Culture and Creativity:
Understanding the Role of
Uncertainty Avoidance and Multicultural Experience

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Research on culture and creativity has shown cultural differences in creative performance among Western and Eastern individuals such that Westerners consistently outperform Easterners on certain creative tasks. Theorists have postulated that such differences are due to the existence of two separate aspects of creativity: novel and practical creativity. Cultures do not emphasise the two different aspects of creativity equally – Westerners place more importance on novelty while Easterners place more importance on practicality. Previous research examining culture and creativity has mainly focused on the novelty aspect of creativity, an aspect of creativity that is mostly emphasized in the West; thus, partially addressing the culture-based creative performance differences. However, we lack empirical research examining specific mechanisms that explain cultural differences in the conceptualization of creativity as well as creative outcomes. The current dissertation first investigates factors that explain the cultural variations in the conceptualization of creativity and creative performance, and then tests the role of multicultural experience as a factor that will help to reduce the noted performance difference.

Study 1 examines the relationship between culture and preferences placed on novelty versus practicality in the conceptualization of creativity as well as the amount of evaluation focus given across Asian Canadian (Eastern) and Caucasian Canadian (Western) samples. Study 1 also tests the mediating role of three specific cultural values (individualism/collectivism, power distance, and uncertainty avoidance). Study 2 replicates results from Study 1 and examines the moderating role of multicultural experience on explicit attitudes toward novel and practical creativity and the ability to recognize creative ideas between Western and Eastern cultures. Study 3 extends results of Study 2 by examining the impact of multicultural experience on novel

creativity in terms of idea generation in a native Chinese sample living in China. Study 4 examines the causal effect of multicultural experience on creative evaluation focus and the ability to recognize creative ideas between both cultures by experimentally manipulating multicultural experience.

Consistent with previous research, results show that Asian Canadian individuals held a stronger preference towards idea practicality than Caucasian Canadian individuals and Caucasian Canadian individuals held a stronger preference towards idea novelty than Asian Canadians. Uncertainty avoidance explained the underlying relationship between culture and creativity such that high levels of uncertainty avoidance led to less preference towards idea novelty. Similar to findings from Study 1, Study 2 found that uncertainty avoidance mediated the relationship between culture and explicit attitudes towards novelty creativity. It was also shown that multicultural experience boosted the explicit attitudes toward novelty for Asian Canadian participants. The beneficial effects of multicultural experience were generalized in Study 3 where participants with more exposure to different cultures generated more novel ideas. Finally, it was shown in Study 4 that experimentally manipulated multicultural experience affected both Asian Canadian and Caucasian Canadian participants' evaluation focus such that participants focused more on the aspect of creativity that is less emphasized in their native culture. In an exploratory analysis, it was found that multicultural experience enhanced novel creativity especially for those with high uncertainty avoidance. Overall, findings provide tangible recommendations for creativity and innovation in a globalized world.

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Dedication

To my friends and family

Philippians 2:13

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CHAPTER 1

INTRODUCTION

Recently, a total of 22 fake Chinese Apple stores were uncovered in one Chinese city. Not only have the store owners created replicas of Apple products such as iPhones and iPads, they have also done so with the entire shopping experience at Apple. In fact, these stores imitated the design and ambience of real Apple stores so well that even its employees were not aware of the fact they were working for a fake company. As a result of this unique ability to imitate almost anything, many Western business scholars contend that the Chinese must lack creativity. For example, they have written pieces such as "*Why China Can't Innovate*" (Abrami, Kirby, & McFarlan, 2014) published in Harvard Business Review and "*China Makes Everything. Why Can't It Create Anything*" in TIME magazine (Schuman & Chengcheng, 2013). These articles stirred a great deal of discussion on the topic of culture and creativity. Some argue that it is only a matter of time for China to rise up as an innovation game changer; after all, historical evidence credits the Chinese for several noteworthy inventions such as the compass, paper money, and gunpowder. However, many others believe that China is no longer the home of creative business innovations despite its enviable position as the 3rd largest R&D spender and its growing capabilities and financial resources (Ito, Iwata, McKenzie, Noland, & Urata, 2014). The present research calls into question the universality of the assumption that people from different cultures have similar conceptualization of creativity. Can we assume that what is considered creative in one culture is also considered creative in another? And is it fair to say that people from certain cultures lack creativity? In order to tackle these questions, in the present dissertation, I seek to answer three key research questions: 1) does the conceptualization of creativity differ by culture?

2) Are there factors that explain these cross-cultural differences? 3) What are potential factors that will suspend or reverse these cross-cultural differences? Ultimately, I will argue that cultures differ on their conceptualization and evaluation of creativity, and this cross-cultural difference can be explained by cultural values that differ based on culture. However, being exposed to foreign cultures that are different from one's own will mitigate these differences by freeing individuals to better recognize and express aspects of creativity that is not normative in their own culture.

Experts have suggested several potential reasons for the lack of innovation in China: 1) an imbalance of engineers to designers, 2) the unprecedented scale of copyright infringements imitating products from the West, and 3) the rigid education system that heavily stresses rule-based learning. One can find merit in all of these postulations; however, these reasons do not tell the entire story if China's seemingly lack of innovation stems from its culture rather than its structure and systems. Perhaps an overlooked factor concerning the level of innovation performance between China compared to other countries is that innovation stems from creativity, and cross-cultural researchers have uncovered significant differences in the conceptualization of creativity in Eastern versus Western cultures.

Organizational innovation can be attributed to two aspects of creativity: a) novel creativity encompassing fundamental breakthroughs that generate headlines and win Nobel Prizes, and b) practical creativity encompassing improvement focused ideas that turn breakthroughs into affordable services and products. Scholars define creativity as the production of both novel and practical ideas and solutions (Amabile, 1996; Woodman, Sawyer, & Griffin, 1999). These two aspects of creativity are additive, such that an idea that is both novel and practical is more creative than a novel idea or a practical idea (Amabile, 1996). National culture

is inextricably linked to emphases on these two different aspects of creativity, as East Asian corporations tend to focus more on practical creative endeavours (Herbig & Palumbo, 1996). In light of the fact that our global economy is shifting from the Industrial to the Creative Age that is distinguished by the rise of a creative class engaging in skilled knowledge work (Florida, 2012), the impact of culture on the two different types of creativity warrants a closer examination.

Novelty refers to idea characteristics that are uncommon, new, and original; for example, consider the works of Pablo Picasso who reinvented the conventions of painting. Practicality refers to characteristics that are useful, plausible, and appropriate; for example, an actionable idea that improves a product (Amabile, 1996). A distinct focus on novelty versus practicality may arise from ingrained cultural differences in values that are upheld by East Asian cultures such as collectivism, high power distance, and high uncertainty avoidance (Hofstede, 1980). Certainly, both Westerners and East Asians alike value creative ideas and solutions that are both novel and practical. The desire to create something new and useful is universal as creativity helps meet the basic human need for exploration (Kashdan, Rose, & Fincham, 2004), variety (Kim & Drolet, 2003), and uniqueness (Brewer & Gardner, 1996). Additionally, creativity as a general concept is perceived positively across cultures (Paletz & Peng, 2008; Westwood & Low, 2003). Even so, these universal values for novelty and practicality may not be fulfilled or recognized equally across cultures due to cultural constrains such as the need to conform (in the East) or appear unique in a group (in the West).

A key to sustainable prosperity lies in investing and unleashing creative performance that incorporates both types of creativity to drive novel *as well as* practical business solutions that contribute to organizational competitive advantages and long-term success (Amabile, 2010; Shalley, 1995). This dissertation asks how culture impacts the two aspects of creativity and what

factors may influence individuals to focus on the aspect of creativity that is not normative in their native culture. Towards this goal, I review the research literature to identify culture-based creative performance differences, and propose factors that may explain and reduce this difference. Across four studies I empirically establish the East-West creative performance difference, identify uncertainty avoidance as a mediating mechanism, and find that individuals' level of multicultural experience can help diminish the creative performance difference.

First, I review literature showing systematic cultural differences in creative performances such that Westerners[1] consistently outperform East Asians[2] on the novelty aspect of creativity (Ng, 2001), an effect that extends to bicultural Chinese-Americans who are primed with an American versus East Asian cultural mindset (Mok & Morris, 2010). Specifically, under an experimental condition, bicultural participants outperformed those in a control condition on divergent thinking tasks by generating more novel solutions. Although scholars have offered several theoretical explanations for why East Asians tend to underperform in the novelty aspect of creativity (e.g., cultural values, social norms, and information acquisition strategies), a review

[1] "Westerners" refers to individuals who were born in and identify with a Western culture with a European heritage, for example: Germans and Caucasian Canadians. "Westerners" will be used to describe previous studies on culture and creativity. The term Caucasian Canadians will be used to describe the particular samples in the present studies.

[2] "East Asians" refers individuals who were born in and identify with an East Asian culture that has been largely influenced by the Chinese culture, for example: Chinese and Asian Canadians. "East Asians" will be used to describe previous studies on culture and creativity. The term Asian Canadians will be used to describe the particular samples in the present studies.

of the literature does not offer empirical evidence demonstrating the psychological mechanism responsible for such differences (Erez & Nouri, 2010). I, therefore, investigate how different cultures, namely Caucasian Canadians, representing a prototypical Western culture, and Asian Canadians, representing a prototypical East Asian culture, view the concept of creativity and examine the underlying mechanism explaining cultural preferences for novelty vs. practicality.

Second, given the culturally based differences in creative performance, I examine what factors might help narrow this creative performance difference. Current advancements in the area of cognition have illuminated the creative advantages of exposing and immersing oneself in different cultures (e.g., Leung & Chiu, 2010; Tadmor, Galinsky, & Maddux, 2012; Tadmor, Satterstrom, Jang, & Polzer, 2012). Studies have found that Multicultural Experience (MCE), defined as "all direct and indirect experiences of encountering or interacting with the elements and/or members of foreign cultures," can greatly enhance one's level of creativity, typically assessed by the demonstration of insight and the production of divergent ideas (Leung & Chiu, 2010). However, this prior work has not examined the effects of MCE on pre-existing cultural preferences for creativity, nor has it examined the novelty and practicality dimensions separately. Differential effects of MCE on an overall measure of creativity are relevant and important because a creative idea is both novel and practical. However, given the different preferences, conceptualization, and expression of creativity between the East and West, I extend this prior literature by investigating the impact of MCE on the two aspects of creativity among Asian Canadian and Caucasian Canadian individuals.

In particular, I expect to find that Asian Canadians will emphasize practicality rather than novelty. On the other hand, Caucasian Canadians will emphasize novelty rather than practicality. Across four studies, I use different methods to examine the interplay between culture and two

main constructs of creativity: 1) Conceptualization of creativity (operationalized as the definition of creativity and explicit attitudes toward creativity) and 2) Evaluation of creativity (operationalized as *evaluation focus* placed on creativity and *evaluation ratings* of creative ideas) .I also provide the first empirical test of three potential mediators of the culture-creativity link: individualism/collectivism, power distance, and uncertainty avoidance, previously proposed by Erez and Nour (2010). Lastly, I use multiple methods to assess whether individuals' exposure to different cultures (Pearsall, Ellis, & Evans, 2008) and experimentally manipulated multicultural experience (Tadmor et al., 2012) will lead Asian Canadian individuals to focus more on the novel aspect of creativity and Caucasian Canadian individuals to focus more on the practical aspect of creativity.

In order to accomplish these research goals, four studies were conducted. In Study 1, I tested both the relationship between culture and preferences placed on novelty/practicality and the role of three specific cultural values in a multiple mediation model with a sample of Caucasian Canadian and Asian Canadian students studying in Canada. In Study 2, I replicated findings from Study 1 with another sample of Caucasian Canadian and Asian Canadian students in Canada, and examined the role of MCE on a related but new criterion variable: explicit attitudes toward novelty and practicality. In Study 3, I tested whether the effects of MCE uncovered in Study 2 generalize in a sample of native Chinese students residing in mainland China to bolster the validity of my culture arguments. Finally, in Study 4, I experimentally manipulated MCE in the laboratory to investigate its causal effect on the ability to recognize novel and practical creative ideas for both Asian Canadian and Caucasian Canadian participants living in Canada.

To present my dissertation, I begin by reviewing the literature detailing cultural differences in creativity. Next, I build upon this existing literature to explicate hypotheses for the present investigations. Then I present the four studies described above, which are designed to test theoretically derived hypotheses on the relationship between culture, cultural values, multicultural experience, and two aspects of creativity. Finally, I conclude with a discussion of theoretical and practical implications of my dissertation for the culture and creativity literature as well as the global business market.

CHAPTER 2

LITERATURE REVIEW

The Crucial Role of Creativity in Today's Organizations

The global economy is currently undergoing a massive structural shift that is on par with the transformation from the Agricultural to the Industrial age (Florida, 2012). Having recognized the importance of creativity and innovation for organizational survival, researchers are devoting an increasing amount of attention to the determinants of creative behaviour at work (Shalley, Zhou, & Oldham, 2004). Scholars and practitioners alike hold creativity and innovation as critical factors for high-performing individuals, teams, and organizations (Amabile, 1996; James, Clark & Cropanzano, 1999; George & Zhou, 2001). Creativity is defined as the generation of both novel and practical ideas and solutions (Amabile, 1996) and innovation is defined as the implementation of creative ideas (Van de Ven, 1986), which will be elaborated below. In fact, a recent study conducted by IBM Institute for Business Value using a sample of 1,542 CEOs, general managers, and senior public sector leaders representing 33 industries in 60 different countries indicated that "creativity" was deemed the most crucial factor for success (Berman, 2010).

This finding is not surprising in light of today's volatile, uncertain, complex, and ambiguous business environment. Such harsh business environments require rapid identification of new opportunities to generate innovative ideas that serve as the basis for new ventures. As such, high performing organizations must leverage creativity and innovation as one of the key factors in establishing a competitive advantage that promotes organizational success (Hennessey & Amabile, 2010; Shalley, 1995). Similarly, creative ideas are highly desired in the academic

realm as they are seen as the engine for scientific discovery (Hennessey & Amabile, 2010) as scholars strive to make new discoveries, produce, and publish novel work to contribute to their field. Before examining predictors of creativity, which is a valued and necessary component in these fields and many others (e.g., art, music, architecture, city planning), it is important for us to understand what exactly is creativity. In the current literature review, I will first define creativity and culture, and I will present findings from exiting research in the area of culture and creativity. Second, I will discuss cultural values that may explain cross-cultural differences in the conceptualization and evaluation of creativity. Next, I will define MCE and present findings regarding its impact on creativity. Finally, I will present my hypotheses.

Defining Creativity

A proliferating amount of research in psychology has greatly advanced our understanding of creativity. The current research defines creativity as "the production of novel and practical ideas in any domain" (Amabile, 1996). Creativity can be a quality of person, process, or product (Amabile, 2006). First, creativity can reside in a person, as investigated by examining and comparing profiles of creative geniuses versus the general public (Barron & Harrington, 1981; Feist, 1998). Second, the process in which an idea is generated or a problem is solved can also be considered creative. These processes can be examined by considering cognitive and motivational processes that boost or hinder creative work by individuals and groups (Erez &Nouri, 2010; Mok & Morris, 2010). Finally, products or services can be more or less creative, as creativity can be the quality of a product. Typically, the study of creative production is examined by investigating reasons why certain products or services are evaluated as more creative than others (Simonton, 2003; Simonton & Ting, 2010). Across these contexts of individual creative ability, creative thought processes, and creative product characteristics, creativity comprises aspects of both

novelty and practicality (Amabile, 1996). In other words, a creative individual is someone who is able to think in novel and practical directions to develop ideas, and products are considered creative when they are both novel and practical. Specifically, novelty refers to the part of creativity that emphasizes newness, and practicality refers to the part of creativity that emphasizes feasibility.

The desire to create something new and practical is universal, as creativity results from the basic human need for exploration, variety, and uniqueness (Brewer & Gardner, 1996, Kashdan, Rose, & Fincham, 2004). In general, researchers agree that both novelty and practicality are necessary for an individual, idea, or process to be classified as creative. However, different skills and resources may be required to generate novel vs. practical creativity. Novelty usually requires the ability to "think outside the box" and engage in divergent thinking, for example, brainstorming different ideas as a way to solve a problem. In contrast, practicality requires the ability to focus and examine the feasibility of an idea by engaging in convergent thinking, for example narrowing down on ideas that will be most suitable for implementation (Cropley, 2006; Csikszentmihalyi, 1997; McCrae, 1987).

Historically, researchers have focused mainly on individual differences that predict creativity in a person (i.e., personality traits). For example, studies have employed the Torrance Test of Creative Thinking (TTCT; Torrance 1966/1974), a creativity test involving simple tests of divergent thinking and other problem-solving skills, for more than four decades. In fact, such tests continue to be widely used in the field of individual creativity. This field of research has greatly contributed to our understanding by examining the relationship between creativity and individual's background, level of intelligence, personality, and work styles (Aguilar-Alonson, 1996; Silvia, 2008; Oldham & Cummings, 1996). Despite the wide acclaim accorded to the

study of individual creativity using a person-focused approach, it has received criticism as it does not help us understand how to improve creativity. For example, studies have found that individuals with creative ability also tend to be more open to new experiences and score higher on intelligence tests; however, these stable individual characteristics are not easily changed in order to improve one's creative performance (Mayer, 1999). In addition, this line of research does not take account of social and environmental aspects that influence creativity (Amabile, 1996). For example, a highly relevant source of social influence arises from one's national culture.

Defining Culture

Anthropologists Hall and Hall (1969) described culture as a system for creating, sending, storing, and processing information. Another classic definition as discussed by Hofstede is that culture is "the collective programming of the mind which distinguishes the members of one group from another" (Hofstede, 1984). In the current investigation, I will examine culture in terms of characteristics that distinguish one society from another (e.g., East Asian culture vs. North American culture). While cultural boundaries between societies are increasingly becoming more "fuzzy" due to globalization and economic integration (Fukuyama, 1995), and significantly distinct subgroups may exist within the same geographically defined nation, culture nevertheless defines a distinct character of a social group which creates and reinforces norms and values that reside within geographical boundaries (Brett, Tinsley, Janssens, Barsness, & Lytle, 1997). Culture thus describes a large number of people conditioned by a similar background, education system, and life experiences. Note that culture is not merely defined as a set of values and norms; however, I will focus on how cultural values shared by a group of people may influence the conceptualization and evaluation of creativity.

Creativity through the Lens of Culture

Even with what we know about creativity, there is a gap in the literature as there has not been a lot of work done in the area of culture and creativity. In fact, in the *Handbook of Organizational Creativity*, Zhou and Shalley (2008) observed "A striking omission" from existing volume of work on the topic of culture and creativity. This is perhaps because research on culture and creativity has only recently emerged as a topic of interest (Erez & Nouri, 2010; Chiu, Kwan, 2010; De Dreu, 2010; Hempel & Sue-Chan, 2010; Morris, Leung, 2010). Historically, up until the 1960s, world civilization was considered to have started in the Middle East and Mediterranean. However, pioneering scholars such as Needham discovered that many of the most notable achievements in science and technology actually originated from China in the East (Needham, 1980). In fact, the Chinese are credited with four great inventions: gunpowder, paper, printing, and the compass. Despite China's claim to some of the greatest innovations in modern civilization, systematic differences in the creative performances of Eastern and Western individuals have led some to claim that today China has lost its creative edge. While creativity is defined by both novelty and practicality, researchers have found that Westerners consistently outperform Easterners on the novelty domain (Ng, 2001, Ng & Rudowicz, 2003). The difference in the execution of creativity is so apparent between Eastern and Western cultures that some scholars have suggested that Asians lack creativity altogether (Ng & Rudowicz, 2003). Where, then, do these differences in creativity stem from? Rather than arguing for an inherent cultural difference in creative ability or creative processes, researchers have proposed that cultural differences in creativity lay in the conceptualization of creativity. If indeed creativity is conceptualized quite differently across cultures, differences in creative

ability, processes, and performance can be attributed to culture's influence on the relative weight accorded to novelty versus practicality when defining or understanding this construct.

Before exploring how creativity is conceptualized differently across cultures, we must clearly define the two aspects of creativity – novelty and practicality, as they apply to individual ability, thought processes, production, and recognition of creative ideas. As noted above, novelty refers to characteristics of thought processes and products that are uncommon, new, and original; whereas practicality refers to characteristics of thought processes and products that are useful, plausible, and appropriate (Amabile, 1996). Truly creative ideas should be high on both measures of novelty and practicality (Hennessey & Amabile, 2010), as should truly creative individuals and thought processes. This is because ideas that are new but not useful do not make sense or cannot be implemented as an actual product – they are too *bizarre*. On the other hand, ideas that are useful but lack novelty will not add further value to existing solutions – they are too *mundane*. Thus, creativity is a paradox because on the one hand, convergent thinking and attention to detail are required for practicality. At the same time, novelty requires divergent thinking and cognitive breakthrough. Often, this paradox creates a trade-off between the two such that focusing only on novelty means ignoring practical concerns, and focusing on practicality limits innovators' ability to come up with novel ideas. As a result, true creativity should incorporate both novelty and practicality by balancing the trade-off between the two dimensions (Amabile, 1996).

There is cross-cultural agreement that creativity is useful, satisfactory, and appropriate; however, the novelty aspect of creativity emphasized in the West is not always shared in the East (Morris & Leung, 2010). As noted by Morris and Leung (2010), the East Asian cultures value practicality more than novelty, whereas Western cultures value novelty more than practicality.

An example that illustrates this contrast is that Chinese and Westerners are equally advanced in mathematics, but there is little-to-no record of theorems or proofs in China, suggesting that Chinese focused less on the abstract aspect of theory building (Lloyd, 1991), and more on the practicality of mathematical knowledge.

Corroborating results from the above discussion, Mok and Morris (2010) examined the effect of cultural context on creativity among a group of Asian-American biculturals. The authors define biculturals as individuals who identifies with two cultures and can assimilate to norms of either culture based on situational cues. Using a standard priming method, participants were exposed to either Chinese or American cultural images, for example an image of the Chinese flag, to prime their Chinese or American mindset, respectively, just before they completed a divergent thinking task. Participants were asked to name one example of an object belonging to specific categories (e.g., fruit) and each example was coded as "novel" if it constituted less than 10 percent of all examples mentioned for each category. The study found that integrated biculturals (those who are able to identify with both Asian and American cultures and see them as compatible) were able to shift their creative style in response to the type of cultural images presented to them. Specifically, biculturals exposed to American cultural cues generated more novel solutions than those exposed to Asian cultural cues. Findings of this study imply that cultural cues can elicit culturally congruent responses. Although the study did not measure practicality (most likely due to the nature of the task); a logical inference would be that those biculturals primed with Asian cultural cues would be more likely to generate practical solutions.

In the current research, I expect to find similar patterns such that Caucasian Canadians will conceptualize creativity more in terms of novelty than practicality. In addition, I extend this

prior research by predicting that Asian Canadians will conceptualize creativity more in terms of practicality than novelty. Further, I propose these systematic differences between Caucasian Canadians and Asian Canadians will be evident in the conceptualization of creativity (how individuals define creativity and their explicit attitudes toward creativity),thought processes (what individuals evaluate as creative), and idea generation (individuals' final outcome of ideas produced). These measures will tap into the different aspects of creativity mentioned earlier; creativity can exist in the person, process, and product (Amabile, 1996). It is also important to address these separate but related creativity measures because creative idea production requires both: 1) recognizing a creative idea, and then 2) evaluating and implementing the idea to generate desired business outcomes (Lubart, 2010). The process of idea recognition often leads to a "eureka" experience, this is the moment of recognition that pushes thought processes forward to generate an idea or solution. Such ideas are then evaluated before an outcome is finalized. If the idea is not evaluated as sufficiently creative, then creative thought processes continue until another idea is recognized. The process is iterative in nature, which makes the aspects of creative production, recognition, and evaluation, integral and tightly related to the final creative outcome (Lubart, 2010).

In addition, recognizing creativity is a crucial component in the process of advancing, developing, and implementing creative ideas. The task of recognizing creative ideas often falls to idea evaluators for example: 1) business decision-makers who decide whether an idea/product/service gets implemented, 2) government gate-keepers who decide which scientific proposal will be granted funding, 3) venture capitalists who decide which ideas are worth investment. If decision makers do not recognize the importance of a creative domain (e.g., novelty) they will be less likely to evaluate a novel idea as being creative, and likewise, if

decision makers recognize the importance of novelty, they will be more likely to rate a novel idea as being creative.

Thus, I expect that the pattern of cultural differences in emphasis placed on novelty versus practicality will be evident in 1) how individuals conceptualize creativity (operationalized as the *percent distribution* accorded to novelty vs practicality when defining creativity and *explicit attitudes toward* novelty/practicality) and 2) individual's evaluation of creativity (operationalized as *evaluation ratings* and *evaluation focus* placed upon novelty/practicality).

Hypothesis 1a: Conceptualization of creativity will differ by culture such that Asian Canadian participants will assign greater importance towards idea practicality than idea novelty, whereas Caucasian Canadian participants will assign greater importance towards idea novelty than idea practicality.

Hypothesis 1b: Evaluation of creativity (focus and ratings) will differ by culture such that: Asian Canadian participants will focus more on idea practicality than idea novelty, whereas Caucasian Canadian participants will focus more on idea novelty than idea practicality.

While the existing literature offers suggestions about factors that predict cultural preferences for creativity, no literature empirically examines the mediating mechanism explaining why certain cultures prefer one aspect of creativity over the other, that is, novelty vs. practicality. It has been postulated that factors such as cultural values affect whether different aspects of creativity are rejected or accepted in a culture (Erez & Nouri, 2010). Cultural differences in the emphasis placed on novelty and practicality can be explained by values that differ in the East and West. Next, I will examine the role of cultural values as a mediator through which culture affects an emphasis on novel versus practical creativity.

Cultural Values Affecting Creativity

Morris and Leung (2010) explicitly argued that contrary to popular belief, culture itself does not shape an individual's creative behaviour by imprinting fixed mindsets, talents, and world views. Instead, creativity resides in the shared norms in different cultures, which are determined by cultural values that individuals share within the same culture. Thus, they have proposed a focus on social norms and values as well as situation-dependent motives when examining the relationship between culture and creativity.

Theories of cultural values have been used to explain and compare how the meaning of life and work differ across individuals from varied cultures (e.g., Inglehart, 1977; Triandis, 1990). Schwartz (1999) has defined values as conceptions of the desirable that guide the way social actors (e.g., leaders, policy-makers, individuals) select actions, evaluate people and events, and explain their actions and evaluations (cf. Kluckhohn, 1951; Rokeach, 1973; Schwartz, 1992). In this view, cultural values can transpire across various situations and they represent implicit or explicit ideas shared within a society about what is good and important (Williams, 1970). Cultural values are the basis for norms that instruct what is appropriate in different situations. For example, in societies where individualism, a belief in the importance of the individual and the virtue of self-reliance and personal independence, is valued, the organization of the economic and legal systems is likely to be competitive (Rokeach, 1973). In contrast, cultures that value collectivism, a belief in the importance of the group and virtues of group interdependence, will likely have a more cooperative economic and legal system (Rokeach, 1973). In sum, cultural values represent societal and cultural demands, which then determine priorities placed on various needs in different cultures.

In the current discussion, cultural values have significant implications in the context of culture and creativity. Traditionally, economists argue that national differences in innovativeness and creativity are the result of industrial structure, societal wealth, and research and development infrastructure (Nelson, 1993). While previous studies have identified societies that are more innovative or inventive than others, these studies have not explained reasons why values prevalent in certain societies may influence the innovation process. I propose cultural values as a mechanism linking culture to creativity because values represent concepts and beliefs about desirable behaviours that guide the selection and evaluation of behaviour and events (Schwartz & Bilsk, 1987). Cultural values reflect underlying emphases about what is appropriate in a given culture and people may respond to the creative problem solving process by prioritizing certain values and sacrificing others. For example, to be novel creative, people must break existing frames and use divergent thinking to create new associations between existing ideas (Guilford, 1967), a behaviour that is closely related to the cultural value of individualism. In contrast, to be practical creative, people should make sure that an idea is useful and feasible and focus on convergent thinking and closely adhering to existing rules, behaviours that are closely related to the cultural value collectivism. Thus, cultural values are manifested and expressed in desired creative outcomes.

Erez and Nouri (2010) have identified three cultural values that may be particularly relevant to the outcomes of creativity: collectivism, power distance, and uncertainty avoidance. The authors developed a conceptual framework specifying the relationship between these three cultural values, social and task contexts, and the two creativity aspects (novelty and practicality). The first part of their model proposes that the three cultural values will affect the two aspects of creativity such that higher scores on these three values (more collectivistic, high power distance,

and high uncertainty avoidance) will lead to stronger preferences for practicality than novelty. Cultures also differ in other values such as masculinity/femininity or long term orientation; however, these three particular values were identified in the model based on support from the existing literature regarding their potential association with creative outcomes. The second part of the model proposes that social (whether working alone versus in the presence of others) and task (well defined versus ill-defined tasks) will moderate the effects of cultural values on the two aspects of creativity[3]. More specifically, the model suggests more cultural variation when generating ideas in social settings, such as in the presence of peers or supervisors, than working alone and privately. The model also suggests more cultural variation when individuals are working on less defined tasks rather than well-defined tasks because ambiguous tasks offer weak situational strength that allow greater influence of creativity.

Previous studies have found that cultural values can explain the relationship between culture and various organizational and behavioural outcomes such as firm effectiveness and communication styles (Gudykunst et al., 1996; Gregory, Harris, Armenakis, & Shook, 2009). Similarly, in the current research, I propose that the relationship between culture and creativity is attributed to (or mediated by) people's level of collectivism, power distance, and uncertainty avoidance. However, rather than assume simply that the Caucasian Canadians will differ significantly than their Asian Canadian counterparts, I will measure levels of collectivism, power distance, and uncertainty avoidance in the present investigation. I will then test whether the three proposed cultural values identified by Erez and Nouri (2010) can help explain the underlying

[3] The second part of this model is built on the idea that human creativity is inherently social in nature; thus, the more socially embedded the creativity task, the stronger the cultural differences. For example, studies have found that some cross-cultural differences in creative performances emerge when the task is conducted in a group setting, but do not appear when individuals perform tasks in isolation (Nouri, Erez, Rockstuhl, & Ang, 2008; Nouri, Erez, Lee, & Chiu, 2011).

relationship between culture and creativity[4]. Below I define the constructs and discuss in detail reasons why individualism, power distance, and uncertainty avoidance are potential mediators of the relationship between culture and creativity.

Individualism/Collectivism. Of the many values that distinguish different cultures from one another, researchers have paid the most attention to individualism/collectivism (Markus & Kitayama, 1991). Across several definitions (e.g., Hofstede, 1980; Schwartz, 1990) the term individualism has been conceptualized as a worldview that centralizes the personal, from personal goals and uniqueness to personal control, while peripheralizing the social (Oyserman, Coon, & Kemmelmeier, 2002). On the other hand, collectivism characterizes a social way of being that has less emphasis on the personal but more emphasis on the group (Oyserman, 1993). It implies that group membership is a central aspect of identity and personal traits reflect the goals of the group (Markus & Kitayama, 1991; Oyserman, 1993; Triandis, 1995). There is also more restraint in emotional expression rather than open and direct expression of one's feelings in order to maintain group harmony.

In the creativity literature, existing studies on culture and creativity have uncovered the link between individualism and novel creativity, as individualists place a stronger emphasis on being unique, autonomous, independent, and self-directive, all of which are important qualities that help generate novel ideas (Jones & Davis, 2000). In contrast, collectivists place less emphasis on personal freedom and independence but more emphasis on upholding group norms and maintaining group harmony, which are qualities that restrain the generation of unique ideas and discourage self-expression (Brewer & Chen, 2007), likely inhibiting generation of novel

[4] Note that the current research focuses mainly on the three cultural values identified in the first part of Erez and Noris's (2010) model; the current investigation does not examine the second part of their model.

ideas. Further, the collectivist culture of the East emphasizes conformity to existing rules, consensus, group norms, and interdependence, which promote elaboration on the practicality of ideas so that they are accepted by one's groups as well as adding concrete benefits to the groups. On the other hand, the individualistic culture of the West will likely encourage members to suggest novel and original ideas that stand out from the rest of the group. This is because an individualistic orientation signifies striving towards autonomy and freedom that mitigates conformity pressure. In addition, studies have found that self-direction, a value that corresponds to individualism, positively relates to creativity (Dollinger, Burke, & Gump, 2007; Kasof, Chen, Himsel, & Greengerger, 2007). In contrast, tradition, security, and conformity, values that correspond to collectivism, relate to emphasis placed on group conformity and consensus, which stresses the elaboration of practical and appropriate ideas. Previous studies have found that East Asians (e.g., Asian Canadians) tend to be more collectivist and Westerners (e.g., Caucasian Canadians) tend to be more individualistic (e.g. (Markus & Kitayama, 1991; Oyserman, 1993; Triandis, 1995). Thus I expect to find a significant relationship between culture and collectivism.

Power distance. Power distance indicates values associated with the equality of power that is distributed among members of a society (Hofstede, 1980; Schwartz & Bilsky, 1990). In cultures that exhibit high power distance, inequality in the social hierarchy is accepted, and the more powerful control those that are less powerful. In such cultures, it is important for one to comply with authority (Hofstede, 2001). On the other hand, in societies that exhibit low power distance, power is more equally distributed across members of society regardless of status and authority. Thus, the relationship between subordinates and authorities is based less on compliance and discipline.

In the context of culture and creativity, high levels of power distance will likely result in the generation of fewer novel ideas and more practical ideas. This is because in organizations where power distance is valued and individuals encourage dependence on authority, when faced with a problem, subordinates are less likely to come up with their own solutions but will instead conform to existing procedures that are already accepted by the group. Unlike those in low power distance societies that are free to voice their own ideas without fear or obligation, those in high power distance societies may place more emphasis on the appropriateness of ideas that do not deviate from existing norms. However, a low level of power distance should lead to fewer practical ideas and more novel ideas. This is because in lower power distance cultures, a leader is more likely to empower and encourage autonomy and independence, which in turn encourage novel creativity (Morrison & Milliken, 2003). Previous research has found that East Asians tend to exhibit higher levels of power distance and Westerners lower levels of power distance (e.g., Hofstede, 1980). Thus I expect to find a significantly positive relationship between culture and power distance.

Uncertainty avoidance. Uncertainty avoidance is defined as "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede 1991, p.113). It depicts level of comfort with unstructured or ambiguous situations such that if uncertainty avoidance is high, there will be stronger preference for rigidity and rules (Hofstede, 1980). High uncertainty avoidance is also associated with anxiety, which is a state of discomfort that individuals are motivated to reduce. In cultures where uncertainty avoidance is not valued and ambiguous situations are not as anxiety provoking, there is a greater chance that novelty will be accepted due to openness to change. This is because in order to have novelty there must be exploration involved that brings possible changes (Erez & Nouri, 2010). Individuals who are

more tolerant of ambiguity will allow more room for experimentation that may result in novel ideas. On the other hand, for individuals who cannot tolerate ambiguity, the novelty dimension of creativity will be avoided, replaced with an emphasis on practicality. Therefore cultures that strongly value uncertainty avoidance may have difficulty implementing novel ideas due to a lack of structure and rules.

Empirical evidence suggesting support for my predictions can be found in a previous study addressing organizational culture and innovation. Authors examined preferences of 4,405 individuals from 43 organizations in 68 different countries and found that degree of uncertainty acceptance, the inverse of uncertainty avoidance, was significantly associated with preferences for innovation championing roles. Innovation championing roles are held by individuals with expertise, credibility, and self-confidence to guide and coach others in the organization to build innovation capabilities in the organization. They do this by overcoming sources of inertia and advocating innovation in organizational routines (Ettlie, Bridges, & O'keefe, 1984). Organizations that endorse innovation champions tend to have cultures that are more accepting of uncertainty and may be more innovative than uncertainty-avoiding cultures (Shane, 1995). East Asians have been found to exhibit higher levels of uncertainty avoidance and Westerners exhibit lower levels of uncertainty avoidance (e.g., House, 2004). Thus I expect to find a significantly positive relationship between culture and uncertainty avoidance.

Given the above review, I offer the following hypotheses:

> *Hypothesis 2a: The relationship between culture and the importance allocated towards idea novelty versus practicality will be mediated by individualism/collectivism, power distance, and uncertainty avoidance such that high collectivism, high power distance and*

high uncertainty avoidance will lead to less emphasis placed on idea novelty rather than practicality.

Hypothesis 2b: The relationship between culture and evaluation focus directed towards idea novelty versus practicality will be mediated by individualism/collectivism, power distance, and uncertainty avoidance such that high collectivism, high power distance and high uncertainty avoidance will lead to less focus directed towards idea novelty rather than practicality.

To this point I have suggested that culture predicts different emphases on idea novelty or idea practicality in the conceptualization and evaluation of creativity when evaluating creative ideas. Further, I propose the mechanism underlying this relationship is captured by cultural differences in values for collectivism, power distance, and uncertainty avoidance acting as mediators. In the following section, I extend these predictions by examining the impact of multicultural experience and its resultant psychological changes on culturally normative emphases on novel versus practical creativity.

Theories of Multicultural Experience (MCE) and Creativity

Theorists across cognitive and social psychology agree that there exists a distinction between cognitive processes that are fast, automatic, and unconscious and those that are slow, deliberative, and conscious (Chaiken & Trope, 1999; Evans, 2008). These two distinct processing styles have been referred to as dual-processing systems - system 1, also known as the heuristic system, is implicit, whereas system 2, also known as the analytic system, is explicit and rational (Evans & Curtis-Holmes, 2005). The dual processing theory argues that both processes of reasoning compete for control of the response that individuals make.

In everyday settings, people perform routinized activities under automatic processing styles with ease and speed using system 1 processing. However, research has found that people are forced to switch from system 1 to system 2 processing, that is, from automatic to conscious processing when exposed to new environments (e.g., a new culture) that contain ambiguity which cannot be adequately dealt with using previous modes of thinking and behaving (e.g., Louis & Sutton, 1991). As a result of this shift, exposure to different cultures can have both harmful and beneficial effects. On the one hand, when individuals encounter new cultures, culture shock may occur when they are immersed in unfamiliar language, food, customs, and behavioural norms. The new environment and experiences may lead to debilitating feelings of anxiety and disorientation (Furnham, 1985). However, once the individual has taken time to adapt to the unfamiliar environment by learning and adjusting to the new culture, foreign cultural experiences present unique opportunities for the individual; such benefits include enhanced creative expansion of ideas (Maddux, Adam, & Galinsky, 2010).

There are many paths through which multicultural experience may foster creativity (Leung et al., 2008). First, foreign cultural experiences allow the individual to learn about different cultural norms and cognitive scripts that people use to generate ideas and solve problems in different cultural contexts. Having been exposed to these new ideas that are only prevalent in a different culture, the individual gains a broader range of knowledge and ideas that can be used for further idea expansion in the future. Indeed, research has shown that exposure to new ideas will allow one to generate more subsequent ideas (Weisberg, 1999).

Second, being immersed in different cultural practices allows opportunities to observe similar behavioural actions with functions and consequences that are different from in one's native culture. Through these observations, an individual will become aware that the same type

of behaviour may hold different/contrasting underlying meanings due to different customs, values, and traditions (Leung & Chiu, 2008). Sometimes these underlying concepts can even be in direct conflict with one another. Such is the case for the "thumbs up" non-verbal behaviour: in certain cultures, e.g., the US, it is a sign for "good", while in other cultures, e.g., Northern Greece, it is considered belligerent behaviour intended to offend others. Creativity is fostered under conditions where two seemingly different concepts that are not normally seen as overlapping combine with each other (Wan & Chiu, 2002). In the example above, a US American exposed to the Greek culture is able to see that a single gesture can have multiple, overlapping, and even contradictory meanings.

Related to the pathway above, a third reason why multicultural experience can boost creativity is that the process of understanding different ways of reacting to situations will likely destabilize established conceptions that the individual held prior to his/her exposure to another culture. For example, going to a restaurant in a foreign country may be a very different experience such that the usual schema for going out to a restaurant (e.g., being greeted, seated, order, have meal, then pay) may not be fulfilled in a different country (e.g., when one must pay first before having a meal). Acquiring alternative conceptions will likely motivate individuals to access unconventional knowledge that may also exist in their own cultures. Thus, an individual is more likely to generate creative solutions as a result of being able to frame the same problem flexibly in multiple ways (e.g., Friedman & Foerster, 2001; Galinsky & Moskowitz, 2000).

Fourth, having had the experience of learning and adapting to different cultural customs and practices, individuals become aware of the vast amount of information that is available in unusual sources. For example, knowing different customs and traditions in one foreign country may suggest the possibility of more customs and traditions in another foreign country. Thus,

individuals may be more willing to seek out and recruit information from more unconventional sources in the future to generate more creative solutions. Such explorative experience will in turn allow exposure to more ideas that continuously promote the cycle of creative idea generation (e.g., Guilford, 1950).

Lastly, the experience of learning about cultural customs that are sometimes in direct contrast to one's native customs may stimulate the desire to resolve such inconsistencies through questioning and exploring the interrelations between different concepts. For example, one may ask why the same gesture has opposite meaning in different cultures such as the act of nodding to say "yes" or "no". Such explorative experiences will likely result in more complex styles of information processing that help uncover the interrelation between concepts. In contrast to those who are with someone who is only exposed to one culture, those that have been exposed to a different culture will be more likely to benefit from the process of exploring and finding commonalities in different concepts. Such processes can lead to the production of new insights to existing problems (e.g., Schooler & Melcher, 1995).

Although there are several possible explanatory mechanisms for why multicultural experience can promote creativity, studies also suggest that exposure to different cultures does not *inevitably* result in enhanced creativity. Recent work undertaken by Maddux, Leung, Chiu, and Galinksky (2009) and Maddux, Adam, and Galinisky (2010) suggest that mere exposure to different cultures, considered alone, may not put forth enduring psychological and behavioural changes that affect creativity. The researchers theorized that the process of adapting to different cultures in the form of acculturating, adjusting, or integrating with the host foreign culture is a crucial component of any mechanism leading to increased creativity. Specifically, one component of cultural adaptation involves learning, acquiring, understanding, and cognitively

integrating new information and skills about the foreign culture to allow the expansion of pre-existing knowledge. As a result, this process can help shape behaviour and thoughts to promote more complex and multifaceted thinking that stimulates creativity. The mediating role of functional *multicultural learning* between multicultural experience and creativity has been tested by Maddux and colleagues (2010). They manipulated the multicultural learning experience by having participants recall and write about a multicultural experience in which they learned something new about a different culture. Such learning experience had to occur as a result of being able to decipher the underlying reasons for the cultural differences by sense-making and interpreting such differences. Specifically, participants were randomly assigned into one of four conditions. In the functional multicultural learning condition, participants were asked to recall and write about a multicultural experience in which they learned the underlying reasons why people from a different culture behave the way they do. In the functional within-culture learning condition, participants were asked to recall and write about a time in which they learned the underlying reason why people from their *own* culture behave the way they do. In these two conditions, participants were asked to write why what they learned was new to them. In the new sport learning condition, participants were asked to recall and write about a time they learned a new sport. In the control condition, participants were asked to recall and write about the last time they visited the supermarket. Results of their study supported the authors' hypothesis and showed that the specific experience of learning about the underlying meaning or function of behaviours in a different cultural context was essential for individuals to realize the benefits of exposure to different cultures.

In summary, we know from prior research that authentic multicultural experience can significantly impact people's creative output by boosting performance on insight problem-

solving and/or divergent thinking tasks (Maddux & Galinsky, 2009). Beyond this, existing research does not allow us to draw conclusions about how MCE influences individuals from different cultures. The association between multicultural experience and creativity has only been investigated among European American undergraduate students, European MBA students (Tadmor, Galinsky, & Maddux, 2012), or a mixture of participants from foreign countries that comprise a smaller percentage of the overall sample population (Maddux & Galinsky, 2009). These prior samples limit generalizability because we cannot draw inferences about creative performance of individuals in other cultures around the world. This is problematic because multicultural experience may have different consequences for Easterners and Westerners regarding the two aspects of creativity.

MCE and Creativity across Cultures

If indeed Eastern versus Western cultural values differentially emphasize the novelty and practicality aspects of creativity, the study of culture, MCE, and creativity should include both dimensions in theory and research design. However, most creativity measures collapse these two dimensions into a single unidimensional scale. A rare exception was demonstrated in a study conducted by Paletz and Peng (2008), where the authors manipulated the novelty vs. practicality of a new product and found that Chinese participants were more attracted to the novel product ideas compared to their US American counterparts. Conversely, American participants were more attracted to the practical product ideas compared to their Chinese counterparts. These intriguing results emphasize the importance of considering both aspects of creativity and the role of cultural norms. Why, for example, might Westerners perform better generating novel creativity (Ng, 2001) but be more attracted to practical new product ideas (Paletz & Peng, 2008).

If Westerners and Easterners value both novelty and practicality alike, but cultural constraints do not typically allow the actualization of practical creativity among Westerners or novel creativity among Easterners, this might explain the reported attraction to the culturally counter-normative aspect of creativity. What then might allow both Easterners and Westerners to tap into the side of creativity that is typically supressed? Similar to justification-suppression models of prejudice (e.g., Crandall & Eshleman, 2003). I propose that individuals may suppress the expression of certain aspects of creativity due to prevalent cultural norms and values. However, exposure to different foreign cultures should act to release constraints placed by cultural norms on the expression of creativity. MCE allows multicultural learning opportunities and exposure to ideas that are not usually found in one's own culture, freeing individuals to generate and explore the aspect of creativity that is not prevalent in their native culture. Along this line of reasoning, Hempel and Sue-Chan (2010) propose that as expatriates adapt to a different culture through the influence of its local employees in the organization, their capacity to generate and better assess the aspect of creativity that is not emphasised by their own culture (e.g., practicality for an American expatriate) should increase.

As mentioned above, when individuals operate in familiar situations, they navigate their environments using automatic information processing strategies based on existing perceptual schemas that have guided previous interpretation and responses in the past (e.g., Langer, 1978). Individuals' conceptualization and evaluation of creativity in a given culture are also a part of such mental schemas that emerge from what is considered normative in one's culture and that can be activated by means of automatic processing. These conceptualizations and evaluations regarding creativity are often shared within the same culture and help individuals from the same cultural group make quick decisions about the creativity of a given idea.

However, when individuals are exposed to unfamiliar contexts, such as a new culture, the unexpected makes reliance on automatic processing insufficient. As mentioned, people then switch from system 1 information processing mode (automatic) to system 2 information processing mode (conscious) thus allowing individuals to notice things they would have normally filtered out (Louis & Sutton, 1991). As people are exposed to different cultural experiences that include different values and norms that are distinct and inconsistent with their existing values and norms, their existing cultural scripts, schemas, and knowledge structures no longer serve to guide appropriate behaviour. Thus, when individuals are exposed to foreign cultures, their internalized preconceptions about values and norms in one culture no longer serve the same function.

This disconnection between preconception and reality creates a sense of cognitive dissonance that must be resolved (Festinger, 1957; Mcgregor, Newby-Clark, & Zana, 1999). Under such uncertain circumstances, individuals become "epistemically unfrozen" (Kruglanski & Webster, 1996; Webster & Kruglanski, 1997). In order to resolve this dissonance, individuals are more motivated to re-examine existing assumptions, seek out additional information, and revise their preconceived expectations. As a result, reliance on existing knowledge regarding conceptualization and evaluation of creativity will be called into question and re-examined.

As individuals accumulate more experiences of being exposed to foreign cultures, they are likely to encounter repeated occurrences of discrepancy between prior expectations and actual realities. Such instances will likely lead individuals to become *habitually* motivated by a lower need for certainty as a more adaptive way of making sense of the world. Rather than relying on existing knowledge and cultural scripts, they become more comfortable with ambiguity and more likely to seek out new knowledge and process information more deeply (Fox

& Elraz-Shapira, 2005). Consequently, they diversify and expand their concepts of what is considered creative beyond their native culture understanding.

Recent evidence shows that experimental exposure to multicultural experience leads to changes in one's creative performance as well as decisions-making process. More specifically, in Leung and Chiu's study (2010), participants were randomly assigned to four different experimental slideshow conditions: 1) exposure to US American culture only condition, 2) Chinese culture only condition, 3) dual-culture condition where participants were exposed to both Chinese and American cultures simultaneously, and 4) a control condition. They discovered that immediately after exposure to the two conditions where the American and Chinese cultures were juxtaposed together, participants who viewed the fusion slideshow with both cultures demonstrated higher novel creativity on tasks by generating more unusual uses for a garbage bag, unconventional gift-giving ideas, and examples of occupations. These participants outperformed those in the control conditions on the same creative task; in addition, this effect was also observed 5 to 7 days after the initial exposure.

These findings were corroborated in two more recent studies by Tadmor and colleagues (2009, 2012) where it was found that the simultaneous juxtaposition of two different cultures caused a reduction in intergroup bias. Notably, the studies found that mere exposure to a different culture (Chinese *or* North America) had similar results as the pure control condition where participants viewed geometric shapes, as both the single culture condition and the pure control condition did not impact the outcome. This is because presenting images from existing and new cultures simultaneously (Chinese *and* North American) creates dissonance that generates more effortful information processing (Tadmor et al., 2012). When confronted with these inconsistencies, individuals are likely to resolve the inconsistencies by engaging in

effortful thinking that promotes creative thinking (e.g., Leung & Chiu, 2010; Leung et al., 2008; Tadmor & Tetlock, 2006; Tadmor et al., 2009; Tadmor et al., 2012; cf., McGregor et al., 1999). Viewing pictures from two different cultures will also activate previous experiences and exposures to other foreign cultures given that the individual has had these types of experiences in the past. This is commonly known as the priming technique whereby the process of exposing participants to certain ideas and concepts will increase the accessibility of related schemas and memories by bringing them into the forefront of an individual's mind. This process then influences judgement and decision-making on subsequent tasks (Tulving & Schacter, 1990). Therefore, in the current research, in Study 4 I will test the effects of MCE by incorporating two different conditions: the MCE manipulation condition (juxtaposing two different cultures simultaneously) versus a pure control condition (by showing geometric figures). I expect the MCE exposure in the manipulation condition will enhance creativity outcomes for Asian Canadian participants in the manipulation condition in terms of novel creativity, and Caucasian Canadian participants in terms of practical creativity. Relating the above findings to goals of the current investigation, I explore the effect of MCE (measured in Study 2, manipulated in Study 4) in regards to 1) how individuals conceptualize creativity (explicit attitudes toward novelty/practicality) and 2) individuals' evaluation of creativity (operationalized as *evaluation ratings* and *evaluation focus* placed on novelty/practicality)

Hypothesis 3: There will be an interaction between culture and MCE such that

H3a: A higher level of MCE will boost the explicit attitudes toward novelty for Asian Canadian participants compared to Asian Canadian participants with a lower level of MCE.

H3b: A higher level of MCE will boost the explicit attitudes toward practicality for Caucasian Canadian participants compared to Caucasian Canadian participants with a lower level of MCE.

H3c: Asian Canadian participants will have higher novelty evaluation ratings in the MCE condition relative to Asian Canadian participants in the control condition.

H3d: Caucasian Canadian participants will have higher practicality evaluation ratings in the MCE condition relative to Caucasian Canadian participants in the control condition.

H3e: Asian Canadian participants will focus more on idea novelty in the MCE condition relative to Asian Canadian participants in the control condition.

H3f: Caucasian Canadian participants will focus more on idea practicality in the MCE condition relative to Caucasian Canadian participants in the control condition.

Further, I expect that the facilitative effect of MCE on Asians who are living abroad should extend to Asians who are currently living in their native country. It is important to replicate the effect of MCE with a native Chinese sample because previous studies have found that these two Asian samples may behave differently due to partial acculturation of East Asians living in Canada (Heine & Hamamura, 2004). Replicating the effect of MCE on creativity in a native Chinese sample will rule out a potential alternative explanation that something unique to the Canadian cultural environment drives the observed effects of MCE. In addition to influencing the conceptualization and evaluation of creative ideas, I also expect this effect to apply to the creativity of idea ideas generated. This measure is different yet related to both the conceptualization and evaluation of creativity because it measures what participants will

eventually *generate* as product ideas. As such, this measure serves as a more tangible outcome of what participants deem as creative. Thus, it is important to examine whether MCE will boost the novel creativity of Asians living in Asia so that the same effects would be found with a different sample with less extensive amount of MCE:

> *Hypothesis 4: Mainland Chinese participants who have more MCE will generate more novel creative ideas compared to those with less MCE.*

Relationship between MCE, Uncertainty Avoidance, and Creativity

Building on prior research relating MCE and Need for Cognitive Closure (NFCC), I propose that MCE will moderate the proposed mediation path of Culture-Uncertainty Avoidance-Creativity. Leung and Chiu (2010) found that need for cognitive closure (NFCC), a measure that gauges individuals' "motivation with respect to information processing and judgment" (Webster & Kruglanski, 1994), limits the benefits of MCE. NFCC is defined as a desire for firm answers in order to end further information processing and judgement, even if the answer is not the correct or best answer. The NFCC construct is similar to the cultural value of uncertainty avoidance at the individual level. NFCC gauges an individual's desires for a definitive answer to a question as opposed to ambiguity (Houghton & Grewal, 2000) which bares similarities to the measure of uncertainty avoidance as both concepts tap into the tendency to reject and resist new ideas or experiences in favour of more certain outcomes (Webster & Kruglanski, 1997). Thus, similar to uncertainty avoidance, individuals who have high need for cognitive closure often prefer order, structure, predictability, and clarity rather than uncertainty, ambiguity, and novel ideas (Webster & Kruglanski, 1994).

Tadmor and colleagues' (2012) found that experimental exposure to MCE caused a reduction in NFCC that ameliorated the effects of intergroup bias. Participants in their study made decisions

either to hire or reject a minority applicant who is part of the participant's out-group. The ameliorative effect of MCE on intergroup bias was fully mediated by lower levels of NFCC such that those in the MCE manipulated conditions with lower levels of NFCC were more likely to hire someone from an out-group. In other words, MCE produced the expected openness and divergent thinking when individuals were more tolerant of ambiguity. Likewise, I expect the effects of MCE to differ for individuals who are more or less tolerant of ambiguity, as indicated by cultural values for uncertainty avoidance.

It is possible that individuals who are high in uncertainty avoidance by disposition will avoid exposure to foreign culture. For example, Leung and Chiu (2010) examined NFCC as a moderator of the link between MCE and receptiveness to ideas from a different culture. In their study, NFCC was manipulated using time pressure because when individuals are placed under time pressure, they will desire firm answers and avoid ambiguities (Kruglanski & Webster, 1996). Results showed that when individuals are not under time pressure, those with more extensive MCE were more motivated to recruit ideas from unfamiliar cultures. This link was significantly attenuated when individuals experienced higher NFCC due to time pressure, which led to resistance to ideas from foreign cultures. Even though this may be the case, it has been suggested that repeated cultural learning can lead to reduction in NFCC (Webster & Kruglanski, 1997). In support of this reasoning, Tadmor and colleagues (2009) found that Asian Americans primed to simultaneously think about both their Asian and American cultures rated significantly lower on personal need for structure, which bares similarities to NFCC and Uncertainty Avoidance, than did individuals primed with only a single culture or those in the a control group. In addition, recent advancement in the field of neurology has found that cultural learning

experiences can be powerful enough to change how one's brain is wired (Hedden, Ketay, Aron, Markus, & Gabrieli, 2008).

Relating the above conceptualization and findings to the present series of studies, I propose that while uncertainty avoidance will mediate the relationship between culture and emphasis on novel or practical creativity, as proposed in hypothesis 2, this mediation may be moderated by levels of MCE. I expect the mediated relationship to be weaker for individuals with high MCE, because MCE may diminish levels of uncertainty avoidance and/or effects of uncertainty avoidance. This proposition can be tested by a moderated mediation model whereby the mediation effects of uncertainty avoidance on creativity would vary by levels of MCE. I predict that:

H5: MCE will moderate the strength of the mediated relationship between culture and creativity via uncertainty avoidance such that the mediated relationship will be weaker under high levels of MCE than low levels of MCE.

Overall, the overarching goal of my studies is to examine the mediating role of cultural values and the moderating role of MCE to explain variation in how individuals from two different cultures recognize, evaluate, and generate ideas that are novel versus practical. See figure 1 for an overview of the proposed model.

Table 1 Summary of Outcome Variables

Construct	**Operationalization**
1. Conceptualization	1. Definition of creativity - % novelty + % practicality = 100% 2. Explicit positive attitudes (Mueller, Melwani, & Goncalo, 2012) - Toward novelty (1 to 7 Likert) - Toward practicality (1 to 7 Likert)
2. Evaluation	1. Focus when evaluating creative ideas (Mueller et al., 2012) - Novelty only vs Practicality only (1 to 5 Likert) 2. Rating of creative ideas (Mueller et al., 2012) - Novelty (1 to 7 Likert) - Practicality (1 to 7 Likert)

Table 2 Summary of Hypotheses

Hypothesis 1	a) *Conceptualization of creativity will differ by culture such that Asian Canadian participants will assign greater importance towards idea practicality than idea novelty, whereas Caucasian Canadian participants will assign greater importance towards idea novelty than idea practicality.* b) *Evaluation of creativity (focus and ratings) will differ by culture such that: Asian Canadian participants will focus more on idea practicality than idea novelty, whereas Caucasian Canadian participants will focus more on idea novelty than idea practicality.*
Hypothesis 2	a) *The relationship between culture and the importance allocated towards idea practicality versus novelty will be mediated by individualism/collectivism, power distance, and uncertainty avoidance such that high collectivism, high power distance and high uncertainty avoidance will lead to less emphasis placed on idea novelty rather than practicality.* b) *The relationship between culture and evaluation focus directed towards idea practicality versus novelty will be mediated by individualism/collectivism, power distance, and uncertainty avoidance such that high collectivism, high power distance and high uncertainty avoidance will lead to less focus directed towards idea novelty rather than practicality.*

Hypothesis 3	*There will be an interaction between culture and MCE such that* *a) A higher level of MCE will boost the explicit attitudes toward novelty for Asian Canadian participants compared to Asian Canadian participants with a lower level of MCE.* *b) A higher level of MCE will boost the explicit attitudes toward practicality for Caucasian Canadian participants compared to Caucasian Canadian participants with a lower level of MCE.* *c) Asian Canadian participants will have higher novelty evaluation ratings in the MCE condition relative to Asian Canadian participants in the control condition.* *d) Caucasian Canadian participants will have higher practicality evaluation ratings in the MCE condition relative to Caucasian Canadian participants in the control condition.* *e) Asian Canadian participants will focus more on idea novelty in the MCE condition relative to Asian Canadian participants in the control condition.* *f) Caucasian Canadian participants will focus more on idea practicality in the MCE condition relative to Caucasian Canadian participants in the control condition.*

Hypothesis 4	*Mainland Chinese participants who have more MCE will generate more novel creative ideas compared to those with less MCE.*
Hypothesis 5	*MCE will moderate the strength of the mediated relationship between culture and creativity via uncertainty avoidance such that the mediated relationship will be weaker under high levels of MCE than low levels of MCE.*

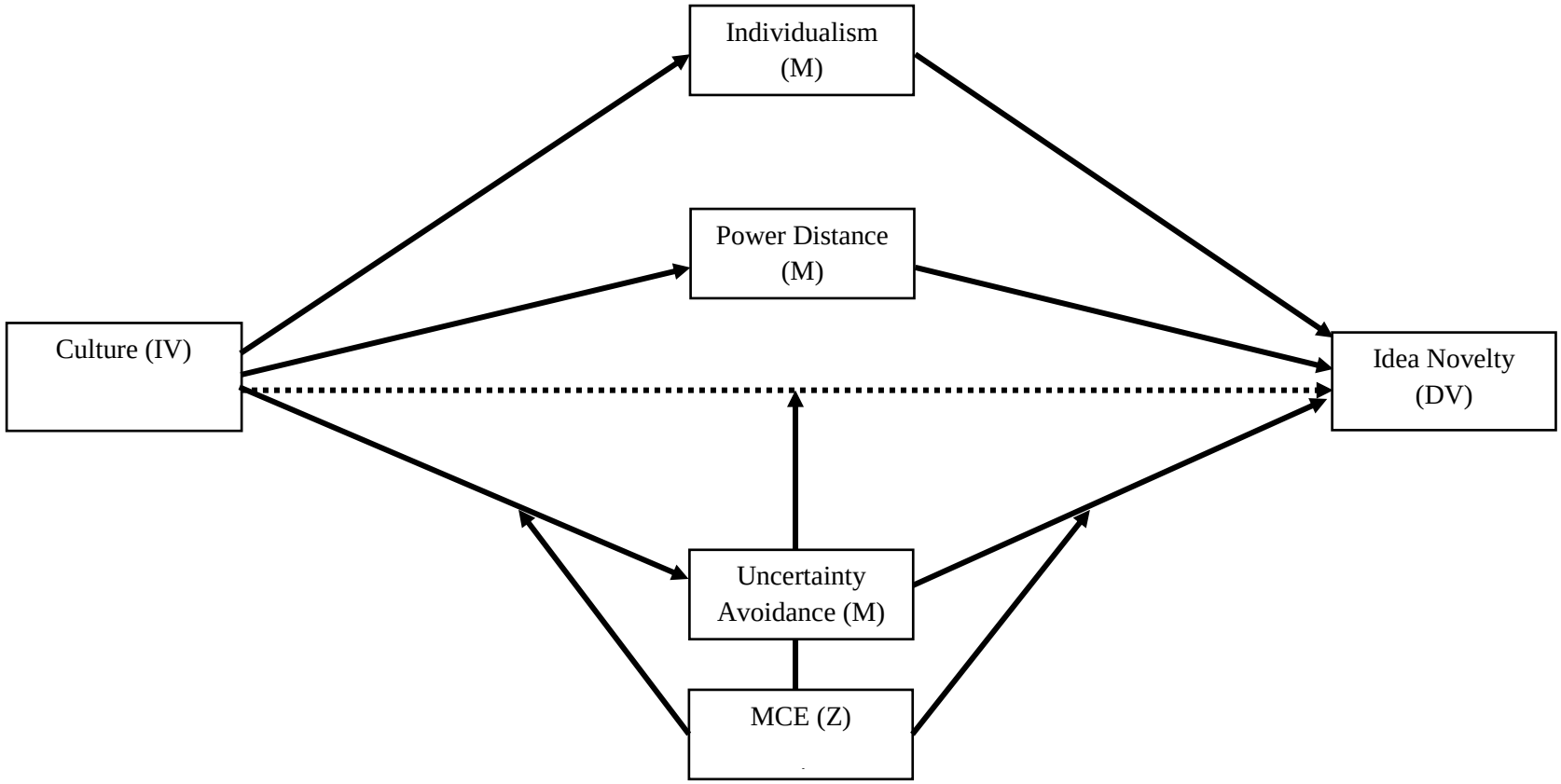

Figure 1. The multiple mediation and mediated moderated relationship between culture and creativity. Note: IV = independent variable, M = mediator, Z = moderator, DV = dependent variable.

CHAPTER 3

THREE STUDIES EXAMINING THE ROLE OF CULTURE, MULTICULTURAL EXPERIENCE, AND CREATIVITY

Study 1: Testing a Multiple Mediation Model of Culture and Creativity

Study 1 was conducted for two main purposes. First, I examine the importance allocated towards the two different aspects of creativity across cultures; I also examine evaluation focus towards novel and practical creativity when assessing ideas. Secondly, I test a theoretical framework to answer the question *why* cultural differences exist in preferences toward the two aspect of creativity by investigating individualism/collectivism, power distance, and uncertainty avoidance as mediators via a multiple mediation model. Based on previous literature and theorizing on the relationship between culture and creativity, I predicted that:

> *Hypothesis 1a: Conceptualization of creativity will differ by culture such that Asian Canadian participants will assign greater importance towards idea practicality than idea novelty, whereas Caucasian Canadian participants will assign greater importance towards idea novelty than idea practicality.*
>
> *Hypothesis 1b: Evaluation of creativity (focus and ratings) will differ by culture such that: Asian Canadian participants will focus more on idea practicality than idea novelty, whereas Caucasian Canadian participants will focus more on idea novelty than idea practicality.*

Hypothesis 2a: The relationship between culture and the importance allocated towards idea practicality versus novelty will be mediated by individualism/collectivism, power distance, and uncertainty avoidance such that high collectivism, high power distance and high uncertainty avoidance will lead to less emphasis placed on idea novelty rather than practicality.

Hypothesis 2b: The relationship between culture and evaluation focus directed towards idea practicality versus novelty will be mediated by individualism/collectivism, power distance, and uncertainty avoidance such that high collectivism, high power distance and high uncertainty avoidance will lead to less focus directed towards idea novelty rather than practicality.

Method

Participants and Design

I obtained 167 students, 84 of whom were Caucasian Canadian students and 83 Asian Canadian students. There were 70 male and 97 female participants. I took measures to ensure that the Asian Canadian participants were not acculturated to the Canadian culture by selecting participants who were born in China and identified mostly with their native culture. In order to qualify for the study, participants had to rate 6 or higher on a scale from 1 to 10 describing how much they identify with their native culture. The average age for Caucasian Canadian participants (50 females and 34 males) was 21 years old (SD = 4.90). The average age for Asian Canadian participants (47 females and 36 males) was 21 years old (SD = 4.00).

Procedure

Participants were undergraduate students enrolled in a large North American university. The recruitment advertisements invited students to participate in an online study that examines common perceptions of creativity across individuals. If students chose to participate in the study they would receive bonus credits for courses they were currently taking. Participants completed the task that was used in the study by Mueller et al. (2012) whereby participants were asked to rate a creative idea (*a running shoe with nanotechnology that adjusts fabric thickness to cool the foot and reduce blisters*). This idea was pretested by Mueller et al. (2012) using 36 undergraduates who found the idea to be highly creative, novel, and practical.

Measures

Individualism/collectivism. Wagner's (1995) scale was used to measure individualism/collectivism which included items from several popular I–C measures to construct a 20-item measure covering five dimensions of the construct (see Appendix C). Participants responded using a 5-point Likert scale (1 = *strongly disagree* and 5 = *strongly agree;* α = .86). Sample items are "Only those who depend on themselves get ahead in life" and "In the long run the only person you can count on is yourself". Item responses were reversed as needed so that high evaluation ratings indicated stronger collectivism.

Power distance. Earley & Erez's (1997) scale was used to measure level of power distance. This scale consists of 8 items (see Appendix B), participants responded using a 5-point Likert-type scale (1 = *strongly disagree* and 5 = *strongly agree;* α = .88*).* Sample items are "Employees should not express disagreements with their managers" and "A company's rules should not be broken—not even when the employee thinks it is in the company's best interest". Higher scores mean more power distance.

Uncertainty avoidance. Jung's (2002) scale which is a slightly modified version of Hofstede's (1980) 7-item uncertainty avoidance scale was used (See Appendix A). Participants responded using a 7-point Likert-type scale (1 = *strongly disagree* and 7 = *strongly agree; α* = .82*)* to questions such as "I would not take risks when an outcome cannot be predicted".

Defining creativity. Participants were asked to give a rating concerning the importance of the two different dimensions of creativity by responding to the question: "Using a percentage, how much do you think each aspect below contributes to creativity (Answers to both question must total to 100%)"? Participants assigned a percentage to both novelty and practicality and two percentages assigned added up to 100%.

Evaluation focus. This term is defined as attention to the distinct aspects of creativity when evaluating an idea. Mueller et al.'s (2012) scale was used to assess which aspects of creativity participants focused on the most when making assessments regarding idea creativity. Participants were asked the following three questions: "I focused on the following aspect of the idea while making my evaluation"; "I made my evaluation of the idea predominantly because of the idea's";" The features of the idea which appealed more to me when I made my evaluation were". Responses were based on 1 = *novelty only*, 2 = *mostly novelty, some usefulness*[5], 3 = *balance of novelty and usefulness*, 4 = *mostly usefulness, some novelty*, 5 = *usefulness only*. A composite of the measure was created by averaging all three questions (α = .81). This measure was used for subsequent analyses.

[5] The terms usefulness and practicality are used interchangeably in the literature. Both refer to the same aspect of creativity (e.g., Oldham & Cummings, 1996; Mueller et. al, 2012).

Data Analysis and Results

Table 3 presents the means, standard deviations, reliabilities, and correlations of the key variables. The zero-order correlations were also similar to past findings in that East Asians tend to be more uncertainty avoidant and collectivistic (Hofstede, 1980). However, there was no significant relationship between culture and power distance. As predicted, there was a positive correlation between culture and preference for novelty vs. practicality (Asian Canadian coded as 1, Caucasian Canadian coded as 0). Similar patterns were observed for evaluation focus on either of the two aspects of creativity when participants were making assessment. As expected, Asian Canadian participants scored higher on uncertainty avoidance and collectivism. The associations between the three cultural values were positively related to each other.

Hypothesis 1a proposed that there will be cultural differences in how creativity is conceptualized. I tested how much emphasis participants placed on novelty (vs practicality) when defining "creativity" using a One-way Analysis of Variance (ANOVA) whereby culture was entered as an independent variable and the percentage weight assigned to novelty as the dependent variable. Consistent with hypothesis 1a, results show that Asian Canadian participants assigned a lower percentage to novelty than Caucasian Canadian participants ($M_{Asian\ Canadian}$ = 45.89, SD = 18.20; $M_{Caucasian\ Canadian}$ = 51.60, SD = 18.03), F (1, 165) = 4.14, p = .02.[6]

Simple effects analysis conducted within-culture confirmed that Asian Canadian participants assigned a significantly greater percentage toward practicality than novelty ($M_{practicality}$ = 54.11, SD = 18.20, $M_{novelty}$ = 45.89, SD = 18.20, t (82) = 2.06, p < .01) while Caucasian Canadian participants assigned a greater percentage toward novelty than practicality,

[6] Analyses excluded idea practicality as the dependent variable because results would be inversed as idea novelty. See correlation of *1.00 (Table 1).

although this difference was not significant ($M_{practicality}$ = 48.40, SD = 18.03, $M_{novelty}$ = 51.60, SD = 18.03, t (83) = -.81, p = ns) (Figure 2).

Further, Hypothesis 1b was tested using the same method by entering evaluation focus placed on novelty vs. practicality as the dependent variable. Results showed a significant difference between Asian Canadian and Caucasian Canadian participants for which aspect of creativity they paid more attention to when evaluating creative ideas. Recall that a lower score means more focus on idea novelty and a higher score means more focus on practicality. Asian Canadian participants reported greater attention paid to idea practicality when evaluating the creative idea (M = 3.25, SD = .80) compared to Caucasian Canadian participants who reported more attention paid to idea novelty (M = 2.95, SD = .80), F (1, 165) = 7.43, p = .007. Thus, hypothesis 1b was also supported.

Mediation analysis

Hypothesis 2 proposed individualism/collectivism, power distance, and uncertainty avoidance as potential mediators for the relationship between culture and both the conceptualization of and evaluation focus on novel and practical creativity. To examine this hypothesis, I tested a) the total indirect effect of culture on preference for novelty through individualism/collectivism, power distance, and uncertainty avoidance, b) the specific indirect effect of culture on preference for novelty through individualism/collectivism, c) the specific indirect effect of culture on preference for novelty through power distance, and d) the specific indirect effect of culture on preference for novelty through uncertainty avoidance.

Bootstrapping procedure. I used procedures described by Preacher and Hayes (2008). This procedure allows for the simultaneous examination and statistical testing of each of the

estimated mediated effects in a model and the direct effect of the independent variable on the outcome variable (available for download on quantpsy.org).

The total indirect effect associated with the three proposed mediators was tested using the formula a$a_1a_1 + a_2a_2 + a_3a_3$ where the three terms represent a) the indirect effect of culture on emphasis placed on novelty/practicality through individualism/collectivism, b) the indirect effect of culture on emphasis placed on novelty/practicality through power distance c) the indirect effect of culture on emphasis placed on novelty/practicality through uncertainty avoidance. Calculation of the specific indirect effects (i.e.,$a_1a_1, a_2a_2, and\ a_3a_3$) involved four steps (see Preacher & Hayes, 2008): 1) from my original 167 cases, a bootstrap sample of 167 cases was generated using random sampling with replacement; 2) the regression coefficients (*a, b, and c*) and the indirect effect estimates (*abc*) were calculated based on this bootstrap sample; 3) by repeating this process 5,000 times 5,000 estimates of the indirect effect of interest were obtained; and 4) the mean of the 5,000 indirect effect estimates was calculated. If a zero was not included in the 95% confidence interval of the estimate, I concluded that the indirect effect was statistically significant (Preacher & Hayes, 2008; Shrout & Bolgar, 2002). These bootstrapped indirect estimates were then used in the multiple mediation model. As such, I am able to test the significance of each of the three proposed mediators.

Percentage amount assigned to novelty

Table 4 displays the bootstrapped estimates for the total and specific indirect effects and 95% confidence intervals obtained from the main analysis. The total direct effect of culture on percentage assigned to novelty was significant ($p < .05$), as the confidence interval did not contain zero.

Specific indirect effects. Next, I tested the indirect effects of individualism/collectivism, power distance, and uncertainty avoidance for the relationship between culture and percentages assigned to novelty. Results show that the specific indirect effect of culture on percentage assigned to novelty through individualism/collectivism was not statistically significant, as the confidence interval contained zero (see table 5). Although the indirect effect was not statistically significant, the direction of both associations was as expected: Asian Canadian participants were more collectivistic than Caucasian Canadian participants (B = .16, p < .05), and a higher score on collectivism was negatively related to percentage amount assigned to novelty (B = -3.96, p = *ns*; see figure 3).

The specific direct effect of culture on percentage amount assigned to novelty through power distance was also not statistically significant, as the confidence interval contained zero (see table 5). The direction of association was as expected as Asian Canadian participants scored higher on power distance than Caucasian Canadian participants (B = .10, p = .38). However, unexpectedly a higher score on power distance was positively related to percentage amount assigned to novelty (B = 2.42, p = *ns*; see figure 3).

Lastly, the specific indirect effect of culture on percentage amount assigned to novelty through uncertainty avoidance was statistically significant, as the confidence interval did not contain zero (see table 5). That is, uncertainty avoidance was found to be a significant mediator. The direction of both associations was as expected: Asian Canadian participants were more uncertainty avoidant than Caucasian Canadian participants (B = .29, p < .05), and a higher score on uncertainty avoidance was negatively related to percentage amount assigned to novelty (B = -4.0, p = .03; see figure 3). In addition, results indicated that the direct effects of culture on

preference for novelty became non-significant (B = - 1.51, p = .13) when controlling for uncertainty avoidance, thus suggesting a full mediation.

Evaluation focus on novelty/practicality

Table 4 displays the bootstrapped estimates for the total and specific indirect effects and 95% confidence intervals obtained from the main analysis. The total direct effect of culture on focus placed on novelty/practicality was significant ($p < .01$), as the confidence interval did not contain zero.

Specific indirect effects. Following similar procedures described above, I tested the indirect effects of individualism/collectivism, power distance, and uncertainty avoidance for the relationship between culture and evaluation focus on novelty/practicality. Results show that the specific indirect effect of culture on evaluation focus through individualism/collectivism was not statistically significant, as the confidence interval contained zero (see table 5). Although the indirect effect was not statistically significant, the direction of both associations was as expected: Asian Canadian participants were more collectivistic than Caucasian Canadian participants (B = .16, $p < .05$), and a higher score on collectivism was positively related to evaluation focus placed on practicality (B = .15, p = .18; see figure 4).

The specific direct effect of culture on evaluation focus through power distance was also not statistically significant, as the confidence interval contained zero (see table 5). The direction of association was as expected as Asian Canadian participants scored higher on power distance than Caucasian Canadian participants (B = .10, p = .38). Again, unexpectedly a higher score on power distance was negatively related to evaluation focus on practicality (B = - .03, p = .68; see figure 4).

Lastly, the specific indirect effect of culture on percentage amount assigned to novelty through uncertainty avoidance was statistically significant, as the confidence interval did not contain zero (see table 5). That is, uncertainty avoidance was found to be a significant mediator. The direction of both associations was as expected: Asian Canadian participants were more uncertainty avoidant than Caucasian Canadian participants (B = .29, p < .05), and a higher score on uncertainty avoidance was negatively related to evaluation focus placed on novelty (B = -1.5, p = .02; see figure 2). In addition, results indicated that the uncertainty avoidance partially mediated the relationship between culture and evaluation focus (B = .23, p = .03) when controlling for individualism/collectivism and power distance.

In summary, taken as a set, individualism/collectivism, power distance, and uncertainty avoidance together mediated the effect of culture on evaluation focus placed on novelty/practicality, as the total and direct effects of culture on evaluation focus were significant. An examination of the specific indirect effects indicated that only uncertainty avoidance was a mediator, since its 95% CI did not contain a zero. Neither individualism/collectivism nor power distance contributed to the indirect effect above and beyond uncertainty avoidance.

Discussion

The present investigation is the first study designed to identify potential explanatory variables underlying the relationship between culture and creativity. Findings contribute to the existing literature by offering empirical evidence of cultural differences on the importance placed on either novelty or practicality when defining and evaluating overall creativity. This study is also the first to test three specific cultural values: individualism/collectivism, power distance, and uncertainty avoidance as potential mediators of the relation between culture and emphasis place on the two aspects of creativity: novelty vs. practicality. As predicted, results showed a stronger preference towards novelty for Caucasian Canadian participants and practicality for Asian Canadian participants.

In addition, multiple mediation analysis showed that uncertainty avoidance was the only significant cultural value that fully mediated the relationship between culture and percentage assigned towards novelty. The same patterns were observed for the relationship between culture and evaluation focus whereby uncertainty avoidance, as the only significant mediator, partially meditated the relationship. These findings are consistent with recent finding showing that the motivation to reduce uncertainty predicted higher levels of implicit bias against novelty (relative to practicality) (Mueller et al., 2012). Higher levels of uncertainty avoidance have also been shown to interfere with the ability to recognize novel creative ideas.

More work is needed to examine factors that might help individuals recognize and generate the aspect creativity that is not culturally normative for them. With this goal in mind, a review of the literature suggests that exposure to multicultural experience boosts creativity by reducing individuals' need for cognitive closure, a construct very similar to uncertainty avoidance (Tadmor, Hong, Chao, Wiruchnipawan, & Wang, 2012). Therefore I conducted a

second study to replicate the mediating effect of uncertainty avoidance and to examine the effect of multicultural experience on the two aspects creativity for Asian Canadians and Caucasian Canadians.

Table 3

Study 1 Descriptive Statistics, Zero Order Correlations, and Reliabilities

	Mean	*SD*	1	2	3	4	5	6	7
1. Culture	.50	.50							
2. Collectivism	4.43	.49	.16*	**.86**					
3. Power Distance	3.23	.76	.07	-.03	**.75**				
4. Uncertainty Avoidance	4.50	.89	.16*	.17*	.21**	**.82**			
5. Novelty %	48.76	.18.28	-.16**	-.16*	.06	-.19*			
6. Practicality %	51.24	18.28	.16*	.16*	-.06	.19*	-1.00**		
7. Evaluation focus[7]	3.10	.71	.21**	.16*	.015	.22**	-.52**	.52**	**.81**

Note. The numbers in bold on the diagonal are Coefficient alphas. * $p < .05$; ** $p < .01$. Asian Canadian coded as 1, Caucasian Canadian coded as 0.

[7] A lower score indicates more focus on novelty and a higher score indicates more focus on practicality.

Table 4

Bootstrapped Estimates for the total and specific indirect effects and 95% Confidence Intervals for collectivism, power distance, and uncertainty avoidance on % Novelty.

			95% BC CI	
Mediator	*Estimates*	*SE*	Lower	Upper
Percentage Novelty[8]				
Total	-1.42	.88	-3.89	.25
Collectivism	.55	-1.16	-2.29	.14
Power Distance	.24	.34	-.22	1.81
Uncertainty Avoidance	-1.04	.67	-3.23	-.02
Evaluation Focus				
Total	.06	.03	.01	.16
Collectivism	.02	-.02	-.04	.09
Power Distance	-.03	.01	-.05	.01
Uncertainty Avoidance	.04	.03	.02	.13

[8] As a measure of conceptualization of creativity

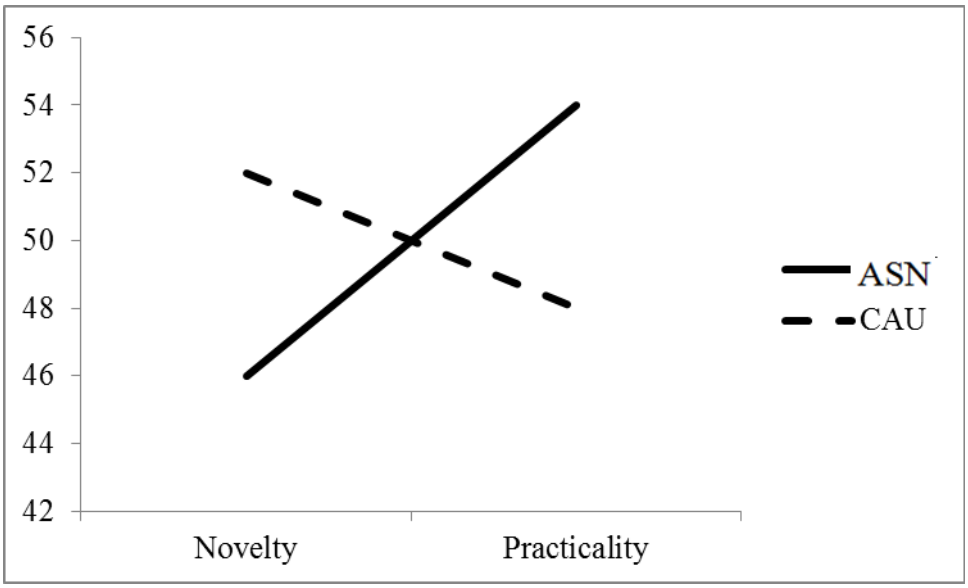

Figure 2. Comparison between Asian Canadian and Caucasian Canadian participants' percentage distribution of practicality and novelty towards overall creativity.

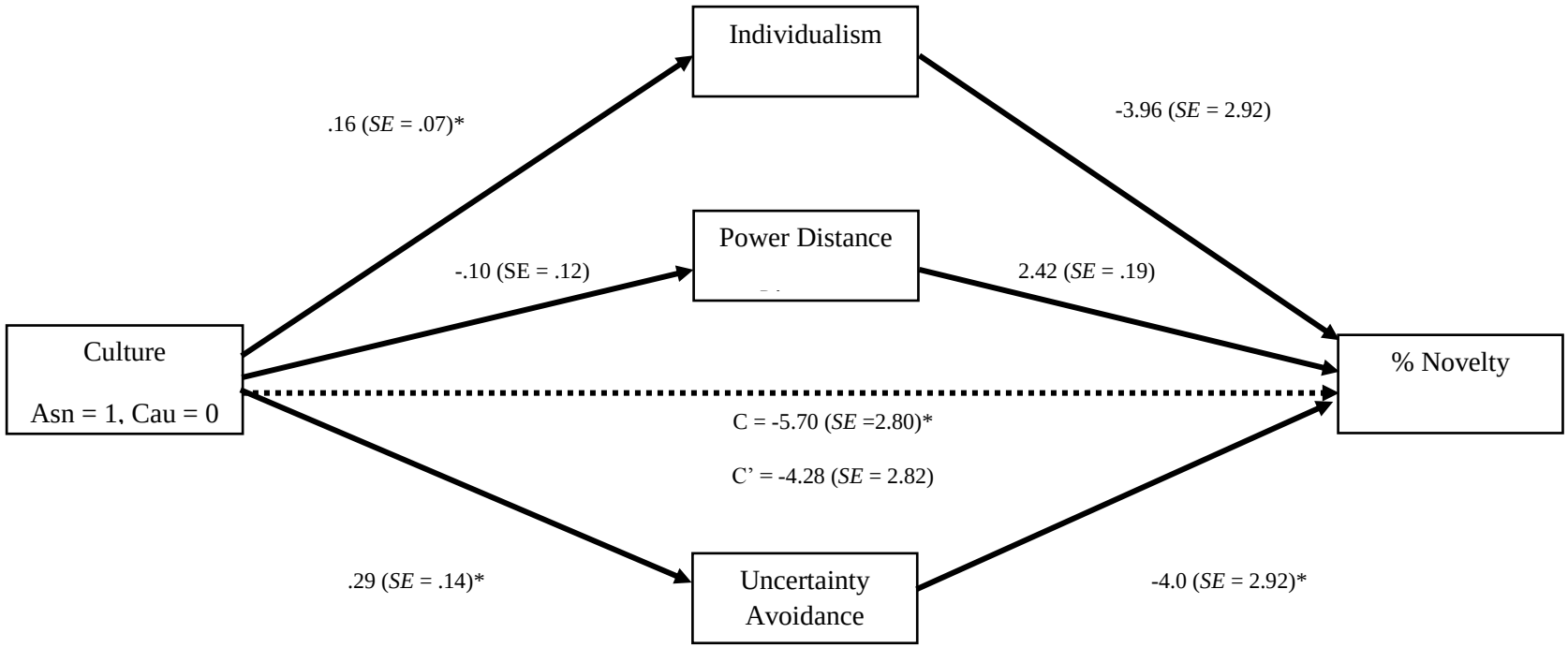

Figure 3. The estimated multiple mediation model. The numbers in the figure represent standardized regression coefficients derived from a bootstrap procedure. * $P < .05$, ** $p < .01$, *** $p < .001$; $R^2 = .07$.

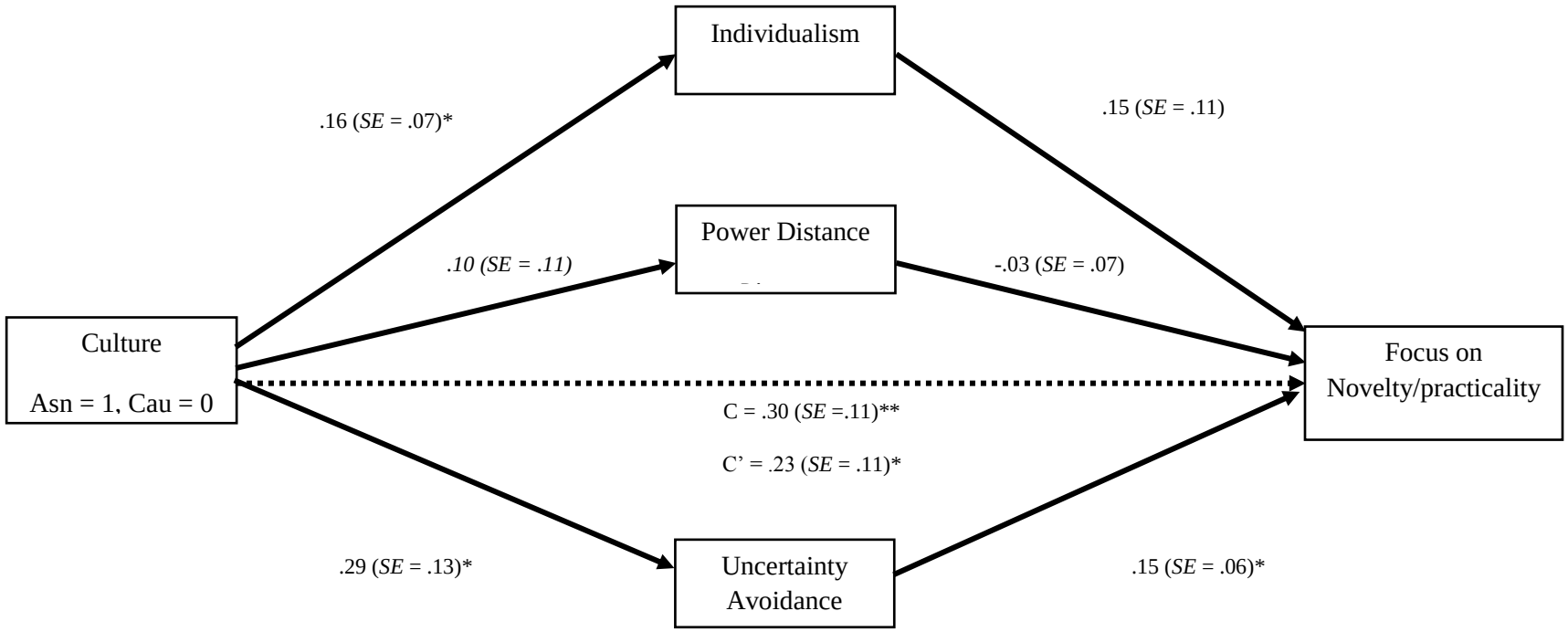

Figure 4. The estimated multiple mediation model. The numbers in the figure represent standardized regression coefficients derived from a bootstrap procedure. * $P < .05$, ** $p < .01$, *** $p < .001$; $R^2 = .07$.

Study 2: Examining the Mediating Role of Uncertainty Avoidance and Exploring the Effects of MCE

The primary purpose of Study 2 was twofold: first, to replicate the mediating role of uncertainty avoidance that was found in Study 1 using a different criterion measure for creativity (explicit attitudes). Second, to examine if MCE impacts the conceptualization and evaluation of creativity that is not culturally normative. The current study tests the mediating role of uncertainty avoidance on measures of explicit attitudes toward novelty and practicality. Explicit attitudes are an interesting alternative measure of creativity because attitudes are action tendencies that can facilitate or hinder action, which directly relates to why certain ideas are eventually accepted and others are rejected. Attitudes also tap into degree of social acceptance of different aspects of creativity at both individual as well as societal levels (Ajzen & Fishbein, 1980). As noted above in Hypotheses 1 and 2, I predict that the relationship between culture and explicit attitudes towards idea novelty versus practicality will be mediated by uncertainty avoidance such that high uncertainty avoidance will lead to more negative attitudes toward idea novelty rather than practicality.

I also introduce and test Hypothesis 3a and 3b, which predict the moderating role of MCE on explicit attitudes towards novelty versus practicality. I predict that Asian/Caucasian Canadian participants who have more exposure to different cultures will be better at novel/practical creative idea recognition:

Hypothesis 3: There will be an interaction between culture and MCE such that

H3a: A higher level of MCE will boost the explicit attitudes toward novelty for Asian Canadian participants compared to Asian Canadian participants with a lower level of MCE.

H3b: A higher level of MCE will boost the explicit attitudes toward practicality for Caucasian Canadian participants compared to Caucasian Canadian participants with a lower level of MCE.

Method

Participants and Design

Participants were 218 students, 117 of whom were Caucasian Canadian and 101 of whom were Asian Canadians. Asian Canadian participants in the current sample included some Korean participants (n = 8) and Taiwanese participants (n = 2); the rest were from China. As in Study 1, I took measures to ensure that the Asian Canadian participants were not acculturated to the Canadian culture by selecting participants who were born in an Asian country and identified mostly with their native culture. In order to qualify for the study, participants had to rate 6 or higher on a scale from 1 to 10 describing how much they identify with their native culture. The average age for Caucasian Canadian participants was 20.44 year old (SD = 2.70); there were 91 females and 26 males Caucasian Canadian participants. The average age for Asian Canadian participants were 21.02 years old (SD = 3.35), there were 69 females and 32 males Asian Canadian participants.

Procedure

Similar procedures were followed as in Study 1 with the exception that Study 2 was advertised as an in-lab study that examines common perceptions of creativity. If students chose to participate in the study they would receive bonus credits for courses they were currently taking. Unlike on-line Study 1, participants from this study were invited to come in to the lab. Participants were greeted in the lab by a research assistant and seated in front of a computer

station. After providing consent to the study, participants then proceeded with the study in which they completed a survey shown on the computer screen. Upon completion they were debriefed and thanked.

Measures

Uncertainty avoidance. Jung's (2002) scale which is a slightly modified version of Hofstede's (1980) 7-item uncertainty avoidance scale was used (See appendix A). Participants responded using a 7-point Likert-type scale (1 = *strongly disagree* and 7 = *strongly agree; α* = .82*)* to questions such as "I would not take risks when an outcome cannot be predicted".

Multicultural experience. I used the 15-item Multicultural Experience Questionnaire (MEQ) for the current study. This is a measure of multicultural experiences with and attitudinal openness towards diverse groups originally developed by Narvaez and Endicott (2009). It consists of two main subscales: Multicultural Experience score (sample items include: "I travel out of the country" on a scale of 1 to 5, 1 = never, 5 = regularly) as well as Multicultural Desire scores (sample item include: "I want to travel out of the country" on a scale of 1 to 5, 1 = not true at all, 5 = very true). Alphas for both subscales were high (α = .73, α = .71), and they were significantly correlated with each other (*r* = .65), thus, I used the composite measure of MEQ Total, which is the sum of both subscales, for all further analyses (see appendix D).

Evaluation ratings. This term is defined as the recognition of an idea as novel or practical. The task used in Mueller el al.'s (2012) study was used whereby participants were asked to rate a creative idea (*a running shoe with nanotechnology that adjusts fabric thickness to cool the foot and reduce blisters*). This idea was pretested in their previous study using 36 undergraduates as being highly creative, novel, and practical. Participants in the current study

provided their evaluation ratings of novelty and practicality about this idea on a sliding scale using the following instructions: On the scale below, please indicate how novel/practical you think this idea is? (1 = not novel/practical at all and 5 = extremely novel/practical). Responses formed two separate novelty and practicality scores which were used for subsequent analyses.

Explicit attitudes towards novelty and practicality. I used a scale to measure explicit attitudes towards novelty and practicality (Mueller et al., 2012). Participants were asked to rate their positive and negative feelings toward creativity- and practicality-related words on a 7-point scale (1 = strongly negative, 4 = neutral, 7 = strongly positive). Words associated with novelty included creative, inventive, original, and novel (α = .83), and words associated with practicality included practical, functional, constructive, and useful (α = .87). Overall, explicit attitudes were positive towards both aspects of creativity: novelty-related words (M = 5.82, SD = 0.81) and practicality-related words (M = 5.53, SD = 0.93). Results were similar to previous findings (Mueller et al., 2012).

Control measure. I controlled for openness to experience as it has been previously shown to be associated with creativity (Maddux & Galinsky, 2009). By measuring and subsequently controlling for this variable, I minimized the possibility that it could provide an alternative explanation for my results. I used the Mini-IPIP, a 20-item scale with four items measuring each of the five-factor model traits (see Appendix E). Participants were instructed to indicate how accurate a phrase is for them, (1 = not true at all, 5 = very true, sample item: *I am the life of the party*). Scores for individual items from the scale were summed to produce a total score. Cronbach's alpha was high (α = .80).

Data Analysis and Results

Table 5 presents the means, standard deviations, and correlations of the key variables. The zero-order correlations were also similar to past findings in that Asians tend to be more uncertainty avoidant than Westerners (Hofstede, 1980). As predicted, there was a positive correlation between culture and preference for novelty vs. practicality (Asian Canadian coded as 1, Caucasian Canadian coded as 0).

First, to examine participants' ability to recognize a novel creative idea, I conducted a one-way ANOVA with culture as the predictor variable and evaluation rating as the criterion variable. Results revealed that Asian Canadian participants rated the innovative shoe idea as less novel (M = 5.39, SD = .84) compared to Caucasian Canadians (M = 5.68, SD = .74), F (1, 208) = 7.13, p < .010. Unexpectedly, Asian Canadian participants (M = 5.58, SD = 1.02) rated the idea as being equally practical than Caucasian Canadian participants (M = 5.50, SD = .93), as differences were not statistically significant, F (1, 208) = -.41, p = *ns*.

Next, I tested explicit attitudes toward idea novelty and practicality for both cultures using a one-way ANOVA. Results showed significant differences between the two cultures for attitudes toward novelty, F (1, 208) =5.02, p = .03. Caucasian Canadian participants (M = 5.91, SD = .73) had more positive attitudes towards novelty than Asian Canadian participants (M = 5.70, SD = .87). There was no significant difference for attitudes toward practicality, (F (1, 208) =.63, p = *ns*.), although the means were in the expected direction: Asian Canadian participants (M = 5.59, SD = .95) displayed more positive attitudes toward practicality than Caucasian Canadian participants (M = 5.49, SD = .90).

Mediation analysis

Next, I tested uncertainty avoidance as a mediator for the relationship between culture and explicit attitudes towards novelty and practicality. As in Study 1, I used procedures described by Preacher and Hayes (2008). The analyses were conducted with SPSS that performed bootstrap sampling with replacement to draw 5,000 samples from the dataset. I obtained the 95% confidence interval of the indirect effects with 5000 bootstrap resamples (Preacher & Hayes, 2008). Then, using the estimates on the basis of these 5,000 bootstrap samples, the mean direct and indirect effects and their confidence intervals (CIs) were calculated.

First, it was found that culture (Asian Canadian = 1, Caucasian Canadian = 0) was positively associated with uncertainty avoidance (B = .38, p < .001). It was also found that culture was negatively related to explicit attitudes toward novelty (B = -.21, p = .04). The mediator, uncertainty avoidance, was negatively related to explicit attitudes toward novelty (B = -.14, p = .02). Because the value of 0 did not fall within the range of the CI (B = -.07, CI = -1.58 to -.01), I can conclude that the finding was statistically significant at p < .05. In addition, results indicated that the direct effects of culture on preference for explicit attitudes toward novelty became non-significant (B = -.15, p = .19) when controlling for uncertainty avoidance, thus suggesting a full mediation. Figure 6 displays the results. Thus, hypothesis 2c was supported and these results are consistent with Study 1 in demonstrating the mediating role of uncertainty avoidance.

Moderating Effects of MCE

I tested whether MCE boosts the explicit attitudes toward novel creativity as well as novel creative recognition for Asian Canadian participants by introducing MCE as a moderator. I used hierarchical multiple regression analyses whereby culture and MCE were entered in the first

step, and the interaction between culture and MCE were entered in the second step. There was no significant effect of MCE on attitudes toward practicality for both cultures, thus H3b was not supported (β = .05, p = *ns*). However, results indicated a significant interaction between MCE and culture on explicit attitudes toward novelty (β = .05, p < .05). The interaction is graphed in figure 6. Further simple slope analysis of this interaction revealed that the effect of culture on explicit attitudes toward novelty was significant only for participants with low levels of MCE (*b* = -1.28, p = 0.03). Among Asian Canadian participants with high levels of MCE, attitudes toward novelty were equally positive as Caucasian Canadian participants (*b* = -.07, p = *ns*) and more positive than Asian Canadian participants with low levels of MCE (*b* = -.20, *p* = 0.02). In addition, there was no effect of MCE on explicit attitudes toward novelty for Caucasian Canadian participants (*b* = -.09, p = *ns*).

Following the same procedures, I tested the interaction between MCE and culture using evaluation ratings of novel creativity as the criterion variable. Similar patterns emerged as above. Results indicated a marginally significant interaction between MCE and culture on evaluation ratings of novel creativity (β = .07, *p* = .06). The interaction is graphed in figure 7. Further simple slope analyses of this interaction revealed that among Asian Canadian participants, MCE impacted novelty ratings when it was low (*b* = -1.58, *p* < 0.01), but not when it was high (*b* = -.03, p = *ns*). In addition, examining the effects of MCE within culture, there was no effect of MCE for Caucasian Canadian participants, but it boosted the novelty ratings for Asian Canadian participants (*b* = .31, p = *.02*). Overall, hypothesis 3b was not supported. However, hypothesis 3a was supported in that attitudes towards novel creativity were boosted for Asian Canadian participants but not for Caucasian Canadian participants.

Discussion

Study 2 contributes to the culture and creativity literatures by first replicating the role of uncertainty avoidance as a mediator for the relation between culture and creativity. Results demonstrated that Asian Canadian participants had greater uncertainty avoidance, which led to more negative explicit attitudes toward novelty. In the same way, culture hindered the ability to recognize novel aspects of a creative idea via uncertainty avoidance. Second, the current study is the first to show that MCE enhances novel creativity for Asian Canadian participants, as those with greater exposure to different cultures had more positive explicit attitudes toward novelty. They were also better at novel idea recognition such that Asian Canadian and Caucasian Canadian participants who had extensive MCE performed at the same level.

In the current sample, culture was significantly associated with MCE. I suspect there may be qualities that distinguish Asians who have come abroad to pursue education versus native Asians who live in Asia. For example previous studies have demonstrated more moderate culture effects for Asian students residing in Canada compared to Asian students residing in their native country (Heine & Hamamura, 2004). To ensure results from Study 2 are not "particular" to Asians in North America, I conducted Study 3 next to examine the role of MCE on creativity in a group of Chinese students who may not have the experience of immigrating or living abroad for their studies.

Table 5

Study 2 Descriptive Statistics and Zero Order Correlations

	Mean	SD	1	2	3	4	5	6	7	8
1. Culture	.46	.50								
2. Uncertainty Avoidance	4.61	.88	.25**	**.80**						
3. Multicultural Experience	47.13	6.08	.36**	.04	**.72**					
4. Evaluation Focus	3.35	.77	.14*	-.09	-.09	**.81**				
5. Novelty Attitudes	5.82	.81	-.12	-.16*	.11	-.09	**.83**			
6. Practicality Attitudes	5.53	.93	.05	.09	.04	.02	.42**	**.87**		
7. Novel Ratings	5.54	.79	-.19**	.07	-.05	-.16*	.24**	.21**		
8. Practical Ratings	5.56	.98	-.03	.07	.01	-.04	.18*	.35**	.32**	

Note. The numbers in bold on the diagonal are Coefficient alphas. * $p < .05$; ** $p < .01$. Asian Canadian coded as 1, Caucasian Canadian coded as 0.

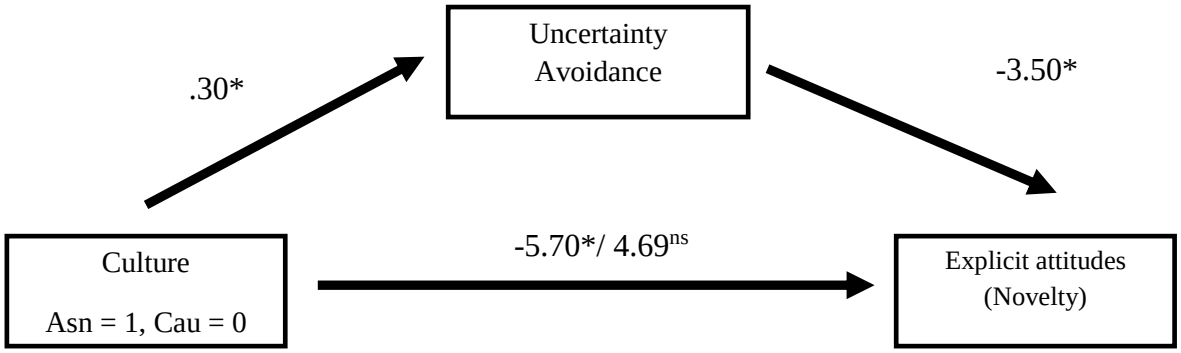

Figure 5. Study 2 mediation between culture and explicit attitudes toward novelty.

*p<.05; **p<.01; ***p<.001.

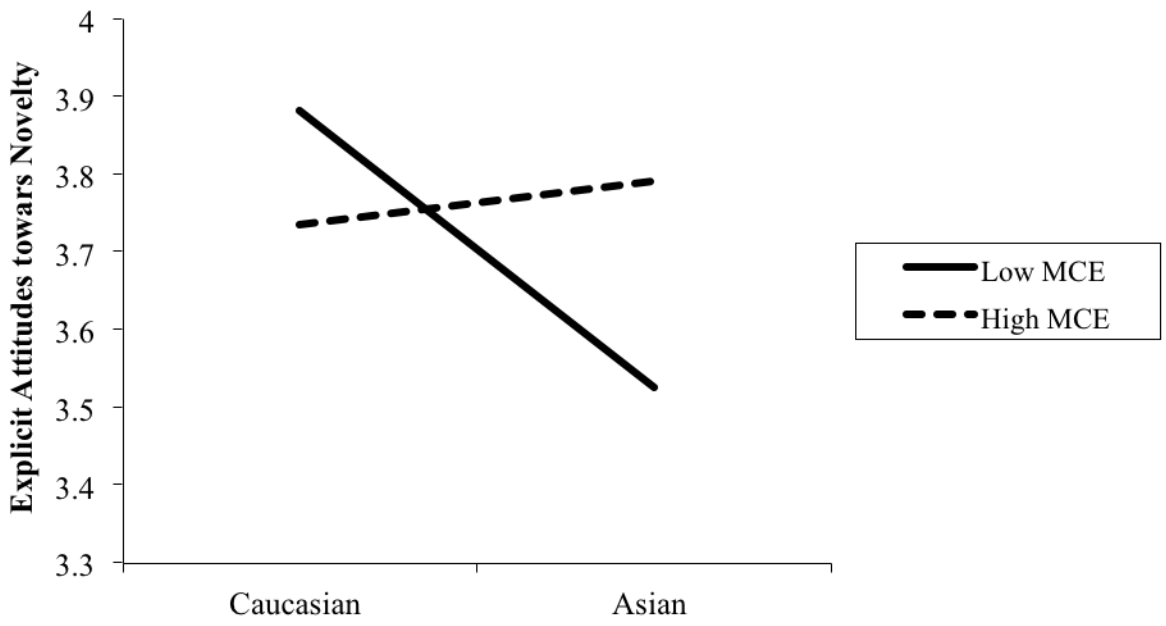

Figure 6. Study 2 interaction between culture and level of MCE on explicit attitudes toward novelty.

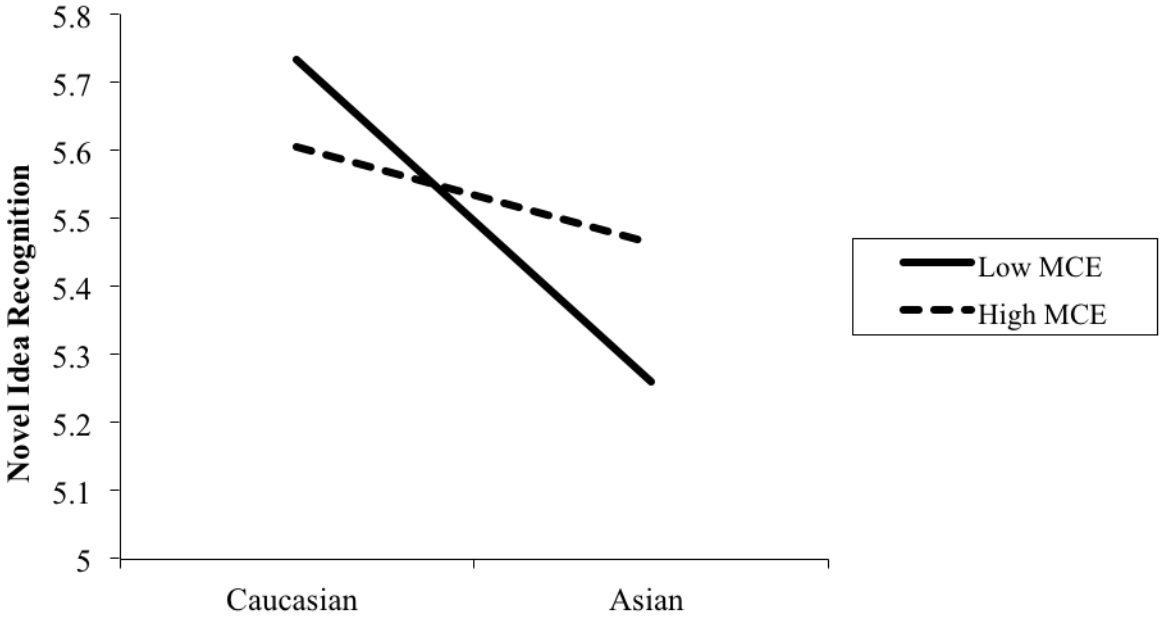

Figure 7. Study 2 interaction between culture and level of MCE on novel idea recognition.

Study 3: The Effects of Multicultural Experience on Novel Creativity in China

The main purpose of Study 3 was to replicate the findings of Study 2 with a Chinese sample (natives from mainland China), a cultural group with less extensive multicultural experience than those who may be living abroad. There are good theoretical reasons to examine this group separately from Asians that are living abroad as well as Caucasian Canadians living in Canada, as acculturation research has demonstrated that people adopt the ways of a new culture with time spent there (e.g., Heine & Lehman, 2004; Kitayama, Duffy, & Kawamura, 2003). For example, research has revealed that when Asians living abroad are primed with ideas from Western cultures, they are more likely to think in Western ways (Hong, Morris, Chiu, & Benet-Martinez, 2000). Therefore, it is a possibility that living in a Western culture would expose individuals to an abundant source of Western primes which may not be present for those living in their native cultures, and it may be these Western experiences that generate the observed effects of MCE.

In addition, it is important to test the link between MCE and creativity among a native Chinese sample because it will offer external validity for the MCE mechanism. Previous studies have found differences in the effect of culture between students temporarily studying abroad compared to those remaining in their home country (Heine & Hamamura, 2004). For example, comparing the magnitude of self-enhancing motivations across three different groups of participants (Caucasian Canadians living in Canada, Asians living in Canada, and Asians living in Asia), Heine and Hamamura (2004) found that the two groups of Asian Canadian participants did not behave in the same way, as Asians living in Canada took on a more intermediate position in their motivation to self-enhance. Specifically, Asians living in Asia were the least likely to self-enhance and Caucasian Canadians living in Canada were the most

likely to self-enhance. Asians living in Canada were more similar to their Caucasian Canadian counterparts because their mean level of self-enhancement was slightly closer to the Caucasian mean compared to the Asian mean.

In this study, I propose that MCE will have similar beneficial effects for a pool of Asian participants that did not have as much exposure to different cultures as Asian students who came to study in North America. That is, will MCE benefit the novel creativity aspect of Chinese individuals in China, enhancing their ability to produce products and services that are not only practical but also novel? More importantly, the current study extends Study 2 by testing the role of MCE on another key measure of creativity: the ability to *generate* novel creative ideas. I predict that:

Hypothesis 4: Mainland Chinese participants who have more MCE will generate more novel creative ideas compared to those with less MCE.

Method

Procedure

This study employed Guilford's Alternate Uses task, which requires participants to generate as many uses for a common item as possible (such items can include paper clip, hanger, and a plastic bag, see Appendix H). Specifically, for the current study, participants were asked to generate as many uses as they can for a brick (Guilford, 1956). Participants' responses were assessed for idea creativity and the amount of ideas that were generated (Routledge & Juhl, 2012; Runco, 2011). As noted in the literature review, this creativity task is different than those utilized in Studies 1 and 2 because instead of asking participants to rate the creativity in ideas that have already been generated, this task asks participants to generate ideas.

Participants

Eighty-five undergraduate students at a large Chinese university enrolled in an Organizational Behaviour course were recruited for the present study. All participants were native Chinese speakers who were also well versed in English as the class was taught entirely in English. In total, 74 Chinese students participated in the study. Mean age of the current sample was 21 years old, *SD* = 1.46. There were 38 male and 36 female participants. Data were collected by administering two different surveys to students at the beginning and towards the end of the term. There were two separate surveys at two different times because the first survey measured basic demographic information such as language competence and amount of exposure to different cultures. The second survey included the creativity task as discussed in detail below.

Measures

Language Competence. Participants rated their own language capabilities by answering *"Please rate how competent you feel with your English language skills"* (1 = not competent at all, 7 = perfectly competent).

Multicultural Experience. I used the 15-item Multicultural Experience Questionnaire (MEQ) for the current study. This is a measure of multicultural experiences with and attitudinal openness towards diverse groups originally developed by Narvaez and Endicott (2009). It consists of two main subscales: Multicultural Experience score (sample items include: "I travel out of the country" on a scale of 1 to 5, 1 = never, 5 = regularly) as well as Multicultural Desire scores (sample item include: "I want to travel out of the country" on a scale of 1 to 5, 1 = not true at all, 5 = very true). Alphas for both subscales were high ($\alpha = .73$, $\alpha = .71$), and they were significantly correlated with each other ($r = .61$), thus, I used the composite measure of MEQ Total, which is the sum of both subscales, for all further analyses (see appendix D).

Creativity Task. Towards the end of the term, participants took part in a second survey on problem-solving. They were asked to come up with as many creative uses for a brick as they could in exactly 3 minutes.

Creativity Scoring. Two coders (one Asian Canadian and one Caucasian Canadian) blind to the experimental hypothesis independently coded participants' uses for a brick in two ways. First, coders counted the total number of ideas generated by the participant (overall *M* = 5.58, *SD* = 3.54). Second, they rated the novel creativity for each of the ideas. Coders used the Consensual Assessment Technique (CAT) developed by Amabile (1996) that has been used in recent research (e.g., Runco, 2011; Silvia et al., 2008). This method of measuring creativity has been found to be both valid and reliable as judges consistently agree on the creativity ratings of ideas with high inter-rater reliability (r = .72 - .93). More importantly, a previous study has found this method to be cross-culturally valid ((Niu & Sternberg, 2001). The two coders reviewed all ideas generated by each participant and rated each participant on a subjective scale for novelty. The two coders rated independently on a scale between 1 to 5, 1 = "not at all novel/unique" to 5 "= extremely novel/unique". They also coded for the practicality of an idea using the same rating scheme. (1 = "not at all practical/useful" to 5 = "extremely practical/useful"). The inter-rater correlation for this coding scheme was *r* = .79 for both sets of ratings.

Data Analysis and Results

Table 6 shows descriptive statistics and correlations among all major variables. Because language competence was significantly correlated with number of ideas, it was entered as a control variable along with openness to experience. Using regression analysis, MCE was entered as a predictor variable, and measures of novelty and practicality as outcome variables.

Novel idea generation score. As expected, there was a significant effect of MCE on

novel creativity score, b = .87, t (78) = 2.86, p = .005. Increasing amounts of MCE significantly predicted higher scores of novel creativity.

Practical idea generation score. There was no main effect of MCE on scores of practical creativity generated (b = .06, t (78) = .20, p = ns).

Number of ideas: There was no main effect of MCE on the number of ideas generated, b = .54, t (78) = .63, p = ns. These results replicate previous findings where studies have found that MCE did not affect the number of ideas generated (Cheng & Leung, 2011).

Overall, results suggest that Chinese living in China with higher levels of MCE generated ideas that scored higher on ratings of novel creativity, thus supporting hypothesis 4. However, MCE did not make a difference for the number of ideas generated or on measures practical creativity.

Discussion

As an extension of Study 2, the current study examined the link between MCE and creativity by testing its effects in a sample of Chinese students that currently reside in China. Results indicate that level of MCE enhanced the novel aspect of creative ideas generated. However, MCE did not have an effect on practical creativity or the number of ideas generated.

The current study makes two important contributions. By utilizing a commonly accepted creativity test, the present study demonstrated the facilitative effect of MCE in boosting novel creativity performance. In addition, it extended findings in Studies 1 and 2 by testing creative idea generation as a different aspect of the creative process in addition to evaluation focus/ratings (Study 1) and explicit attitudes toward novel and practical creativity (Study 2). MCE also had facilitative effect for Chinese participants, boosting their novel creative performance. Results of the present study were consistent with results from Study 2 showing that MCE improved the aspect of creativity that is not normative in one's own culture. Regardless of whether participants were currently living in a foreign country, the facilitative effect of MCE applied to native Chinese students residing in China as well as those that have traveled abroad. Overall, this study showed that Asian Canadian participants with the most amount of exposure to different cultures outperformed others on the novel aspects of a creativity task. It is interesting to note that levels of MCE did not help boost number of ideas generated or the practicality of the ideas generated. This suggests that a higher rating in novelty is not merely due to the generation of a higher quantity of ideas but rather MCE impacted the quality of the ideas generated.

Thus far, MCE has been a measured variable, which cannot lead to causal conclusions. It is possible that there may be confounding variables that I may not have taken into consideration. For example, it is possible that Chinese participants who have had more exposure to different

cultures also read more news stories from around the world which may be considered a confounding variable. Thus, Study 4 was conducted by manipulating MCE in an in-lab experiment with blocked random-assignment.

Table 6

Study 3 Descriptive Statistics and Zero Order Correlations

	M (*SD*)	1	2	3	4	5
1. Language Competence	5.00 (1.35)					
2. Multicultural Experience	2.9 (.47)	.54**				
3. Practicality score	4.50 (.80)	.16	.75			
4. Novelty score	2.25 (1.29)	-.06	.22*	.08		
5. Number of ideas	6.00 (3.54)	.22*	.17	.60**	.28*	

Notes.

* $p < .05$.

** $p < .01$.

Study 4: Culture and Creativity: Integrating the Role of Uncertainty Avoidance and Multicultural Experience

Studies 1 and 2 documented cultural inclinations for the two aspects of creativity and the underlying psychological mechanism responsible for the cultural differences via uncertainty avoidance. Studies 2 and 3 demonstrated the beneficial effects of MCE. Thus, the main goal of Study 4 is to examine how experimental manipulation of MCE impacts the relationship between culture, uncertainty avoidance, and creativity as measured by evaluation focus and evaluation ratings. The current study will first replicate findings from Study 2. Specifically, I will examine the effects of the key variables on evaluation ratings and evaluation focus placed on product ideas. Then I will test a moderated mediation model in which levels of MCE will moderate the mediation between culture and creativity via uncertainty avoidance. Specifically, I predict that:

H3c: Asian Canadian participants will have higher novelty evaluation ratings in the MCE condition relative to Asian Canadian participants in the control condition.

H3e: Caucasian Canadian participants will have higher practicality evaluation ratings in the MCE condition relative to Caucasian Canadian participants in the control condition.

H3f: Asian Canadian participants will focus more on idea novelty in the MCE condition relative to Asian Canadian participants in the control condition.

H3g: Caucasian Canadian participants will focus more on idea practicality in the MCE condition relative to Caucasian Canadian participants in the control condition.

H5: MCE will moderate the strength of the mediated relationship between culture and creativity via uncertainty avoidance such that the mediated relationship will be weaker under high levels of MCE than low levels of MCE.

Method

Participants and Design

I obtained 125 participants for this study (76 female participants and 49 male participants). The mean age of the sample was 20.75 (*S.D.* = 3.44). There were 60 (30 Asian and 30 Caucasian Canadian) participants in the control condition and 65 (36 Asian and 29 Caucasian Canadian) participants in the experimental condition. In the current Asian sample, 1 participant was from Singapore, 2 participants were from Malaysia, and 4 were from South Korea (making up 5% of the overall Asian sample); the rest were all from China.

Procedure

Participants were recruited using the same method as Study 1. Participants were invited to come in to the lab for the current study. The experimenter informed participants that they would be involved in a study investigating students' perceptions of certain product ideas. The multicultural experience manipulation was carried out during the first part of the study for the experimental conditions. Following previous procedures, this part of the study was disguised as a pretest for pilot testing slideshow materials for a different study (Leung & Chiu, 2010). The creative idea recognition task was carried out in the second part of the study. In addition, participants provided additional demographic information. Finally, they were debriefed and thanked.

Multicultural experience manipulation. The experimental manipulations were adapted

from Leung and Chiu (2010) where participants were randomly assigned to one of two conditions: American[9]-Chinese MCE experimental conditional, in which participants viewed a 5-min multimedia PowerPoint presentation that depicted different aspects of American and Chinese cultures juxtaposed next to each other. Images displayed multiple domains including architecture, apparel, natural scenery, home decorations, entertainment, cuisine, recreation, music, movies, arts, and literature (see examples on Appendix G). As part of the cover story, participants were then asked to write a 5-minute essay describing their impression of the presentation in order to reinforce participants' experience. In the control condition, following previous procedures (Tadmor et al., 2012), participants viewed a PowerPoint presentation of a series of geometric shapes, and were also asked to reflect about their experience viewing the geometric shapes presentation.

Manipulation check. To ensure that the multicultural exposure manipulation was effective in eliciting thoughts about both American and Chinese cultures, participants were asked to think about the presentation and describe the extent to which they thought about the following items as they were viewing the presentation: a) the differences between American culture and Chinese cultures; b) the similarities between American culture and Chinese culture. The responses were recorded on a Likert scale (1 = *I did not think about it at all* and 7 = *I thought about it a lot).* An American-Chinese MCE score was created by averaging the two items (r = .66). Finally, participants were asked if they knew what was being manipulated in the study, and if so, to explain what it was. No one in the study was aware of the MCE manipulation.

[9] Original American experimental stimuli were used even though my sample is Canadian. This is because American and Canadian cultures share a great deal of similarities. Also, both Canadian and American cultures are considered Western.

Measures

Evaluation ratings. As with Study 1, this term is defined as the recognition of an idea as novel or practical. Creative idea recognition was assessed in both conditions where participants rated the novelty and practicality of 15 different creative product ideas. All ideas were selected from an online source listing popular creative ideas as rated by experts. I also made sure that the product ideas were not biased toward a particular culture by selecting product ideas showcasing products that could be marketed in both Asian and Western countries (see examples in Appendix F). This method of creativity evaluation has been termed consensual assessment, meaning that products or ideas are creative to the extent that other appropriate observers also agree that they are creative. A creative individual's own subjective view of creativity on a set of products correlates surprisingly well with others that make the same judgements independently. Thus, independent ratings made by observers can serve as a measure of creativity (Amabile, 1996).

Participants first viewed a picture of the product idea, then made their ratings based on the following three questions: "On the scale below, please indicate how novel you think this idea is", "On the scale below, please indicate how practical you think this idea is", and "On the scale below, please indicate how creative you think this idea is." All evaluations were made on a Likert scale ranging from 1 (not novel/practical/creative at all) to 7 (extremely novel/practical/creative). The score of all 15 ideas were aggregated to a composite score measuring novelty ($\alpha = .92$), practicality ($\alpha = .83$), overall creativity ($\alpha = .88$). Correlations between these ratings appear in Table 7.

Uncertainty avoidance. As in Study 1, I used Jung's (2002) uncertainty avoidance scale, which is a slightly modified version of Hofstede's (1980) 7-item uncertainty avoidance scale (See appendix A). Participants responded using a 7-point Likert-type scale (1 = *strongly disagree*

and 7 = *strongly agree; α* = .82*)* to questions such as "I would not take risks when an outcome cannot be predicted".

Evaluation focus. As with Study 1, this term is defined as attention to the distinct aspects of creativity when evaluating an idea. Mueller el al.'s (2012) scale was used to assess which aspects of creativity participants focused on the most when making assessments. Participants were asked the following three questions: "I focused on the following aspect of the idea while making my evaluation"; "I made my evaluation of the idea predominantly because of the idea's";" The features of the idea which appealed more to me when I made my evaluation were." (α = .81). Response choices were: 1 = *novelty only*, 2 = *mostly novelty, some usefulness*, 3 = *balance of novelty and usefulness*, 4 = *mostly usefulness, some novelty*, 5 = *usefulness only*. A composite measure was created by averaging responses to all three questions. This measure was used for subsequent analyses.

Openness to experience. As with study 2, I used The Mini-IPIP, a 20-item scale with four items measuring level of openness to experience (see Appendix E). Participants were instructed to indicate how accurate a set of phrases is for them, (1 = not true at all, 5 = very true, sample item: *I am the life of the party*). Scores for individual items from the scale were summed to produce a total score for the scale. Cronbach's alpha was high (α = .80).

Data Analysis and Results

Manipulation check. I conducted a two-way analysis of variance (ANOVA) to examine the effects of culture and manipulation condition on the MCE score (indicating how much participants thought about the differences between Asian vs. Western culture). There was no statistically significant interaction between culture and condition on the MCE score, F (1, 124) =

1.73, $p = ns$. There was also no effect of culture on MCE, F (1, 124) = 2.18, $p = ns$. However, there was a significant effect of condition, F (1, 124) = 264.67, $p < .001$. Participants in the manipulation condition (M = 3.70, SD = .95) were more likely to have thought extensively about both Chinese and American cultures than those in the control condition (M = 1.32, SD =.93). Therefore, the manipulation was successful.

Hypothesis testing

Interaction between culture and MCE on evaluation ratings

First, I examined the interaction between culture and MCE on the two different types of creativity ratings: idea novelty and idea practicality. Mean comparisons across culture and condition are displayed in Table 8.

Evaluation ratings (Novelty). I used Analysis of Covariance (ANCOVA) controlling for openness to experience[10] to analyze the effect of culture and exposure to MCE on creativity evaluation ratings. As expected, there was a main effect of culture on the novelty ratings of ideas such that Asian Canadian participants (M = 4.29, SD =1.21) rated the ideas as less novel compared to Caucasian Canadian participants (M = 4.62, SD = .78), F (1, 124) = 4.43, p = .04. There was no significant main effect of condition on the novelty ratings, F (1, 124) = 0.43, $p = ns$. However, in support of hypothesis 3, results revealed a significant two-way interaction

[10] Previous studies investigating the link between MCE and creativity have controlled openness to experience in their design in order to rule out its effect as an alternative explanation (e.g. Maddux et al., 2010). In the present investigation, following similar procedures, I also controlled for openness to experience. However, the results did not alter based on whether or not openness to experience was included in the analysis.

between culture and condition, F (1, 124) = 7.72, p = .006 on novelty ratings.

Follow up simple effect analyses revealed that Caucasian Canadian participants in the control condition (M = 4.70, SD = 1.45) rated the ideas as significantly more novel than Asian Canadian participants in the control condition (M = 3.90, SD = 1.89), F (1, 124) = 7.72, p <.01. However, there was no difference in the experimental condition between Asian Canadian participants (M = 4.53, SD = 1.39) and Caucasian Canadian participants (M = 4.59, SD = 1.23), F (1, 124) = .04, p = *ns,* confirming the beneficial effect of MCE in boosting novelty ratings for Asian Canadian participants (see figure 8). In addition, results comparing the effect of MCE within culture also revealed that Caucasian Canadian participants' novelty ratings did not differ across the two conditions, F (1, 124) = .28, p = *ns,* however, Asian Canadian participants rated significantly higher in the experimental MCE condition than the control condition, which further supports the beneficial role of MCE in enhancing Asian Canadian participants' ability to recognize novelty aspects in creative ideas, F (1, 124) = 3.18, p = .03. Thus, results supported hypothesis 3c (Figure 8).

***Evaluation ratings (Practicality)*.** I then conducted a second ANCOVA controlling for openness to experience to analyze the effect of culture and exposure to MCE on practicality evaluation ratings. Results revealed that there was no significant effect of culture on the practicality ratings, F (1, 124) = .39, p = *ns*. However, there was a significant main effect of condition such that those in the MCE condition (M = 4.04, SD = .85) rated idea practicality higher than those in the control condition (M = 3.62, SD = 1.00), F (1, 124) = 4.72, p = .03. There was no significant interaction between culture and MCE, F (1, 124) = .98, p = *ns*, thus hypothesis 3d was not supported (See figure 9).

Interaction between culture and MCE on evaluation focus

Evaluation focus. First, I tested whether results of Study 1 (hypothesis3a and 3b) would replicate using Analysis of Covariance (ANCOVA) controlling for openness to experience to analyze the effects of culture and MCE on aspects of creativity that participants focused on when making idea evaluations. Recall that a lower score means more focus on idea novelty and a higher score means more focus on idea practicality. There was a marginally significant main effect of culture on evaluation focus. However, this effect was qualified by a significant two-way interaction between culture and condition, F (1, 124) = 7.39, p = .008. To better understand the nature of this interaction, follow up simple effect analyses revealed that there was no effect of culture in the control condition as Asian Canadian participants (M = 3.57, SD = .78) focused on the same aspect of idea creativity as Caucasian Canadian participants (M = 3.68, SD = .67), F (1, 121) = .37, p = *ns*. However, Asian Canadian and Caucasian Canadian participants focused on different aspects of the idea in the manipulation condition, F (1, 121) = 9.26, p = .003. Specifically, Asian Canadian participants (M = 3.43, SD = .82) focused more on novel aspects of the idea than Caucasian Canadian participants (M = 4.00, SD = .64), Caucasian Canadians focused more on practicality aspects of the ideas (See figure 10).

In addition, results comparing the effect of MCE within culture also revealed that Asian Canadian participants focused more on novel aspects of the idea in the manipulation condition (M = 3.43, SD = .82) than Asian Canadian participants in the control condition (M = 3.68, SD = .67), although this effect was marginal, F (1, 121) = 2.22, p = .13. On the other hand, Caucasian Canadian participants in the manipulation condition (M = 4.00. SD = .65) focused significantly more on idea practicality compared to the control condition (M = 3.56, SD = .78), F (1, 121) = 4.96, p = .03. These findings provided support for hypotheses 3e and 3f that exposure to different cultures led participants to identify aspects of creativity that are less prevalent in their own

culture.

Testing a moderated mediation model

Hypothesis 5 posited a moderated mediation effect, whereby the mediation effect of uncertainty avoidance on creativity would vary by levels of MCE. To test this moderated mediation effect, I followed procedures proposed by Mueller et al. (2005). Accordingly, a moderated mediation is demonstrated when (a) the main effect of the independent variable on the dependent variable is significant; and (b) the main effect of the independent variable on the mediator is significant when the moderator is controlled and (c) the change in the effect of the mediator on the dependent variable is significant as the moderator changes.

The results showed a significant main effect of culture on novel creativity (b = -.72, $p <$ .01). Results showed a non-significant effect of culture on uncertainty avoidance when MCE was controlled (b = .216, p = *ns*) as well as a non-significant interaction effect of MCE and culture (b = .01, p = *ns*). Thus, hypothesis 5 was not supported. A possible reason for this null finding is that uncertainty avoidance was not correlated with culture in this particular sample. This could likely be due to an artifact such as participant motivation and measurement error (Cheung & Rensvold, 2000; Van de Vijver & Leung, 1997).

Discussion

Results of Study 4 contribute to the literature by delineating the effect of MCE and uncertainty avoidance on the two different aspects of creativity that vary across cultures. The study makes several important theoretical contributions. MCE affected both Asian Canadian and Caucasian Canadian participants' tendency to focus on different dimensions of creativity when evaluating creative ideas. Specifically, Asian Canadian participants who were in the MCE condition were more likely to focus on novel aspects of the ideas compared to Asian Canadian participants who were in the control condition; whereas Caucasian Canadian participants in the MCE condition were more likely to focus on practical aspects of the ideas compared to Caucasian Canadian participants who were in the control condition.

MCE also enhanced Asian Canadian participants' evaluation ratings of creative ideas on the novel aspect of creativity. Notably, Asian Canadian participants in the MCE condition rated the ideas as being more novel creative compared to those in the control condition. However, MCE did not affect evaluation ratings of practicality for both cultures. Caucasian Canadian and Asian Canadian participants did not rate ideas as being more practical in the MCE condition compared to those in the control condition.

Lastly, the current study did not find that MCE moderated the mediation between culture and creativity via uncertainty avoidance. This was mainly because culture was not significantly related to uncertainty avoidance, which may be due to artefacts in the current sample (e.g., Asian participants came abroad to pursue an education). However, an exploratory analysis (See Appendix I) demonstrated a significant three-way interaction between culture, MCE, and uncertainty avoidance which showed that Asian Canadian participants were most likely to benefit from exposure to multiple cultures to facilitate better idea novelty recognition when they

were more uncomfortable with uncertainty. On the other hand, ratings of practicality were not affected by levels of MCE for both cultures, a pattern that is consistent across analyses.

Table 7

Study 4 Descriptive Statistics, Zero Order Correlations

	1	2	4	5	6	7	8
1. MCE							
2. Culture	.05						
3. Openness	.14	-.13					
4. Novelty ratings	.12	-.16	**.92**				
5. Practicality ratings	.22*	-.09	.67**	**.83**			
6. Creativity ratings	.19*	-.29**	.77**	.76**	**.88**		
7. Uncertainty Avoidance	.09	.10	-.16	-.02	-.08	**.82**	
8. Evaluation Focus	.04	-.15	-.04	-.05	-.06	.08	**.83**

Table 8

Study 4 Mean comparisons between culture and conditions

Novelty		Condition					
		Control		Manipulation		All	
	Culture	Mean	SD	Mean	SD	Mean	SD
	CAU	4.69	.56	4.55	.97	4.62	.78
	ASN	3.96	1.28	4.58	1.09	4.29	1.21

Practicality		Condition					
		Control		Manipulation		All	
		Mean	SD	Mean	SD	Mean	SD
	CAU	3.78	.77	4.08	.75	3.93	.76
	ASN	3.47	1.19	4.01	.94	3.76	1.09

Overall		Condition					
		Control		Manipulation		All	
		Mean	SD	Mean	SD	Mean	SD
	CAU	4.76	.61	5.06	.87	4.91	.76
	ASN	4.00	1.38	4.54	1.01	4.29	1.21

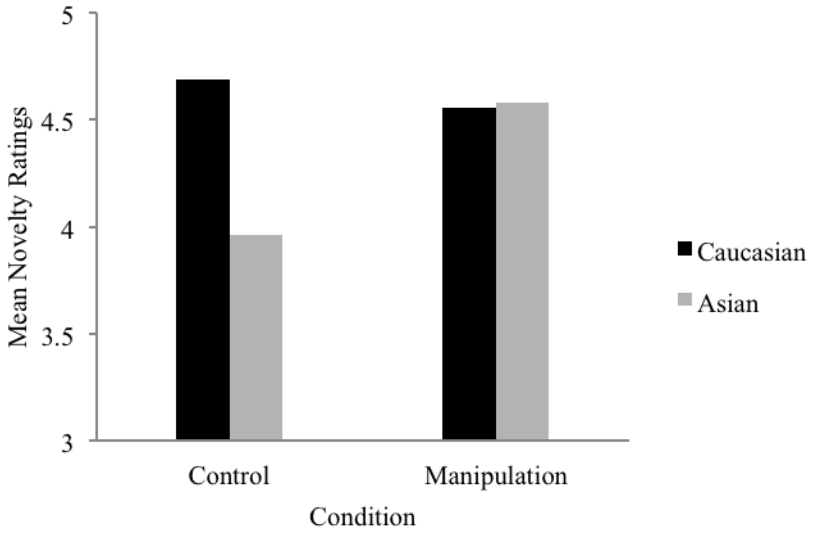

Figure 8. Study 4 interaction between culture and condition on novelty ratings (1 = not at all novel, 7 = extremely novel).

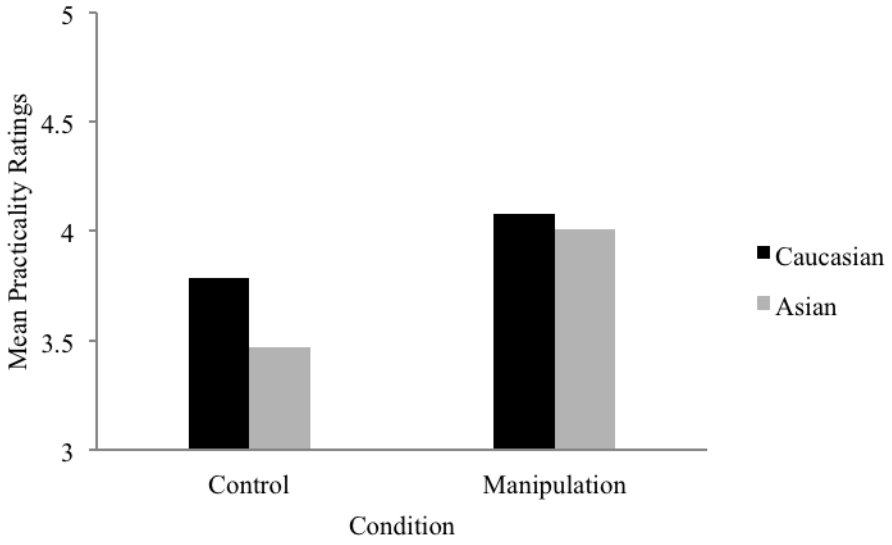

Figure 9. Study 4 interaction between culture and condition on practicality evalauation ratings (1 = not at all practical, 7 = extremely practical).

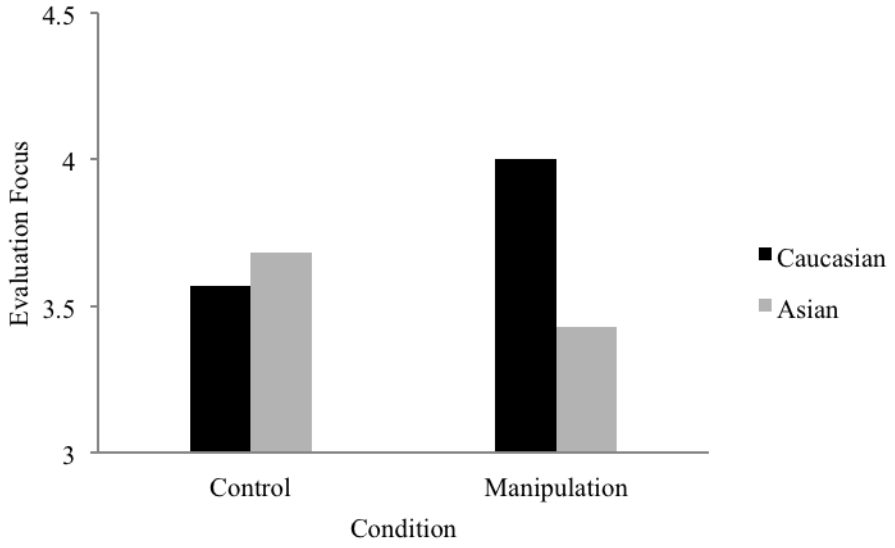

Figure 10. Study 4 interaction between culture and condition on evalution focus (*1= Novelty only 2 = Mostly novelty 3= Balance of both 4 = Mostly Practicality 5 =Practicality only)*

Table 9 Summary of Results

Study	Dependent Measures	Results
1	**% of Novelty vs. Practicality percentage assigned towards Overall Creativity**	1. Asian Canadians assigned greater % towards practicality than Caucasian Canadians (H1a supported) 2. Caucasian Canadians assigned greater % towards novelty than Asian Canadians (H1a supported) 3. Uncertainty avoidance fully mediated the relationship between culture and novel creativity (H2 supported)
	Evaluation focus	1. Asian Canadians focused more on practicality than Caucasian Canadians (H1b supported) 2. Caucasian Canadians focused more on novelty than Asian Canadians (H1b supported) 3. Uncertainty avoidance partially mediated the relationship between culture and novel creativity (H2 supported)
2	**Evaluation rating (innovative shoe)**	1. Asian Canadians rated idea as less novel than Caucasian Canadians (H1b supported) 2. Asian Canadians rated ideas as more practical than Caucasian Canadians (H1b supported)
	Explicit Attitudes	1. Uncertainty avoidance mediated explicit attitudes toward novelty (H2 supported) 2. MCE X culture significant interaction: a. Among high MCE participants, no difference between Asian Canadians and Caucasian Canadians (H3a supported) b. Among low MCE participants, Caucasian Canadians had more positive explicit attitudes toward novelty than Asian Canadians (H3a supported) c. Asian Canadian participants with high levels of MCE had more positive attitudes toward novelty than Asian Canadian participants with low levels of MCE (H3a

		supported)
3	**Novelty of creative ideas**	MCE significantly predicted level of idea novelty for Chinese in mainland china (H4 supported)
4	**Evaluation ratings of all ideas**	1. MCE X culture significant interaction: a. Asian Canadians in the MCE condition thought ideas were more novel creative than Asian Canadians in the control condition (H3c supported) b. In the MCE manipulation condition, there were no difference between Asian Canadians and Caucasian Canadians (H3c supported)
	Evaluation Focus	1. MCE X culture significant interaction: a. Asian Canadians in the MCE condition focused more on Novelty of ideas than Asian Canadians in the control condition (H3e supported) b. Caucasian Canadians in the MCE condition focused more on practicality of ideas than Caucasian Canadians in the control condition (H3f supported)

CHAPTER 4

GENERAL DISCUSSION

In today's volatile, uncertain, complex and, ambiguous business world, organizations face challenges that are without precedent. New problems arise due to limited natural resources, fast advancing technology, and massive unpredictability that have never been encountered in history. As a result, organizational creativity has been flagged as a crucial 21st century skill that is needed to confront these problems. To better understand how to innovate on a global scale, culture and creativity have become an increasingly important topic of research.

To fill existing gaps in the literature on culture and creativity, I built on previous research to further understand the relationship between culture, uncertainty avoidance, and the resultant creative outcomes (in terms of definition of creativity, explicit attitudes toward creativity, evaluation ratings, evaluation focus, and idea generation). I also proposed and tested the effect of MCE as a moderator on these measures of creative outcomes. I conducted two studies that supported the mediating effect of uncertainty avoidance (Studies 1 and 2) explaining different preferences of Caucasian Canadians and Asian Canadians toward novel or practical aspects of creativity, respectively. I found that MCE moderated the effect of culture on creativity, boosting recognition of and preferences for novel creativity for Asian Canadians and Chinese students residing in China (Studies 2 and 3). Moreover, I uncovered that participants who were exposed to experimentally manipulated MCE were more likely to focus on the aspect of creativity that is less prevalent in their native culture. I also found that MCE enhanced Asian Canadian participants' explicit

attitudes and evaluation ratings of a creative idea on the novel dimension of creativity (Studies 3 and 4).

Contributions

Evidence from the studies presented makes several important theoretical contributions. First, this dissertation provides important supporting evidence for theory, research, and practice related to culture and creativity – the conceptualization of creativity goes beyond general creativity to include two separate but related domains. Consistent with previous theorizing, I found that Asian Canadian participants prefer idea practicality over novelty whereas Caucasian Canadian participants preferred novelty above practicality. This finding helps to explain why Asians do not fare as well on creative tests that focus solely on the novel dimension of creativity (Ng & Rudowicz, 2003). Although researchers agree that creative ideas are those that are both novel and practical (Amabile, 1996), important cultural differences exist in the conceptualization and assessment of creativity (Morris & Leung, 2010). My findings emphasize the importance of separating the two aspects of creativity when investigating the topic of creativity and also innovation, which is the implementation of a creative idea, in future studies.

Another contribution of the present dissertation is to address the underlying mechanisms responsible for the relationship between culture and creativity. I empirically tested a theoretically grounded model (Erez & Nouri, 2010), which proposed the cultural values of individualism/collectivism, power distance, and uncertainty avoidance as mediators of the relationship between culture and creativity. In particular, the present investigation advances the literature by finding that, as predicted by theory, culture has an indirect effect on preferences for novelty/practicality that is mediated by uncertainty

avoidance. This finding is consistent with recent experimental evidence demonstrating the role of uncertainty avoidance on implicit attitudes toward novel creativity (Meuller et al., 2012). While people may desire and espouse novelty in a creative idea, in actuality, they may reject novel ideas over practical ones when experiencing uncertainty. This phenomenon whereby organizations, scientific institutions, and decision makers routinely reject creative ideas that find success elsewhere has long puzzled researchers (Staw, 1995). For example, the father of modern rocket propulsion, Robert Goddard, faced many years of ridicule and criticism towards his ideas for being impossible and absurd before he was finally able to launch his ideas, which subsequently changed the world. Another example is the famous Harry Potter series by author J.K. Rowling. Her work was rejected 12 times before finally getting published. Through two studies, Meuller and colleagues (2012) also revealed uncertainty avoidance as a key variable that explains why people may reject novel ideas even in the face of intentions to the contrary. When uncertainty makes people anxious, they will reject novel ideas to avoid the anxiety and uncertainty inherent in pursuing a novel and unpredictable path.

Unexpectedly, both individualism/collectivism and power distance did not mediate the relationship between culture and creativity when uncertainty avoidance was taken into consideration. With regards to individualism/collectivism, there is prior evidence suggesting that individualism/collectivism does not relate directly to creativity. For example, Japan is a highly collectivistic culture; however, the Thomson Science Innovation Indicator Country Ratings (in Brocklehurst, 2005) showed that Japan ranks at the top of the list with regard to the absolute number of patents. In addition, power distance also did not mediate the relationship between culture and creativity above and beyond the effects of uncertainty

avoidance. This may be due to the fact that power distance did not correlate significantly with culture in my sample. Although scholars have noted that mediation may still exist in the absence of a direct relationship between an independent and a dependent variable (Mallinckrodt et al., 2006; Preacher & Hayes, 2008), my analyses suggest that individualism/collectivism and power distance do not mediate this relationship. Consistent with the Erez and Nouri's (2010) model, another reason why these two factors did not exhibit significant indirect effects on creativity could be that my study design did not activate salient cultural cues involving social and task contexts. The model suggested stronger cultural variation when individuals are working in the presence of others and/or working on an ill-structured task. In the present investigation, participants in my studies were not asked to work with others or imagine the presence of peers and supervisors while completing the studies. Also, they were not given an ambiguous task, as the process of completing an online study is very structured. Overall, these findings suggest that in the absence of salient social cues or ambiguous tasks, culture has the strongest indirect effect on preferences toward practicality/novelty via uncertainty avoidance.

Another noteworthy contribution of the present dissertation is delineating the role of MCE on culture and creativity. My studies are the first to explore how MCE can reduce the culture-based creative differences by showing that MCE boosted the emphasis on novel creativity for Asian Canadians. There were no differences in focus placed on novelty and novel evaluation ratings between Asian Canadian participants and Caucasian Canadian participants with high MCE. Based on the general tendency for all societies, whether individualist or collectivist (Harrison, & Huntington, 2000; Feldman, 1984), to be intolerant of responses that deviate too greatly from accepted norms, I predicted and found that,

novelty would be less preferred in Asian cultures and practicality would be less preferred in Western cultures. However, exposure to MCE attenuated this effect by creating greater acceptance toward the aspect of creativity that is not generally accepted in a certain culture. This effect was especially prevalent in Study 3, in which it was found that MCE boosted novel creativity in a group of native Chinese students residing in China.

Thus, MCE not only facilitates creativity, as suggested by previous research, it can also mitigate the suppression effects of one's native cultural norms so that individuals are more likely to generate aspects of creativity that are not prevalent in their own culture. Further supporting this line of reasoning, I found that Asian Canadian participants with higher levels of MCE were able to utilize the synergistic effects of MCE to boost both their conceptualization of creativity (in terms of explicit attitudes toward novel creativity) and evaluation of creativity (in terms of evaluation focus and evaluation ratings of novel aspect of ideas). This patter was observed consistently observed for Asian Canadians in my studies. However, I didn't find consistent evidence that this is the case for Caucasian Canadians in terms of conceptualization and evaluation of creativity. The only finding that supported the notion that MCE boosted Caucasian Canadians' evaluation of practical creativity was found in Study 4 where it was found that higher levels of MCE boosted more evaluation focus on practical aspects of creative ideas. Interestingly, MCE did not influence evaluation ratings or conceptualization of practicality for Caucasian Canadians. I speculated that having more exposure to MCE would help Caucasian Canadians generate more practical ideas as practicality is an aspect of creativity that is not normally emphasised in the West. However, this was not the case, one possible explanation could be that the MCE measure in my study does not indicate cultural distance of the countries that Caucasian Canadians visited. It is

possible that having a higher score on MCE would mean that the participant visited lots of visits to countries in Europe which does not expose them to practical aspect of creativity that are more prevalent in countries in Asia. Thus it would serve future studies to further explore the cultural distance of countries visited in the MCE measure.

The finding of a significant three-way interaction between MCE, culture, and uncertainty avoidance in an exploratory analysis suggests, consistent with previous research, there is a caveat to the effect of MCE on creativity. Results showed that Asian Canadian participants who were less likely to avoid uncertainty emphasized novelty more than those who were highly uncertainty avoidant. However, MCE boosted novel creativity for Asian Canadian participants who were more likely to avoid uncertain situations. Previous research has showed that need for cognitive closure, a construct similar to uncertainty avoidance, reduced the beneficial effects of MCE. The present research suggests that high uncertainty avoidance does not reduce the beneficial effects of MCE for Asian Canadian participants; it actually enhances novel creativity for Asian Canadian participants. It should be noted that the results may look different had MCE not been manipulated but measured as was the case in previous studies.

Practical Implications

In a poll of 1,500 CEOs across the globe, creativity ranked number one as a key competency of the future (Berman, 2010), as such, this dissertation project offers several practical implications. Given its high demand, it is important to understand ways that can unlock organisational creative potential. Whether it is learning to be more novel for Asians living abroad/ in Asia or more practical for Caucasian Canadians, evidence from this dissertation suggests that creativity can indeed be cultivated. However, it is vital to take into

account the influence of both individual differences and cultural contexts. To begin, the current findings suggest framing to be an important element that one should consider when trying to influence another to come on board with a creative idea. Depending on the culture, an idea could be framed differently in terms of its level of novelty or practicality to ensure buy-in from recipients such as decision makers and investors from different cultures.

Despite the facilitative effect of MCE for both cultures, practitioners should be cautious when using MCE as a training or selection tool. Prior studies have found that the cognitive benefit of MCE may not come automatically as studies have found that mere exposure to different cultures without *multicultural learning* will not necessarily benefit one's creativity (Maddux et al., 2010). My findings thus illustrate the importance of selecting and training individuals carefully for overseas assignments. Another important consideration my research uncovered is uncertainty avoidance. First, to realize the maximum benefit of MCE, it is best to select individuals who have high tolerance for uncertainty as company ambassadors. Second, training programs can also help coach employees about the process of adjusting to a different culture and developing coping strategies that will make uncertainties in a foreign culture seem less daunting. For example, traditional training programs have mainly focused on cultural differences that highlight uncertain aspects of a different culture (Lee, 2012). Such training programs are limited because they focus on differences instead of similarities, which may unintentionally heighten feelings of uncertainty. To better serve trainees, an alternative international diversity training that identifies ways in which cultures are different *as well as* similar can help facilitate feelings of certainty when learning about a foreign culture.

As more Asian companies are looking to branch out into Western countries (such as companies like Samsung), the current findings also have practical implications for promoting creative performance among multinational organizations. First, my findings suggest companies should avoid simply sending their employees overseas to develop alternate conceptualizations of creativity. For example, if Chinese employees were sent to Canada to get more creative but did not interact with locals and learn about the cultural differences between the two countries, and instead only worked on their projects with other Chinese colleagues, then they would be unlikely to realize the benefits of MCE on creativity. Second, if potential candidates for an overseas assignment are generally closed to new and uncertain experiences, their time in foreign cultures may actually be too overwhelming or even threatening, causing resistance to new ways of thinking about creativity. Thus, when assigning expatriate roles, it is crucial to select candidates who have higher uncertainty tolerance and provide opportunities to immerse and interact with the foreign culture. In addition, equipping individuals with the right skill sets to cope with feelings of uncertainty, such as mindfulness training (Gudykunst, 1998) will help promote the beneficial potential of MCE. Lastly, organizations can provide training to set expectations and bring awareness of possible cultural conflicts. Such training will help reduce the likelihood of culture shock to maximize benefits of MCE.

Lastly, results from the current investigation present an interesting view on the role of uncertainty. Previous scholars have shown that uncertainty spurs the search for and generation of creative ideas (Audia & Goncalo, 2007); others and the current research have shown that a strong motivation and desire to avoid uncertainty also makes people less able to recognize creativity (Mueller et al., 2012). Given the findings from the present

investigation, another perspective on the role of uncertainty is that uncertainty may have the potential to act as creative fuel. The process of creating something new from nothing will inevitably be met with the feeling of uncertainty at the onset. All creators encounter this feeling and they must be able to live with uncomfortable feelings such as uncertainty, fear, and doubt, in order to generate waves of ideas that will eventually help reduce the level of uncertainty. Creative people are those that are able to stay in the shade of uncertainty relentlessly, and make decisions that are based on what is best for the creative endeavour with the particular outcome in mind. Unfortunately, those with high uncertainty avoidance will likely make decisions that will reduce the feelings of uncertainty the fastest, thus compromising the creative process. Uncertainty may not be the culprit, but it is the motivation to avoid it that mitigates creative performance.

Future Directions, Strengths, and Limitations

The current research is the first to explore how MCE can lead to reductions in a culture-based performance difference. It is also the first to uncover the mediating role of uncertainty avoidance underlying the relationship between culture and preferred aspects of creativity. Thus, findings serve as a catalyst for further replication and investigation. In particular, the present findings should be tempered by the recognition that culture and creativity are both multifaceted and complex constructs. It stands to reason that there may be an array of other cultural, individual, or situational factors that affect the relationship between culture and creativity. Therefore, future studies can further investigate the link between culture and creativity by considering other factors that play a role in this relationship. For example, it would be interesting to examine how different lay theories of

creativity, social orientations, motivational predilection, and other contextual factors in society affect creativity.

This dissertation was strictly concerned with novelty versus practicality when defining creativity and when recognizing, rating, or generating ideas; as such, I did not examine idea implementation. As reflected in the popular quote: "Ideas are a dime a dozen. People who implement them are priceless", the ultimate goal of creative idea generation is to be able to implement the creative ideas that result in innovation (Van de Ven, 1986). Implementation refers to whether or not new ideas are carried out. Most operationalisations of innovation involve successful implementation of ideas (Van de Ven, 1986). Future studies should examine the process by which the conceptualization and recognition of creative ideas lead to idea implementation across different cultural contexts (Van de Ven et al., 2008). Further, future studies can explore whether exposure to multiple cultures will also impact the process of implementing creative ideas. Another area of future exploration is the topic of leadership and creative performance. Researchers can study how leaders serve as creative inspirations that promote novel and/or practical creativity within individuals and teams.

Lastly, I did not examine creative performance of teams. As previous research has found that MCE benefits creative team performance (Tadmor et al., 2012), it would be interesting to examine whether it is the case that Asian teams will benefit from MCE by producing more novel ideas and Caucasian teams will benefit from MCE by producing more practical ideas. Erez and Nouri (2010) have reasoned that social context may also play a role. Since the mere presence of fellow team members could serve as a culture cue, will the beneficial effect of MCE hold up in group situations? Additionally, research that

investigates creative performance of culturally heterogeneous teams is an important area for future development. Could it be the case where teams made up of members from both Asian and Caucasian Canadian cultures are able to produce ideas that are high on both novelty and practicality? Scholars have argued that teams of all types can be highly effective given that they develop common norms and shared expectations for work outcomes (Earley & Gibson, 2002). Corroborating evidence has shown that multicultural teams with high cultural intelligence (CQ) develop shared values more quickly than multicultural teams with low CQ (Adair, Hideg, & Spence, 2013). Just as people in different cultures have distinct norms for aspects of creativity, they also have distinct communication & strategic norms that they use to negotiate creative solutions (Adair & Brett, 2005). Thus, future research on teams can examine the communication processes in culturally heterogeneous & culturally homogeneous teams to unpack creative thought processes and communication interplay that lead to the adoption of novel and creative ideas.

Given cultural differences in preferences for the two aspects of creativity, multicultural teams may encounter challenges when attempting to establish shared standards when evaluating creative ideas. At the same time, there is potential for multicultural teams to outperform culturally homogeneous teams since a creative idea should be both practical and novel. I believe that as teams overcome the initial challenges of defining shared work expectations and establishing a shared understanding of creativity, they will be able to take advantage of different members' cultural knowledge and background. This will allow multicultural teams to benefit from a wider pool of knowledge to generate ideas that are both novel and practical. Future research should address challenges faced by multicultural teams in finding agreement in the conceptualization and evaluation of creativity. Given my

findings, I believe that multicultural teams with higher levels of MCE will be most creative, as team members can emphasize both novelty and practicality.

The present investigation has a number of strengths. First, it illustrates a key theoretical point that when examining creativity in different cultural contexts, it is important to separate measures of creativity in terms of novelty and practicality. The present research implemented a measure of creativity that effectively balances demands for both novelty and practicality. Previous studies have also measured creativity in terms of fluency, flexibility, and originality (Guilford, 1956; Runco, 2011). While these constructs may capture the novel dimension of creativity, practicality may not be captured appropriately according to this alternative operationalization of creativity. Moreover, in the current research, Study 4 incorporated a consensual rating method (CAT) that allowed the assessment of participants' ability to recognize both novelty and practicality of ideas via evaluation ratings. The effect of MCE on these evaluation ratings suggests that MCE plays an important role in facilitating one's ability to recognize creative ideas as well as come up with creative ideas.

Notably, the current research relied on a diverse set of samples and measures as well as a variety of both experimental and non-experimental methods to demonstrate validity of my findings: I find the same robust relationships regardless of the population sampled (separate groups of Asian Canadian and Caucasian Canadian students at a large North American university, Chinese students at a university in mainland China), and regardless of whether multicultural experience was measured or manipulated. In addition, the present research replicated the mediating role of uncertainty avoidance with multiple outcome measures of creativity: percentage assigned to practicality/novelty, focus placed practicality/novelty, and explicit attitudes toward practicality/novelty (Studies 1 and 2).

Also, the beneficial effect of MCE was uncovered in three different samples (Studies 2, 3, and 4).

An additional strength of the current research is that the construct of creativity was operationalized in four different ways across four separate studies: explicit attitudes toward novel and practical creativity, evaluation focus towards novelty and practicality, the ability to recognize novel and practical ideas, and finally the ability to generate novel and practical ideas. Across all four studies, the patterns of findings were consistent regardless of the measure of creativity used. In answering the key research question, I found that MCE was mostly beneficial for Asian Canadian and Chinese participants in boosting the level of novel creativity by endorsing more positive attitudes toward novel creativity, focusing more on novelty aspects of creativity when evaluating creative ideas, and enhancing their ability to both recognize and generate novel creative ideas. MCE also promoted more focus towards practicality for Caucasian Canadian participants when evaluating creative ideas.

Despite these strengths, limitations should also be noted. One limitation is that uncertainty avoidance across all four studies was measured rather than manipulated. This limits the causal interpretation of uncertainty avoidance on creative performance. In previous studies, researchers have manipulated uncertainty by manipulating potential study outcome. For example, in one study participants in a certain condition were told that they will receive a certain payment at the end of a study while those in an uncertain condition were told their name would be entered into a lottery to determine their outcome (Mueller et al., 2012). Although this study did not directly manipulate uncertainty avoidance, participants in the uncertain situation will likely be reminded of previous experiences that were ambiguous, thus triggering feelings of anxiety and stress that are related uncertainty

avoidance. Future studies can directly manipulate uncertainty avoidance to further examine and isolate the interactive effects of MCE, uncertainty avoidance, and culture.

Another limitation in my results is that I did not find the expected relationship between culture and two related cultural values: power distance and uncertainty avoidance in Studies 1 and 4, respectively. These non-significant findings are likely due to measurement artifacts because my Asian Canadian samples were Asian students living in Canada. However, given that uncertainty avoidance was found to be a mediator in Study 1, and that the results were also replicated in Study 2, we can be more confident about the effects of uncertainty avoidance in mediating the relationship between culture and creativity. Future studies may test the multiple mediation models with different culture samples to offer more conclusive results regarding the role of power distance. Another explanation for why I did not find the expected relationship between culture, power distance, and individualism/collectivism, and creativity is that as suggested by Erez and Nouri's model (2010), the current set of studies did not include any strong situational cues that may have activated cultural norms while participants completed the study. Thus, future studies can test the second part of the model by examining whether social context (working alone versus working with group of others) and task type (working on ambiguous problems versus defined problems) moderate the relationship between values and the two aspects of creativity.

Lastly, a limitation with Study 2 is that the Asian Canadian participants had significantly higher levels of MCE than the Caucasian Canadian participants. Indeed, the experience of traveling to Canada to study at a University means that Asian Canadian participants inherently have a higher level of foreign culture exposure than Caucasian

Canadian participants who may not have traveled across the globe to attend a Canadian University. As such, Asians in my studies may not accurately represent native Asians who have not had the experience of traveling and studying abroad. However, Study 3 provided evidence that boosts confidence that these results also generalize to a group of native Chinese participants living in China.

Conclusion

In conclusion, to answer the question whether Asians lack creativity, results from my study suggest that although Asians do not place the same amount of emphasis on both novel and practical aspects of creativity, they do not lack creativity in general. Imposing a Western conceptualization of creativity onto a different culture may actually underestimate the creative contributions from an Eastern society such as China. The current research provides a critical first step toward understanding how cultural values mediate the relationship between culture and creativity. It also demonstrates the beneficial effect of MCE that reduces the culturally based creativity performance difference for novelty. Results of the studies are timely given today's ever-changing global business environment. Taken together, these studies emphasize the importance of considering cultural values (levels of uncertainty avoidance) and individual differences (levels of MCE) and different aspects of creativity in psychological research on creativity and multiculturalism. As opportunities for exposure to different cultures multiply in an increasingly interconnected and mobile world, organizations should take advantage of the beneficial effects of MCE by promoting cross-cultural experiences and greater tolerance to new cultural concepts among employees. A deeper understanding of the process by which MCE benefits other aspects of organizational

creativity such as multicultural teams and idea implementation is an important goal for future research.

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APPENDIX A: Uncertainty Avoidance

Instructions: Please indicate your agreement with each of the following statements based on your typical thoughts and feelings about yourself.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. I prefer structured situations to unstructured situations.
2. I prefer specific instructions to broad guidelines.
3. I tend to get anxious easily when I don't know an outcome.
4. I feel stressful when I cannot predict consequences.
5. I would not take risks when an outcome cannot be predicted.
6. I believe that rules should not be broken for mere pragmatic reasons.
7. I don't like ambiguous situations.

APPENDIX B: Power Distance

Please indicate the extent to which you agree or disagree with each of the following statements by writing the number that best corresponds to your answer.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. In most situations managers should make decisions without consulting their subordinates

2. In work related matters, managers have a right to expect obedience from their subordinates

3. Employees who often question authority sometimes keep their managers from being effective

4. Once a decision of a top-level executive is made, people working for the company should not question it

5. Employees should not express disagreements with their managers

6. Managers should be able to make the right decisions without consulting with others

7. Managers who let their employees participate in decisions lose power

8. A company's rules should not be broken—not even when the employee thinks it is in the company's best interest

APPENDIX C: Individualism/Collectivism

Please indicate the extent to which you agree or disagree with each of the following statements by writing the number that best corresponds to your answer.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Personal independence

1. Only those who depend on themselves get ahead in life

2. To be superior a person must stand alone

3. If you want something done right, you've got to do it yourself

4. What happens to me is my own doing

5. In the long run the only person you can count on is yourself

Competitive success

6. Winning is everything

7. I feel that winning is important in both work and games

8. Success is the most important thing in life

9. It annoys me when other people perform better than I do.

10. Doing your best isn't enough; it is important to win.

Working alone

11. I prefer to work with others in a group rather than working alone

12. Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group

13. Working with a group is better than working alone

14. People should be made aware that if they are going to be part of a group then they are sometimes going to have to do things they don't want to do

Group interests

15. People who belong to a group should realize that they're not always going to get what they personally want

16. People in a group should realize that they sometimes are going to have to make sacrifices for the sake of the group as a whole

17. People in a group should be willing to make sacrifices for the sake of the group's well-being

Group productivity

18. A group is more productive when its members do what they want to do rather than what the group wants them to do

19. A group is most efficient when its members do what they think is best rather than doing what the group wants them to do

20. A group is more productive when its members follow their own interests and concerns

APPENDIX D: Multicultural Experience

Instructions: Please answer these questions according to your experience.

1. I travel out of the country

1	2	3	4
Never	1-2 times in my life	3 or more times	Regularly

2. I want to travel outside of my country.

1	2	3	4	5
Not true at all				Very true

3. I speak well

1	2	3	4
1 language	2 languages	3 languages	more than 3 languages

4. I correspond currently with people from other countries

1	2	3	4
Never	1 country	2-3 countries	more than 3 countries

5. I have friends from cultural-racial-ethnic backgrounds different than my own

0 friends 1 friend 2 friends 3 friends 4 friends 5 or more friends

5b.How close are they? Very close Moderately close Not very close

6. I want to have friends from different cultural-racial-ethnic backgrounds.

1	2	3	4	5
Not true at all				Very true

7. I work with people with cultural-racial-ethnic backgrounds different from my own.

1	2	3	4	5
Never				Always

8. I go out of my way to hear/read/understand viewpoints other than my own

1	2	3	4	5
Never				Always

9. I try to get to know people who are different from me.

1	2	3	4	5
Never				Always

10. I push myself to explore my prejudices and biases.

1	2	3	4	5
Never				Always

11. Discussing issues of discrimination, racism and oppression makes me uncomfortable.

1	2	3	4	5
Never				Always

12. I have had courses in intercultural communication

0	1 course	2 courses	3 or more courses

13. I have lived in a contrasting community (with a very different culture from my own)

0	1-2 months	3-6 months	6-9 months	over 9 months
13a. How many times?		_____	_____	_____ ____
13b. How many different countries?		_____	_____	_____ ____

14. I pay attention to news about the world beyond the U.S.A.

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Always

15. I enjoy media and art from different cultures

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Always

APPENDIX E: Openness to Experience

Instructions: Please indicate your agreement with each of the following statements based on your typical thoughts and feelings about your organization.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. Believe in the importance of art.
2. Have a vivid imagination.
3. Tend to vote for liberal political candidates.
4. Carry the conversation to a higher level.
5. Enjoy hearing new ideas.
6. Enjoy thinking about things.
7. Can say things beautifully.
8. Enjoy wild flights of fantasy.
9. Get excited by new ideas.
10. Have a rich vocabulary.
11. Am not interested in abstract ideas.
12. Do not like art.

13. Avoid philosophical discussions.

14. Do not enjoy going to art museums.

15. Tend to vote for conservative political candidates.

16. Do not like poetry.

17. Rarely look for a deeper meaning in things.

18. Believe that too much tax money goes to support artists.

19. Am not interested in theoretical discussions.

20. Have difficulty understanding abstract ideas.

APPENDIX F: Sample of Ideas Assessed

APPENDIX G: MCE Manipulation Sample Slides

APPENDIX H: Creativity: Alternate Uses (Brick) Task

Instructions:

**** *Please spend about 3 minutes completing this exercise. Move on to the next part after about 3minutes regardless of how many things you have listed out* ****

Many people use bricks to build houses, but bricks have thousands of interesting and unusual uses. In the next 3 minutes, list as many uses of bricks as you can think of. Do not limit yourself to certain kind of size bricks.

You may use as many bricks as you like. Do not limit yourself to the uses you have seen or heard about; think about as many new uses as you can.

APPENDIX I: Exploratory Analysis from Study 4

Interaction between culture, MCE, on Overall creativity

Table 5 shows descriptive statistics and correlations among all major variables. Results show that in both cultures, novelty and practicality were significantly correlated with overall creativity. Thus, a strong positive correlation between novelty, practicality, and overall creativity confirmed that a creative idea should be both novel and practical.

Evaluation ratings (Overall creativity). A third ANCOVA controlling for openness was conducted to test the relationship between culture and effects of MCE on the overall creativity assessment of the ideas. Results revealed a marginal effect of condition as those in the experimental condition (M = 3.62, SD = 1.00) rated the ideas as more creative than those in the control condition (M = 3.62, SD = 1.00), F (1, 124) = 4.72, p =.32. There was also a significant main effect of culture as Asian participants Asian Canadian participants (M = 4.29, SD = 1.21) rated the ideas as less creative than Caucasian Canadian participants (M = 4.91, SD = .76), F (1, 124) = 4.72, p < .001. Finally, there was a marginally significant interaction between culture and condition, F (1, 124) = 3.43, p = .06.

While not statistically significant, follow up simple effects results illustrate patterns that were similar with that of novelty ratings. Caucasian Canadian participants (M = 4.76, SD = .61) in the control condition rated the idea as significantly more creative than Asian Canadian participants in the control condition (M = 4.00, SD = 1.38), F (1, 124) = 8.60, p = .004. However, the difference in overall creativity ratings were no longer significant in the experimental condition where both Asian and Caucasian Canadian participants rated the ideas as equally creative, again, confirming the beneficial effect of MCE for Asian Canadian participants F (1, 124) = 3.67, p = *ns*. See figure 12.

Interaction between Culture, MCE, Uncertainty avoidance, on Creativity.

Given that hypothesis 5 was not supported, I analysed the role of MCE and UA by introducing both as moderator variables. Testing UA as a moderator instead of a mediator, the analysis will examine whether levels of uncertainty avoidance will interact with MCE to result in different outcomes. In addition, testing UA as a mediator may be used to drive interventions to serve applied goals (Baron, R.M. & Kenny, D.A., 1986). Thus, I used hierarchical multiple regression analysis to examine the possibility of a three-way interaction between culture, MCE, and uncertainty avoidance. I expected that exposure to MCE will moderate the relationship between uncertainty avoidance and culture in terms of the ability to recognize novel creative ideas. I expected this to be the case for novel creativity for Asian Canadian participants and practical creativity for Caucasian Canadians.

The control variable openness to experience and main effects (levels of uncertainty avoidance, culture, and study condition) were entered in the first step. Subsequently, the three two-way interactions between uncertainty avoidance × condition, uncertainty avoidance × culture, and culture × condition were entered in the second step. Finally, a three-way interaction between uncertainty avoidance × culture × condition was entered in the last step. Lower-order terms were centered to reduce multicollinearity.

***Evaluation ratings (Novelty)*.** Results from the multiple regression for novel creativity revealed a marginally significant two-way interaction of uncertainty and culture (β = -.37, p = .12). More importantly, there was a significant three way interaction between uncertainty avoidance, culture, and condition on evaluation ratings of novel creativity (β = .23, R^2 = .15, p = .048). To determine the nature of the three-way interaction, I examined the

slopes of outcomes on novel creativity for Asian and Caucasian Canadian participants at one standard deviation above and below the mean of uncertainty avoidance. The results of these analyses are graphed on figure 13 and figure 14. As those figures suggest, the three-way interaction was driven by a significant two-way interaction between uncertainty and condition for Asian Canadian participants (figure 13). Further simple slope analysis revealed that among Asian Canadian participants, uncertainty avoidance impacted novelty ratings when it was high (b = 2.27, p < .001), but not when it was low (b = 1.44, p = *ns*). Importantly, the simple slopes for control vs. manipulation condition among Asian Canadian participants were significantly different from one another. In the control condition, the simple slope was significant (b = -3.89, p = <.001), however, in the manipulated condition, the simple slope was not significant (b = 1.47, p = *ns*). Among Caucasian Canadian participants, the interaction between uncertainty avoidance and condition was not significant (β = -.06, p = *ns*) (see figure 13).

Evaluation ratings (Practicality). Following similar procedures, I tested the effect of uncertainty avoidance and MCE on evaluation ratings of idea practicality for both cultures. There was a marginal significant effect of culture (β = -1.93, p = .06); however, the three two-interaction terms as well as the three way interaction between culture, condition, and uncertainty avoidance were all non-significant. There was also no significant interactive effect between uncertainty avoidance and condition for both cultures.

Evaluation ratings (Overall Creativity). Finally, I tested the relationship between uncertainty avoidance and MCE on ratings of overall idea creativity for both cultures following similar procedures as described above. There was a marginally significant three way interaction between uncertainty avoidance, culture, and condition on evaluation rating

of overall creativity (β = -.055, p = .062). To determine the nature of this interaction, I examined the slopes of outcomes on overall creativity for Asian and Caucasian Canadian participants at one standard deviation above and below the mean of uncertainty avoidance. Results reflected a similar pattern as findings for novel creativity. There was a marginally significant interaction between condition and culture for Asian Canadian participants (β = .40, p = *.08,* see figure 12). Further simple slope analysis revealed that among Asian Canadian participants, uncertainty avoidance impacted overall creativity ratings when it was high (b = 2.13, p = .04), but not when it was low (b = -1.57, p = *ns*). Importantly, the simple slope was not significant in the manipulated condition (b = 1.47, p = *ns*). Among Caucasian Canadian participants, the interaction between uncertainty avoidance and condition was not significant (β = -.06, p = *ns*).

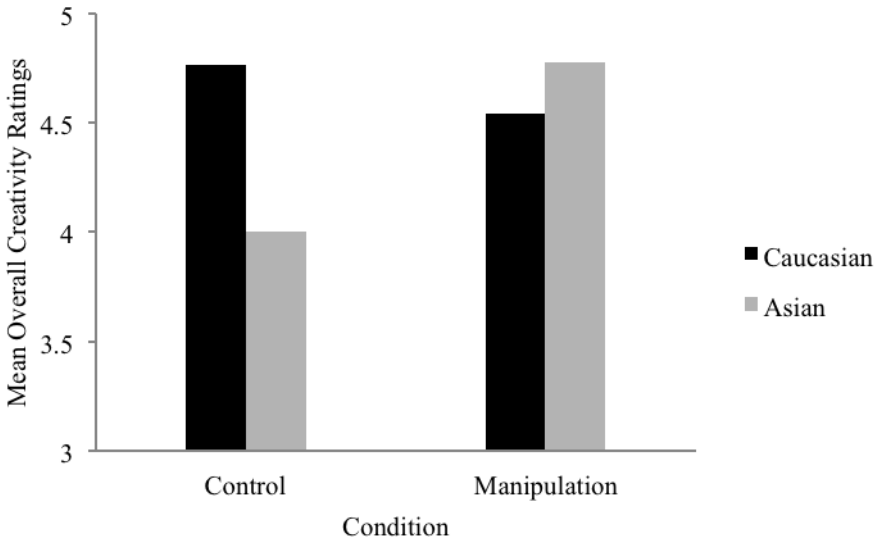

Figure 11. Study 4 interaction between culture and condition on overall creativity ratings.

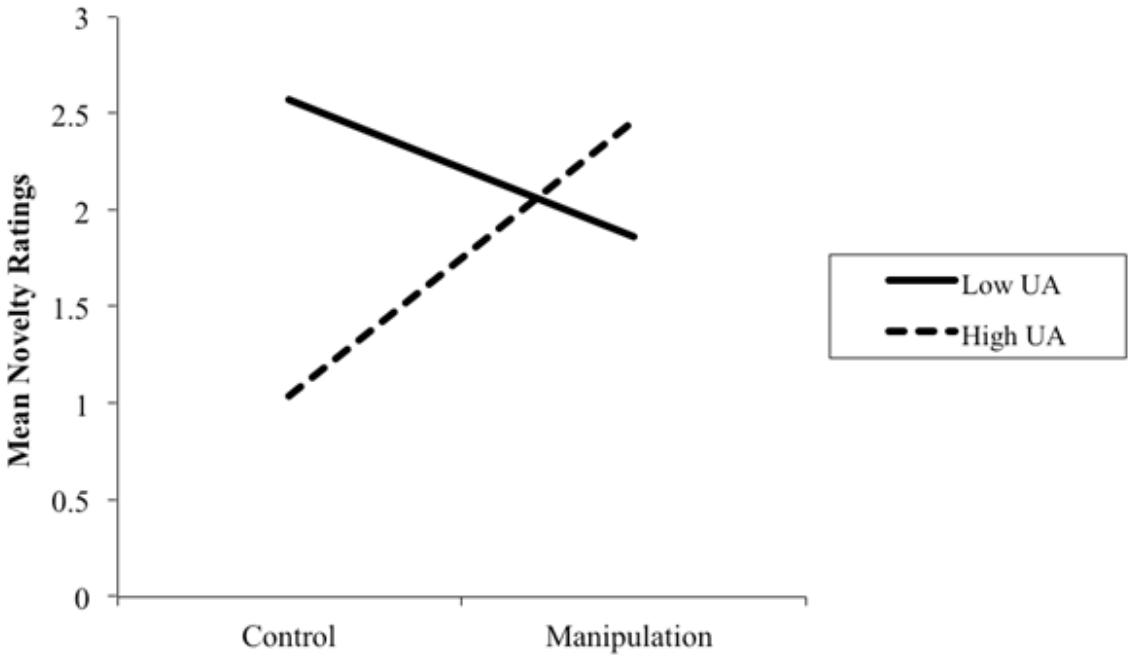

Figure 12. Study 4 interaction between condition and uncertainty avoidance on novelty ratings for Asian Canadian participants.

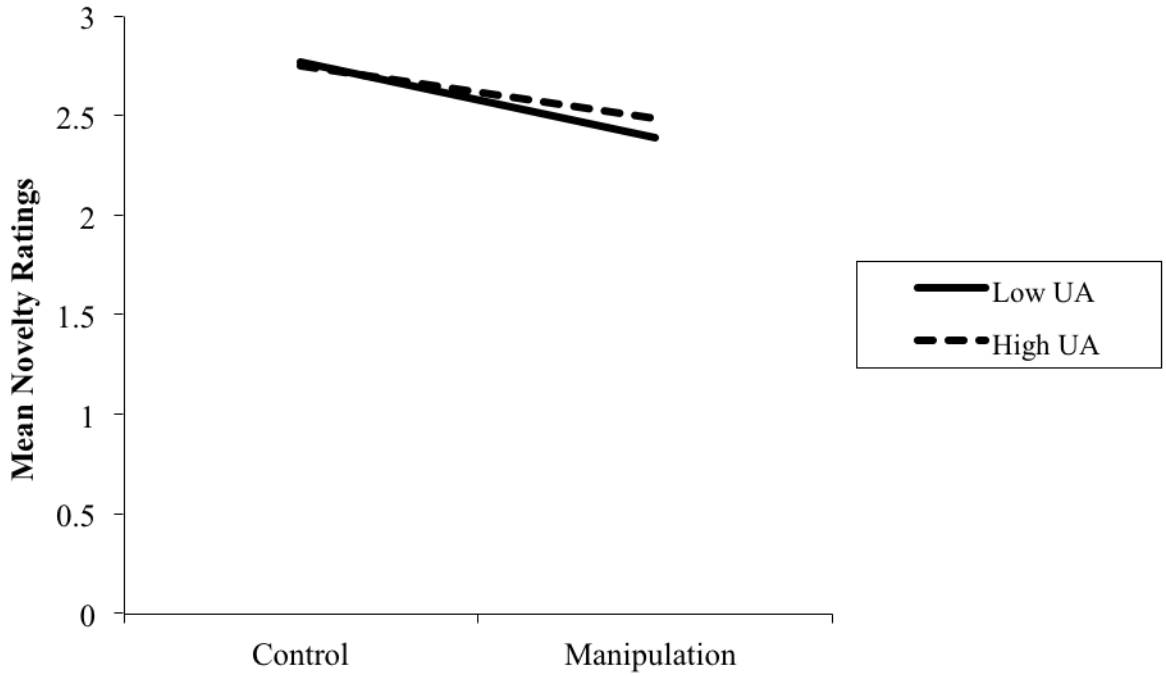

*Figure 13***.** Study 4 interaction between condition and uncertainty avoidance on novelty ratings for Caucasian Canadian participants.

APPENDIX J: Additional demographic information on Caucasian Canadians background information

Study 1	1 Danish 3 British 1 German 5 Polish 1 Romania 1 Slovakian
Study 2	1 British 1 Croatian 3 Dutch 1 Finnish 2 French 4 German 1 Hungarian 1 Irish 5 Italian 1 Romanian 3 Russian 1 Scottish
Study 4	2 British 1 Irish 1 Russian 2 German 1 French

	1 Finish 2 Polish