

Cultural Differences in Aesthetic Preferences: Does Product-to-Context Match Matter?

Tseng-Ping Chiu, University of Michigan, Ann Arbor, MI, USA, mattchiu@umich.edu
Carolyn Yoon, University of Michigan, Ann Arbor, MI, USA, yoonc@umich.edu
Shinobu Kitayama, University of Michigan, Ann Arbor, MI, USA, kitayama@umich.edu **Colleen Seifert**, University of Michigan, Ann Arbor, MI, USA, seifert@umich.edu

Abstract

Western cultures focus on salient objects and use categorization for purposes of organizing the environment (an analytic view), whereas, East Asians cultures focus more holistically on relationships and similarities among objects when organizing the environment (a holistic view). Previous research has shown that cognitive approaches differ between cultures: European Americans prefer an analytic style, and East Asians tend to use a holistic style. However, little is known about how cultural differences in cognition relate to aesthetic preferences. In this paper, we explored whether cultural differences arise in preferences for products set in matching vs. mismatching contexts. Participants in a laboratory experiment included European Americans and East Asians. Individually, they viewed images of a variety of furniture products (chairs, coffee tables, and floor lamps) and rated their aesthetic appeal. Each product type appeared in three different contexts: matching (target product shown in its usual in-home context); mismatched (target product shown in an unusual in-home context), and neutral (the target product shown on a white background). For both cultural groups, products were judged to be more aesthetically pleasing in the matching than in the mismatched context. However, ratings for products in mismatching contexts were significantly higher among East Asians. Our findings suggest that those with holistic views (East Asians) are more tolerant of mismatches than are those with more analytic views (European Americans). The implications for product and marketing design include greater attention to context presentation.

Keywords: Cultural Cognition, Analytic or Holistic View, Product Aesthetics, Consumer Behavior.

Product design is recognized as a competitive advantage for companies in the marketplace. Since many products have reached maturity in their performance and functionality, aesthetic value now plays a more dominant role in marketing to consumers (Postrel, 2003). It has been shown that product aesthetics influence consumers' purchasing decisions (Creusen & Schoormans, 2005; Crilly, Moultrie, & Clarkson, 2004; Govers & Schoormans, 2005). In product evaluations, aesthetics are an important dimension that brings pleasure and reflects the individual's personal values. However, little information exists on cultural differences in aesthetic judgments about products.

Cultural experiences influence how one views and responds to information (Heine, 2012). People in different cultural contexts might perceive a product differently, and as a result may respond differently to representations of products in the marketplace. For example, when a product is sold through the Amazon platform, the identical product is displayed differently in

depending on countries (e.g. Figure 1). On the American site, the displays tend to focus on product features and the product itself without any context of use; in contrast, the Japanese Amazon site draws attention to the use of the product in the context of the home environment. Do these apparent differences within culture reflect aesthetic preferences? In this study, we investigate differences in consumers' appreciation for products based on their cultural backgrounds.

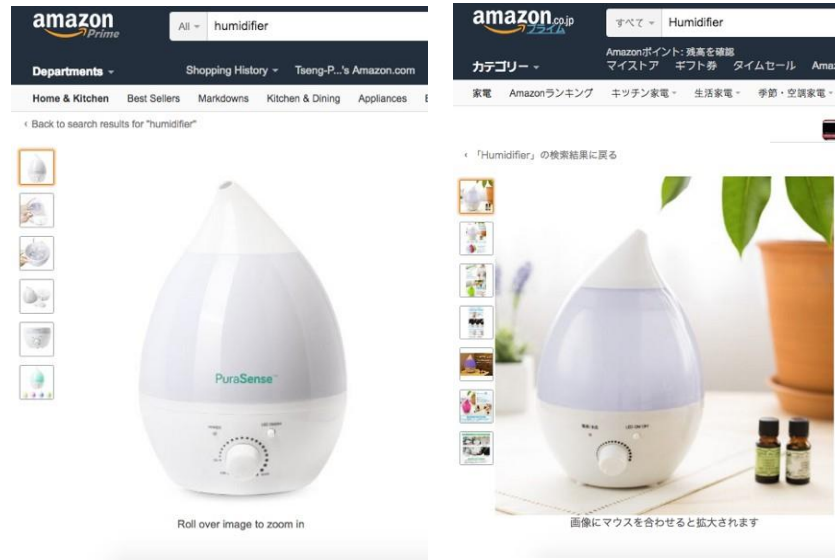


Figure 1: An example of a best-selling product (room humidifier) shown on company websites in two countries (left is the American Amazon, right is the Japanese Amazon).

Literature Review: Aesthetic Values and Culture

Leder and colleagues define aesthetics as a cognitive process starting with perception, followed by integration with previous experiences, classification of style and content, interpretation, and evaluation (Leder, Belke, Oeberst, & Augustin, 2004). A more concise definition of aesthetic judgment stresses the sensory (primarily visual) nature of input to judgments (Bloch, Brunel, & Arnold, 2003; Hekkert, 2006; Lindgaard & Whitfield, 2004), where aesthetics is defined as the physical attractiveness of a product mediated mainly by the visual features (Hekkert & Leder, 2008).

Visual perception has been shown to differ based on cultural background (Nisbett, 2003). Westerners tend to be more analytic in their thinking, while East Asians tend to be holistic, attending to the entire field (Masuda & Nisbett, 2001; R. E. Nisbett, Peng, Choi, & Norenzayan, 2001). In perceptual tasks, Westerners are described as “context-independent” because they focus on a salient object rather than its context, whereas East Asians attend to the relationship between an object and its context (Chua, Boland, & Nisbett, 2005; R. E. Nisbett & Miyamoto, 2005). Americans prefer context-exclusive images more than Japanese, consistent with analytic vs. holistic patterns of attention (Masuda & Nisbett, 2001; R. Nisbett, 2003; R. E. Nisbett & Miyamoto, 2005). Masuda and Nisbett (2008) tested the aesthetic appeal of portraits with variations in size of the model and background. They found that Americans prefer

context-exclusive images more than do Japanese (Masuda & Nisbett, 2001; R. Nisbett, 2003; R. E. Nisbett & Miyamoto, 2005). In addition, logos from individualistic (Western) cultures were found to be more angular than those of collectivistic (Asian) cultures, which showed preferences for rounded shapes considered to be more harmonious (Zhang, Feick, & Price, 2006).

These findings demonstrate that cultural differences in perception of visual scenes can affect the way a product is perceived and appreciated. Can culturally-influenced cognition lead to differences in aesthetic preferences? While there are universals of aesthetics in design, aesthetic preferences may not be universal across cultures; instead, people may differ with respect to what they perceive and attend to based on their cultural experiences. However, differences in aesthetic judgments of products based on cultural experience have not yet been adequately addressed. Because cultural differences may impact attention to product images, people from Western cultures may differ from East Asians in their aesthetic judgments about products.

Research Hypothesis

By focusing on the product itself, people from Western cultures may be unaffected by the surrounding context; in contrast, those from East Asian cultures may attend more to the relationship between a product and its context. These differences may impact individuals' aesthetic judgments about a given product. Our hypothesis is that people's aesthetic preferences will be influenced by their focus on salient objects in the environment (Western cultures) or more holistic view of relationships among objects and contexts (East Asians culture).

Research Method

We set out to test this cultural hypothesis by presenting images of products to people and asking for their aesthetic judgments. Within an experiment, we asked people to view images of target products set in one of three different contexts, (1) the target product presented without context; (2) context matched to the target product; and (3) context mismatched to the target product. People were asked for their aesthetic judgments of the product as indicated by a red arrow (e.g., a chair in the cozy studio vs. a chair in a garage in Figure 2). We predicted that Westerners would use an analytic process where judgment of product aesthetics is decontextualized, whereas East Asians would tend to use holistic judgment and therefore be attentive to context.



Figure 2. The target product presented in three different contexts

Participants

We recruited two groups for this study: European Americans, and East Asians. The European American samples participated through a course requirement at a business school in a large Midwestern U.S. university. The European American group included 171 participants ($M_{\text{age}} = 20.03$, 54.9% male, 45.1% female). The East Asian group included 14 international students at the same university (5 Chinese, 5 Korean, and 4 Japanese) who participated for a course requirement in psychology. In addition, ninety-three East Asian students were recruited from a university in Taiwan (for a monetary payment of USD \$5), for a total of 107 participants ($M_{\text{age}} = 25.88$, 41.1% male, 58.9% female).

Materials

A collection of home products, including furniture (e.g., coffee tables, chairs), kitchen products (e.g., dining table, cabinets), and lighting (e.g., floor lamps, desk lamps) was used in the study. All of the products were designed as objects that fit a specific environmental function and were not portable in use; for example, an armchair set in a living room. We avoided electronic products such as TVs or computers. Each product was shown in a perspective containing its outline, shape, color, material, and detail (e.g. Figure 2a). Three distinct variations of each product image were created: set in a matching context, in a mismatched context, and with no context; for example, the desk chair in three versions is shown in Figure 2.

The Google SketchUP 3D modeling computer program was used to depict identical versions of each product set in three different backgrounds. Every product was shown in a No Context image where it appeared with a white background. In the Match Context images, the background depicted with each product was matched to an appropriate scene (e.g., armchair in a living room, toolbox table in a garage, or dressing table in a bedroom). For the Mismatched Context images, products were placed in within a scene where they do not typically appear; for example, an armchair in a garage, or a toolbox table in a bedroom. The three conditions in the experiment (e.g. Figure 2) -- No Context, Matching Context, and Mismatching Context -- for three specific variants of nine different products resulted in 81 images.

Procedure

At the start of the session, participants were informed that they would be shown a series of products one at a time, and then asked questions about them. Participants were asked to focus on the target product only, and a red arrow appeared in each image to indicate the target product (e.g. Figure 3). Each participant saw nine product types in 3 distinct versions for a total of 27 images: a No Context version, a Matching Context version, and a Mismatching Context version. For example, one participant saw chair 1 in the No Context condition, chair 2 in the Matching Context, and chair 3 in the Mismatching Context. The context condition was counterbalanced so that specific objects were presented in each context condition equally often across participants. The image presentations for each participant appeared in a randomized order.

We asked participants to answer five questions for each image as our dependent variable. The first question was an aesthetic judgment of the product: “*Do you think the product is beautiful?*” The second question assessed liking for the product: “*Do you like the product itself?*” The third question, “*How well do you think the product fits into this context?*” was a manipulation check to ensure participants perceived the intended mismatch and matching contexts. The fourth question, “*Do you like the product in this context?*” assessed product liking within matching and mismatching contexts. The final question, “*Overall, do you like the whole picture?*” assessed general aesthetic preference. Participants answered each question on a 7-point scale using a slider operated with a mouse to indicate the degree of their preference (1, Not at all to 7, Very much). At the end of study, participants completed a demographic questionnaire asking about their age, education, occupation, race, parents’ race, citizenship, duration of living in US, location of birth, and English language ability.



Figure 3. An example of target product (a chair) shown in a matching context with the rating screen.

Results

Manipulation check

We used the third question for each image (“*How well do you think the product fits into this context?*”) as a manipulation check. As expected, the Mismatching Context images were rated lower ($M = 2.40, SD = 1.46$) than the No Context ($M = 3.82, SD = 1.57$) and Matching Context images ($M = 4.54, SD = 1.69$). Across participants, these differences were significant, $F(2, 552) = 680.84, p < .001$.

Product Beauty

Responses to the first question, “*Do you think the product is beautiful?*” were analyzed in a 2 (culture, within-subject) X 3 (condition, between subject) Mixed ANOVA. There were main effects of culture $F(1, 276) = 34.58, p < .001$, and condition $F(2, 552) = 34.21, p < .001$ (e.g. Table 1). There was no interaction between culture and condition, $F(2, 552) = .79, ns$. East Asian participants rated product beauty significantly higher than European American participants in all three conditions; specifically, even when a mismatching context, East Asian participants rated beauty higher ($M=4.10, SD = 1.13$) than European American participants ($M=3.31, SD =$

1.07). However, all groups rated the Matching Context condition highest, and then No Context, then the Mismatching Context condition.

Table 1: Product Beauty ratings for each cultural group by Context.

Conditions	Product Beauty					
	No Context		Matching Context		Mismatching Context	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
European Americans	3.56	1.09	3.72	1.10	3.31	1.07
East Asians	4.26**	1.07	4.41**	1.10	4.10**	1.13

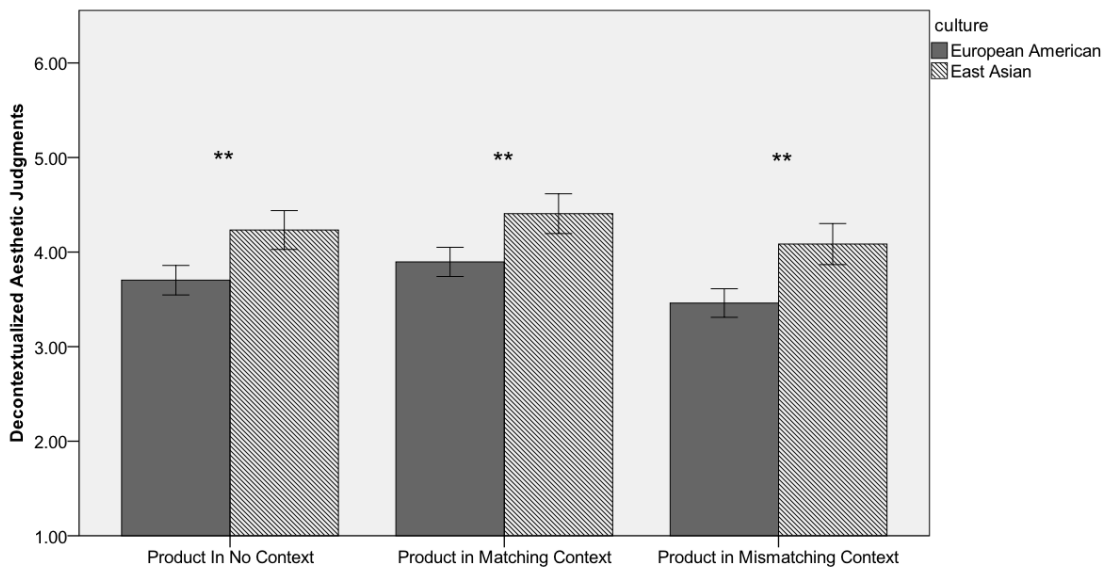
** indicated significantly greater between East Asians and European Americans at $p < .001$

European American sample size, $N = 171$

East Asian sample size, $N = 107$

Product Liking

The second question, “*Do you like the product itself?*” showed very similar results. These two variables were strongly correlated, $r(353) = .91, p < .001$, where the more beautiful the product, the more people like it. A main effect of culture ($F(1, 276) = 9.955, p < .005$) reveals that East Asians liked the products more, and that both groups preferred products shown in matching contexts, $F(2, 552) = 39.606, p < .001$. There was again no interaction between culture and condition, $F(2, 552) = 1.129, ns$. Collapsing the product beauty and product liking judgments shows a main effect of culture, where East Asians rated the aesthetic judgment of target object higher than European Americans (e.g. Figure 4).



Note: Decontextualized Aesthetic Judgments are collapsed by "Product Beauty" and "Product Liking" two attributes

** indicated significantly greater between East Asians and European Americans at $p < .001$

Figure 4. Decontextualize Aesthetic Judgments in three conditions among two cultural groups

Product in Context Fit

The third question, “*How well do you think the product fits into this context?*” showed a main effect of culture, $F(1, 276) = 43.426, p < .001$, where East Asians ($M=4.01, SD = 0.75$) rated all images higher on average than did European Americans ($M=3.35, SD = 0.60$). A main effect of condition ($F(2, 552) = 495.354, p < .001$) indicates that product matching context ($M=4.61, SD = 0.06$) are rated significantly higher than in mismatching contexts ($M=2.44, SD = 0.05$). In addition, there was an interaction between culture and condition, $F(2, 522) = 19.918, p < .001$ (e.g. Table 2). East Asians ($M=4.71, SD = 1.08$) rated products higher in matching contexts than did European Americans ($M=4.42, SD = 0.95$), and East Asians rated mismatched products’ “fit” higher ($M=3.11, SD = 1.29$) than European American ($M=2.00, SD = 0.66$). These findings suggest that East Asians tolerate mismatches in product context more than European American, even those in a mismatched environmental setting.

Table 2. Product in Context Fit ratings for each cultural group by Context condition

Conditions	Product in Context Fit					
	No Context		Matching Context		Mismatching Context	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
European Americans	3.64	1.08	4.42	0.95	2.00	0.66
East Asians	4.22	1.15	4.71	1.08	3.11**	1.29

** indicated significantly greater between East Asians and European Americans at $p < .001$

European American sample size, $N = 171$

East Asian sample size, $N = 107$

Product in Context Liking

Ratings for the fourth question, “*Do you like the product in this context?*” also showed that a significant difference between East Asian ($M=3.95, SD = 0.08$) and European American ($M=3.26, SD = 0.06$) ($F(1, 276) = 44.386, p < .001$). A main effect of condition ($F(2, 552) = 466.364, p < .001$) indicates that all three groups prefer products in the Matching Context ($M=4.46, SD = 0.06$) to the Mismatching Context ($M=2.43, SD = 0.05$). Overall, people liked the product presented in an appropriate context rather than an inappropriate context across cultural groups. However, there was also an interaction between culture and condition, $F(2, 552) = 16.329, p < .001$. The pattern shows that European Americans ($M=1.97, SD = 0.667$) rated products in Mismatching Contexts much lower than East Asians ($M=3.07, SD = 1.31$) (e.g. Figure 5). East Asians preferred products presented in matching contexts, but also show greater appreciation for products in mismatching contexts than European Americans. These results suggest East Asians have a broader acceptance of a product’s context, and view the product as “fitting” the context even though they also acknowledge the mismatch (in question 3).

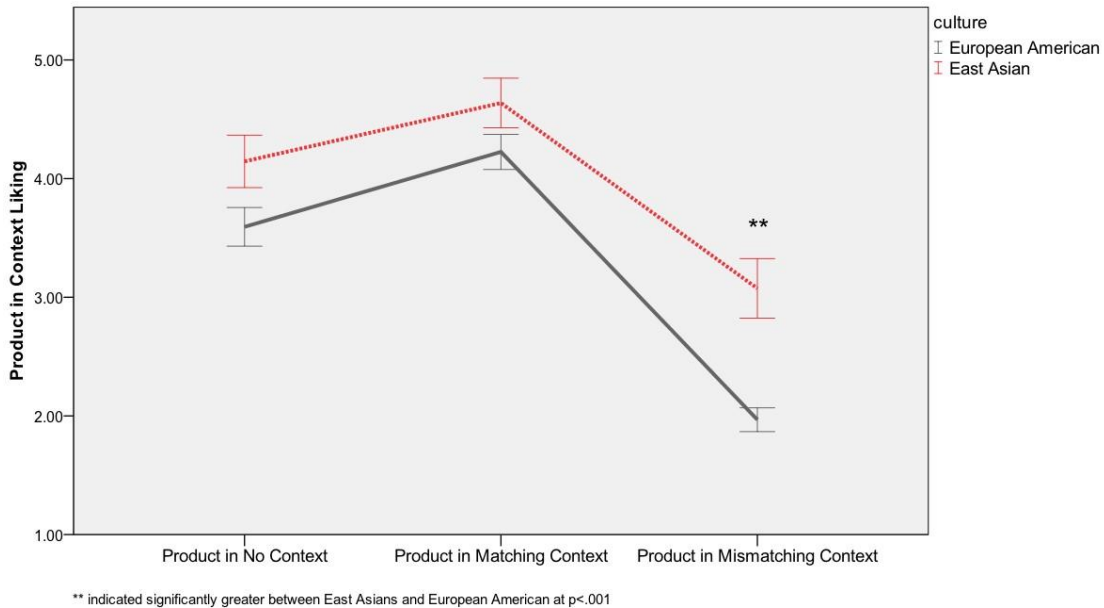


Figure 5. Interaction of culture and context for judgments of liking products in a context.

Overall Liking

The last question assessed general aesthetic preference: “Overall, do you like the whole picture?” There was a main effect of culture $F(1, 276) = 19.559, p < .001$, where East Asians ($M=4.07, SD = 0.09$) like the products more than European Americans ($M=3.57, SD = 0.07$) across all three match conditions. All participants liked the product in the Matching Context condition ($M=4.55, SD = 0.06$) more than mismatching condition ($M=3.10, SD = 0.06$), $F(2, 552) = 280.662, p < .001$. In addition, there was an interaction between culture and mismatching condition, $F(4, 552) = 5.207, p < .005$. While both East Asians ($M=4.65, SD = 1.14$) and European Americans ($M=4.37, SD = 1.00$) preferred products in matching contexts, East Asians ($M=3.37, SD = 1.32$) liked those in mismatching contexts more than European Americans ($M=2.80, SD = 0.91$). This suggests East Asians had a higher tolerance of contextual information, whether in matching or mismatching context. This high tolerance of mismatching contexts for East Asians only may reflect the holistic preference common among East Asians.

In sum, the results show people prefer products presented in matching contexts. The product fitting into a context is judged to be more appropriate, and aesthetic judgments are higher for both groups. However, East Asians appear to tolerate mismatching contexts more than European Americans.

They rated products in mismatching contexts as having a better fit and liked them more than did European Americans.

Discussion

This study investigated aesthetic preferences in light of potential cultural variations in cognition. Previous studies have shown cultural variation in attention within images, where

Westerners (European Americans) use an analytic pattern of attention and are more likely to focus on salient objects, while East Asians tend to use a more holistic pattern of attention and to include context in their focus. In this study, we extend these findings to the domain of product aesthetics, and hypothesize that East Asians tend to use holistic judgment of products, whereas Westerners tend to decontextualize their aesthetic judgments by focusing on the target product without regard to context. Following the predicted cultural differences, East Asians are more tolerant of product presentation within mismatching contexts.

The results of this study demonstrate that people prefer a product presentation in a matching context, and even without context, to products shown in mismatching contexts. Presumably, the mismatching contexts pretended to be confusing to people, for example, the unusual image of a floor lamp set in a garage was viewed as “out of order” or unfamiliar by participants. However, cultural differences moderated this pattern: East Asians showed higher perceptual tolerance for products shown in mismatching contexts compared to Westerners. East Asians responded to the mismatch of product to context with higher aesthetic preference judgments. In other words, East Asians accepted mismatching presentations and showed high product liking even when they perceived mismatching contextual information. In contrast, Westerners had lower liking for mismatching contexts, and had more negative aesthetic responses for products with mismatching contexts.

These cultural differences are consistent with previous research (Masuda & Nisbett, 2006) where East Asians were shown to be more sensitive to the environmental context of focal objects in visual scenes. In those studies, European Americans attended to a focal object (such as a fish) and failed to attend to the contextual setting (the background information). Since Westerners appear to be context-exclusive, and East Asians appear to be context-inclusive, these cultural differences in attention, liking, and aesthetics may be important to consider in the design of products and marketing. People are exposed to visual representations of products both within and outside of their context of use when making purchases; for example, a row of coffeepots in a store display may highlight the focal product within a mismatching setting (a shelf) compared to a display kitchen with a single coffeepot. This difference in context displayed may appear in physical settings, catalogs, online listings, and product advertisements.

Cultural sensitivity to product context may be evident in the displays in current use that are designed within a single dominant culture. For example, Amazon’s U.S. site lists products individually with no context, while the Japanese Amazon site shows products within relevant scenarios or contexts. This study appears to be the first to establish cultural differences in product liking and aesthetic judgments based on product and context match. Our results demonstrate that aesthetic judgments and liking for products are also affected by cultural influences. It is important to examine underlying psychological mechanisms that may explain how these variations in aesthetic preferences arise. Cultural patterns may reveal how aesthetic sense develops as people deal with the demands of surroundings, attention, decision efficiency and aesthetic gratification, and may account for the strong association between beauty and liking.

Contribution

This study identifies an important factor in the design of products and marketing as the

globalization of commerce extends the sale of products to different cultural areas. From the design perspective, this study provides guidelines for product designers and marketers for considering cognitive differences originating in different cultures. While all groups preferred products presented in matching contexts, East Asians were more tolerant of a mismatching context. For example, Westerner shoppers would be preferred a lounge chair displayed in the living room or without any scene-setting, whereas, East Asian shoppers would be not only preferred the same lounge chair displayed in the living room but also tolerant of the chair displayed in the mismatching scene such as a garage. The present study examines cultural differences in product preference may illuminate why current retailers have developed their cultural styles. In addition, this study also extends existing knowledge about cultural differences in attention to focal objects and contexts (Nisbett & Miyamoto, 2005) to the experience of aesthetic preferences, and expands our understanding of differences in cognitive processing based on culture.

One limitation to generalizing these findings is that this study was conducted in a laboratory where presented participants with product images. The impact of product and context fit may also be influenced by other factors when outside of the lab. Another limitation is that the aesthetic judgments collected were quantitative rather than qualitative in nature. Actual purchase decisions would be more important to show the influence of contextual information in product liking. Further research is needed to explore the connections between product aesthetics and cultural psychology.

The implications of cultural differences in psychological processes may help to account for preferences in consumer behavior, marketing, and product design practices. Presently, the importance of design aesthetics appears greater than ever as more options compete for consumers (Postrel, 2003). Understanding the roots of aesthetic preferences in cultural experiences is important in order to understand the diverse marketplace.

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Author Biography

Tseng-Ping Chiu

Tseng-Ping Chiu originated from Taiwan and he received his bachelor and master degree in Industrial Design. He had couple years practical experience in design industry, engaging in consumer electronic product design. Now he is a Ph.D. candidate of Design Science program, University of Michigan. His research focus on product aesthetics, cognition, cultural psychology and consumer behavior. To investigate that how people in different cultural context make aesthetic judgments on physical products by using different cognitive styles and how these differences influence people making purchase decision. Overall, his research fields integrate social psychology and marketing into product design domain by multidisciplinary studies.

Carolyn Yoon

Carolyn Yoon is the Professor of Marketing, Stephen M. Ross School of Business, University of Michigan. Her research interests are in consumer neuroscience, decision neuroscience, cultural neuroscience, cognitive aging in consumer contexts, implicit memory for consumer

information and cross-cultural differences in memory and cognition.

Shinobu Kitayama

Shinobu Kitayama is the Robert B. Zajonc Collegiate Professor Psychology, University of Michigan, and the Director of the Center for Culture, Mind, and the Brain. His research focuses on cultural variations in self, cognition, emotion, and motivation. He focusses on comparing people from Asian countries such as Japan, China with Americans.

Colleen Seifert

Colleen Seifert is the Arthur F. Thurnau Professor of Psychology, University of Michigan. Her research interest lies in complex human cognition, including memory, learning, problem solving and creativity. She currently investigating cognitive accounts of creative thinking, and ways to improve the creative process. She also invested in learning and pedagogy in design.