & Laura Lindenfeld	**Using a Melodramatic Game to Explain Carbon Capture and Storage as a Mitigation Strategy for Climate Change** Andrea Feldpausch-Parker (SUNY ESF), Megan O'Byrne, Danielle Endres & Tarla Peterson
Building Capacity for Social and Ecological Resilience: Group Communication and Stakeholder Engagement in a Conservation Action Planning Process Bridie McGreavy (U. of Maine), Laura Lindenfeld, Linda Silka, Jane Disney, Emma Fox, Molly Miller & Chris Petersen	**Flows, Locomotion, and the Wild West: Mobile Participation through North Dakota's Oil Boom** Brian Cozen (U. of Utah)
Institutional Capacity for Interdisciplinary Collaboration: The Lessons from Alternative Energy Research Initiatives in Maine Hollie Smith(U. of Maine), Laura Lindenfeld &Linda Silka	**Smart Grid: An Analysis of Stakeholder Perception in an Emerging Energy Technology** Adrienne Strubb (Texas A&M U.), Tarla Rai Peterson, Jennie Stephens & Elizabeth Wilson
Building Adaptive Capacity through Collaboration: Co-Developing Best Management Practices for Municipal Road Salt Application Karen Hutchins (U. of Maine), Lauren Thornbrough, Laura Lindenfeld & Brenda Zollitsch	**Hydrofracking in the News: How Does Media's Coverage of Hydraulic Fracturing Shape Public Discourse about Emerging Energy Technologies in the U.S.** Katelind Batill (SUNY ESF)
The Sublimation of Ethics in Sustainability Advocacy: A Study of Metacommunication at a University's Office of Sustainability Brenden Kendall (Clemson U.)	**Public Engagement with Climate Change in Portugal and Spain: Analysing the Roles of the Scientific Community and Higher Education Institutions** Liliana Oliveira (U. do Minho) & Anabela Carvalho

Conference Program

SATURDAY 8 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION E 11:00	**Panel 17: Defining the Commons** Chair: Micheal Vickery	**Panel 18: Revisioning Participation** Chair: Chara Ragland
	Re-Imaging the Commons as 'The Green Economy' Joanna Boehnert (EcoLabs & CIRES, U. of Colorado)	**Multifarious Environmental Concern: Participatory Conundrums in Natural Resource Management and Land Use Planning** Åsa Boholm (U. of Gothenburg)
	Can Stakeholders Hold the Commons? English as the Global Language of Capitalism and That of Sustainability M. Cristina Caimotto (U. of Turin)	**Pleasure and Political Participation in Green Lifestyle Journalism** Geoffrey Craig (U. of Kent)
	Thinking Locally, Acting Globally: A Way to Redefine Commons Edward Lorenz (Alma College) & Micheal Vickery	**Revisiting Participation: Who Matters** Chara Ragland (Texas A&M U.) & Adrienne Strubb
	Re-framing the Commons: Natural Heritage and the Case of Invasive Species Alison E. Vogelaar (Franklin College Switzerland) & Brack Hale	**Participation in Environmental Communication: Culture, Nature, and Literature** Maris Sõrmus (Tallinn U.)
12:30	Lunch restaurant Syltan - Open Board Meeting	

Saturday 8 June am

UNDERVISNINGSHUSET: ROOM H	UNDERVISNINGSHUSET: ROOM C
Panel 19: Local Communities and Concepts of Place Chair: James Cantrill	**Panel 20: Media Analysis of Climate Change Communication** Chair: Shinichiro Asayama
Your Place, My Place, or Someplace More Exciting: Pro-Creative Possibilities for Environmental Communication Scholarship James Cantrill (Northern Michigan U.)	**Apocalyptic Framing and Conservative Action. The Cultural Modes of Climate Change Communicated in Swedish Mass Media 2006-2009** Jonas Anshelm (Linköping U.) & Martin Hultman
The Influence of Landscape Connection in Responding to Climate Change Tai Munro (U. of Alberta)	**Framing Climate Negotiations: Comparing the Japanese News Media Discourses of the Kyoto and Copenhagen Conferences** Shinichiro Asayama (Tohoku U.) & Atsushi Ishii
Mountains and Handrails: Risk, Meaning, and Responsibility in Three National Parks Laura Rickard (SUNY-ESF)	**Cueing Attitudes About Global Warming Using Characteristics of New Media Channels** Sharon Dunwoody (U. of Wisconsin-Madison), Robert Griffin, Dominique Brossard, James Spartz & Leona Yi-Fan Su
Making Sense of Climate Change Resilience: Growing Trends, Diverse Definitions, Key Indicators, and Applications to Coastal Communities Miriah Russo Kelly (Oregon State U.)	**Climate News Across Media Platforms - A Comparative Analysis of Climate Change Communication on Different News Platforms** Mikkel Fugl Eskjær (Aalborg U.)
	Overcoming the Issue Attention Cycle: Four Possible Ingredients of a Successful Climate Movement Neil Stenhouse (George Mason U.) & Susanna Priest

Conference Program

SATURDAY 8 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION F 14:00	**Panel 21: Knowledge Production and Use** Chair: Bruno Takahashi	**Rhetorical and Political Approaches to Energy Disputes** Chair: Pete Bsumek
	Communication and Biodiversity – Openings and Closures for Integration of Local and Traditional Knowledge in the Design of IPBES Elin Ångman (SLU), Tuija Hilding-Rydevik & Torbjörn Ebenhard	**Memories of Malaise: The Rhetoric and Politics of National Energy Policy** Terence Check (College of St. Benedict/St. John's U.)
	Public or Expert? Finding Legitimacy in Deliberations About Commercial Fishing Policy in Rhode Island, U.S.A. Caroline Gottschalk Druschke (U. of Rhode Island)	**Putting the U in Carbon Capture and Storage: Performances of Rupture within the CCS Scientific Community** Danielle Endres (U. of Utah), Brian Cozen, Megan O'Byrne & Andrea Feldpausch-Parker
	Experiential Programs for Educators: Coastal Policy Communication in Cebu, Philippines David W. Knight (Colorado State U.) & Arren M. Allegretti	**Articulating Resistance to Nuclear Power: Local Tactics and Strategic Consequences in a Nuclear Construction Financing Controversy** William Kinsella (North Carolina State U.), Ashley Kelly & Meagan Kittle Autry
	Learning in the Beat: What Influences Environmental Journalists' Perception of Knowledge? Bruno Takahashi (Michigan State U.) & Edson Tandoc	**Proof of Power: An Exploration of Clashing Evidence-based Claims in the A.N.W.R. Oil Drilling Debate** Jessica Moyer (Queen Margaret U.)
		Competing Rhetorics in Contemporary US Coal Controversies Steve Schwarze (U. of Montana), Jen Schneider, Pete Bsumek & Jennifer Peeples
15:30	Coffee Break	

Saturday 8 June pm

UNDERVISNINGSHUSET: ROOM B	UNDERVISNINGSHUSET: ROOM C
Panel 23: Transmedia's Openings and Closures Chair: Jennifer Good	**Panel 24: Environmental Movements in Transition** Chair: Callum McGregor
Transmedia and Transreality: Environmental Discourse in Virtual and Augmented Realities Joseph Clark (Florida State U.)	**Reworking Resilience: Cosmopolitanism and Localism in the Transition Movement** Shiv Ganesh (U. of Waikato) & Heather Zoller
Environmentalists' Use of Transmedia: Queering Media Norms for Social Change Richard Doherty (U. of Illinois)	**Meta-learning in the U.K. Environmental Movement: Cultural Change Theories and Their Pedagogical Implications** Callum McGregor (U. of Edinburgh)
Transmedia's Uses and Gratifications in Hegemonic and Counter-hegemonic Contexts Jennifer Good (Brock U.)	**Social Media and Environmental Activism in China: Enacting Social Change on Wild Public Screens** Kevin Michael DeLuca (U. of Utah)
Transmedia and Environmental Communication: Towards A Brief Historical, Rhetorical and Multimodal Analysis Geo Takach (MacEwan U., U. of Calgary)	**A Social-Cognitive Model of Consumer Activism on Climate Change: Social Influence, Perceived Threat and Efficacy Beliefs** Connie Roser-Renouf (George Mason U.), Ashley Anderson, Edward Maibach, Anthony Leiserowitz & June Flora

Conference Program

SATURDAY 8 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION G 16:00	**Panel 25: Rhetorical Strategies for Participation** Chair: Samantha Senda-Cook	**Panel 26: Deliberating over Disagreements in Game and Carnivore Management** Chair: Lars Hallgren
	Negotiating the End of the World in Climate Change Rhetoric: Climate Skepticism, Science, and Arguments Emma Frances Bloomfield (U. of Southern California) & Randall Lake	**Discourse Ethics Affecting Adaptive Management, Participation and Conflict Management in Swedish Game Management Delegations** Lars Hallgren (SLU) & Lotten Westberg
	The Rhetorical Construction of Food Waste in Public Discourse Joshua Frye (State U. of New York) & Rebekah Fox	**The Agency-Structure Dialectic in Moose Mgmt - Communication as Precondition for and Outcome of Adaptive Co-Management** Therese Bjärstig (Umeå U), Camilla Sandström, Sara Lindqvist & Emma Kvastegård
	Commodifying Heaven: Political Economy and Ecojustice Impact of Multiuser Virtual Worlds Joseph Clark (Florida State U.)	**"The Closer the Better": Possibilities and Limitations with Frontline Management in the Majella National Park, Italy** Serena Cinque (Gothenburg U.) & Annelie Sjölander-Lindqvist
	Masculinity and Making Do: Outdoor Recreation's Risky Rhetoric Samantha Senda-Cook (Creighton U.)	**Didactics for the Development of Communicative Capacity in Multi-Stakeholder Forums for Game Management** Lotten Westberg (SLU) & Lars Hallgren
	"Are You Listening?!": Indecorous Voice as Rhetorical Strategy in Environmental Public Participation Kathleen Hunt (U. of Utah) & Nicholas Paliewicz	
17:30	Session G ends	
19:00	Conference Dinner in Uppsala City at Östgöta Nation	

Saturday 8 June pm

UNDERVISNINGSHUSET: ROOM H

Panel 27: Research-Based Environmental Communication Campaigns
Chair: Lee Ahern

Developing Successful Research-Based Environmental Communication Campaigns

Discussion session participants:

Tom Crompton (WWF UK)
Sharon Dunwoody (U. of Wisconsin-Madison)
Soenke Lorenzen (Greenpeace International)
Ezra M. Markowitz (Princeton University)

UNDERVISNINGSHUSET: ROOM C

Panel 28: Communication and Behavior Change
Chair: Norbert Mundorf

Rare Philippines Sustainable Fishing and Social Marketing
Brian Day (Rare) & Amielle DeWan

A Behavior Change Attribute Model: The Case of Residential Energy Behavior
June A. Flora (Stanford U.), Hilary Boudet & June Flora

Promoting Sustainable Transportation Across Campus Communities Using the Transtheoretical Model of Change
Norbert Mundorf (U. of Rhode Island), Colleen Redding, Andrea Paiva, Leslie Brick, James Prochaska & Tat Fu

Perceptions of Climate Change in Singapore and the United States
Sonny Rosenthal (Nanyang Technological U.), Edmund Lee, Shirley Ho & Benjamin Detenbe

Conference Program

SUNDAY 9 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION H 09:00	**Panel 29: Communication and Public Engagement with Climate Change Politics** Chair: Anabela Carvalho	**Panel 30: Discourses of Wilderness and Public Participation** Chair: Eric L. Morgan
	Remaking the Political through Climate Change Communication Anabela Carvalho (U. of Minho)	**Narratives of Wilderness: Constructing Advocacy through Stories of the Wild** Eric Morgan (New Mexico State U.)
	The Visual Rhetoric of Climate Change Documentary Helen Hughes (U. of Surrey)	**Wandering from Wilderness** Mairi Pileggi (Dominican U.)
	Web-Based Public Participation in the Climate Change Debate Andrea Feldpausch-Parker (SUNY ESF), Israel Parker & Tarla Petersen	**The Ghost of Dr. Mesmer or the Illusionary World of Fantastic Claims** Dominique Richard (Independent Researcher)
	Environmental Governance, Communication and Virtual Public Spheres Anna Maria Jönsson (Södertörn U.)	**Words and Wilderness: Cultural Discourses of Dwelling** Donal Carbaugh (U. of Massachusetts)
	Poverty, Protest and Popular Education in Discourses of Climate Change Eurig Scandrett (Queen Margaret U.), Jim Crowther & Callum McGregor	
10:30	Coffee Break	

Sunday 9 June am

UNDERVISNINGSHUSET: ROOM B	UNDERVISNINGSHUSET: ROOM C
Panel 31: The Role of Emotions in Participation and Conflict Chair: Arjen Buijs	**Panel 32: MSc Papers from the Environmental Communication and Management Program at SLU** Chair: Lars Hallgren Respondent: Susan Senecah
Emotions in Area-Based Participatory Processes: Openings and Closures for Visioning and Design Arjen Buijs (Wageningen U.)	**"We Know How to Talk to Farmers": Dealing With Stakeholder Interaction in Participatory Land Restoration in Iceland** Brita Berglund (SLU, U. of Iceland)
Openings for the Use of Feelings as Legitimate Arguments in the Swedish Debate on the Right of Public Access Elin Ångman (SLU)	**Forest Machine Operators' Perspective on Environmental Considerations in Timber Harvesting** Ida Dahl (SLU)
From Differences in Opinion to Explicit Conflicts: The Role of Anger in People's Participation in Environmental Movements Mirjam de Groot (Wageningen U.)	**Interpreting Without Interpreter Being There - Several Recommendations on Information Boards for Tourists** Hao Di (SLU)
Trading on Emotion: Social License and Transnational Environmental Conflict Libby Lester (U. of Tasmania/Queensland)	**Seeing the Forest For the Trees: Analyzing National Forest Policy Decision-Making Processes in Finland** Lauren Wheeler (SLU)
Distrust as a Tool in an Environmental Conflict Marie-Ève Maillé (Albert-Ludwigs-U. Freiburg) & Johanne Saint-Charles	

Conference Program

SUNDAY 9 JUNE

LOCATION:	UNDERVISNINGSHUSET: AULA	UNDERVISNINGSHUSET: ROOM L
SESSION I 11:00	**Panel 33: Public Participation in Water Governance** Chair: Leah Sprain	**Panel 34: Discursive Framing of the Public Sphere** Chair: Alon Lichinsky
	Cultural Discourses of Water Rights in the Lower Rio Grande Basin of New Mexico Eric Morgan (New Mexico State U.)	**"Blue is the New Green": Neoliberal Logic and the Co-optation of Environmental Justice Discourses in the Pennsylvania Fracking Debate** Katherine Cruger (Chatham U.) & Michael Finewood (Chatham U.)
	Cultural Discourses of Participation, Stewardship, and Community in the Marine Life Protection Act Process Brion van Over (Manchester Community College)	**Citizen-Sourcing and Reframing Environmental Discourse: An Analysis of Frances Moore Lappé's EcoMind** Emilie Falc (Winona State U.)
	Not a Speech Event: Examining (Counter) Cultural Discourses In Deliberation Leah Sprain (U. of Colorado Boulder)	**The Forest Kingdom – With Values for the World? Construction of Objects, Subjests and Policies in the Swedish Climate-Forest Policy Interface** Sara Holmgren (SLU)
	Pathways to Sustainable Development: How Power-Knowledge Transforms Institutions in Land-Water Management Anne-Mette Langvad (U. of Aarhus)	**Corporate Voices in the Public Sphere: Discourse on Sustainability and the Environment in Press Releases** Alon Lischinsky (Oxford Brookes U.) & Annika Egan Sjölander
	Public Participation in Water Governance: Swedish Water Councils as Spaces for Social Learning and Rethinking the Commons Helle Nielsen (U. of Roskilde)	**The Shift in the Discourse about a Free Trade Aarea in the Brazilian Amazon: From Progress to Ecological Modernization** Thaís Brianezi (U. of Sao Paulo)
	Social & Political Legitimacy of Nature Resource Management - The Creation of Community Agoras in Rural Sweden Hans Peter Hansen (SLU) & Nadarajah Sriskandarajah	
LOCATION:	UNDERVISNINGSHUSET: AULA	
12:30-13:00	Closing Plenary Session	

Sunday 9 June am

UNDERVISNINGSHUSET: ROOM B	UNDERVISNINGSHUSET: ROOM C
Panel 35: Engaging Audiences with Environmental Media Chair: Cristián Alarcón	**Panel 36: Media Analysis of Environmental Issues** Chair: Helena Nordström Källström
Greenwash Gold? Assessing the Environment -Themed Advertising of the 2012 Olympics Sponsors in the Context of the Olympic Communicative Commons Jenny Alexander (Bournemouth U.)	**If They Like You, They Learn From You: How a Weathercaster-Delivered Climate Education Segment is Moderated by Viewer Evaluations of the Weathercaster** AshleyAnderson (George Mason U.), Teresa Myers, Edward Maibach, Heidi Cullen, Jim Gandy, Joe Witte, Neil Stenhouse & Anthony Leiserowitz
Therapeutic Redemptions? The Secular Eco-apocalypse in Environmental Advocacy Films Philip Hammond (London South Bank U.) & Hugh Ortega Breton	**Policy Issues Dominate U.S. Environmental News: A Content Analysis of Seven U.S. Newspapers' Coverage of Environmental Issues from 1970-2010** Susan Grantham (U.of Hartford) & Edward Vieira
Entertaining Our Way to Engagement? Climate Change Films and Sustainable Development Values Bridie McGreavy (U. of Maine) & Laura Lindenfeld	**Assessing the Cognitive Autonomy of Audiences towards Environmental Media Messages** Pierre Fastrez (U. Catholique de Louvain), Coralie Meurice, Thierry De Smedt & Julie Matagne
Reimaging Image Politics on Television: Whale Wars and Whale Wars: Viking Shores David Tschida (U. of Wisconsin-Eau Claire)	**Earth Observing Media: Imaging, Indexes and Warnings** Chris Russill (Carleton U.S)
Eco-Jokes and Their Relation to the Un-CO2nscious: Larry David's "Curb Global Warming" Campaign and Other Environmental Comedies Xinghua Li (Babson College)	**Towards a Renewed Research Agenda for Media Studies on Climate Change** Peter Berglez (Örebro U.) & Ulrika Olausson

List of Posters

1. **Sense of Place and the New Reality of Mining in Media Coverage of West Papua's Grasberg Mine**
   Heather Akin (U. of Wisconsin-Madison)

2. **Press Coverage and Framing of Climate Change Issues in Nigeria: A Boost or Constraint for Participation Opportunities?**
   Herbert E. Batta (U. of Uyo), Ashong C. Ashong & Abdullahi S. Bashir

3. **Visual Representations of Climate Change: Arguing for Personal Importance and Urgency**
   Emma Frances Bloomfield (U. of Southern California)

4. **The Power of Environmental Protest: Bodies as Rhetorical Tools**
   Emma Frances Bloomfield (U.of Southern California) & Randall Lake

5. **The Commons in a Spreadsheet**
   Mark Brown (BI Norwegian Business School)

6. **Re-Imaging the Commons as 'The Green Economy'**
   Joanna Boehnert (EcoLabs/CIRES/U. of Colorado)

7. **What Environmental Journalists in Jamaica and Nepal Think: Paradise and Poverty in Two Small Developing Countries**
   Elizabeth Burch (Sonoma State U.)

8. **The A.M.A.R. Project, the SIS-International Summer School in "Sustainable Management and Promotion of Territory" and the "Charter of Todi"**
   Adriano Ciani (Perugia U.)

9. **Making a Difference: A Hierarchical Linear Modeling Approach to Understanding the Role of Opinion Leadership in Encouraging Environmental Behavior Change**
   Kajsa E. Dalrymple (U. of Iowa), Bret R. Shaw & Dominique Brossard

10. **Communicating New Perspectives of the Commons Through Art**
    Darlene Farris-LaBar (East Stroudsburg U. of Pennsylvania)

11. **Creating a Just and Sustainable Humanimality: Core Values to Unify Human Rights, Animal Rights, and Environmental Campaigns**
    Carrie Packwood Freeman (Georgia State U.)

12. **Magazines as Change Agents to a Greener World? A Cross-Cultural Analysis of German, French and Swedish Lifestyle Magazines**
    Maxi Freund (Saarland U.)

13. **Blowin' in the Wind: How Collaborative Governance Communication Can Reduce Wind Power Siting Disputes in the United States**
    Susan Grantham (U.of Hartford)

14. **Openings for Citizen Participation in Debate Over Hydraulic Fracturing: A Cross-National Analysis**
    Jill E. Hopke (U. of Wisconsin-Madison)

15. **Wildlife Scientists and Conservation Policy: Communicating in the Dual World of Scientist and Advocate**
    Cristi Horton (Tarleton State U.), Markus Peterson & Neal Wilkins

16. **Challenging Modernity: Environmental Discourses of Earth Day 1970**
    Rowan Howard-Williams (U.of Pennsylvania)

17. **An Investigation of Pesticide container Recycling Programs: Is there a Best Practice?**
    Ann Jabro (Robert Morris U.) & Jay Jabro

18. **The Efficacy of Conservation Programs and Practices at an American University**
    Thomas Jabro (U. of Pittsburgh)

19. **Credibility at Stake? 'Clean, Green' New Zealand in the News**
    Florian Kaefer (U. of Waikato)

20. **Communicating the Benefits of Acting Sustainably: Can Media Foster Participation in Climate Protection?**
    Gesa Lüdecke (Leuphana U. of Lüneburg)

List of Posters

21. **Communicating the Mountain Agenda in the Asia Pacific and Globally – From Rio to Rio+20 and Beyond**
Tek Jung Mahat (ICIMOD) & Anja Møller Rasmussen

22. **Green Economy for Sustainable Mountain Development**
Tek Jung Mahat (ICIMOD) & Asha Kaji Thaku

23. **Charting a Course to Shellfish Sustainability: A Collaborative Learning Approach**
Bridie McGreavy (U. of Maine), Molly Miller, Jane Disney, Laura Lindenfeld & Linda Silka

24. **The Carrot or the Stick Approach? Effective Delivery of Behavioural Changes Towards Energy Conservation and the Use of Renewable Energy in Local Communities**
Josephine Mmojieje (Aston U.)

25. **Curricula for Communicating Environmental Science and Sustainability**
Norbert Mundorf (U. of Rhode Island), Caroline Druschke, Brenden Kendall & Samantha Senda-Cook

26. **Bridging Disciplines through Environmental Communication Curricula**
Emily Plec (Western Oregon U.)

27. **Curricula for Environmental Communication and Management: Preparing for Competences in Deliberative Democracy**
Lars Hallgren (SLU)

28. **Hunting Elk on YouTube: An Ecocritical Perspective on the Nature-Human Relationship in User-Generated Media**
Cecilia Mörner (Örebro U.) & Ulrika Olausson

29. **Sustainability as Boundary Object for Food and Biomass Production: Criteria, Perceptions, Attitudes and Buying Behaviour Towards a Global Concept**
Sebastian Olényi (Delft U. of Technology) & Patricia Osseweijer

30. **Media Frames on Forests in the Democratic People's Republic of Korea**
Misun Park (Seoul National U.), Min Kyung Song & Youn Yeo-Chang

31. **Maximizing Media Ecologies to Engage the Public in Public Opinion: Regional Study in Environmental Health Information Flow**
Linda Pfeiffer (U. of Wisconsin-Madison)

32. **Crossing Borders: Connecting Immigration and Agriculture in the Press**
Jean Retzinger (U. of California, Berkeley)

33. **Politics, Logistics and Natural Resources – Cornerstones of the Sustainability Concept in Local Level Communication**
Anne-Marie Tuomala (Mikkeli U. of Applied Sciences) & Heimo Tuomala

34. **The Environmental Public Sphere Online: An Analysis of Web-Presences of Actors of Environmental Communication**
Daniel Schulz (Leuphana U. of Lüneburg)

35. **Communicating Adaptation to Climate Change in Thailand: Communication Concepts for Practical Adaptation**
Sukanya Sereenonchai (Mahidol U.)

36. **How Do Communication and Politics Interact to Open and Close Opportunities for Citizen Participation?**
Jan Skalík (Masaryk U.)

37. **Mediated Participation: The Case of Belo Monte Supporters and the Movimento Gota D'Água Dialogue on the Internet**
Vivian Paes Barretto Smith (U. of São Paulo)

38. **Transmedia Communication on Transgenic Mosquitos: Controversial Science in a Network of Digital Media**
Molly Hartzog Storment (North Carolina State U.), A.R. Binder & M. Cobb

39. **Handbook for Urban-Environmental Citizens**
Stinne Storm Folving (U. of Utah)

40. **The Face of Oil: Visualizing Place-Identity in a Resource-Based Economy**
Geo Takach (MacEwan U., U. of Calgary)

41. **Environmental Observatories and Citizens Participation: Public Virtual Arenas?**
Maria Angela Torres Kremers (Yarumo, Marcos de Sostenibilidad, Bogota/Berlin)

List of Posters

42. **In the Study of Environmental Communication, Is an Ounce of Prevention Worth a Pound of Cure?**
David A. Tschida (U. of Wisconsin-Eau Claire)

43. **Can We Just Leave the Public Out of It? Public Participation, Public Policy and the Case of the Penokee Mine**
Meg Turville-Heitz (U. of Wisconsin-Madison)

44. **Collaboration for Resilient Ecosystems and Communities? The Partnership for Coastal Watersheds Project**
Gregg Walker (Oregon State U.), Miriah Russo Kelly & Julie Elkins Watson

45. **Stakeholder Participation, Learning and Ecosystem Management: A Global Study of 146 Biosphere Reserves in 55 countries**
Simon West (Stockholm U.)

46. **Communicating Misinformation: The Media's Role in Perpetuating Climate Change Denial**
Stuart Wood (Claremont Graduate U.)

47. **Influence of Journalistic and Organisational Norms on Nigerian Journalists' Engagement with Climate Change Issues**
Abdullahi S. Bashir (Modibbo Adama U. of Technology), Ashong C. Ashong & Herbert E. Batta

48. **Participatory Art Exhibitions: Public Pedagogy and Global Climate Change**
Andrew Bieler (York U.)

49. **Inclusive Discourse and Knowledge Building around Environmental Challenges: The Vision and Experiences of the Ragged Project**
Alex Dunedin (Ragged U.) & Susan Brown

50. **Can't Climb the Trees Anymore: Social Licence to Operate, Bioenergy and Whole Stump Removal in Sweden**
Peter Edwards (SLU) & Justine Lacey

51. **Calling a Spade a Spade: Legal Property 'Business as Usual' and the 'Commons' of Earth**
June Edvenson (Edvenson Consulting/Norwegian School of Management)

52. **Newspaper Reportage of Environmental Degradation and Youth Restiveness in the Niger Delta**
Aniefiok Udoudo (U. of Port Harcourt)

53. **Participation or Political Positioning? An Analysis of Political Positioning Around a Proposed 'Citizen's Assembly' on Climate Change**
Deborah Wise (U. of Newcastle)

54. **Reimagining Participation with Sustainable Mindset and Leadership: A New Conceptual Framework**
Joo S. Tan (Nanyang Business School, Nanyang Technological U.)

55. **Information Visualisation. Volumetrics, Carbon Comparison and Visual Comprehension**
John Kellas (Edinburgh U.)

56. **Pacific and Globally – From Rio to Rio+20 and Beyond**
Tek Jung Mahat (ICIMOD) & Anja Møller Rasmussen

Excursions Monday 10 June

Excursion # 1: The Lake Tämnaren - 'Reinventing the commons in the inveigling shadows of stakeholders'

Destination:
Lake Tämnaren, 45 minutes' drive north of Uppsala

Place and time of departure and return:
Departure from Uppsala central train station east-side (see map) at 9 am. Return to the same place approximately 5 pm.

Excursion leader:
Hans Peter Hansen, +46 763 66 76 02

Good to bring with you:
Clothes according to the weather, rubber boots or hiking boots.

This excursion will bring us to the beautiful shores of Lake Tämnaren where we will meet and talk to some of the representatives from the local community. We will hear about the different perspectives and visions developed by the locals and learn how the locals try to realize these visions combining their own values and experience with different kinds of expert knowledge in order to recreate the notion of the commons in a practical and useful way. We will also learn about some of the more institutional barriers for changes. Last, but not least, we will enjoy our lunch at one of the beautiful and historical churches by the lakeside.

Excursion # 2: Of Mosquitoes and Men - Deliberation of knowledge and values in a contested area

Destination:
Nedre Dalälven, 1 hour's drive north of Uppsala

Place and time of departure and return:
Clarion Hotel Gillet in Uppsala City center at 8:30 am. Return to same place at 4 pm the latest.

Excursion leaders:
Lotten Westberg (+46-702163072) and Hanna Bergeå (+46-730645694)

Good to bring with you:
Comfortable (hiking-friendly) shoes, dress for the weather and keep in mind that we are going to visit areas that may be rich in mosquito this time of the year.

The excursion will take us to the area of Nedre Dalälven, with amazing scenery, a variety of nature types including Färnebofjärden National Park. During the latest decades, an aggressive species of mosquito has become common in the area, affecting the life quality of the people. We will experience a participatory Landscape Strategy Project aiming to prevent (or at least limit) the reproduction of the mosquito without threatening the high biodiversity of the area. We will hear about how the working groups, consisting of a mix of local people and officers from the County Administrative Board (CAB), have been searching for, learning about, and developing different management methods as alternatives to biological spraying. Another "result" of the participatory and dialogic oriented approach of the project is that the trust between local people and authorities has started to grow. We will discuss both with the project leader from the CAB and with local people involved in the project, and visit some sites to experience the effects of the project. We will make a short hiking tour in the national park and experience the right of public access in Sweden.

Lunch and coffee/tea brakes are included in the program.

Excursions Monday 10 June

Excursion # 3: Big Carnivores in Sweden – Communication and democracy in a polarized NRM conflict

Destination:
Järvsö, 2,5 hours' drive north of Uppsala

Place and time of departure and return:
Departure at 8 am with bus from Uppsala central train station, eastern side (see map). Return to the same place at 8 pm.

Excursion leader:
Lars Hallgren, +46 70 38 31 925

Good to bring with you:
Rain coat, warm clothes, shoes for walking

The purpose of the excursion is to learn about different perspectives on and experiences of big predators and communication about their management in Sweden. We will meet with farmers and hunters and listen to their experiences of carnivores and carnivore management. We will also meet with staff at the carnivore visitor center, and discuss with them how they think about working with information and communication about an issue full of tensions, disagreements and conflicts. For lunch and coffee/tea breaks, we will also try some local food, produced by farmers with experience of carnivores, and we will walk through the forests where humans, domestic animals and carnivores meet each other.

IECA Board Members and Meetings

IECA Board of Directors

2011-2013 Board

Steve Depoe, Chair & Journal Editor, 2011-2013 (USA)
Lee Ahern, Vice-Chair, 2011-2015 (USA)
Barb Willard, Treasurer, 2011-2013 (USA)
Anders Hansen, Secretary, 2011-2015 (UK)
Nadarajah Sriskandarajah, Conference Chair, 2011-2013 (Sweden)
Anabela Carvalho, 2011-2015 (Portugal)
Julie Doyle, 2011-2015 (UK) on leave 2012-2013, replaced by Kathleen Hunt (USA)
Libby Lester, 2011-2013 (Australia)
Soenke Lorenzen, 2011-2015 (Netherlands)
Amanda Katili Niode, 2011-2013 (Indonesia)
Stacey K. Sowards, 2011-2013 (USA)

2013-2015 Board

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Libby Lester, Vice-Chair, 2013-2017 (Australia)
Jen Schneider, Treasurer, 2011-2017 (USA)
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Alison Anderson, Journal Editor, 2013-2015, (UK)
TBA, Conference Chair, 2013-2015
Anabela Carvalho, 2011-2015 (Portugal)
Julie Doyle, 2011-2015 (UK)
Soenke Lorenzen, 2011-2015 (Netherlands)
Stacey K. Sowards, 2013-2017 (USA)
Nadarajah Sriskandarajah, 2013-2017 (Sweden)
TBA at large member, 2013-2015

IECA Board Meetings

The IECA Board will hold two lunch time meetings during the Conference at the same venue as the Conference lunch at restaurant "Syltan". The first meeting on Friday 7 June will be only for Board Members present in Uppsala. The second meeting on Saturday 8 June is open to all IECA members attending the Conference. You are welcome to join the meeting and there will be opportunity for exchanging views.

General Information

Conference Venue
The conference takes place at Undevisningshuset at SLU Ultuna Campus in Uppsala, Sweden. Address: Almas allé 10, Ultuna, Uppsala.

Name Badge
Your name badge is your admission to the scientific sessions as well as to coffee and lunches. It should be worn at all times at the conference venue.

Internet Access
Wireless Internet access is available at the venue.
Network: SLU
Username: larare01 · Password: guest-02

Twitter
Twitter: @TheIECA #COCE2013 #envcom

Busses Between Uppsala and Ultuna
Bus 20 will take you from Uppsala to Ultuna in 20 minutes. You take the bus going in the direction "Graneberg". The stop in Ultuna where you get off is called "Centrala Ultuna".

To make it on time in the mornings you should take the bus leaving at 08:07 (Friday) or 08:15 (Saturday and Sunday) from Uppsala Central Station stop A1 -marked 4 on the city map. The next bus leaves at 08:37 (Fri) or 09:00 (Sat & Sun). Bus 20 can also be picked up at the subsequent stop nearer to the hotel - marked 3 on the citymap.

Alternatively, Bus 110 leaves at 08:25 (Fri) from bus stop B3 at the Central Station.

Ticket options:

1) Single tickets can be bought from a machine at "Centralstation", SEK 25/ticket.

2) A single ticket can also be purchased from the bus driver (credit card only), SEK 30/ticket.

Taxi
You can also take taxi from Uppsala to Ultuna. The number for Uppsala Taxi is +46-18-100 000. The trip costs around 200 SEK.

Lunches
Lunches will be served in the Restaurant Syltan, located next to Undervisningshuset. Your name badge is your ticket. If you have any dietary requests that you have informed the organisers about in your registration, please inform the staff in the restaurant.

Organization Support
Academic Conferences – SLU and Uppsala University in cooperation. Office contact details during office hours (08:00-16:00 local time).
Tel: +46 (0)18 67 15 31
E-mail: coce2013@slu.se

Emergency Calls and Medical Services
Call 112 if there is a need for ambulance, the police or the fire brigade. Uppsala University Hospital, Akademiska sjukhuset, is located in central Uppsala. Telephone: +46 18 611 00 00. The emergency room is called "Akuten" in Swedish. There are several pharmacies in Uppsala. Look for 'Apotek'.

Drinking Water
Tap water in Sweden is of excellent quality, please use it.

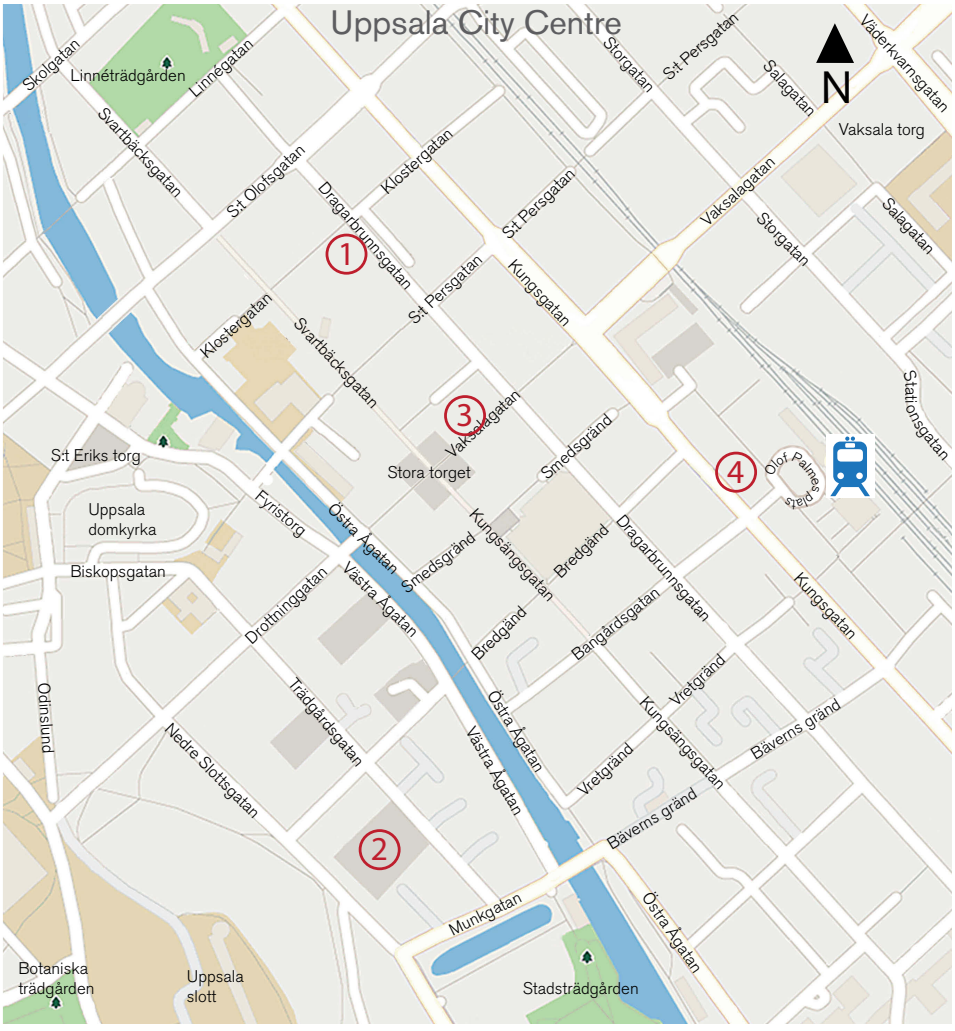
International Calls
Dial 00 + country code + area code + phone number.

Electricity
In Sweden the electrical voltage used is 220/230V.

Smoking
Smoking is not allowed in the conference venues, or in any other public indoor establishments such as restaurants, bars, etc.

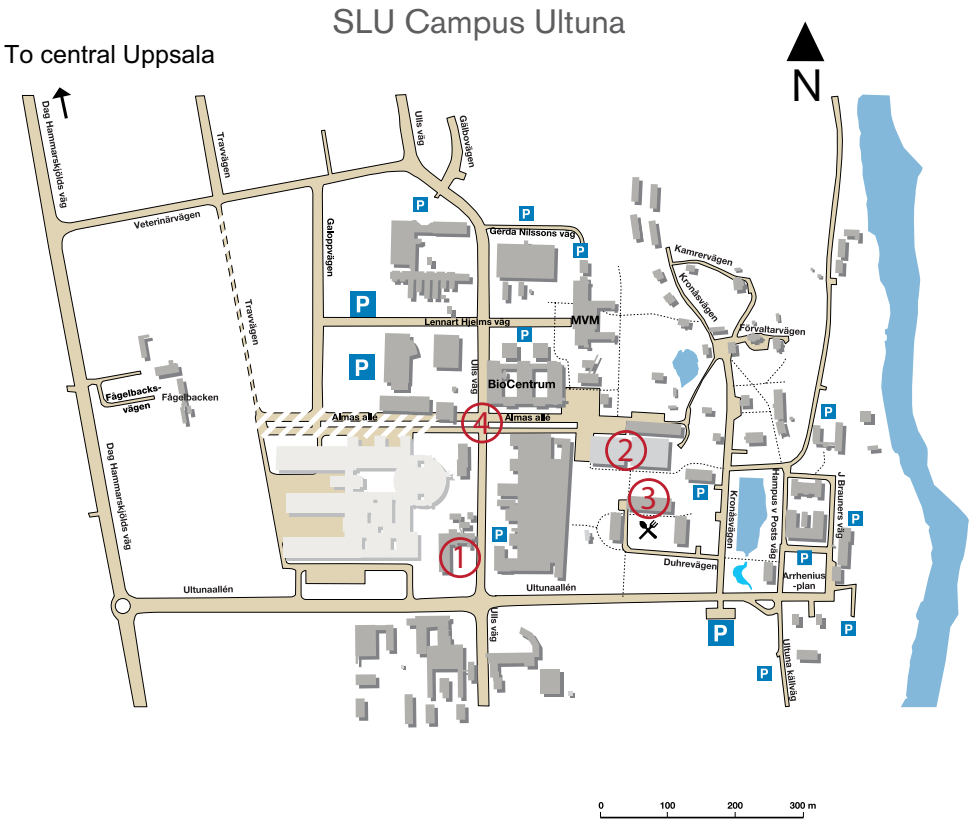
Map of Uppsala City Centre

1. Clarion Hotel Gillet, Dragarbrunnsgatan 23
2. Östgöta Nation, Trädgårdsgatan 15, Conference Dinner Venue
3. Bus stop for bus no 20 to Ultuna Campus, Conference Venue
4. Bus stop for bus no 20 to Ultuna Campus, Conference venue



Map of Campus Ultuna

1. Department of Urban and Rural Development, Ulls väg 28
2. Undervisningshuset - Conference Venue
3. Restaurant Syltan - Restaurant and Café
4. Centrala Ultuna - the bus stop for bus no 20 to and from Uppsala City Centre



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SLU
Swedish University of Agricultural Sciences

UPPSALA UNIVERSITET
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CEFO
CEMUS RESEARCH FORUM
CEMUS Research Forum,
Uppsala University's
Centre for Sustainable Development

UVC
Uppsala vattencentrum

KRAV

formas
The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning

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NATIONAL COMMUNICATION ASSOCIATION



The International Environmental Communication Association (IECA) is a professional nexus of practitioners, teachers, scholars, students, artists and organizations engaged in research and action to find more ethical and effective ways to communicate about environmental concerns in order to move society towards sustainability.

Our mission is to foster effective and inspiring communication that alleviates environmental issues and conflicts, and solves the problems that cause them. We do this by bringing together and supporting practitioners, teachers, scholars, students, artists and organizations that share these goals.

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