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Consumer Assessment of New Creative Products Across China and the United States

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Abstract

This cross-cultural research investigates how consumers assess creativity in new products and if their assessment impacts desire to own. Implicit and explicit scale-based measures were tested in China and the U.S. in online consumer samples and were positively correlated. Novelty, affect and importance dimensions of creative products were tested through Horn and Salvendy's (2006, 2009) Product Creativity Measurement (PCM) scale. Findings point to a different role of novelty in determining desirability of creative new products across-cultures. In fact, novelty and affect are key to explain desire to own in China, while affect and importance are the drivers in the U.S. Affect, which can be viewed as hedonic value, is the key driver of desire to own creative new products across-cultures. Individual differences related to demographics, tolerance of ambiguity and interest in the study product category were also examined. Findings related to novelty, affect and tolerance of ambiguity suggest that traditional cross-cultural views need to be reconsidered. The study has been administered to a sample of 502 consumers aged 18 or older, evenly distributed between genders.

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Consumer Assessment of New Creative Products across China and the United States

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by
Eva Teruzzi

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CHAPTER I

INTRODUCTION

Understanding the way customers judge and value new creative products is crucial to achieve a competitive advantage (Graf & Maas, 2008; Huber, Herrmann, & Morgan, 2001; Im, Bhat, & Lee, 2015; Parasuraman, 1997; Schumpeter, 1934; Woodruff, 1997), and marketing literature has devoted a lot of energy to this subject. Although many experts focused on the managers' perspectives, Im et al. (2015) and Rubera, Ordanini, and Griffith (2008) are actually the only studies to have focused on consumers' perspectives. The creativity field, instead, has traditionally paid more attention to the creative person; thus, creative product measurement is one of the least studied aspects of creativity assessment.

The first instruments to measure creativity in products were developed in the 1980s in the United States (Amabile, 1982, 1983, 1996; Besemer, 1998; Besemer & O'Quin, 1986; Besemer & O'Quin, 1999; Besemer & Treffinger, 1981; O'Quin & Besemer, 1989) and little progress has been made since then (Cropley & Cropley, 2000, 2008; Cropley, Kaufman, & Cropley, 2011; Horn & Salvendy, 2006, 2009). Despite the economic rise of the Eastern Asian world, especially of China (Yuwei, 2013), there was no useful model and a measurement instrument that are sensitive to cross-cultural differences. In other words, there is a need for instruments that assess product creativity from the perspective of consumers across countries. In addition, none of the instruments

developed in the West have become the yardstick; and creative product measurement research has missed the opportunity to strongly connect to the business world. This gap in the literature points to a promising area of growth that any innovation initiative may greatly benefit.

Creativity and innovation have progressively become buzzwords (24.5 million results for “creativity and competitiveness” and 32.7 million for “innovation and competitiveness” in Google search engine, as of February 24th, 2015) associated with business competitiveness and fundamental attributes for organizational growth. Successful companies’ turnover is more and more dependent on the launch of new products that customers would want to buy. A good example of this is Apple that had a 60% increase in new product sales in 2010 (Dediu, 2010). When new products do not arrive on the market, consumers decide to wait for them, and turnover in mature product lines declines. As a matter of fact, Apple had a 5% decrease on sales as of March 2014 over March 2013. Continuous innovativeness is a survival need for today’s corporate structure (Adobe, 2014; IBM Corporation, 2010).

This need was recognized in the Western world that regards creativity, innovation, and competitiveness as connected concepts (Florida, 2003; Pink, 2006; Porter, 1996; Runco, 2004). Lately, Chinese and Korean leadership, too, have affirmed the importance of this connection in the words of former Chinese President Hu (2007, 2012), and Korean President Park (2014).

So, while the world is growing more and more creativity conscious, the research on creative product assessment has little to offer to the business world and the academic

community, especially at the cross-national level. In particular, cross-cultural literature on creativity and creative product is mostly based on theoretical, anthropological works (Paletz & Peng, 2008) and lacks empirical evidence (Rudowicz, 2004). This research addresses such an urgent need by selecting the most promising model and measurement tool developed in the West and experimentally testing it in China and the United States.

The key goals of this research are (a) to assess how consumers in different cultures judge creativity in products, and (b) how such judgments are related to the desire to own creative products. Eight research questions have been developed based on the review of the literature - and are listed at the end of chapter II. The fundamental research questions are: (i) are PCM (the explicit method) and implicit evaluation (a one question rating) of a product related in the U.S. and China contexts?; (ii) is the relationship between novelty and desire to own different in the U.S than in China?; (iii) Are interest and desire to own positively correlated? Additional research questions focus on the reliability of PCM across cultures, the correlation of surprise and the novelty dimension in PCM, differences in individual levels of TOA in China and the United States, and the correspondence of individual levels of TOA with respective country indices (Hofstede, 2015).

In order to gain more credibility from the business community, consumers over the age of 18 have been the target group for the current study. This would provide an important advantage because as Peterson (2001) highlighted, college student subjects were “more homogeneous” (p. 450) than adults and would be likely to produce different effect size than adults. In fact, Peterson recommended to replicate research on adults before generalization. This research can contribute sound empirical evidence to the

academic study of creative products as well as the business world that invests in new creative products.

Assessment of Products

The literature on product assessment reveals two major forms of product assessment: The first one is the explicit method that defines the components of creativity based on a model that represents the major constituents of creativity. The second one is the implicit methods in which creativity is not defined explicitly and raters are encouraged to employ their own conceptualization of creativity.

Explicit methods

Explicit methods have recently received more attention in the literature primarily because they do not require the involvement of expert judges. The two well-known instruments are Besemer's Creative Product Semantic Scale (CPSS; Besemer 1998; Besemer & O'Quin, 1986; Besemer & O'Quin, 1999; O'Quin & Besemer, 1989), and Horn and Salvendy's (2006, 2009) Product Creativity Measurement (PCM).

CPSS was created based on the assumption that any person can objectively assess creativity in products (Besemer, 1998; Besemer & O'Quin's, 1999; O'Quin & Besemer, 1999). Besemer has been using the CPSS in her consultancy practice for about 20 years (S. P. Besemer, personal communication, November 11, 2013). However, there is little evidence on the use of the CPSS in the business world (O'Quin & Besemer, 2006). Besemer (2000) tested the CPSS's ability to predict assessors' willingness to buy creative products and concluded that Valuable and Elegant were the most important predictors of

people's willingness to buy, while Novelty "offered almost no predictive power" (p. 5). However, the CPSS was not specifically designed for consumers' assessment of products. In addition, the CPSS is not parsimonious (55-adjective pair scale), which can be a strong disadvantage in business applications.

Horn and Salvendy's (2006, 2009) model and instrument (i.e., PCM) were designed for the consumers as the evaluators of product creativity. It is a simple and parsimonious instrument (13 opposite-adjective pair scale) that attempts to explain how consumers experience and assess product creativity. It consisted of three components: *Affect*, *importance*, and *novelty*. To be creative, a product must be perceived as novel and must elicit pleasure and arousal (i.e. affect) in the assessor. It must also be perceived as important, that is in line with the assessor's preferences. The model assumes the assessment process starts with the assessor sensing and perceiving a product's features and ends with his awareness of the emotional impact. Affect is key in determining desire to own, too, although other factors may also contribute to hold a positive attitude. In Horn and Salvendy's (2006, 2009) theory products have objective features that are subjectively perceived by an assessor who is influenced by the context of the individual.

The PCM has some similarities with CPSS in that the components of novelty and importance in PCM overlap with the dimensions of novelty and resolution in CPSS. As far as the differences, CPSS includes the component of Style and PCM included Affect scales. Horn and Salvendy (2009) found that affect is key to the development of positive attitude toward buying new products ($R^2 = .75, p < 0.0001$). The PCM (Horn & Salvendy, 2009) has some psychometric weaknesses such as cross-loading items (i.e.,

adjective pairs) and a theoretical model that does not thoroughly address how it connects with the instrument dimensions and attributes. However, because of this unique feature (i.e., including affect as part of assessment) the PCM scale allows assessing the role of affect in customer's willingness to purchase a creative product and, therefore, has been selected for the current study.

Outside the domain of creativity literature, only two researchers (Im et al., 2015; Rubera et al., 2011) proposed theoretical models and scales to measure customers' assessment of new creative products. Both works connected marketing and product creativity in terms of customer value by distinguishing hedonic and utilitarian value (Spangenberg, Voss, & Crowley; 1997; Voss, Spangenberg, & Grohmann, 2003). Im et al. (2015) offered a new explanation of how consumers (in the United States) develop attitudes toward creative products. They found that *coolness* mediates the perception of novelty in a creative product: If novelty is perceived as cool, then hedonic value is perceived, too. In addition, *surprise* and *delight* were positively correlated with *hedonic* value.

Rubera et al. (2011) performed a cross-country study investigating if culture moderates consumers' assessment of new creative products. They measured culture using Schwartz's (1994) values model in two different countries (i.e. Italy and the U.S.) and concluded that culture moderates consumers' perception and attitude. In particular, they found that meaningfulness was more important in highly conservative cultures with low self-enhancement tendency, (e.g. Italy) while novelty was more important in low conservative and high self-enhancement cultures (e.g. the U.S.). Such findings occurred

in both hedonic and utilitarian products. Rubera et al. (2011) used product scenario descriptions that might have conditioned consumers' assessment of product features.

In spite of its limitations, Horn and Salvendy's (2009) measurement framework has been selected as the most appropriate perspective for this cross-cultural research because it takes into account affect, and because PCM is a practical scale with a workable number of items for the consumers. However, PCM was used as an 14-item scale rather than 13 items with the addition of surprise to the novelty scale. There were two reasons for this. First, novelty subscale consisted of only two items, which is relatively less sensitive than other scales. Second, *surprise* has been recognized as an important characteristics of creative products (Simonton, 2012) and novelty and surprise are seen as strongly connected in creative product literature (Besemer, 1998, 2000, 2006; Besemer & O'Quin, 1986, 1999; Besemer & Treffinger, 1981; Simonton, 2012); in marketing literature dealing with customer delight and consumer behavior (Crotts & Magnini, 2011; Im et al., 2015; Oliver, Rust, & Varki, 1997); in design (Ludden, Schifferstein, & Hekkert, 2008; Norman, 2004; Ramirez, 2014); and in computer science (Barto, Mirolli, & Baldassarre, 2013).

Implicit methods

The implicit methods attracted a lot of attention with Amabile's Consensual Assessment Technique (CAT; 1982, 1983). Amabile's (1982, 1983) approach aims to assess if a given product is creative and employs experts as judges. For this reason, it is not a useful method when consumers' perspectives were taken as the focus of product assessment. However, this method could still add value to the current study in terms of

the investigation of the relationship between the explicit and implicit perspectives. Also, this would enhance the understanding of individual and cultural differences, and adds empirical evidence to the limited cross-cultural body of literature on product creativity, as advocated by Paletz, Peng, and Li (2011), and by Lan and Kaufam (2012).

Other factors

Additional research questions related to the relationship between cultural and individual differences and new product creativity assessment have been examined. Specifically, the role of tolerance of ambiguity (Furnham & Marks, 2013; McLain, 1993, 2009) was included because it is related to *novelty*, *complexity*, and *uncertainty* of the products. The present research tested the correlation between subjects' rating of novelty and surprise and their degree of tolerance of ambiguity (TOA). Tolerance of ambiguity has been measured using McLain's Multiple Stimulus Types Ambiguity Tolerance II scale (MSTATII; 1993, 2009). As novelty is positively correlated with ambiguity, it was expected that people with low levels of TOA would be less likely to prefer novel and surprising products. From a cross-cultural perspective, it was expected that higher TOA levels will be observed in China, because of the high tolerance for uncertainty (TU) and high long-term orientation (LTO) indices (Hofstede, 2015). However, lower levels of novelty and TOA might also be expected if literature dealing with Chinese religious, philosophical, and social roots were taken into account (Erez & Nouri, 2010; Niu & Sternberg, 2006; Paletz et al., 2011). In fact, according to the latter, Chinese culture shows a lower preference for novelty than Western cultures .

An investigation of subjects' interest in "chairs" (i.e., the product category selected for this research) has also been included to test if the level of interest in the product category might influence creative product assessment score. The connection between involvement and interest in product has been underlined (Kassarjian & Kassarjian, 1978; Traylor & Joseph, 1984) especially with respect to its influence on product evaluation and desire to own. According to that, low interest could be related to low desire to own.

To conclude, the cross-cultural differences in product assessment have not been examined through both implicit and explicit methods of assessment nor in relation to the role of other factors such as tolerance of ambiguity and interest in product. More importantly, they have not been analyzed together in terms of their impact on consumer's desire to own the product. This study aims to provide empirical evidence about the factors that affect consumers desire to own product.

Significance of the Study

The current study makes important contributions to the field. First, this research adapted Horn and Salvendy's PCM (2009), and McLain's MSTATII (1991) to Chinese. Consequently, they can be used in the future cross-cultural studies. Second, for the first time, empirical evidence is provided about the differences and similarities between Chinese and American consumers' assessment of creative products. Third, the findings from the former studies on the relationship among novelty, affect, and desire to buy are tested in two different cultural contexts. The importance of surprise in defining novelty

is addressed, too. Fourth, TOA was compared between the U.S. and China. Finally, this research employed consumers as research participants rather than convenience samples in both countries for generalizability purposes. This choice is expected to increase the credibility of the results in the business community as well as in the academic one.

Summary

To conclude, using different assessment methods, the current work aims to link the product characteristics with the consumer's purchasing behaviors by taking both individual and cultural factors into consideration.

CHAPTER II

BACKGROUND AND LITERATURE REVIEW

This section explores the most relevant literature related to creative product measurement and cross-cultural research. Specifically, it begins by defining the relevance of product measurement and desire to own from a consumer's perspective. It continues by highlighting the limited body of literature on creative product measurement in both the creativity and marketing fields. In particular, Horn and Salvendy's work (2006, 2009) is presented as it is the selected measurement framework for this research. The literature on cross-cultural perspectives on creativity, more specifically, in the East (i.e., China) and the West is addressed with its theoretical debates and equivocal empirical results. Then, studies on the relationship between surprise, novelty, and desire to own are summarized. Methodological issues related to cross-cultural and cross-country research are laid out with particular attention to translation issues. At the end of each subsection, conclusions are drawn and research questions and hypotheses are formulated.

Product Measurement, Desire to Own, and Interest: A Consumer's Perspective

Research on product evaluation has been conducted with various types of participants, but products are developed for customers. Therefore, customer judgments have a unique value for the predictions of marketing performance of a product. Im et al.

(2015) and van Trijp and van Kleef (2008) argued that managers' and consumers' assessments are different, with managers being mostly focused on product attributes and consumers on perceived value generated by the product. Van Trijp and van Kleef stated that "consumers base their newness perception on criteria different from those than experts use" (p. 564).

Consumers' assessment of a product for creativity is an act that involves the consumer as a thinker, feeler, and doer (Addis & Holbrook, 2001). During the assessment experience the consumer develops a personal idea of value or meaningfulness involving sensation, cognition, and affect (Pinker, 1997). Consumers develop a personal experience and set of meanings about the creative product. Value can be defined as "a relativistic (comparative, personal, situational) preference characterizing a subject's experience of interacting with some object . . . i.e., any good, service, person, place, thing, event, or idea" (Holbrook, 1994, p. 27). Customer value is a subjective construct made up of multiple value components (Huber et al., 2001), and implies desirability (Peter & Olson, 1990). Those meanings are both cognitive and affective and are influenced by past experiences, set of beliefs and values, personal lifestyles, behaviors, and relationships with others (Gentile, Spiller, & Noci, 2007). For this reason, individual, cultural, and social factors impact product assessment. As purported by Horn and Salvendy (2009) and Csikszentmihalyi (1991), in the assessment situation three elements come into play and interact: The consumer, the product, and the context. A well-rounded assessment, then, needs to consider all of these aspects.

With respect to product, the consumer value can be related to at least two factors: utilitarian or functional and affective or experiential. Customer value can also be utilitarian, that is, primarily connected with the relative importance of the objective (or functional) features of the product. *Importance* (i.e., relevance, importance, and being crucial) in Horn and Salvendy's model can be compared to Utilitarian value. Then, value as perceived by customers can also be described as *balanced* (Gentile et al., 2007), that is, a combination of utilitarian and hedonic. This happens when consumers see utilitarian and hedonic dimensions strongly intertwined. Actually, Gentile et al. (2007) research indicated that seven out of the 12 products they examined in Italy ended up being perceived as balanced products.

The assessment experience is not only a rational, logical, problem-solving exercise; instead it also involves emotional states including pleasure, arousal, and dominance (Mehrabian & Russell, as cited in Horn & Salvendy, 2009). As suggested by Norman (2004) and Kahneman and Miller (1986), affect is *faster* than cognition for a number of evolutionary reasons and is fundamental in determining individual attraction and perception of value. Affective value as defined by Norman (2004) and Horn and Salvendy (2006, 2009) (who also include arousal) can be associated with hedonic value (Addis & Holbrook, 2001; Voss et al., 2003).

Whenever a subject perceives an overall positive value (i.e., *approach, desire*)—a positive attitude tends to emerge toward the product. According to the means-end-theory, which explains how possessing a product and consumers' personal values are connected (Gutman, 1982), consumers tend to choose actions that produce desired consequences

and minimize undesirable attributes. Consumers are likely to develop *approach* or *avoidance* from an earlier stage of the buying process (i.e., product assessment). If approach develops, people are likely to desire to own the product that produces positive value perception.

Perceived positive value is likely to turn needs into wants (Belk, Ger, & Askegaard, 2003), developing desire to own, and possibly willingness to buy. As indicated by Zeithaml (1988), perceived value is fundamental in the formation of favorable behavioral intentions towards a product. The relationship between desire and intention is described by Malle and Knobe (2001) as the following:

Desire and intention occupy different positions in the path that (typically) leads to action. Desire stands at the very beginning of the process. Before making a decision about how to act, a person needs to consider various desires, balancing them against each other and asking which of them can be fulfilled. . . . the intention is an all-things-considered decision that takes into account the person's various desires. The intention, then, is just one step away from the action. (p. 46)

In product assessment experience, desire to own precedes intention to buy, with the latter being influenced by additional variables, including very unstable and contingent ones such as mood, personal and family events, and temporal distance from the elicited desire (Thomas, Chandran, & Trope, 2007). This reinforces the view of the assessment experience as one where the person, the product, and the context are intertwined.

Interest in the product domain is likely to play a role in product assessment as it may influence individual predisposition. Interest and involvement are two concepts that

are often used interchangeably, as underlined by Zaichkowsky (1985), who developed the Personal Involvement Inventory. Petty, Cacioppo, and Goldman (1981) underlined that interest and involvement are closely related in that both imply personal relevance. In fact, as expressed by Zaichkowsky (1985), interest can be defined as “a person's perceived relevance of the object based on inherent needs, values, and interests” (p. 342). As Harackiewicz and Hulleman (2010) stated “being interested in something can mean that we care about it, that it is important to us, and that we have (mostly) positive feelings towards it” (p. 42). They demonstrated that interest promotes attention and task persistence. Hidi and Baird (1988) have purported that individual interest (as opposed to momentary reactions) is a stable characteristic like traits. Interest is also connected with knowledge in the domain it applies to, as it requires knowledge to develop interest. More knowledge develops a sense of competence, which strengthens personal meaning and relevance (Harackiewicz & Hulleman, 2010). Therefore, interest or its absence is likely to influence individual attitude toward the study products and, more in general, the willingness to complete the survey.

Participants' interest in the target products (i.e., chairs) has been included in the research to test if the level of interest in the product category influences creative product assessment score. It is hypothesized that interest is positively correlated with desire to own the study products.

Creative Product Measurement in the Creative Product Field

The limited body of knowledge about creative product in creativity literature could be due to the fact that an almost exclusive attention has been devoted to highly creative individuals and their products (Barron, 1955; MacKinnon, 1978; Simonton, 1999). In addition, the idea that creative products can be effectively evaluated only by domain experts has been commonly accepted in the field (Amabile, 1982, 1983, 1996; Csikszentmihalyi, 1991). Amabile's (1982) CAT is one of the few models that are useful for product assessment performed by experts. Amabile (1982) asserted that

A product or response is creative to the extent that appropriate observers independently agree it is creative. Appropriate observers are those familiar with the domain in which the product was created or the response articulated. Thus, creativity can be regarded as the quality of products or responses judged to be creative by appropriate observers. (p. 1000)

Amabile (1982) acknowledged that there might exist some objective characteristics of creative products and these characteristics could also be systematically identified and used by judges. However, she believed that scales reflecting those characteristics were used in a subjective way. Amabile (1982) proposed "a reliable subjective assessment technique" (p. 1000), which was contrary to the mainstream paradigms in the field of creativity at that time. Such an approach implies that no definition or scale is given to the judges except for sets of creative product dimensions, which must be specifically tailored to the product domains such as "novelty of word choice" for verbal products, and "novel use of materials" for collages (Amabile, 1982).

The foundation of Amabile's position was that creativity could be recognized when seen. So, the presence of some experts, or what Amabile called appropriate observers, who possessed the competences specific to the product domain under investigation was sufficient.

The construct validity of CAT is grounded in its use of appropriate experts as judges (Kaufman, Plucker, & Baer, 2008). Amabile (1982) provided evidence of a high correlation for inter-rater reliability (from .70 to .89) and other subsequent studies using CAT confirmed her findings (e.g., Baer, 1993; Baer, Kaufman, & Gentile, 2004; Conti, Coon, & Amabile, 1996; Hennessey, 1994; Runco, 1989). Factor analytic methods were performed in a number of such studies and confirmed that CAT can differentiate creativity from attributes such as technical goodness or style (Baer & McKool, 2009). The issue with Amabile's work is its conceptual inappropriateness for the purpose of this research: CAT suggests that only appropriate experts can assess a product's creativity, therefore, it is not appropriate for consumer uses.

Besemer had a different approach than Amabile (1982) in that she believed creativity in products could be measured by anyone because creative products possess objective characteristics, which can be captured with standardized scales. Besemer's Creative Product Attribute Matrix (Besemer, 2006; Besemer & Treffinger, 1981) and CPSS are useful for studies investigating the way laypeople approach creative products and, therefore, potential consumers. In spite of its merits, which will be discussed later, a careful analysis of the dimensions and adjectives used in CPSS is necessary in terms of usefulness for consumer evaluations.

In her CPAM, Besemer (2006) posited three dimensions (novelty, resolution, and style) and nine attributes in total (surprising, original, logical, useful, valuable, understandable, organic, well-crafted, and elegant) to define the creative product. *Resolution* is composed of four attributes intended to measure the degree to which a product meets the needs of the problematic situation. *Valuable* (meaning physical, psychological, or social value) and *Understandable* (meaning perceived user-friendliness) are appropriate for consumer judges. *Logical* and *Useful*, instead, seem more appropriate for people with product design expertise, at least as defined by Besemer. In fact, *logical* means that the product fits the rules of the discipline, which may be intuitive. For example, a toy must not have sharp parts or require a technical background. *Useful* means that the product has a clear application and anyone can tell whether it can solve a problem. Product design experts are likely to be more appropriate to make generalizations about product usefulness, while consumers should be asked if they perceive usefulness in the creative product. Such a perspective is supported by Cropley and Kaufman's (2013) observation that "more sophisticated and more domain-dependent criteria such as elegance and genesis remain strongly linked to the level of expertise of the observer" (p. 205). In particular, Cropley and Kaufman's *genesis* dimension includes technical/expert judgments, such as (a) *foundationality* (the solution suggests a novel basis for further work), (b) *transferability* (the solution offers ideas for solving apparently unrelated problems), (c) *germinality* (the solution suggests new ways of looking at an existing problem), (d) *vision* (the solution suggests new norms for

judging other solutions), and (e) *pathfinding* (the solution opens up a new conceptualization of the issues).

Style is Besemer's (2006) most creative contribution to the definition of the creative product, as well as the most complex to be explained. Style is related to the way the product is presented and, therefore, must not be confused with stylish. According to Besemer, style has become an integral part of mass-produced consumer goods after the Second World War and all other things being equal, consumers started to select new products based on style since then. Among the synonyms used by Besemer (2006) for style, "personality" (p. 79) seems to effectively grasp the meaning. The style dimension includes three sub-dimensions: organic, well-crafted, and elegant. Doubts arise for *organic* (addressing the sense of wholeness of the creative product that is achieved through "the integration of all the parts of the product's design," Besemer, 2006, p. 88), which appears to be a technical feature. In addition, organic is defined as "connected in a logical way" (Besemer, 2006, p. 88), overlapping with logical (in Resolution). *Elegant* may pose definitional problems, as it is hard to escape a specific historically bounded code of aesthetics. In fact, Besemer (2006) defined elegant as refinement and simplification in a product, "little surface decoration, smooth, simple shape" (p. 130). Minimalism can be quite popular and mainstream in the Western world, and even may become very popular in the Eastern world due to the globalization power of brands (especially in fashion brands); yet, such a definition does not necessarily represent a universal aesthetic code. So, although elegance is an important attribute for sales success (Cooper & Kleinschmidt, 1987) and has proved to be a moderate predictor of consumers'

willingness to buy a product (Besemer, 2000), its definition is likely to be time and culture sensitive.

As far as the adjectives used in CPSS sub-scales, comments are similar to those made on attributes. Some of them, such as correct-incorrect or workable-unworkable, seem more appropriate for investigating experts' opinion.

In spite of the quite opposite ontologies and epistemologies, Amabile's (1982) and Besemer and O'Quin's (1986) research started off with the ambition of measuring if a product was creative or not in absolute terms. Their work overlooked the importance and impact the purpose of the assessment can have on the methodology. Kaufman and Baer (2012) suggested that Amabile's CAT would benefit from including the goal in question in the selection of appropriate experts, underlining the importance of relating the methodology to the goal of the assessment. The principle would benefit Besemer's work, too.

Cropley's studies (Cropley, 2000; Cropley & Cropley, 2008; Cropley, Kaufman, & Cropley, 2011), which show a remarkable overlap with Besemer's, aimed at creating a scale according to which *non-expert* raters can consistently rate the creativity in new product. Cropley's approach seems to include components from both Amabile (1982) and Besemer and O'Quin's (1986) as shown in the Creative Solution Diagnosis Scale (CSDS). Cropley's goal remain consistent with his two predecessors in that he focused on non-experts as he was looking for a less complex and less expensive way of assessing creativity than using experts. His work is mentioned for completeness of the non-expert based creative product measurement literature review.

The work of Horn and Salvendy (2006, 2009) investigated how product creativity influences consumers' evaluation and how such evaluation impacts purchasing intention and customer satisfaction. Their research goal is very specific, pragmatic, and business oriented: "to develop a tool to measure the consumer-based assessment of product creativity . . . [and] not to maximize the effectiveness of the product creativity. . . . To validly characterize and measure product creativity from the consumer's perspective" (Horn & Salvendy, 2006, p. 396).

Horn and Salvendy (2006) offered a challenging integration of the objective approach (i.e., they adapted and applied Besemer's CPAM and CPSS) and the subjective one (i.e., Amabile's CAT). In fact, Horn and Salvendy stated that product creativity is both objective (i.e., related to the physical attributes of the product), and judgment and context dependent (i.e., related to the assessor and the context in which the product exists). They assumed that a universal set of criteria existed to assess product creativity, which is parallel to Besemer's position; and that the judgment of the criterion levels depended on the judge's experience and societal background, as Amabile (1982) also argued.

Horn and Salvendy (2006) defined product creativity as "the subjective judgment of a product to exhibit novelty and appropriateness that elicits arousal and pleasure and is compatible with the judge's preferences" (p. 398). Consistently, they selected dimensions from the literature that expressed both judgmental and affective variables, combining the two aspects of the above definition. They particularly underlined the importance of "creative design . . . [being] one that 'triggers attention and fantasy and

acts on our emotions' (Christiaans, 2002, p. 48)" (Horn & Salvendy, 2006, p. 399) and thus listed *pleasure* and *arousal* as the two emotional dimensions for inclusion. They selected three dimensions from Besemer and Treffinger's (1981) work, namely novelty, resolution, and elaboration and synthesis (later named style by Besemer, 2006). From Christiaans' work (2002) they selected *centrality* (i.e., consumer's interest in creativity) and *applicability* (i.e., importance of creativity for the consumer), which they considered as essential for establishing consumers' individual preferences.

As far as the conceptual model is concerned, Horn and Salvendy (2006) proposed that information processing can appropriately represent how people experience and assess creativity in products. In their model, the consumer first perceives product creativity by assessing the individual product factors (i.e. novelty and importance). Such an assessment is influenced by the context of the assessor that is his or her level of experience. At the end of the process, the assessor develops emotions about the product, which impact his or her desire to own that product. Affect is key in informing the consumer's attitude, although not exclusive.

Horn and Salvendy's (2006) model was initially composed of seven-dimensions operationalized with 90 semantic opposite pairs of adjectives. Exploratory and confirmatory factor analyses pointed to a six-dimension model, excluding elaboration and synthesis, measured by 19 items, with some cross-loadings. Willingness to purchase and consumer satisfaction with the product creativity were assessed with 12 semantic opposite pairs positively associated with product creativity (33% of intention to buy

variance was explained). In particular, the study demonstrated that the affect dimension is an important part of product assessment.

In a following study, Horn and Salvendy (2009) made their model more parsimonious and ended up with more promising results. Affect, Importance, and Novelty were the three final dimensions of their conceptual model, and 14 pairs of opposite adjectives constituted their final scale. They found that affect, that is defined as a valenced feeling state by Cohen and Areni (1991), is the primary factor behind products' creativity and consumers' positive emotions. In particular, affect and novelty contributed to the assessment of creativity in "relatively equal amounts" (Horn & Salvendy, 2009, p. 235). Horn and Salvendy (2009) extensively referred to the renowned work of Norman (2004) on emotional design, and their findings seem to support his notion that affect enhances design evaluation. In particular, consistently with Norman's theory, Horn and Salvendy (2009) demonstrated that consumers' evaluations of products with superior affect or hedonic quality are higher, even when usefulness is inadequate. They found that affect predicted willingness to purchase ($R^2 = .75$) and consumer satisfaction ($R^2 = .73$). In addition, according to Hirschman and Holbrook (1982), it is believed that affect could serve as a primary motivator of consumption behavior.

Horn and Salvendy's (2006, 2009) work is important for several reasons. First, it presents a theory and an instrument centered on the consumer-based assessment of creative products. It has remarkable implications in marketing variables (i.e., desire to buy and customer satisfaction). Second, it recognizes the need for subjective assessment of the objective product characteristics. Third, it recognizes and tests the importance of

emotions in assessing the creative product, and provides evidences about the importance of interest and relevance in the assessment of creative products.

Limitations of Horn and Salvendy's (2006, 2009) work are related to the theoretical model and the scale items. The model has not been tested for statistical fit, and residual cross-loadings are still present (i.e., item P5 *fitting–unsuitable*, see p. 231). In addition, Horn and Salvendy's theoretical model offers a limited exploration of Csikszentmihalyi's (1991) theory (i.e., how does *context* impact individual perception and judgment?), and excludes surprise, which is assumed to be strongly related to customer delight (Crotts & Magnini, 2011; Im et.al., 2015; Oliver et al., 1997; Simonton, 2012; Westbrook & Oliver, 1991).

Nonetheless, Horn and Salvendy's (2006, 2009) work is a sound starting point from where to move onwards, toward cross-cultural investigation in consumer assessment of creative products and its impact on consumers desire to own.

Creative Product Measurement in the Marketing Field

Marketing literature on creative product measurement focuses on understanding if creative products can predict and explain market performance (Im et al., 2015; van Trijp & van Kleef). Similar to creative product literature, experts have been central in assessing product creativity disregarding the role of consumers (Im et al., 2015).

To date only three studies addressed consumers' creative product assessment. Im et al.'s (2015) and Rubera, Ordanini and Griffith (2011) focused on consumers' perception of new creative products comprising novelty and meaningfulness. In an

earlier work, Im and Workman (2004) concluded that only meaningfulness is relevant in the perception of product value; however, they realized that they only investigated managers' perspectives and not consumers' perspectives. Im et al. (2015) investigated the relationship between new product creativity and consumers' perceived value in the United States. They reported that new creative products are usually successful on the market; however, there are exceptions to this rule. Their research investigated what might explain such a difference. Moving from consumer behavior literature, and accidentally converging with the *standard definition* of creativity (Runco & Jaeger, 2012), they posited that new creative products are characterized by novelty and meaningfulness. Consistently with Voss et al. (2003), Im et al. (2015) believed that "utilitarian value refers to a product's functional, instrumental or practical benefits, whereas hedonic value refers to a product's aesthetic, experiential or sensory benefits" (p. 168). They also believe that consumers assess products looking for hedonic and utilitarian value, which influences their attitude toward the product itself. In their research they found that meaningfulness correlates with utilitarian value, while novelty correlates with hedonic value only if mediated by *cool*, a construct made up of a set of attributes the authors developed during their field work (Im et al., 2015). In addition, Im et al. (2015) underlined that "positive surprise, excitement, and *wow* response" (p. 171) are elicited by novel and cool products, which correlate with hedonic value.

As reported by Im et al. (2015), the instruments used in their research have some methodological limitations such as small sample size and arbitrary new product features creation. In addition, Im et al. did not test consumers' attitude toward owning or buying

creative new products; instead they used product scenario descriptions of fictitious products. In such scenarios they pre-define some test products as new by instructing them as the following: “The new product being introduced is a pair of sports shoes with automatic deodorizer” (Im et al., 2015, p. 168). This way of presentation can precondition the assessors (Hempel & Sue-Chan, 2010), so their conclusions cannot be taken as definitive.

Rubera et al. (2011) also based their research in consumers’ behavior literature (Amabile, 1983; Csikszentmihalyi, 1991). Their purpose was to explore what is beyond the product-customer interaction by investigating the moderating role of *context*. The context refers to cultural values that may influence consumers’ assessment of new creative products and intention to buy. They used Schwartz’s (1994) values framework to test cultural characteristics and concluded that cultures impact consumers’ assessment, with meaningfulness being more important in high conservatism/low self-enhancement culture (e.g., Italy) and novelty in low-conservative/high self-enhancement culture (e.g., United States).

Van Trijp and van Kleef (2008) reviewed the literature on the relationship between newness, value, and product performance. They found limited consensus about product newness being a predictor of the success of a new product in the market; and in general “newness per se is not related to market performance but . . . it does so if it provides meaningful differentiation to consumers in the marketplace” (p. 562). Im and Workman (2004) showed that only meaningfulness influences new product performance. Calantone, Chan, and Cui (2006) concluded that product innovativeness has a mixed

effect on product profitability as it enhanced perceived product advantage but reduced product familiarity and did not have a direct effect on product profitability. In the food domain, van Trijp and van Kleef concluded that consumers tend to prefer new products with moderate levels of newness that generate interest and satisfy curiosity without generating fear.

Marketing literature on new creative products shows many connections with creative product literature confirming the importance of novelty and value (i.e., a composite construct) in consumers' assessment and the role of affect in the development of positive perceptions and intentions towards creative products.

Based on the above, this research will investigate the following research question:

1. Is PCM a reliable measure in the U.S. and Chinese cultures?
2. Is PCM significantly related to desire to own in the U.S. and China?
3. Is the novelty dimension of PCM related to desire to own in the United States?

Cross-cultural Views of Creativity and Creative Product Measurement:

The East and the West

Product creativity measurement literature has been built upon the theoretical models and empirical research produced in the Western world and may have unintentionally contributed to the dominance of the Western paradigms (Lan & Kaufman, 2012; Rudowicz, 2003). Cross-cultural scientists such as Lan and Kaufmann (2012), Paletz and Peng (2008), and Rudowicz (2003) underscored that there is a strong and urgent need to experimentally test its applicability and validity in China.

According to Hofstede, Hofstede, and Minkov (2010), the United States and China are classified with quite different cultural profiles. Such differences are likely to influence values and social desirability (Erez & Nouri, 2010). Erez and Nouri also pointed out that the desire to be creative is universal and positive; however, the way creativity is expressed may differ in different countries. Also researchers working in the creativity and product creativity field have mismatched views regarding the nature of creativity and the impact of culture on it. Weiner (2000) pointed to the evidence that the standard definition of creativity (Runco & Jaeger, 2012; Stein, 1953), which consisted of the components of novelty and usefulness, applies to non-United States contexts; but some cross-cultural differences were found in the definition and role of novelty (Rudowicz, 2003). According to Rudowicz, Eastern cultures tend to see novelty as a reinterpretation of the past: novelty can be created but it must respect existing norms. In addition, Rudowicz and Yue (2000) found some differences in the way creativity was conceptualized by undergraduate students in China, who did not include attributes such as *artistic* and *humorous* in their implicit conceptualization of creativity.

In the field of creativity studies, cultural differences between the East and the West have been based on philosophical and religious grounds (Lubart, 1999; Niu & Sternberg, 2006) rather than on field research findings, and have emphasized differences in the meaning and role of novelty. According to Lubart (1999), differences in cosmogonies impact the role and value of novelty in cultures. According to that, Eastern cosmogony implies a continuous change, where novelty is associated with continuous

refinement. Western cosmogony, instead, assumes a beginning and an end for things, in which novelty is more radical and creativity is associated with innovation.

Niu and Sternberg (2006) drew opposite conclusions in their analysis from philosophical and linguistic perspectives. They believed that, although Confucianism and Christianity rely on opposite cosmogonies, the word creativity currently used in China comes from modern English, translated first into Japanese and then into Chinese. According to Niu and Sternberg, such a linguistic influence must have affected Eastern values, so that today, novelty and individualism are very important in China, too.

The importance of individualism and imagination is underlined also by Lau, Hui, and Ng (2004) who suggested that Chinese culture has been influenced by Taoism and Buddhism, in addition to Confucianism. The associations among creativity, innovation and independence have been demonstrated also by Rudowicz and Hui (1997) for Chinese culture. Yue (2004) reported that creativity is related to social influence in the Chinese culture, which does not apply to Western cultures. Hempel and Sue-Chan's (2010) research review concluded that there are both similarities and between Eastern and Western cultures, and field studies are needed to verify the impact of differences on performance and assessment of creativity (Erez & Nouri, 2010; Paletz et al., 2011).

Paletz and Peng (2008) agreed on the urgent need to develop empirical evidence to evaluate how consumers assess creative products, either based on implicit or explicit definitions and measures. Paletz and Peng's article is the only empirical research that has addressed the validity of the North American paradigm across cultural settings that included the United States, China, and Japan. They created new product scenarios to test

the impact of culture on the perception of creativity (i.e., measured according to the two dimensions of novelty and usefulness) and the desire to own a creative product with student population. They found novelty to be more attractive to Chinese students than to Japanese and Americans, with the latter expressing more attraction for usefulness. However, as noted by Hempel and Sue-Chan (2010), their research made explicit that products were novel and useful potentially pre-conditioning the assessors. Therefore no definitive conclusion can be derived from their work.

Cultural differences may also impact cognition (Nisbett, Peng, Choi, & Norenzayan, 2001), which in turn may impact the way creativity is perceived and valued. Chinese people developed a way of thinking (Lloyd, 1990) that embraces opposites and apparent contradictions (Nisbett et al., 2001). Instead, the Western world developed an opposite way of thinking, based on dialectic contrast. If social needs continue to influence intellectual stances, East Asians would be expected to seek compromise solutions to problems, to prefer arguments based on principles of holism and continuity, and to try to reconcile seeming contradictions.

Cognitive abilities also influence social practice and paradigms of judgment. People in China and the United States are likely to behave quite differently when faced by novelty and ambiguity, with the first expressing a preference for holistic assessments (i.e., assumingly higher levels of tolerance for ambiguity) and avoidance of extremes (i.e., assumingly preference for lower levels of novelty) (Nisbett et al., 2001).

Such remarkable differences between the Eastern and Western perspective require extensive cross-cultural research. However, only Paletz and Peng (2008) empirically

tested the standard criterion directly comparing China and the United States. They did it by using an implicit research framework, and their findings on novelty and desire to own were somewhat counterintuitive, showing that novelty was correlated with desire to own in the Chinese sample.

Experimental research across countries can be approached in two ways. One way is the use of implicit methods, which are based on tacit assumptions that laypeople hold about psychological constructs (Plucker & Renzulli, 1999; Runco, 2007). Another way is the explicit methods, which are based on definitions that scientists and researchers articulate about psychological constructs. Though some found that they do tend to correspond in many ways (Plucker & Renzulli, 1999), some have also pointed to important differences (Lubart, 2010; Puccio & Chimento, 2001; Runco, 2007). Therefore, in this research it was decided to adopt both implicit and explicit approaches and investigate their relationship.

This research aims to contribute to the development of cross-cultural empirical research combining implicit and explicit approaches and testing the differences between China and the United States with regard to consumers' creative product assessment. The following research questions will be investigated:

1. Are PCM (the explicit method) and implicit evaluation (a one question rating) of a product related in the U.S. and China contexts?
2. Is the relationship between novelty and desire to own higher in the U.S. sample than in the China sample as was expected from philosophical theories and reported in Rubera et al.'s work (2011)?

Surprise and Novelty: Views in Different Domains and Cultures

“Surprise is the astonishment, wonder, or amazement that grows with the unexpectedness and importance of an event” (Valenzuela, Mellers, & Strebel, 2010, p. 793).

In psychology there are different theories about surprise. Some see it as a distinct emotion based in our biological nature that can be recognized across cultures (Ekman, Friesen, & Ellsworth, 1972). Others see it as a cognitive process that involves beliefs about the likelihood of an event (Lorini & Castelfranchi, 2006; Teigen & Keren, 2003). According to Roseman, Spindel, and Jose (1990), surprise was the only emotion that can be either positive or negative; more research is needed to verify if surprise is linked to the appraisal of the unexpectedness or novelty rather than uncertainty. According to Kahneman and Miller (1986), surprise can be seen as an emotional amplifier of either positive or negative emotions, depending on the valence of the outcome.

In marketing and design, positive surprise is considered desirable as it is an attention-catching mechanism (Ludden et al., 2008; Ramirez, 2012). It is associated with customer delight, that is, surprise implies disconfirmation of customer's expectations (Crotts & Magnini, 2011). In design research (Ludden et al., 2008; Ramirez, 2012), surprise is recognized as an essential driver of design strategies. Ludden et al. (2008) proposed a combination of *familiarity* and *newness* to define role of surprise in effective design. The familiar element forms the basis of the expectation and the new one disconfirms expectations. According to Ramirez (2012), people experienced surprise

when they appraised a design as *novel* and *unexpected*. Novelty, complexity, and unexpected stimuli are key to eliciting arousal, which, in turn, develops exploratory behavior and fascination. Kahneman and Miller (2008), Norman (2004), and Ramirez (2012) concluded that surprise can increase an emotional response toward an object.

In creativity literature, Besemer (2006) defined novelty as *original* and *surprising*. Besemer defined *surprising* as unexpected or unanticipated information. According to Besemer, surprising is not necessarily positive. In some fields or business sectors, like fashion or fine arts, a high degree of surprise is sought and expected. In other fields, like the beverage industry, surprise could yield negative reactions in customers if too much novelty is introduced (as was the case with the New Coke fiasco). Besemer underlined that not everybody welcomes novelty: Neophobes might be scared and pushed back by the originality of a product. As largely proved by the work of Raymond Lowey, the father of American industrial design (as cited in Besemer, 2006), the acronym “MAYA” is there to remind of the rule that successful products must be “More Advanced, Yet Acceptable” (p. 104).

According to Barto et al. (2013), surprise and novelty are associated and are two different constructs. Taking computer science approach, Barto et al. expected that a key difference between novelty and surprise should be related to the type of knowledge store the two use and the way they process such knowledge. Novelty is based on memory stores and the process that determines if a given item is or is not in store. Surprise, on the other hand, is based on expectations of systems capable of predicting, the processes generating such expectations, and the processes that compare the expectations with what

is actually experienced. They distinguished the two from each other as the former referring to the process of comparing the new stimuli with other stimuli stored in memory, and the latter being a consequence of novelty resulting from comparison between the expectation and observed reality. Novelty often leads to surprise, but it is not the only way to it. For example, stimuli that create the feeling of unexpectedness elicit surprise, as well. Surprise by unexpectedness may happen when a stimulus, which may be experienced before--so not novel--occurred at an unexpected time. The theoretical investigation tested such hypothesis but failed to distinguish between novelty and surprise.

In different cultures it is questionable if consumers experience delight from similar types of new, unexpected (i.e., surprising), pleasurable experiences and with the same intensity. According to Kitayama and Markus (2000), Westerners consider pleasurable states significantly more desirable than East Asians. In addition, the intensity and the frequency of emotions seem to be stronger in Western cultures (Heine, Lehman, Markus, & Kitayama, 1999).

More theoretical work, as well as empirical evidence, is needed to clarify the relationship between novelty and surprise and its cross-cultural implications. This research investigates if surprise is positively correlated with novelty. It is hypothesized that surprise is positively related with novelty.

High Novelty and Surprise May Not Be Highly Desirable: The Role of Tolerance for Ambiguity

When consumers perceive products to be creative, they are likely to desire to own them. However, as reported above, creativity that consumers want might not be positively correlated with a high degree of novelty and surprise. Cultural context and individual characteristics are also involved in judgments. Individuals rating the same product using a scale (e.g., PCM; Horn & Salvendy, 2009) may obtain the same results from different combinations of the different items associated with novelty and value. Among the possible reasons are personality, attitudes, values, preferences, income, education, gender, age, and so on.

Innovative consumers may be the exception to this general tendency. They can be defined as people who have a disposition to buy new products (Steenkamp, Hofstede, & Wedel, 1999). According to Rogers (2003) *innovators*, who are likely to prefer products that they find highly novel and enjoy taking risks associated with novelty, account 2.5% of the consumer base (16% if we include the *early* adopters). The *majority*, *early* and *late* adopters combined accounting for 64% (Rogers, 2003), tend to prefer lower levels of novelty. Innovators tend to buy new products earlier than the majorities and require less information to decide (Rogers, 2003).

One personality characteristic that can impact consumers' assessment of creative product and desire to own them is tolerance of ambiguity (TOA). This construct can be relevant also from a cultural perspective, as suggested by Hofstede's (2015) and Hofstede et al. (2015).

From an individual personality perspective, Budner (1962) defined TOA as "the tendency to perceive ambiguous situations as desirable . . . [whereas intolerance for

ambiguity was defined as] the tendency to perceive . . . ambiguous situations as sources of threat" (p. 29). Budner's concept has been refined by McLain (1993), who addressed the contextual meaning of ambiguity, defining the construct as "a range, from rejection to attraction, of reactions to stimuli perceived as unfamiliar, complex, dynamically uncertain, or subject to multiple conflicting interpretations" (p. 184). McLain (1993) developed a uni-dimensional model comprising of a 22-item measure named Multiple Stimulus Types Ambiguity Tolerance (MSTATI). The MSTATI model is a self-reported measure of TOA defined as a personality trait. McLain (2009) developed a more parsimonious scale, the MSTATII, a 13-item measure that has been further validated in Spain (Arquero & Tejero, 2009). The MSTATII is a one-dimensional model with good internal consistency reliability ($\alpha = .83$) and positive correlation with MacDonald's AT-20 ($r = .41, p < 0.1$); and with Budner's scale, which was not significant ($r = 0.09$).

McLain's (2009) MSTATII classifies ambiguity items in the following five groups: ambiguous stimuli in general (5 items); complex stimuli (2 items); new/familiar/novel stimuli (2 items); insoluble/illogical/irreducible/internally inconsistent stimuli (3 items); and uncertain/stimuli (1 item).

As argued by Grenier, Barrette, and Ladouceur (2005), and apparent in McLain's (2009) MSTATII items, there is a difference between TOA and tolerance of uncertainty (TOU). Grenier et al. suggested that the main difference between TOA and TOU is the time frame. TOA focuses on the present whereas TOU is future oriented (Furnham & Marks, 2013, p. 718). However, there is still no clear operational definition that differentiates between TOA and TOU, and the two constructs are often used

interchangeably. In both cases, individuals with a high TOA or TOU should tend to experience discomfort and anxiety and, therefore, tend to avoid situations that entail new and unfamiliar stimuli, complex and cognitively difficult situations, illogical and surprising problems, as well as situations they perceive as having an uncertain outcome.

From a cultural perspective, Hofstede's cultural index (Hofstede, 2015; Hofstede et al., 2010) for countries defined and analyzed the UA construct. Such a construct looks less comprehensive than those developed for individual measures that researchers mentioned above. The UA construct is a country/national indicator of

the way that a society deals with the fact that the future can never be known: Should we try to control the future or just let it happen? This ambiguity brings with it anxiety and different cultures have learnt to deal with this anxiety in different ways. (Hofstede, 2015, n.d.).

China has a low UA index, that is, 30/100; the United States has a low to moderate index of 46/100.

Long-term orientation (LTO) (Hofstede, 2015) should also be taken into consideration. Hofstede (2015) defined LTO as "how people in the past as well as today relate to the fact that so much that happens around us cannot be explained." Long-term orientation could be considered the cultural equivalent of individual TOU, as both are future oriented and express a degree of openness toward the future. Long-term orientation countries are pragmatic at an ideological level, less polarized, and more flexible regarding what is right or wrong, good or bad, as they tend to believe that it is

impossible to fully understand the complexity of life. China has high LTO (87/100), the United States has a low LTO (26/100).

A recent call for papers (Augier, March, Rhee, & Zhou, 2012) contributed to the discussion on ambiguity in China, highlighting that it is normal for Chinese people to hold opposite views simultaneously. This might mean openness to and appreciation for novel and contradictory stimuli.

Desirability of creative products may be based on different levels of novelty, which may change at the individual and cultural level. Individuals that are more tolerant of ambiguity may show a higher preference for novelty than less tolerant ones. At country level, according to Hofstede et al. (2010), countries have developed different dispositions with regard to uncertainty and ambiguity, which affect individual character.

The current study investigates the follow research questions:

1. Is TOA significantly higher in China than in the United States? It is expected that Chinese should be higher on TOA as they are more prone to deal with contradictory and novel situations.

2. Is novelty more desirable in China than in the United States? Although contrary to the previous research questions, this could be the case if TOA implies preference for novelty.

3. Are TOA in China and the United States and Hofstede's (2015) cultural indices for UA and LTO in the two countries correlated?

Cross-cultural and Cross-national Studies: Translation and Methodological Issues

Cross-national research usually defines culture as a static entity, and group membership in a nation-state is used to study cultural variation among countries (Agarwal, Malhotra, & Bolton, 2010). Hofstede et al. (2010) asserted that culture is very slow to be changed; therefore, traditional values can live together with more recent ones. Cross-cultural research usually views culture as a dynamic construct that cannot be interpreted only by means of national boundaries. According to Erez and Gati (2004) and Kitayama (2002), the interaction of individual, group, and national levels create a dynamic, multilevel, multilayered construct. Gould and Grein (2009) postulated that culture is created by communities based on their lifestyle and personal characteristics at the local level. They concurred with other constructivists (e.g., Kjeldgaard & Askegaard, 2006) who regards that the construction of meaning is a key mechanism in identity creation. This view accounts for the creation of elective identities (Arnett, 2002), that is, cultural identities that consumers can self-define by selecting cultural elements from global identities. Such a perspective results in a potentially very heterogeneous national culture.

Cross-cultural studies have a number of typical limitations one must be aware of and possibly address. As reported by Nasif, Al-Daeaj, Ebrahimi, and Thibodeaux (1991), cross-cultural research is seldom based on a direct comparative approach and rarely culture is the main independent variable. Cross-cultural research is often based on an ethnocentric approach whereby the study in one culture is replicated in another culture. In addition, cross-cultural studies reflect opinions instead of empirical evidence. Other

key methodological concerns include issues around sampling, levels of analysis, data collection, and appropriateness of instrumentation.

The issues around sampling often present biases that may result from the strategy of convenience sampling. It may occur when limited number of countries is included to represent the culture or when participants are selected among the most easily available group of students, which can be undergraduate or graduate students.

As pinpointed by Hofstede, Bond, and Luk (1993), the level of analysis can be mixed up and misinterpretation can be drawn if data from the individual level are interpreted as belonging to the aggregate country level and vice versa.

Data collection procedures must assure equivalence in the administration of data collection in various sites. Equivalence requires providing the same instructions, allowing the same amount of time and making the same or comparable setting available (Nasif et al., 1991). Response equivalence is also important, and it can be achieved by implementing a uniform data collection procedure. Timing may cause equivalence issues, especially if data are collected at significantly different times in different cultures.

Equivalence of instruments is another key issue. When cross-cultural research relies on instruments that were not developed across-countries, translation becomes necessary. One of the key constraints of cross-cultural comparative research is translation of survey instruments (Fischer & Smith, 2003; Williamson & Fadil, 2009). Direct translation is not a guarantee of full equivalence in meaning and concepts, neither even back translation (Brisling, 1970, 1980), although it is the most popular technique adopted in social science studies and the primary method in marketing (Douglas & Craig,

2007). However, the translation process is fundamental for the quality and comparability of the study instruments across countries.

Brislin's (1970, 1980) translation-back translation technique suggests that the instruments should be translated by blind bilingual translators from the source language to the target language and then be translated back from the target language to the source language by different translators. Translations are then compared for item content equivalency. If an inconsistency is found, another translator retranslates and checks the discrepancies. This process continues until equivalence is established. This procedure has its limitations, in particular the time and cost involved in the iterative process with a bilingual team of translators, and the specific abilities of bilinguals who tend to make sense of texts even when poor translations occur (Cha, Kim, & Erlen, 2007; Douglas & Craig, 2007).

Among other approaches to translations (e.g., Arquero & McLain, 2010; Beaton, Bombardier, Guillemin, & Ferraz, 2000; Cha et al., 2007; Douglas & Craig, 2007), Beaton et al.'s (2000) is the more comprehensive and specific for cross-cultural adaptation of self-report measures. They envisaged five scenarios of cross-cultural adaptation of questionnaire. Scenario one assumes that no cultural adaptation is needed. Scenario five assumes that the questionnaire must be used in another country with another language and requires both translation (i.e. *semantic* and *idiomatic* equivalence) and cultural adaptation (i.e. *experiential* and *conceptual* equivalence). Their process starts off from an initial translation, which is a forward translation from source to target language performed by two translators (one being aware and one unaware of the concepts

under investigation). Translations are subsequently synthesized and process documented. The next step is a back translation from target back into source language. Back translation “highlights gross inconsistencies or conceptual errors in the translations” (Beaton et al., 2000, p. 3188). Two translators are recommended, who are blind to the whole process. An expert committee is then recommended to reach a consensus on discrepancies. The committee is expected to make decisions regarding *semantic* equivalence (i.e., “do the words mean the same thing?”); *idiomatic* equivalence (i.e., colloquialism and idioms need to be provided an appropriate equivalent expression); *experimental* equivalence (i.e., can the task addressed by the questionnaire be experienced in the target country?); and *conceptual* equivalence (i.e., literal meaning can be the same, but the concept might not exist or be equivalent in the target language). Then, the field test of the pre-final version of the questionnaire follows. This step includes administration to 30-40 subjects and a subsequent interview to check for item and response understanding. A final committee check takes place in the final step. Further testing of the adapted version is recommended, in particular, to investigate item-level and item-scale correlations, and internal consistency, score-level reliability, construct validity, and responsiveness. The authors acknowledged that such a process is time consuming and costly.

The research of Lin, Chen, and Chiu (2005) underscores the importance of demonstrating that instruments across cultures are free from construct, method, and item biases. According to them, construct bias is related to construct discrepancy across target cultures and it can be addressed by a multi-cultural, multi-lingual team of experts.

Method bias is mostly dependent on administration procedures consistency and confirmatory factor analysis (CFA) is one of recommended techniques to take care of. Item bias can be minimized by “independent back translation” and statistical techniques that vary depending on the nature of data (i.e., dichotomous score items with MH-CHISQ test and ANOVA for interval-scale items). CFA and reliability testing are also recommended for confirmation of construct validity and consistency across cultures.

Most of the above mentioned methodological issues have been considered and addressed in this research. Sample selection was not through convenience sampling (i.e., students) but based on the potential consumer population. The study hypotheses clearly separated individual and cultural units of analysis. Data collection procedures were developed by assuring equivalence in content and timing (i.e., cross-country translation issues and same time of administration). Translation principles and procedures have been consistent with the suggestion by Brislin (1970, 1980), Beaton et al. (2000), and Lin et al. (2005) who provided guidelines to assure semantic and concept equivalence of measures.

For the purpose of this research, cross-national and cross-cultural have been used interchangeably as it has been assumed that country can be an acceptable and efficient proxy for culture (Beaudreau, 2006; Dawar & Parker, 1994; Soares, Farhangmehr, & Shoham, 2006) for research purposes. It has also been decided to adopt the *indirect value* approach to measure cultural characteristics in subjects; that is, “secondary data to ascribe characteristics of cultural groupings without measuring members of the group” (Soares et al., 2006, p. 279).

Consistently with this section of the literature review, it has been hypothesized that PCM (Horn & Salvendy, 2009) will show good internal reliability values across countries, supporting the accuracy of the translation.

Recapitulation of the Research Questions and Hypotheses

Research questions and hypotheses have been revised and the final selection has been listed hereunder.

1. Is PCM a reliable measure in the U.S. and Chinese cultures?

It is hypothesized that PCM scale reliability (total and subscales) will be comparable for the United States and China.

2. Are PCM (the explicit method) and implicit evaluation (a one question rating) of a product related in the U.S. and China contexts?

It is hypothesized that if PCM scale's underlying concepts are representative of the United States and China's implicit concepts, the two measurements will be positively correlated.

3. Is surprise positively correlated with novelty in the PCM scale?

It is hypothesized that surprise is positively correlated with novelty.

4. Is PCM significantly related to desire to own in the U.S. and China?

It is hypothesized that PCM scale positively is positively correlated with desire to own across countries.

5. Is the relationship between novelty and desire to own higher in the U.S.

sample than in the China sample as was expected from philosophical theories and reported in Rubera et al.'s work (2011)?

It is hypothesized that novelty will be more desirable in China than in the United States. This hypothesis contradicts the formerly stated hypotheses (Lubart, 1999; Rubera et al, 2011), and is based on the assumption that higher TOA implies preference for novelty (Augier et al., 2012). Therefore, the hypothesis that novelty would positively correlate with desire to own in the United States and that novelty and desire to own would show a higher correlation in the United States sample based on philosophical theories, and Rubera et al.'s work (2011) is discarded.

6. Is TOA significantly higher in China than in the United States?

It is hypothesized TOA mean scores will be significantly higher in China than in the United States, on the assumption that Chinese are more prone to deal with contradictory and novel situations.

7. Are individual levels of TOA in China and the United States positively associated with UA and LTO country indices (Hofstede, 2015)?

It is hypothesized that individual TOA measured by means of MSTATII (McLain, 2009) is positively associated with country UA and LTO (Hofstede, 2015).

8. Are interest and desire to own positively correlated?

It is hypothesized that interest is positively correlated with desire to own.

CHAPTER III

METHODS AND PROCEDURES

This chapter describes how the study was conducted. It starts with the description of the study design and the methods and instruments adopted. Rationale for country and product type identification is then provided, followed by the selection process of the three study chairs. Participants and translation management are addressed before describing the study recruitment process and materials used. Lastly, the pilot study is described, followed by data storage and data analysis. Institutional Review Board (IRB) approval and the study material are provided in the appendices.

Methods and Instruments

Study Design

This is a quantitative study with comparative and correlational design (Gay, Mills, and Airasian, 1976), with a pilot study preceding the actual study to explore the appropriateness of data collection procedures. Comparative design was employed in cross-cultural research questions. Within each culture, relationships among different variables were investigated through correlational design culture, as consumers are likely to be part of a national culture (Soares et al., 2007; Steenkamp et al., 1999; Triandis, 1989).

Participants

A total sample of 502 consumer subjects (give mean age if we have it) completed questionnaires (250 in China and 252 in the United States) was obtained. The 502 completed questionnaires were obtained out of a total of 716 participants, 415 from China and 297 from the United States. Participants that did not complete the task were excluded from the analyses. Participants were selected from the customer rather than student populations as the research questions are related to the customer's behaviors. Moreover, students differ from general population in that they are more homogeneous (Peterson, 2001) and can be more analytical and critical than the average population (Schmitt & Tavassoli, 2009).

The sample was expected to reflect comparable representation of gender, to see if any differences could be statistically significant. The China sample was composed of 250 subjects: 120 women (48%) and 130 men (52%). The United States sample was composed of a total of 252 participants: 136 women (54%) and 116 men (46%).

By employment status, 85.2% of the China sample was employed people, followed by 9.6% of students, 2.8% of not employed, and 1.6% of retired. Employed was the most frequent (53.3%) population in the United States; however, unemployed was as high as 30.2%. Retired accounted for 9.9% of the sample, while student accounted for 6.7%.

By highest education degree the China sample was mostly composed of undergraduates (84 or 8%). No primary school was present. The United States sample was composed of a mix of undergraduates (34 or 1%), graduates (26 or 2%), and

secondary degrees (25 or 4%). The percentage of primary school present was 9% (11) in the United States sample. A similar percentage of PhD degrees were present in the two samples: 1.6% in China and 2.4% in the United States.

Instruments

Explicit (i.e., PCM scale) and implicit (i.e., a question asking to rate creativity of each chair) measures of creativity have been used for the evaluation of the same type of stimuli (i.e., the three chairs). The MSTATII scale (McLain, 2009) has been used to measure TOA in individuals. Questions have been used to rate interest in chairs and desire to own. Instruments are addressed in the order they were presented in the online survey.

Interest in Chairs as a Product Category

After participants accepted to participate into the study, they were asked to answer the following question: "Rate your interest in chairs" on a 10-point Likert scale. Such a question aimed at recording the individual interest in chair category before the study products were presented.

Individual Tolerance of Ambiguity: MSTATII Scale

Participants rated their individual level of tolerance for ambiguity using MSTATII (McLain, 2009), a 13-item scale-based questionnaire. MSTATII is a scale based on a uni-dimensional construct as supported by factor analysis fit indexes ($X^2 = .50, p < .01$; NFI = .97; TLI = .95; RFI = .91; RMSEA = .05). MSTATII showed good internal consistency reliability (α s ranging from .83 to .79), and a moderate correlation with

McDonald's AT-20 ($r = .41, p < .01$). The MSTATII items are behavior related questions (e.g., "I don't tolerate ambiguous situations well") to be rated on a 5-point Likert scale. This measure was administered after recording individual interest.

Product Creativity Measure (PCM)

Horn and Salvendy's (2009) PCM scale was used to measure how consumers rated product creativity by means of explicit dimensions and factors. Implicit consumer perception of product creativity was measured by means of a general question: "Rate the creativity of this chair." Three different creative new chairs were assessed as the study stimuli for both measures.

The PCM scale was designed to be a *general* product creativity measurement instrument that can be used for any product category. The instrument consists of three dimensions and 14 opposite-adjective pairs measured on a 7-item Likert scale. Horn and Salvendy (2009) demonstrated PCM three factor structure by means of exploratory factor analysis in two studies, and reported good internal reliability ($\alpha = .84$) for the scale.

The surprising - usual pair was added to the original scale in order to account for the role of surprise in the novelty dimension. Items were scored according to the original scale (see Table 1).

Desire to Own Creative Products

Participants rated desire to own each of the study chairs after they rated the creativity of the chairs. The following question was used: "Rate your desire to own this chair." The question was asked to investigate how subjects rated their desire to possess the study product on a 10-point Likert scale.

Selection of Countries

One of the key objectives of the present study was to examine similarities and differences in consumers' perceptions of creative products across the United States and China as they are the world's biggest markets (Euromonitor International, 2014). A direct comparison was fundamental to determine whether there are cultural differences across such countries (Runco & Johnson, 2002) and how they impact creativity assessment and desire to own. Country has been used as a proxy for culture, as consumers are likely to be part of a national culture (Soares et al., 2007; Steenkamp et al., 1999; Triandis, 1989).

Table 1

Product Creativity Dimensions and Measurement Items

Product Creativity Dimensions	Product Creativity Measurement Items
Novelty	Unique – ordinary
	Expected – unexpected
	Rare – standard
	Surprising – usual (*)
Affect	Stimulated – irritated
	Pleased – displeased
	Delighted – horrified
	Appealed – revolted
	Unattractive – attractive
	Favorable – unfavorable
	Appealing – unappealing

	Desirable – undesirable
	Ideal – unsuitable
Importance	Relevant – irrelevant
	Important – unimportant
	Crucial – insignificant

(*) added pair

Selection of Study Product

In the creative product literature, a number of studies have been conducted using different creative and innovative products such as t-shirts (Besemer & O'Quin, 1986), chairs (Besemer, 1998; Besemer & O'Quin, 1999), lamps and chairs (Horn & Salvendy, 2006, 2009), mouse traps (Cropley & Cropley, 2010), and telephone booths (Christiaans, 2002). Chairs were used in this study. Chairs have a number of advantages over other potential test products. First, they are not likely to elicit gender specific preferences. Other products have shown gender preferences (Tellis, Yin, & Bell, 2009). For example, home appliances, cosmetics, and food/groceries are preferred by women while sporting goods and automobiles are preferred by men. Second, chairs are likely to be more fully and easily understandable than lamps or phones, as they are less technology-driven and sight is sufficient to understand the product functions. Third, they have shown to be successfully used in previous studies outside the United States (Besemer, 1998). Fourth, it represents a commonly used product category in the two target countries (e.g., China and the U.S.); subjects are likely to be familiar with this product category. Product

brands have not been revealed to subjects as they could have led to a bias in product rating, especially when the brand is known and the product is not (Cattin, Jolibert, & Lohnes, 1982). Chairs in this study have been presented in a two-dimensional format as the testing procedure.

Surprise was a key element in this research; therefore; the study chairs had to be creative and new to the subjects. Therefore, they have been identified on a web site (i.e., Architonic.com) the presented new chair designs. The adoption of the same chairs used by Besemer (1998) has been considered to have a direct comparison with literature results; however, it has been excluded because changes in aesthetic codes might have biased the study results.

Selection of the Three Study Chairs

An online quantitative study has been conducted to select three highly new creative chairs for the research. Ten experts have been identified to help with the selection process. Eight experts, three females and five males, completed the online survey. They were provided no definition of creativity, consistent with Amabile's CAT (1982, 1983). Experts were employed as their assessments tend to have a higher level of inter-rater reliability (Amabile, 1996; Baer et al., 2004) and because non-experts would have required a much larger sample to achieve a high correlation (Cropley & Kaufman, 2013).

Experts included industrial design experts and trade-show professionals dealing with home furniture who are considered to be chairs *lead users* (von Hippel, 1986).

According to von Hippel (1986), lead users are “users at the ‘front of the trend’” (p. 569) who feel the market needs in advance; specifically, in this case, they were knowledgeable about chairs and very sensitive toward market trends. An online questionnaire was created using Google Forms and ten 2D chairs images included in the survey. For each of the 10 chairs, the experts were asked to “rate the level of creativity of the chair using the following scale.” The scale was a 10-item opposite adjective scale (1 = “Not at all creative” and 10 = “Extremely creative”). Assessors were presented with a short introduction, which explained that the degree of creativity was to be intended as the assessor’s personal opinion. Assessors were also informed that the survey duration would not exceed 10 minutes, their identity would not be disclosed, and data would be treated as confidential. The introduction to the survey served to inform and to obtain participant consent to the survey. In fact, participants could enter the survey only after reading the introduction and selecting the “I accept” box.

The identities of the experts were not accessible to the study researcher (a functionality enabled by Google Forms mailing procedure), and no demographic data was requested that could allow the identification of individual subjects. In addition, every participant could answer the survey only once, as the *Show link to submit another response* in Google Form was flagged.

The three chairs that obtained the highest mean values from the eight assessors were coded for analysis purposes as *flip chair* ($M = 8.00$, $SD = 0.70$), *flower chair* ($M = 7.60$, $SD = 2.07$), and *spoon chair* ($M = 7.20$, $SD = 1.10$). Subsequently, such chairs were selected for the cross-country study and named as “chair 1”, “chair 2,” and “chair 3.”

Instead of the original product name, these numbered names were used to avoid influencing subjects' perceptions. The other seven chairs were all rated creative and mean values ranged between 6.18 and 5.00.

Translation Process

Translation in cross-cultural research is a very sensitive issue (Brislin, 1970, 1980; Fischer & Smith, 2003; Williamson & Fadil, 2009), and it may not guarantee full conceptual equivalence of meaning (Arquero & McLain, 2010; Beaton et al., 2000; Cha et al., 2007; Douglas & Craig, 2007; Rudowicz, 2003). To limit the risks of major conceptual differences, the questions and instrument translation have been translated by a total of three bilinguals following Brislin's (1970, 1980) back translation principle, and Beaton et al.'s (2000) suggestions. Some adaptations have been introduced in order to optimize time and costs (i.e., total number of translators).

The translation process started with a bilingual holding a PhD in psychology who translated the whole survey from the target language (i.e., American English) into Chinese (i.e. simplified Chinese). It was expected that a person with a degree in psychology would be the best person to understand and translate psychological content. Subsequently, the translated material was sent to two different bilingual people (i.e., one business translator by profession, and one international graduate student) to be back translated into the source language (i.e., American English). The two back-translators' knowledge of the study was limited to what was in the survey so as to not influence their work (Beaton et al., 2000). Words that were considered wrong or inappropriate were

highlighted and commented in writing. Two items from the MSTATII had been translated with an opposite meaning in the first forward-translation (i.e., from target to source language). This mistake was noticed by the study researcher thanks to the parallel back-translation. The original English version (from McLain's MSTATII, 2009) was then translated into Chinese by the two translators, whose versions were the same. Special attention was devoted to PCM scale as it is composed of adjectives, and adjectives are particularly difficult to translate as they have no context. After both translators completed their versions, the researcher of this study compared them by checking meaning equivalency for each pair of adjectives with one of the translators (the international student). This process allowed for a progressive refinement of the concepts underlined by the adjectives, and potential issues were brought to the international student translator for clarification.

As far as instructions are concerned, special attention was devoted to keeping wording as simple as possible to reduce unnecessary complexity in translation.

Recruitment Process

An online survey was created and an online recruitment procedure was adopted to efficiently recruit subjects among consumers of at least 18 year of age in different areas (provinces/states) of the United States and China. Although online research may suffer from biases such as under-representation and self-selection (Bethlehem, 2008), it is a widespread and efficient procedure largely adopted for marketing research purposes.

The online survey provider was selected on the basis of some specifications, which included the possibility to create the survey in simplified Chinese, and recruit respondents from both China and the United States. Three versions of the survey were created: (a) in simplified Chinese, (b) in American English, (c) in both languages. The latter was created for quality assurance purposes before the launch and during subsequent data management and analysis. The process has been an ongoing refinement with the support of one of the Chinese bilingual translators. A final test to verify content accuracy as well as survey functionalities has been undertaken by the study researcher before submitting to the service company for uploading. The service company performed a quality check before publishing the survey online, too.

The surveys were published on a service provider website and potential respondents could assess them after a profiling procedure. Potential respondents were shown the survey introduction page and had to click on the “I agree” option to participate. They were offered two rewards in exchange for participation: A donation to an NGO organization, and the entry into an instant win sweepstakes. Such rewards are expected to be motivating but not inductive to misleading behaviors (i.e., multiple accounts creation).

The survey was titled “Consumer Assessment of Products in China and the US.” Any explicit references to creativity or novelty were avoided in order not to pre-condition the assessors. A short introduction explained that the survey aimed “to reveal cross cultural differences in the evaluation of products” and that approximately 500 people would have rated their opinions on three products. Chairs were not mentioned in the

introduction to reduce self-selection bias. Consistent with IRB provisions, potential respondents were informed about the expected duration of the survey; they were also told that participation was voluntary, that no foreseeable risks were associated to it, that identity would not be disclosed, and data confidentiality would be assured. Participants were also informed that they could quit the survey at any moment. Respondents that decided to continue had to select “I agree.” If they chose “I disagree,” the survey would be ended.

As agreed with IRB, this information process was consistent with ethical requirements for informed consent, and the “I agree/I disagree” selection would be considered a formal consent/refusal from the subject. In addition, as there was no reason for the study researcher to collect individual data that could disclose identity and/or allow personal contacts (i.e., e-mail address) such data were not collected. Individual-specific identifiers could be verified by a combination of other data, including an individual alphanumeric code assigned to the subjects by the service provider at the time of enrollment. In addition, the survey platform functionalities were set so that subjects could not edit their answers once they completed the survey, nor could they skip compulsory questions or jump forward to see material in a different order than the one designed by the study researcher. Subjects were presented with a time bar expressed as percentage of completion for usability purposes.

The survey materials are described hereunder in the order they were presented to the subjects:

1. *Introduction to the Survey and Consent*: timing, purpose, ethical considerations and instructions and thanks for participation. Subjects’ consent

was obtained online after reading the introduction, by flagging the “I agree” option (see Appendix A).

2. *Section A: Interest in Chairs rating:* A statement explained that the study would focus on subjects’ opinions on chairs. The statement was followed by the study question: “Please rate your interest in chairs” on a 10-item scale (1 = low interest and 10 = high interest).

3. *Section B: MSTATII assessment:* This was a self-report 13-item questionnaire. Subjects were asked to rate themselves on a 5-point scale ranging from “Not at all like me” to “Very much like me” (see Appendix B).

4. *Section C: Three chairs creative product measurements.* Section C was composed of two measures, implicit and explicit, repeated for the three different chairs. Subjects were presented a 2-D image of chair #1 and asked to “rate the creativity of this chairs” (i.e., implicit judgment). Then, PCM scale (explicit measure) was presented for chair #1. Each chair was assessed by means of a 15-item opposite-adjectives 7-point Likert scale (e.g., rare = 1, standard = 7). As described with more details above, the 15th pair (i.e., surprising-usual) was included to the original scale to account for surprise. The same procedure was repeated for chair #2 and chair #3. Chairs were presented in the same order, while the 15 adjective pairs were presented in random order. In addition, adjective pairs ratings were presented to the subjects independently of the actual coding order to reduce priming of participants (see Appendix C).

5. *Section D: Demographic questions* asking participants’ age, sex, occupation status, highest educational level, residence, annual income (see Appendix D).

6. *End of survey page:* This was a page for thanking participants, for collecting comments or concerns in a comment box, and for providing explanations regarding the benefits of the study. It was positioned at the end of the survey as disclosure of creativity measurement purposes might have biased (i.e., social desirability) the participants. Everything was in line with IRB provisions (see Appendix E).

Pilot Study

The online study was preceded by a “soft launch” that was expected to identify potential problems related to comprehension and technical problems. Soft launch in this study meant a sample composed of subjects replying on day 1 (i.e. maximum 20 subjects

were expected to complete the questionnaire). Potential problems or concerns were to be reported in the comment box on the end-of-study page. No problems were reported from the 18 American subjects that filled in the survey on day 1. Problems related to the format of the income field were reported by 60 of the Chinese subjects that filled in the survey on day 1. The format of the income field and instructions for completing it were the same for both languages; however, the problem was reported only by the Chinese sample. It was not possible to understand what technical problem had happened to the Chinese subjects and solve it within the study time frame. An unexpected response rate was recorded in China on day 1 (180 completed questionnaires), probably because the launch occurred on a Saturday (February 28th). In the United States the launch occurred on a Friday (February 27th) and on the subsequent Saturday all the expected subjects were done.

Study Variables

Dependent variables of this study are implicit (i.e., individually perceived) and explicit (i.e., based on pre-defined items) creativity rated in products; desire to own creative products; surprise, and individual level of TOA.

Independent variables of this study include culture expressed by country; country tolerance of ambiguity and long-term orientation (according to Hofstede et al., 2010); interest in product category; and demographic variables such as sex, education level, and employment status.

During the recruitment period, data were stored on the servers of the service provider. At the end of the study they were extracted into an Excel format for data analysis. Subsequently, data will be handled in accordance with the IRB's provisions.

CHAPTER IV

RESULTS

This chapter presents the study results associated with the research questions. Results presentation begins with demographics as described in Chapter III; demographics were not related to any hypotheses in this research. Subsequently, internal reliability of different instruments is described, followed by descriptive statistics of all measures across the U.S. and China, in particular product creativity ratings. This research hypothesized that implicit and explicit measures would be related and both would show good internal reliability (research questions #1 and #2). Then, correlational findings are presented addressing the relationship a) between surprise and PCM scale (question #3), b) among product creativity ratings and desire to own (questions # 4 and #5), tolerance for ambiguity in individuals and at country level (question #6 and #7), and interest in chair (question #8). Countries specificities are addressed, too.

Demographics: Gender differences in chair preference

No hypotheses were made regarding demographics, as no literature exists so far. Male and female participants were evenly distributed in the combined group (see Table 2). Gender did not significantly differentiate the outcomes in the combined sample except for desire to own chair #2 and #3. Country-specific comparison analyses indicated that Chinese females showed higher desire to own Chair 1 than Chinese males and the

U.S. males showed higher desire to own Chairs 2 and 3 than the U.S. females. No gender difference was found in other variables.

Table 2

Male-Female Descriptive Statistics and t Test of the Tasks and Instruments

	Female (N = 256)		Male (N=246)		t	P	
	M	SD	M	SD			
Combined	Interest in chairs	7.34	2.215	7.3	2.2	0.20	.84
	Desire to own – Chair 1	5.45	2.99	5.25	2.89	0.77	.44
	Desire to own – Chair 2	5.65	2.97	6.25	2.69	-2.37	.02
	Desire to own – Chair 3	5.46	2.87	6.21	2.678	-3.01	.003
	PCM – Chair 1	66.96	15.12	64.66	13.95	1.77	.078
	PCM – Chair 2	67.36	15.79	69.49	14.65	-1.56	.119
	PCM – Chair 3	66.68	15.25	68.4	14.51	-1.29	.197
	Tol. of Ambiguity	39.77	7.52	40.06	8.14	-0.41	.681
	China	Interest in chairs	8.19	1.63	7.95	1.5	1.24
Desire to own – Chair 1		6.41	2.42	5.74	2.55	2.10	.037
Desire to own – Chair 2		7.12	1.9	6.92	1.97	0.79	.432
Desire to own – Chair 3		6.67	2.22	6.72	2.13	-0.18	.86
PCM – Chair 1		67.77	12.04	65.3	12.01	1.63	.105
PCM – Chair 2		71.89	11.85	71.33	12.04	0.37	.715
PCM – Chair 3		69.23	11.64	68.06	11.07	0.12	.905
Tol. of Ambiguity		41.97	7.15	41.69	6.09	0.34	.736
The U.S.		Interest in chairs	6.58	2.38	6.57	2.6	0.04
	Desire to own – Chair 1	4.61	3.2	4.69	3.14	-0.21	.838
	Desire to own – Chair 2	4.35	3.14	5.5	3.164	-2.88	.004
	Desire to own – Chair 3	4.40	2.96	5.64	3.08	-3.25	.001
	PCM – Chair 1	66.25	17.41	63.95	15.86	1.09	.279
	PCM – Chair 2	63.36	17.7	67.42	16.92	-1.85	.066
	PCM – Chair 3	65.32	17.77	68.79	17.62	-1.55	.122
	Tol. of Ambiguity	37.83	7.32	38.23	9.64	-0.38	.708

Internal Reliability of Measures

Before conducting actual analyses to test the hypotheses, internal reliability was investigated for the implicit creativity ratings across three chair items.

As seen in Table 3, alpha coefficient value was good ($\alpha = .72$) for implicit creativity ratings across three chairs and for tolerance for ambiguity scale ($\alpha = .81$). Internal reliability has been performed in two steps for Horn and Salvendy's (2009) PCM scale. In the first step, alpha coefficient values for individual items were investigated across three items (i.e., chairs). Then, items for each component of PCM (e.g., novelty, affect, importance) were examined for alpha and were collapsed if alpha was acceptable. Finally, alpha value for the total scale was also examined. The two-step operation yielded indices with an acceptable level of internal reliability. Alpha coefficient was .79 for novelty, .70 for affect, .66 for importance, and .72 for the total scale. These composite measures were used in the following for the sake of parsimony.

Comparison of China and the United States for Product Creativity

Composite values were created for the all the study measures to use in the further analyses (See Table 3). The first analysis compared the participants from China and the United States for implicit creativity ratings and total score from PCM scale. The results showed that participants from the United States had significantly higher mean implicit creativity ratings ($M = 8.01$, $SD = 1.91$) than the participants in China ($t(500) = 3.81$, $p < .0001$, $d = .34$) whereas participants from China had significantly higher scores on PCM (i.e., explicit method) scale than the U.S. participants ($t(500) = -2.80$, $p < .0001$, $d = .25$).

When specific dimensions were compared, the difference was significant for affect ($t(500) = - 3.97, p < .0001, d = .35$) and novelty ($t(500) = 2.13, p < .0001, d = .19$). Chinese participants scored higher ($M = 4.62, SD = 0.81$) than the U.S. participants ($M = 4.26, SD = 1.17$) in affect, whereas the U.S. participants had higher scores ($M = 5.12, SD = 1.4$) than Chinese participants ($M = 4.93, SD = 0.99$) in novelty. The difference for importance was not significant ($t(500) = - 1.50, p = .14, d = .13$).

Table 3

Descriptive Statistics and Internal Reliability of the Tasks and Instruments

		Chair 1		Chair 2		Chair 3		Alpha	Composite	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Combined	Implicit Creativity	7.51	2.28	8.1	2.15	7.54	2.23	.71	7.71	1.76
	PCM Affect	4.28	1.29	4.52	1.33	4.53	1.28	.70	4.44	1.02
	PCM Importance	4.08	0.94	4.06	1.06	4.00	1.02	.66	4.05	0.78
	PCM Novelty	5.02	1.22	5.17	1.16	4.89	1.24	.79	5.03	1.02
	PCM Total	4.38	0.97	4.56	1.02	4.5	0.99	.72	4.48	0.79
	Tol. for ambiguity	-	-	-	-	-	-	.81	3.07	0.60
	Interest in Chairs	-	-	-	-	-	-	-	7.32	2.20
	Desire to own	5.35	2.94	5.94	2.85	5.83	2.8	.74	5.71	2.32
U.S.	Implicit Creativity	7.93	2.41	8.27	2.44	7.83	2.39	.70	8.01	1.91
	PCM Affect	4.2	1.47	4.2	1.56	4.39	1.49	.68	4.26	1.17
	PCM Importance	3.96	1.24	3.94	1.39	4.09	1.35	.71	3.99	1.06
	PCM Novelty	5.15	1.25	5.18	1.15	5.03	1.24	.82	5.12	1.04
	PCM Total	4.34	1.11	4.34	1.16	4.46	1.18	.70	4.38	0.90
	Tol. for ambiguity	-	-	-	-	-	-	.83	2.92	0.65
	Interest in Chairs	-	-	-	-	-	-	-	6.58	2.48
	Desire to own	4.65	3.17	4.88	3.19	4.97	3.08	.71	4.83	2.50
China	Implicit Creativity	7.09	2.07	7.93	1.8	7.24	2.01	.69	7.42	1.55
	PCM Affect	4.35	1.06	4.83	1.00	4.68	1.00	.73	4.62	0.81
	PCM Importance	4.2	0.44	4.19	0.54	4.2	0.45	.70	4.2	0.38
	PCM Novelty	4.88	1.17	5.16	1.19	4.75	1.22	.76	4.93	0.98
	PCM Total	4.43	0.8	4.77	0.8	4.54	0.75	.79	4.58	0.66
	Tol. for ambiguity	-	-	-	-	-	-	.75	3.21	0.51
	Interest in Chairs	-	-	-	-	-	-	-	8.06	1.57
	Desire to own	6.06	2.51	7.02	1.94	6.69	2.17	.69	6.59	1.73

Then, the Chinese and the American groups were compared for tolerance for ambiguity. The Chinese group had significantly higher values on tolerance for ambiguity than the U.S. group ($t(500) = -5.62, p = .001, d = .50$).

Correlation of Surprise Ratings and PCM Dimensions

Bivariate analyses were performed for the United States and China individually and then for the combined data (the United States and China). As seen in Table 4, surprise, which was added to this scale, showed a positively significant correlation with novelty and affect. The strongest correlations are found in the Chinese group between surprise and novelty ($r = .82$), and surprise and affect ($r = .65$).

Table 4

Correlation Matrix Indicating the Relationship between Surprising, Novelty, Affect, and Importance

		Novelty (rare-frequency)	Affect	Importance
Combined	Surprising	.645	.350	.031
USA	Surprising	.561	.289	.046
CHINA	Surprising	.818	.646	.258

Correlations among Product Creativity Ratings, Surprise, Desire to Own, Tolerance for Ambiguity, and Interest in Chairs

Implicit creativity was positively correlated with PCM total score ($r = .40, p < .01$) in the combined sample (see Table 5), and strength of relationship was higher in China ($r = .63$) than in the United States ($r = .31$). Implicit creativity in China had a higher correlation with the affect dimension ($r = .61, p < .01$), too.

Table 5

Correlation among Creativity Ratings on the Combined Data (the United States and China)

	2	3	4	5	6	7	8
1. Interest in chairs	.28**	.37**	.43**	.02	.41**	.32**	.51**
2. Implicit Creativity		.21**	.34**	.37**	.40**	.14**	.25**
3. PCM Importance			.69**	-.16**	.69**	.19**	.64**
4. PCM Affect				-.27**	.98**	.15**	.74**
5. PCM Novelty					.43**	-.16	-.11
6. PCM Total						.12**	.67**
7. Tol. for Ambiguity							.33**
8. Desire to own							

Interest in chairs was high in the combined sample ($M = 7.32, SD = 2.20$) as seen in Table 3; it was higher in China ($M = 8.06, SD = 1.57$) than in the United States ($M = 6.58, SD = 2.48$). It showed a positive moderate correlation with PCM scale ($r = .41, p < .01$). The correlation between interest in chairs and implicit creativity was stronger in China ($r = .63, p < .01$) than the United States ($r = .33, p < .01$). In the United States, a negative weak correlation ($r = -.09$), was obtained between interest in chairs and novelty.

Tolerance of ambiguity showed weak to medium correlation with most dependent variables in both countries ranging from ($.14 < r < .33$) in the combined sample, as seen on Table 5. Tolerance of ambiguity showed a negative weak to moderate correlation with novelty in the American sample ($r = -.27$), as seen on Table 6. All the correlations were statistically significant ($p \leq .01$).

Desire to own positively correlated with all dependent variables, except novelty ($r = -.11$ in the combined sample) as seen on Table 5. In the United States, the negative correlation increased to almost moderate ($r = -.28$), as seen on Table 6. Desire to own strongly correlated with affect ($r = .73$) and importance ($r = .64$) in the combined sample. A positive significant correlation was shown between desire to own and interest in chairs ($r = .51$ in the combined sample). Desire to own and implicit creative product rating showed a weak to moderate correlation ($r = .25$) in the combined sample; in the Chinese sample it was much stronger ($r = .54$). Desire to own showed a strong positive correlation with the PCM scale in the combined sample ($r = .67$). Desire to own was also higher in the China group ($M = 6.59, SD = 1.73$) than in the U.S. group ($M = 4.83, SD = 2.5$).

PCM dimensions showed some differences across the U.S. and China as seen on Table 6. Affect showed a high correlation in both countries ($r = .98$ in the United States and $r = .97$ in China, $ps < .01$). On the contrary, novelty had a higher correlation in China ($r = .80$) than in the United States ($r = .21$). Novelty and importance were negatively correlated in the American sample ($r = -.25$). Affect showed a higher

correlation with novelty in the Chinese sample ($r = .68$) than in the American sample ($r = .05$).

Table 6

Correlation among Creativity Ratings on the U.S. (Upper Diagonal) and China (Lower Diagonal)

	1	2	3	4	5	6	7	8
1. Interest in chairs		.33**	.40**	.39**	-.09	.38**	.26**	.42**
2. Implicit Creativity	.45**		.22**	.26**	.26**	.31**	.14*	.23**
3. PCM Importance	.35**	.46**		.81**	-.25**	.81**	.24**	.79**
4. PCM Affect	.43**	.61**	.54**	□	.05	.98**	.08	.75**
5. PCM Novelty	.30**	.48**	.28**	.68**		.21**	-.27**	-
6. PCM Total	.44**	.63**	.56**	.98**	.81**		.05	.71**
7. Tol. for Ambiguity	.25**	.26**	.13*	.19**	.04	.16*		.26**
8. Desire to own	.50**	.55**	.46**	.24**	.61**	.29**		

CHAPTER V

DISCUSSION

This research had many questions and hypotheses to investigate; however, the two fundamental questions under investigation were:

- 1) Are there any differences in the way Chinese and American consumers assess creative products,
- 2) Is creativity of products positively correlated with desire to own?

Results of this study showed that the PCM scale (Horn & Salvendy, 2009) can be used to assess creative products across countries, and that such an instrument can be used to predict consumers' desire to own creative products. This chapter revisits the questions and hypotheses stated in Chapter II – and reported hereunder for the reader's convenience – and discusses associated results along four main frames:

1. PCM' (Horn & Salvendy, 2009) ability to measure creative products across countries and to predict desire to own at scale and subscale level (questions #1, 4, 5);
2. The relationship between implicit and explicit assessment of creative product measurements across cultures (question #2);
3. The relationship between individual (TOA) and cultural/country characteristics and their relationship with creative product measurement (questions #6 and 7); and
4. The role of surprise and interest in the assessment of creative products (questions #3 and 8).

A comparison of the findings of this research with existing literature will also be addressed. Limitations of this study, as well as implications for future research will conclude the chapter.

Interpretation of Results

The findings supported all of the hypotheses except Hypothesis #1, which was supported only for the Chinese group, but not for the U.S. sample.

The ability of PCM to Predict Desire to Own Across Cultures

PCM scale (Horn & Salvendy, 2009) can be reliably used by consumers to assess creative products across countries. PCM and subscales had good internal reliability ($\alpha = .66$ or above; in the importance subscale was the lowest value). In addition, higher values on the PCM scale was strongly and positively correlated with desire to own ($r = .61$ and $.71$ in the Chinese and the U.S. groups, respectively). Therefore, it can be stated that PCM scale can reliably predict consumers' intention to own a product across countries.

Interestingly, novelty was negatively correlated with desire to own in the U.S. sample, which showed the higher mean scores on novelty across the three chairs than the Chinese group. These findings suggest that the more a product is rated novel, the less desirable it is among U.S. consumers. The research findings contradict Rubera et al.'s (2011) findings in which novelty was strongly correlated with desire to own in the U.S. ($\beta_s = .76$ and $.77$, $p < .001$ in utilitarian and hedonic goods, respectively). Novelty in the U.S. sample was also negatively correlated with importance. When these two findings

are considered together, it can be argued that desirability of a product is associated with its importance rather than its novelty in the U.S. group. Actually, the latter might undermine the perception of the former for the U.S. sample. This finding is contrary to Salvendy's (2009) findings that novelty and affect contributed almost evenly to desire to buy in a U.S. population. One difference with the current study is that "surprising-unsurprising" pair was added to the novelty scale. Direct comparison can be made as this research did not perform any factorial analyses.

The above findings support Besemer (2000) who found novelty cannot predict desire to buy in the U.S.. The role of novelty in this research is also consistent with Paletz and Peng's (2008) cross-cultural research, who concluded that novelty was not predictive of desire to own among U.S. students. Such findings are also in line with customer value research (Holbrook, 1994; Spangenberg et al., 1997; Voss et al., 2003) according to which novelty is not the driver of desire to own. The negative correlation between novelty and desire to own in the U.S. group suggests reconsidering the proposed positive relationship among novelty, hedonism, and individualism by cross-cultural studies (Rubera et al., 2011). Another possible explanation is that novelty must also be *cool* to be attractive, as suggested by Im et al. (2015), at least in the U.S. culture. Novelty showed a moderate correlation with desire to own in the Chinese sample, suggesting that some novelty is needed for desire to own in this population. Maybe novelty plays the role of a prerequisite; that is, a condition that must be present, but is not in itself a driver of desire.

Affect, which overlaps with hedonic value in customer value literature, was strongly correlated with desire to own across countries. This finding confirmed the importance of positive emotions and arousal in desire to own, as reported by Horn and Salvendy (2009) and posited by Norman (2004). In China, affect was correlated with novelty, suggesting that both of them are important in a creative product. However, compared to other PCM indices, affect is the most important marker of the desire to own a product in China. In the United States, affect was clearly connected with importance ($r = .68$) but not with novelty ($r = .05$), and both affect and importance had strong correlations with desire to own. There was a significant relationship between Importance and affect; and importance and desire to own in the combined sample ($r_s = .69$ and $.64$, $p < .01$ respectively). Importance and novelty were negatively correlated in the U.S. sample ($r = -.25$, $p < .01$) whereas correlation was positive in the Chinese sample ($r = .28$, $p < .01$).

It can be concluded that hedonic (i.e., affect) value and utilitarian (i.e., importance) value almost equally contribute to desire to own in the United States; however novelty appears to be a negative factor toward desire to own. Value (i.e., hedonic-affect and utilitarian-importance) for the subjects showed to be more relevant than novelty in desire to own.

Such findings suggest reconsidering cross-cultural assumptions that describe China as a more utilitarian country and the United States as a hedonic one. Findings in China are supported also by McKinsey's (2011) research on Chinese consumer trends,

where it was clear that familiarity has become less important for Chinese consumers over time, and emotional considerations are fast becoming more and more important.

The Relationship between Implicit and Explicit Assessment of Creative Product Measurements across Cultures

The relationship between implicit and explicit measures of product creativity has not been examined in a cross-cultural design. The only existing cross-cultural research to date comparing China, the United States, and Japan, is Paletz and Peng's (2008) research and it based on implicit definitions. The findings of this research showed that the two measurement frameworks are positively and strongly related in China and moderately in the U.S. These findings suggest that the evaluations of creative product based on implicit conceptualization of creativity is consistent with explicit methods when PCM scale was used (Horn & Salvendy, 2009) among Chinese consumers. In addition, the three individual PCM subscales had a strong correlation with the whole scale in the Chinese group. In the American group, affect and importance subscales were strongly correlated with the whole scale, while the novelty subscale had a weak correlation. This might mean that the PCM scale can only partially embody the concept of creativity of the U.S. participants. Given the fact that PCM scale was created based on Western creativity literature, this finding is quite surprising. It is possible that the number of items is relatively smaller for accurately representing the construct for the U.S. group. Therefore, the inclusion of further items such as novel-old might improve the sensitivity of this scale.

Both American and Chinese consumers expressed higher mean values with implicit rating than with the PCM scale. However, different rating ranges were used in the two scales. Implicit rating measurement preceded Horn and Salvendy in all three chairs in both samples. The use of a random order might have helped to verify if the position of the question influenced the rating.

The Relationship between Individual TOA and Cultural Characteristics and their Relationship with PCM

Statistically significant differences in TOA were found between the two samples, and China had higher mean values than the United States. Therefore, Chinese consumers showed a higher TOA than the United States. As far as the relationship between novelty and TOA, they were negatively correlated in the U.S. sample. In other words high novelty seems to elicit lower TOA. In the Chinese sample there was no significant correlation between the two variables.

Findings regarding TOA are consistent with former research showing that China is more tolerant of uncertainty toward the future and pragmatic with regard to how to manage for uncertainty than the United States (Hofstede et al., 2010). This is also consistent with Nisbett et al. (2001) who reported that Chinese are likely to be more apt to manage contradictory situations because of social values, and also because of a different cognitive development (i.e., a dialectic way of thinking in the Chinese, and an either/or way of thinking in the United States).

The Role of Surprise and Interest in the Assessment of Creative Products

This research hypothesized that surprise would be positively correlated with novelty, affect, and importance but highest correlation would be between surprise and novelty (other two items in this scale). Analyses indicated that novelty and affect were positively and strongly correlated with surprise in the Chinese sample, while they were positively and moderately correlated in the U.S. sample. This finding supports Besemer's framework (Besemer, 1998; Besemer, 2006; Besemer & Treffinger, 1981) that adopted surprise as one of the CPSS factors for measuring novelty. Surprise had a weak but significant correlation with importance in China whereas the relationship was not significant in the United States. In the combined sample, surprise was positively correlated with stimulated, suggesting that surprise brings positive energy to creative products.

Interest, defined as knowledge and involvement, was investigated based on the expectation that it is positively correlated with importance and desire to own across countries. Results indicated that interest was indeed positively correlated with desire to own across countries, suggesting that the more one is interested in a product, the more he or she is likely to desire to own it. Interestingly, in the U.S. sample, interest was negatively correlated with novelty. Such an outcome could be explained by assuming that the more one is interested in a creative product, the more he is knowledgeable and competent, the less novel he tends to see the products. However, this explanation does not explain why interest and novelty show a positive moderate correlation in the Chinese sample.

It seems that the desire to own for those in the United States is associated with lower novelty, higher importance, and, subsequently high affect, while in China it is associated with moderate novelty, high affect and, subsequently high in importance.

Although the internal reliability of measures does not imply that they measure the same construct, this research provides the first empirical evidence that Chinese consumers' assessment of creativity is highly consistent with implicit and explicit measures. Therefore, implicit and explicit measures mostly overlap. This result suggests that both measures predict desire to own in China, and that the translated version the PCM scale can be used in cross-cultural research.

Limitations

Although many of the following methodological issues have been considered while planning the research, some decisions needed some compromise in terms of the resources needed. Results should be interpreted and used with these cautionary notes.

First, a pilot study that included interviews to collect stronger evidence of the PCM scale construct equivalence between the Chinese and American version could have been planned. This would have made the interpretation of the connection between the scale and the implicit measurement much stronger. Second, implicit measurement could have been made more sensitive by asking participants to list concepts they would associate to creative products. Cross-cultural studies in China and other far Eastern countries have investigated traits associated with creativity for people, but no research has elicited implicit definitions associated with creative products. Further empirical

studies are needed to clarify if there is any difference between creativity evaluation for people and products across cultures. Third, the order of the implicit and scale questions in the survey should have been randomized. However, there is no evidence to argue that the study results suffered from an order bias. Fourth, a more effective quality assurance of the survey technical aspects might have allowed for collection of data on income in China, which would have allowed demographic segmentations and more in depth cross-cultural investigations. Interest in chairs might have been more reliably investigated by asking questions that would confirm self-rating to manage for social desirability bias. In addition, as noticed by Horn and Salvendy (2009), chair presentation as 2D might have limited the effectiveness of product evaluation as 2D lacks interaction with the product, (i.e. as the assessment was mostly based on subjects watching the products, and a number of product features might have gone unnoticed). However, 2D images, are a typical format for web surveys.

Future Research

Now that there is empirical evidence that the PCM scale can be reliably used across China and the United States, further research is needed to provide more evidence of construct validity. Horn and Salvendy (2009) performed only an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) would add to the psychometric evidence substantially. This study could also help to improve the quality of the novelty subscale. This research dealt with highly new and creative products, and the PCM scale has demonstrated its ability to identify and measure them. A further study including less

novel chairs should be considered to confirm that PCM scale generalizes also to less novel products, as done by Besemer and O'Quin (1999).

Other product categories should also be tested in order to have empirical data to support the use of PCM scale across product domains. In particular, less expensive goods should be considered to account for different price and product involvement levels. It might be possible that novelty is more relevant in products that produce lower interest/involvement (i.e., tooth brushes) and value (i.e., affect and importance) in products that show higher interest/involvement (i.e., design chairs). It would also be interesting to investigate if there is a threshold of novelty that makes a new product desirable in China and in the United States.

More robust cross-cultural research should be conducted in China and direct measures of cultural characteristics collected during the study going beyond the indirect approach used in this study. Extensions in other countries and cultures should be considered. In particular, studies with at least three countries should be performed (Paletz & Peng, 2008). Cognitivist approaches could be integrated as they might develop interesting hypotheses to be tested, in particular regarding *elective identities* (Arnett, 2002); that is, cultural identities that consumers can self-define by selecting cultural elements from global identities. Such a perspective could result in a potentially very heterogeneous national culture. This could also bring about a very heterogeneous creative product concept within and across countries, an instance that would definitely impact the requirements of creative product measurement instruments.

The connection between novelty and surprise and optimal arousal level should be investigated to understand if their relationship may be explained by a U-shaped (or inversed U-shaped) curve instead of by a linear relationship (Steenkamp & Gielens, 2003). A further investigation of Im et al.'s (2015) findings regarding the moderating role of "coolness" in desirability of novel products could lead to interesting findings.

A stronger conceptualization of how product creativity is defined and assessed, as well as what are the mechanisms that connect the assessment of creativity in product and desire to own, is highly needed. In addition, to really be of interest for the business world, new creative product research should also show if and how desire to own translates into purchasing decisions as well as repurchasing over time.

Conclusions

Novelty is correlated with in creativity in products and desire to own in China but novelty is not correlated with desire town in the U.S. The findings of this research contribute to a deeper understanding of the role of novelty in the field of creative product evaluation and suggests need to reconsider it in cross-culture research. Thanks to this research, we also know that desire to own new creative products in China is correlated with affect and novelty, while affect and importance are the drivers in the U.S. A positive correlation between surprise and novelty and affect across cultures has also been established.

Thanks to this research, we know more on consumer product creativity assessment across countries and have some reliable instruments. In addition, the

framework and methods developed in this research provide easy, practical, and affordable instruments to test creative products and consumer desire to own them. As consumer population allows for generalizability, the results of this study provide a framework with those in the field of marketing and with those who work on new product development for testing the potential success of new creative products in the East and in the West. Further studies are needed to clarify how and why desire to own creative products develops and how it correlates with action.

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Appendix A

Consent to Participate

Assessment of products in the US and China

Hello: You are invited to participate into the survey titled Consumer Assessment of Products in China and the US. It will take about 20 minutes to complete. This study aims to reveal cross cultural differences in the evaluation of products. In this survey, approximately 500 people will rate their opinions on three products; the survey aims at verifying if there are any differences in how products are assessed in the two countries. Your participation in this study is completely voluntary. This is a typical consumer attitude survey, and there are no foreseeable risks associated with it. Your identity will not be disclosed to third parties and your data will be treated as confidential. Should you decide to withdraw from the survey at any point, just click on the close (x) in the upper right part of the screen; any data provided to that point will not be stored.

If you agree to participate, please select "I Agree"

- I agree
- I don't agree

 ▾

Appendix B

Self-Report 13-Item Questionnaire

Section 1- approximately 5' to complete

Please, rate how the following statements describe you best:

1 = Not like me at all
5 = Very much like me

I don't tolerate ambiguous situations well*

1 2 3 4 5

Not at all like me Very much like me

I would rather avoid solving a problem that must be viewed from several different perspectives*

1 2 3 4 5

Not at all like me Very much like me

I try to avoid situations that are ambiguous*

1 2 3 4 5

Not at all like me Very much like me

I prefer familiar situations to new ones*

1 2 3 4 5

Not at all like me Very much like me

Problems that cannot be considered from just one point of view are a little threatening*

1 2 3 4 5

Not at all like me Very much like me

I avoid situations that are too complicated for me to easily understand*

1 2 3 4 5

Not at all like me Very much like me

I am tolerant of ambiguous situations*

1 2 3 4 5

Not at all like me Very much like me

I enjoy tackling problems that are complex enough to be ambiguous*

1 2 3 4 5

Not at all like me Very much like me

I try to avoid problems that don't seem to have only the "best" solution*

1 2 3 4 5

Not at all like me Very much like me

I generally prefer novelty over familiarity*

1 2 3 4 5

Not at all like me Very much like me

I dislike ambiguous situations*

1 2 3 4 5

Not at all like me Very much like me

I find it hard to make a choice when the outcome is uncertain*

1 2 3 4 5

Not at all like me Very much like me

I prefer a situation in which there is some ambiguity*

1 2 3 4 5

Not at all like me Very much like me

Appendix C

Creative Product Measurement

Section 2 - approximately 10' to complete

You will be presented with three chairs, one at a time, and will be asked to rate your opinion regarding EACH OF them

Section 2 - CHAIR N. 1



Rate the creativity of this chair*

1 2 3 4 5 6 7 8 9 10

Very uncreative Very creative

Rate this chair on the following 14 pairs of adjectives *

Tick the space that best describes your opinion

1 2 3 4 5 6 7

Rare Standard

*

1 2 3 4 5 6 7

Stimulated Irritated

*

1 2 3 4 5 6 7

Horrified Delighted

1 2 3 4 5 6 7

Attractive Unattractive

*

1 2 3 4 5 6 7

Infrequent Frequent

*

1 2 3 4 5 6 7

Unsuitable Ideal

*

1 2 3 4 5 6 7

Appealed Revolted

*

1 2 3 4 5 6 7

Appendix D
Demographic Questions

Section 3 - Personal Data - approximately 3' to complete

In this section we require you to provide some personal data, after which the survey will be completed!

Date of Birth*

Month ▼	Day ▼	2015 ▼	31
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Gender*

- Male
 Female

Education Level*

Please, select the highest you have achieved

Region or State of Residence

Please, digit the region or state name

City of Residence

Please, digit the city name

Country of Residence*

Gross Yearly Income - FOR CHINESE RESIDENTS*

Please, select your income range

- No income
 < 14.000 yuan
 14.001 to 16.000 yuan
 16.001 to 20.000 yuan
 20.001 to 30.000 yuan
 30.001 to 40.000 yuan
 40.001 to 50.000 yuan
 > than 50.0001 yuan
 I don't want to share

Appendix E

IRB Approval Letter

February 18, 2015

Eva Teruzzi
c/o Dr. Selcuk Acar
CHAS 239

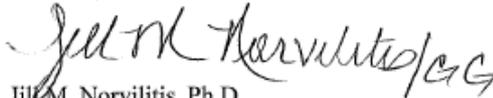
Dear Ms. Teruzzi:

The Institutional Review Board has reviewed and approved your study titled, "Consumer Assessment of Creative Products in the US and China." Attached is a copy of the signed IRB approval sheet for your records. Approval is granted from February 18, 2015, to February 17, 2016, and it has been assigned Protocol #1330. If you do not complete your study by this date, you will need to request a continuation from the IRB.

Please note that it is your responsibility to notify the Board in advance and obtain IRB approval should you make any substantive changes in the study. In addition, it is your responsibility to provide the Board with a report summarizing the results of your study within 90 days of the completion of the study.

If you have any questions, please feel free to contact Gina Game, IRB Administrator, at 716-878-6700 or gameg@buffalostate.edu. Thank you for submitting to the Buffalo State College's IRB and good luck with your research!

Sincerely,



Jill M. Norvilitis, Ph.D.
Institutional Review Board Chair

JMN:gg