Two blind spots in design thinking

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Abstract
From the 1980s, design thinking has emerged in companies as a method for practical and creative problem solving, based on designers' way of thinking, integrated into a rational and iterative model to accompany the process. In companies, design thinking helped valuing creative teamwork, though not necessarily professional designers' expertise. By pointing out two *blind spots* in design thinking models, as currently understood and implemented, this paper aims at shedding light on two rarely described traits of designers' self. The first relies in problem framing, a breaking point that deeply escapes determinism. The second blind spot questions the post project process.
We thus seek to portray designers' singularity, in order to stimulate critical reflection and encourage the opening-up to *design culture*. Companies and organizations willing to make the most of designers' expertise would gain acknowledging their *critical heteronomy* to foster innovation based on strong and disruptive visions, beyond an out-of-date problem solving approach to design.

Introduction

Introduced as a communication tool to clarify designers' thinking and working process, design thinking met with undeniable success in companies and organizations, and developed into a panel of tools, connected by a methodology to accompany design process. Widely reinterpreted by design professionals, consultants or researchers, the basic model may vary, but a common ground remains in summarizing the key phases of design projects. Academic research started investigating the way designers think in the 1990s, in particular from the pioneering contributions of Archer (1979), Cross (1982) and Schön (1983). There is now a large body of literature on design thinking, holding a pivotal place in design research and pervading education. Leading institutions around the world publically promote the teaching of design thinking, even for non-design backgrounds. A "discourse community" is built up, constructing meaning through the use of language and signs, claiming power to legitimize design activity (Ghassan, 2016).

This position paper aims at pointing out two blind spots in design thinking as it is currently understood and implemented. Two archetypical and recognized design thinking models are used as a baseline for discussion: the Double Diamond, from the British Design Council (2005), and the d.school model, developed by Hasso-Plattner Institute and Stanford University from IDEO's work (2001). Both of them show a linear process, divided in four to six stages, while allowing episodes of divergent thinking (double diamond) and feedback loops (d.school). Cross-disciplinary teamwork and early testing with potential users are shared focus.

Figure 1: Design thinking baseline models:

Double Diamond (British Design Council, 2005), d.school from IDEO
(2001)

These models give a generic pattern to monitor design projects, in order to foster innovative ideas, quickly transformable intro implementable solutions in companies. But do all design projects need to share such goals and means? We are defending the irreducibility of design to methodology-driven problem solving. More than methods, design involves values and visions that remain in the blind spot of design thinking models. Those look at the *how* of design – "doing the thing right". But design is above all concerned by the *why* – "doing the right thing". Besides what is done, how and why it is done, successful innovation depends in part on an interior condition, the inner place from where individuals or collective entities operate (Flowers et al., 2005). Drawing upon the pioneering work of social scientist Kurt Lewin and recent research on brain plasticity and neurophenomenology, Otto Scharmer has been working to describe this blind spot of psychological experience from which our attention, intention, and action originate when we engage with others and with ourselves. By borrowing the concept of *blind spot*, we aim at shedding light on two rarely described traits of designers' self, looking below the surface of design thinking models. Once explored and described, we hope these perspectives may broaden the view on designers' expertise, beyond innovation problems solving.

First, this study investigates *problem framing*. Design thinking models mention it as a key phase, graphically integrated in the process. We take the stance that questioning the initial design brief is a breaking point that deeply escapes determinism, hence should be taken into account accordingly. The second blind spot is simply absent from models. Consultants promoting design thinking may consider design is not longer involved after delivering an outcome, or launching a product. But companies and organizations need long-term, process- oriented design accompaniment to learn from the past as well as from the future as it emerges. The paper ends up portraying the *critical heteronomy* exerted by designers, drawing a few directions for companies to make the most of *design culture* beyond the restrictive *design thinking*.

The mystery behind *problem framing*

From *problem* to *mystery*

Figure 2: "Define", a key phase of design thinking

Both models start with "discovering" or "empathizing" phase, engaging fine-tuned observation for a deep and human-centered (Buchanan, 2008) understanding of situations. In this phase, designers collect a huge amount of field data (interviews, notes, state-of-the-art studies…). Ethnographic tools help gathering and analysing this material. This work may be handled by trained designers or in collaboration with psychologists, sociologists or anthropologists… aiming at developing the broadest view on human experience, knowing that exhaustiveness is unreachable.

In doing so, designers are supposed to spot relevant pain points, entering the second step: defining a problem to address. This means integrating disparate pieces of information into a focused vision of the situation. Divergent thinking gives way to convergence in setting the final design brief. The moment is key because all stakeholders, from client to design team, need to agree on the project's terms and goals. In this state of becoming, different alternatives coexist. Without being able to explore them all, a choice is to be made and a question formulated, which will be the reference framework to evaluate final outcome. In other words, the following iteration phase is merely an exploration *within* the problem framed. The point is, there is no single global vision of a situation, no matter how talented or experienced the designer is. Diverse ways and variations may fulfil a design brief. This set of patterns remains the realm of arbitrary and instinct.

Figure 3: The mystery behind *problem framing*, a blind spot of design thinking

In this line, the term "problem" should be replaced by "*mystery*". Whereas problems are capable of rational solutions, mysteries involve subjectivity. They do not exist independently and are meta-problematic, unsolvable by technical means. Hence the well-known aphorism: "Life is not a problem to be solved but a mystery to be lived" (Marcel, 1935).

Insights and inspiration

From a cognitive point of view, the enigma around problem setting/framing has been a recurring topic in the literature (in particular Schön, 1983/1992; Simon, 1973; Cross, 1984). It is defined as the point when designer's judgment is shifting the project from a sum of identified parameters to the unknown, the unpredictable (Moholy-Nagy, 1947). How does this happen? It appears that designers are able to tacitly make "qualitative judgments" without being necessarily able to explicit the criteria on which they base them (Schön, 1992). In complex environments, where interdependencies and uncertainty rule, where no objective view of situations exist, analytic approach is inefficient. Designers mobilize their subjectivity to identify and frame relevant issues, relying on insights from the observation phase that are individual and qualitative rather than quantitative. The criteria for selecting such inspiring elements are mainly personal and involve "[the designer's] creativity, way of approaching the world's problems, [his/her] own history, learning style and view of the world" (Lawson & Dorst, 2009).

First studied by Gestalt Psychology in the early part of the 20th century, insight learning is a type of cognitive process able to address a problem that cannot be solved in a conventional or logical manner (Köhler, 1925). Suddenly seeing the problem in a new way creates a so-called "eureka moment". The problem is that such creative breakthrough is not directly observable, and relies for a large part on subconscious mechanisms.

Figure 4: Insight, a singular way to see the
world (Georges Rousse, Utopia, 2015)

Indeed, insights are at the basis of designers' thinking. Designers "think, dream and imagine" (Branzi, 1997), and "original and interesting ideas rise from a well-trained subconscious" (Wynants & Cornelis, 2005). Inspiration happens when intuition meets a latent potential, like waiting for Kairos. This ancient Greek figure personifies luck and favourable moments. A tuft of hair hanging over his face allows seizing him when arriving. But the back of his head is bald, meaning when an opportunity is gone it cannot be re-captured.

Figure 5: Kairos, Greek figure of favourable moments

This metaphor depicts the state of mind from which insights happen: standing ready to seize the unpredictable, which may come from outside the project's framework. It requires balancing sensitivity and judgment. As the French mathematician Henri Poincaré used to say, difficulties are sometimes overcomed through hard work, and sometimes by a sudden and unexpected illumination "during a walk along a cliff". Poincaré's inspiration was obviously not in the cliff, but in his brain experiencing emotions, recalling analogous situations… Even in hard sciences, ideas come from a subtle balance between methodical work and inexplicable illumination (Villani, 2012).

Such relativity rules out any notion of designers being objective. Each one rather expresses, from diverse experiences and personality traits "what [their] individuality records, like a seismograph, from human phenomenon" (Mendini, 1984).

The irrationality of designers

However, design thinking models remain silent about the tacit and irrational judgments made by designers. They are yet crucial, since any result is to be judged according to the problem initially set. Admitting that choices are based on instants of subjectivity and intuitive shortcuts destabilizes linear methods.

"There is a causal relationship between problems, processes, and solutions in science – a relationship that is wholly absent in designing. Problems do not determine the process, and neither the problem nor the process determines (a) solution." (Beck & Stolterman, 2015) In both cases, novel entities emerge, that could not have been predicted from what was before: new points of view, new perspectives – in the realm of design, new concepts and meanings. But different modes of emergence are to be distinguished. Combinatory emergence is an evolutionary process where an expansive phase (in which many possibilities are generated) leads to a contractive phase (in which critical selection of "adequate" or "best" possibilities is made). Although combinatory systems may differ in numbers of possible combinations, their set of possibilities is closed. In creative emergence, on the other hand, new primitives are formed, permitting the space of combinations to expand (Cariani, 2012). This is what Schön (1983) referred to as "generative metaphors".

As the first mode of emergence means applying methods, the latter means designing. Designers often say there is no "good answer" but a diversity of propositions that are not mutually exclusive. Giving twenty designers the same brief inevitably results in twenty different projects. More important, evaluating the quality and relevance of these solutions in relation to each other might be impossible.

Here is a limit for theory, concerned with universality and reproducibility of results. On the contrary, design practice aims at singularity (Hatchuel, 2015). While any object of scientific study represents an example from a broader category, design considers what makes an object or situation unique. This singularity stems as much from contexts as from designers' individualities.

Giving shape to the world

Therefore, not every part of design projects can be achieved collectively. In particular as initial parameters melt into a whole that transcends the sum of its parts, following a well-known Gestalt principle. This transformation process goes beyond analysis-synthesis and logical thinking, which makes it hard to share or distribute. It remains a part of the black box of creation – more than creativity.

Though design is basically not self-expression (Hara, 2003), designers share with artists the same sensorial and sensible expression and communication tools (Moholy-Nagy 1947; Papanek 1972). Designing means shaping objects, services, systems or relationships… Whatever the outcome, designers are experts at giving physical embodiment to ideas. It should be clarified that aesthetics is more than appearance; it underlines the importance of our sensitive perception of the world. In this line, designers form and "reform" (Huyghe, 2014) the objects surrounding us. In multidisciplinary teams, professional designers often naturally transpose ideas, thoughts or discussions into tangible representations – be they deliverables or intermediary objects.

This is the first vocation of design, still in our more and more immaterial times. Designers of the 20th century used to shape physical materials; today they also shape experiences and patterns of relationships. This extension of the realm of design represents a challenge for designers to step forward, though it remains somewhat cloudy.

Is it over when *delivered*?

Embracing the full lifecycle

Figure 6: *Deliver*, the last stage of design thinking

Rather than producing finite solutions, most designers assume providing "representations of things that might work" (Gero, 2013). Such caution makes sense, because uncertainty

doesn't disappear during the design process. It is rather diffracted, taking design another step further from a deterministic problem solving activity. Designers are called to create "simplexity" (Kluger, 2008): enhance affordance and evidence without impoverishing the diversity of uses. They project themselves into the artefacts' future life, and try to design them accordingly. But as reality always remains polymorph (Latour, 1992), the ideal of a convergent outcome is bound to be unreachable.

Though, all design thinking models end with implementation. What happens next? Products or services are never univocally adopted. Some fail to find a market, audience or to meet users' needs; some are subject to missuses or unexpected practices. The outcome can be positive, showing creative appropriation, but also negative, exacerbating the counter- productive (Illitch) or harmful (Baudrillard) potential of design. Just like design tackles "wicked problems" (Rittel & Webber, 1973), it may also create wicked solutions!

In the social innovation field, designers are particularly vigilant about such unintended effects of action (Papanek, 1974). But every object should be concerned: human behaviours and relations transform functions, meanings and values. Designers' good intentions may lead to adverse effects, as shown by the example of Modernist architecture. Initially based on social concerns, "machines for living in" (Le Corbusier) are now roughly criticized for alienating people. Though, as pointed by a contemporary corpus-led discourse analysis study, the design thinking research community is reticent to discuss negative consequences of design, "unwilling to broach areas which may potentially cause discomfort" (Ghassan, 2016).

It is indeed a matter of responsibility for designers to track what happens after the project process, basically for sustainability reasons. The lifecycle of artefacts must be taken into account, not only through planning but also on an on-going basis in real life context. Are the needs fulfilled? What patterns of use emerge? Upgrading, repairing, recycling or remanufacturing are also design strategies to plan for and arrange.

The concept of "open objects" coined by Simondon (1958) argues in this sense. Unlike closed objects, adapted to their technological context and hence doomed to obsolescence, open objects remain adaptable and withstand the evolution of human uses. As they can be fixed, hacked or improved along with technological progress, the course of time does not affect uses so much.

Open models

But openness is more than a pragmatic issue. Designers are above all concerned with experience, which involves more than the traditional functional, sensorial and emotional dimensions attached to design. Time, social relations, purposes and motivations combine, shaping unique and transformative experiences over time (Dewey, 1934). Today, successful designs offer more than products or services, caring for holistic experiential dimensions. It was proven that living experiences is more memorable and transformative for people than consuming goods (Van Boven, 2005). In this line, artefacts need to be designed not as ends in themselves, rather as conditions for and supports to experience. An object is nothing but a "freeze frame" in a dynamical process of "transformations, associations and substitutions", requiring designer's arbitration or "negociation" (Latour, 2009; Bihanic & Huyghe, 2015). In a project context, status quo may seem achieved at the

end of the process, but this is hardly the case in real life. As pointed by the famous French designer Roger Tallon:

"Most people believe a project has a beginning and an end, like a movie. Not at all. There is no 'Closing time!'" (Tallon, 2011)

From users point of view, a large part of experiences escape design intentions. But this does not mean designers should take no further interest after projects are delivered. On the contrary, they have a lot to learn from practical situations to compare and contrast their views on human behaviours, needs and aspirations. In this line, stubborn habits, opposition to recommendations, misuses or even hacking of rules are to be considered significant and legitimate, even to adapt design solutions afterwards. This allows to gradually enhancing the relevance of design propositions. Objects are no longer consumer goods but "in-process objects", "becoming-objects" or "proto-objects" (Bihanic & Huyghe, 2015), that can be used as tools for observational studies.

In the digital world, lean or open source frameworks allow designers to maintain artefacts in a "neotenic state" (Beaubois, 2015) and to learn from diverse emerging practices. In other sectors, participatory or co-design processes deploy similar methods and tools, but most of the time ending up with a "closed" solution to implement. Consultancies and even in-house design teams often lose sight on their work once projects are considered finished. This makes them unable to gather feedback from direct and indirect users, at detailed and large scale, short and long-term, hence unable to learn from the challenges or limits encountered. Design thinking toolkits remain silent on this aspect.
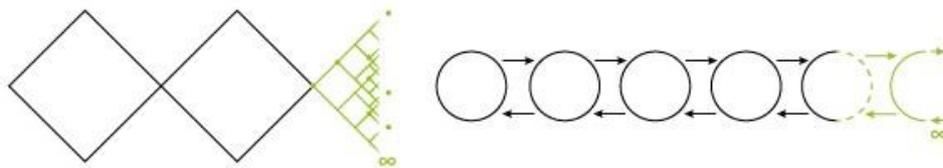

Figure 7: Is it over when *delivered*?

A framework for *practical wisdom*

There is a need for more growing and generative models, valuing designers' ability to slow down, keep open or reintegrate options into broadly linear and deterministic processes. As a project-based discipline, design considers what is possible rather than what was stated, taking "the world as design" (translated from German *Die Welt als Entwurf;* Aicher, 2011). Among all possible futures (Voros, 2001), designers try to lead the way towards the preferable ones. This implies defining strategies, while preserving latitude for adaptation or bifurcation if needed – in other words *tactics*. The French philosopher Michel De Certeau (1990) distinguishes between strategic vision – which is a synoptic, unified view of a situation, and tactical ways – which are multiple and adaptive. The latter characterise everyday life creativity, individuals being influenced by current rules and tools but never completely determined by them. In the same way, design activity is not closed strategy, following a linear timeline from past to future in a prescriptive manner. It rather fosters adaptability, proposing scenarios that leave space for people's own ways of living. "The ultimate interest of design is to provide openings

and choices" (Huyghe, 2014).

Being more concerned by what happens than what was intended, design culture cannot thrive on methods systemizing paths to follow. A "designerly way of thinking" (Archer, 1979) involves practical wisdom and knowledge. In the same way, the early Greek concept of *phronesis* requires both intuition and ability to discern how and why to act. Linked to the figure of Kairos outlined above, it was translated as "mindfulness" or "prudence".

This way of acting meets design practice as far as it is based on "reflection-in-action" (Schön, 1983). Just like ancient prudent Greeks, designers develop conducts from the unpredictable, aware that they don't know what tomorrow will bring. This precludes predictive approaches aiming at quantifying risks, following a so-called precautionary principle. It is then to distinguish between *prudence* and precaution (Sage-Fuller, 2016; Huyghe, 2014), one being concerned with design, the other with calculation. Prudence does not hinder action, but requires ability to operate in uncertain environments, as a mindful and tactful practitioner.

Impact for organizations

From the comfort of design thinking…

In companies, while marketing, commercial and financial bodies all dread uncertainty, design does not only accept but also build from the unpredictable. As described above, designers are used to complex environments, handling interconnected and sometimes paradoxical parameters, and hazards are at the basis of the creative process.

On their side, design managers have the difficult task of balancing strategy and contingency. The challenge is to preserve the necessary freedom to create while integrating companies'constraints and goals (Paris, 2008). Oddly, they need to reassure and convince that designers can comply with the rules while bringing innovation and excitement. Design thinking models – rational, clear and comprehensible, give the impression of solving the paradox. They shatter the myth that designers might possess "some mystical, creative thought process that places them above all others" (Norman, 2010).

"Design thinking is a powerful public relations term that changes the way in which design firms are viewed. […] So, long live the phrase "design thinking". It will help in the transformation of design from the world of form and style to that of function and structure. It will help spread the word that designers can add value to almost any problem, from healthcare to pollution, business strategy and company organization. When this transformation takes place, the term can be put away to die a natural death." (Norman, 2010). Including design thinking in companies had a pedagogical effect, enhancing the recognition of creativity. Its tools, now widely known and used, proved useful to accompany ideation and federate multidisciplinary teams. Designers cannot hide behind the "magic of design" any more: they need to clarify their means and ends. But this doesn't mean that the mystery behind inspiration is unravelled, nor that professional designers are no longer needed. Design thinking is a narrative missing a large part of design activity. It is a *myth* – a rhetorical figure orienting the understanding (Barthes, 1970). And like any myth, its symbolic and federative values are more important than the far more complex

reality. Exploiting the power of design thinking can help promote design methods, showing that the discipline can help facing any issue, until entering companies' organization. Yet, there is a risk to absorb it until inhibiting the transformative power of design.

When used as a closed and context-independent methodology, design thinking results at best in incremental innovation (Nussbaum, 2011). This impedes the proposition of new scenarios based on strong and disruptive visions, beyond the problem solving approach theorized in the 1960s. If tools are meant to be transferable, design projects are not carried out in vitro. Design is a whole context-dependant system of knowledge, competencies and know-how (Deserti & Rizzo, 2014). Facing real life complexity, the first skill of designers is to adjust tools and methods on a case-by-case basis, even to design their own. Rather than spreading "good practices", design expertise develops over time a range of management and creative practices that are specific and situated. Instant insights, creative teamwork, ethnographic observation or transformative visions are as many colours on the palette: basic ingredients that only predict few of the final artwork.

… To the *critical heteronomy* of design

An organizational shift is needed for companies to make the most of design expertise. Being creative at problem solving is no longer enough, as creativity is the lowest common denominator between all actors of innovation. The challenge now is to carry strong visions based on holistic, yet singular, views. This allows for innovation cultures to value doubt and contingency to spur innovation, combining design strategy with *tactics* (De Certeau, 1990). In this line, using complexity and paradox as spaces for creation appears wiser than trying to dissolve them into unequivocal processes.

Until now, design thinking tools have been used to fed the *how* of design, providing methods and techniques. But, as noticed above, design is more concerned with *mysteries* than with problems, its expertise being more than a set of tools. Designers search for meaning and support the process of change in companies.

This is where design management comes into play, disseminating design in different areas of companies, fine-tuning the articulation between the individual and collective territories (Bobo & Ract, 2008). Inclusive creativity workshops, where consensus reigns, are not fully indicative of design expertise. It takes professional designers to maintain coherence and strength along the project, integrating pieces without losing sight of the big picture. Besides, companies should not reduce design to isolated interventions aiming at launching innovative products or services. Design is a long-term, process-oriented accompaniment addressing companies' outputs, but also frameworks and people themselves (Michlewshi, 2015). It is an influencing force in the physical sense of the word, not native but "invading the corporate world" (Michlewshi, 2015). In perpetual movement and somewhat on the margins of the industrial, scientific, economic and commercial systems, designers exercise some kind of *critical heteronomy* (Caraes, 2008) in companies. Design thinking tools and methods being now widely implemented, it may be time to go beyond accompanying discourse (Jeanneret, 2001) and take the risk of opening up to *design culture*. Or in other words:

"I think future industry needs to revolve around its creative centre, and, through osmosis, take on board vibrations of madness." (Mendini, 2006)

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First trained as a designer, Estelle Berger obtained in 2014 a PhD in Applied Arts for research on the reflective practice of design. Supported by theory and an analysis of design practice in context, her research investigates the singularity of designers and the stances they adopt in companies and society at large. Her scope focuses on ethics, understood as a constant introspection and assessment of designers' means, positions and ends in professional force fields. As a lecturer at Strate School of Design, she accompanies experience design and cross- disciplinary innovation projects, putting an emphasis on the sensitive and imaginary dimensions. Based on action research, the collaborative projects and activities run within Strate research lab aim at developing a toolbox for professional practice and reflection-in- action. As a designer, Estelle Berger specializes in experience design, with a predilection for the promotion of handicrafts through design.