Multicultural Experience Enhances Creativity

The When and How

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Many practices aimed at cultivating multicultural competence in educational and organizational settings (e.g., exchange programs, diversity education in college, diversity management at work) assume that multicultural experience fosters creativity. In line with this assumption, the research reported in this article is the first to empirically demonstrate that exposure to multiple cultures in and of itself can enhance creativity. Overall, the authors found that extensiveness of multicultural experiences was positively related to both creative performance (insight learning, remote association, and idea generation) and creativity-supporting cognitive processes (retrieval of unconventional knowledge, recruitment of ideas from unfamiliar cultures for creative idea expansion). Furthermore, their studies showed that the serendipitous creative benefits resulting from multicultural experiences may depend on the extent to which individuals open themselves to foreign cultures, and that creativity is facilitated in contexts that deemphasize the need for firm answers or existential concerns. The authors discuss the implications of their findings for promoting creativity in increasingly global learning and work environments.

Keywords: multicultural experience(s), creativity, culture, cognition

Writers have to have two countries, the one where they belong and the one in which they live really.

—Gertrude Stein

To Gertrude Stein, bicultural experiences were necessary for writers at both the artistic and the practical levels: Not only do experiences in foreign countries allow writers a critical abstract and physical distance from the subjects they write about, but immersion in foreign environments also provides an important source of inspiration, a multicultural muse for the craft of creation.

Creativity is perhaps just as valuable for psychologists as it is for writers; indeed, it is arguably the driving force in determining scholarly impact. When Sternberg and Gordeeva (1996) asked 252 research psychologists what made a psychology article influential, the items that were rated as most important centered around creativity and novelty: making an obvious contribution to psychological knowledge, adding something *new* and substantial; presenting a useful *new* theory; generating *new* research; and providing *new* and exciting ideas (emphasis added).

Beyond creativity, psychologists also generally agree on the importance of multicultural awareness and competence, especially given the rapid increase in global interconnectedness. In the 1999 National Multicultural Conference and Summit hosted by the American Psychological Association, the 550 attendants unanimously agreed on the importance of implementing multicultural competence in all psychological endeavors and of making multicultural competence a defining feature of psychological practice, education, training, and research (Sue, Bingham, Porche-Burke, & Vasquez, 1999). Although current discussion on multiculturalism focuses primarily on issues related to ethnic diversity in the United States, multicultural psychology concerns all aspects of human behavior that occur when people from two or more cultural backgrounds encounter each other (Chiu, in press). In the present article, we define *culture* as a set of loosely organized ideas and practices produced and reproduced by a network of interconnected individuals (Chiu & Hong, 2007), and we use the term *multicultural experience* to refer to all direct and indirect experiences of encountering or interacting with the elements and/or members of foreign cultures.

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It is important to note that many current practices in educational and organizational settings are based on the assumption that multicultural experience fosters creativity, but this hypothesized link between multicultural experience and creativity is as yet untested (Bassett-Jones, 2005; Maehr & Yamaguchi, 2001). These practices include exchange programs, sabbaticals and temporary job transfers, diversity education programs in colleges, promotion of cultural diversity in the classroom, and implementation of diversity management programs in organizations. Fortunately, the evidence reviewed in the present article should reassure supporters of these practices that multicultural experience does indeed confer distinct beneficial effects on creative performance. Aside from providing empirical justifications for these practices, research on the relationship between multicultural experience and creativity is expected to answer the following questions: (a) What types of multicultural experience are needed for enhanced creative performance? (b) How does multicultural experience benefit creativity? (c) Who is most likely to realize the creative potential of having multicultural experience? and (d) When are the creative benefits of multicultural experience most likely to surface?

In recent years, research from multiple independent laboratories on three continents—the University of Illinois and Northwestern University in the United States, INSEAD in France, and Singapore Management University in Singapore—has examined these issues systematically and has provided some initial answers to these questions. Because both multicultural experience and creativity are elusive constructs and researchers have not agreed on the best ways to measure them (see Chiu & Hong, 2005; Glover, Ronning, & Reynolds, 1989), our research reviewed in the present article takes an eclectic, multimethod approach to measuring both multicultural experience and creativity. Multicultural experience was operationalized in terms of the amount of time living abroad, extensiveness of interactions with foreign cultures (family immigration history, bilingualism, interactions with people from different national or ethnic backgrounds), and exposure to a foreign culture in a laboratory experiment. Measurements of creativity included measures of both performance and creativity-supporting cognitive processes. For measures of creative performance, we assessed people's creative insight in problem-solving tasks, generation of remote but effective associations, and production of creative stories and divergent ideas. For measures of creativity-supporting cognitive processes, we assessed people's tendency to spontaneously access unconventional or normatively inaccessible ideas and to recruit ideas from foreign cultures in an idea sampling task.

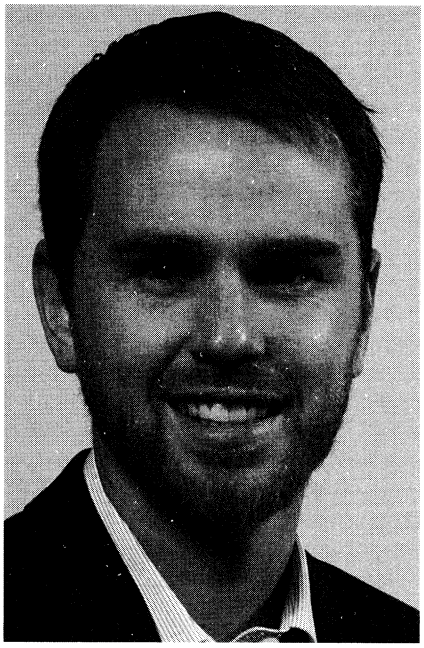
As an overview of the major conclusions, the results of our investigation show that (a) multicultural experience increases creative performance and the use of some creativity-supporting cognitive processes (e.g., recruitment of foreign ideas and retrieval of unconventional knowledge); (b) the connection between multicultural experience and creativity is most apparent when individuals have had the experience of deeply immersing themselves in foreign countries (such as living in a foreign country rather than other more cursory foreign experiences, such as traveling abroad); (c) individual differences that account for whether people adapt and open themselves to foreign cultures and actively think about and compare the differences they encounter between their home culture and the foreign culture can boost the creative benefits of multicultural experience; and (d) a weaker relationship between multicultural experience and creativity emerges in contexts that require a need for firm answers or adherence to conventional knowledge.

Theoretical Background

What Is Creativity?

Creativity is typically defined as the process of bringing into being something that is both novel and useful (Sawyer, 2006; Sternberg & O'Hara, 1999; see also Amabile, 1996). The creative process is often a mysterious phenomenon, with sudden insights seeming to work at an unconscious and inaccessible level (Schooler & Melcher, 1994). The magical "aha" moment of discovery, the point at which an idea leaps into consciousness, is part of what makes creativity seem sudden, without logic, and elusive.

Creativity often springs forth in places far removed from the domain for which the idea is appropriate. A recent television commercial, which harkens back to the Eureka moment that Archimedes had while easing into his nightly bath, shows executives of a company squeezing into a shower for a meeting because that is where the boss has his best ideas. Many of the Greek philosophers purposely discussed ideas during walks in nature, and European physicists had many of their most influential ideas while climbing mountains and looking at stars (Csikszentmihalyi,



William W. Maddux

1996). Creativity can even occur during sleep: The Austrian composer Anton Bruckner said that a friend whistled the opening theme for his most popular symphony, Symphony no. 7 in E major, to him in a dream; he immediately woke up and wrote the melody down.

Creativity may also seem fickle and fleeting. The English composer Edward Elgar wrote all of his masterpieces after falling in love with and marrying one of his piano students. After she died, he did not compose again. In some disciplines, such as mathematics and physics, creativity is thought to have a remarkably short half-life; a physicist's big ideas are thought to come by age 30 or not at all (Sawyer, 2006). Some writers, such as Margaret Mitchell (*Gone with the Wind*) and Harper Lee (*To Kill a Mockingbird*), had but a single magnum opus in them, whereas others, such as Ernest Hemingway and William Shakespeare, seemed to produce masterpiece after masterpiece.

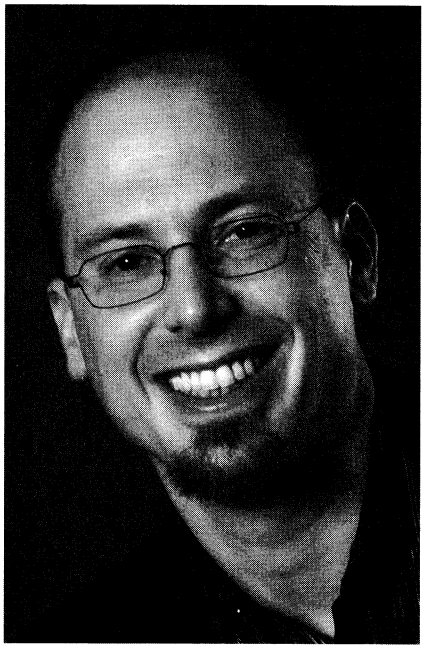
Because of its apparent unpredictability and fickleness, creativity may seem difficult to study scientifically and systematically. However, the psychological literature now boasts a wealth of evidence delineating the psychological factors that facilitate creativity; elements of personality, affect, cognition, and motivation can either facilitate or impair creativity (see Amabile, 1996; Csikszentmihalyi, 1996; Sawyer, 2006). For example, personality studies have demonstrated that creative people tend to be nonconforming, independent, intrinsically motivated, open to new experiences, and risk seeking (for reviews, see Simonton, 2000, 2003). Large-scale studies and meta-analyses have found that intelligence, tolerance of ambiguity, self-confidence, and cognitive flexibility also tend to be found in creative people (Feist, 1998; MacKinnon, 1978).

In addition to personality factors, a number of contextual factors related to motivation, cognition, and affect have been shown to facilitate creativity. Individuals who pursue tasks for intrinsic rather than extrinsic purposes show enhanced creativity (Amabile, 1985, 1996; Amabile, Hennessey, & Grossman, 1986; Eisenberger & Cameron, 1996; Hennessey & Amabile, 1998). A distant future focus, compared to a near future focus, has been shown to lead to more creative negotiation outcomes (Okhuysen, Galinsky, & Uptigrove, 2003) and to enhanced creative insight (Förster, Friedman, & Liberman, 2004). Focusing on potential gains rather than losses increases the accessibility of unconventional ideas and thus enhances fluency in generating creative ideas (Friedman & Förster, 2001; Lam & Chiu, 2002). Finally, creativity seems to flourish when people are in positive or neutral affective states rather than negative affective states (Amabile, Barsade, Mueller, & Staw, 2005; Fredrickson, 2001; Fong, 2006), a finding that belies the stereotype of the "starving artist."

The Creative Cognition Approach

Recently, a scientific approach to studying creativity—the creative cognition approach—was proposed for understanding and specifying the cognitive processes that produce creative ideas (Amabile, 1996; Bink & Marsh, 2000; Finke, Ward, & Smith, 1992; Runco & Chand, 1995; Wan & Chiu, 2002). The central argument of this approach is that creative processes are not much different from those cognitive processes that produce our everyday mundane activities. According to this view, every person has the potential to become creative as long as he or she effectively utilizes ordinary cognitive processes to produce extraordinary creative outcomes (Finke et al., 1992; T. B. Ward, Smith, & Vaid, 1997; Weisberg, 1993). Specifically, the creative cognition approach identifies two kinds of cognitive processes implicated in creative thinking—generative processes and exploratory processes (Finke et al., 1992). First, people actively retrieve or seek out relevant information to generate candidate ideas with differing creative potential (the generative processes). Next, they scrutinize these candidate ideas to determine which ones should receive further processing, such as modification, elaboration, and transformation (the explorative processes).

One strategy that makes effective use of generative processes is conceptual expansion, which takes place when attributes of seemingly irrelevant concepts are added to an existing concept to extend its conceptual boundary (Hampton, 1987; Wan & Chiu, 2002; T. B. Ward, Patterson, Sifonis, Dodds, & Saunders, 2002; T. B. Ward et al., 1997). In psychology, researchers may create new instances of an old construct by applying and integrating ideas from another theory. For instance, Chen and Andersen (1999) shed new light on the psychoanalytical construct of transference (the unconscious redirection of feelings from one person to another) by reinterpreting it from a social-cognitive perspective, positing that transference occurs when an evaluation of a new person is assimilated into an activated representation of a significant other. Given that the expansion of an idea with the use of previously separate ideas seems to be crucial to human creativity, in this article we build off the creative cognition approach to understand



Adam D. Galinsky

when and why multicultural experience may enhance creativity.

Multicultural Experience and Creativity

Culture is a double-edged sword. On the one hand, it consists of a set of conventionalized learned routines that help individuals in a society to coordinate their social behaviors (Chiu & Hong, 2006). On the other hand, when an individual is immersed in and exposed to only one culture, the learned routines and conventional knowledge of that culture may limit his or her creative conceptual expansion. Prior knowledge and highly accessible exemplars are a major constraint on imagination and creative conceptual expansion (T. B. Ward, 1994). For instance, when people generate exemplars in a novel conceptual domain (e.g., animals on the planet Mars), even the most creative examples resemble highly accessible exemplars (e.g., animals on Earth with eyes and legs or known science fiction exemplars; see Kray, Galinsky, & Wong, 2006; Rubin & Kontis, 1983; T. B. Ward, 1994; T. B. Ward et al., 2002). To the extent that culture consists of a set of preexisting, routinized, and chronically accessible ideas, it may limit the generation of creative thoughts.

Multicultural experience is also a double-edged sword. When individuals encounter a foreign environment, they may experience culture shock, feeling anxious and disoriented in the absence of the familiar—the language, the food, the behavioral norms. These familiar things people typically take for granted can suddenly become lost and inaccessible when people are immersed in a foreign culture (C. Ward, Bochner, & Furnham, 2001). Although culture shock has its dark side, once the initial, difficult adaptation stages have passed, it can also provide a great opportunity for acquiring new perspectives to approaching various life tasks and learning new ways of thinking.

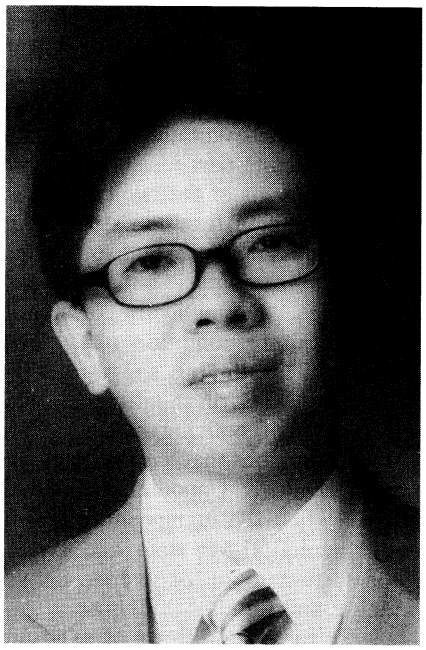
Whereas culture may constrain creativity, multicultural experience may foster the creative expansion of ideas. For example, there is the stereotype of the expatriate artist whose brilliant insights emerge only when settled in a foreign land, and there seems to be at least some kernel of truth to this stereotype, as history is ripe with examples of artists who, at some point in their careers, lived abroad or created their masterworks in a foreign country. Thus, we hypothesize that multicultural experiences can contribute to creative expansion in at least five ways.

First, people learn new ideas and concepts from multicultural experiences. Through multicultural experiences, people are also exposed to a range of behavioral and cognitive scripts for situations and problems. These new ideas, concepts, and scripts can be the inputs for the creative expansion processes because the more new ideas people have, the more likely they are to come up with novel combinations (Weisberg, 1999).

Second, multicultural living experience may allow people to recognize that the same form, or surface behavior, has different functions and implications. For example, in some cultures (e.g., China, Jordan), leaving food on your plate at a host's house is a sign of appreciation, implying that the host has given you enough to eat. In other countries (e.g., Indonesia), the same behavior may be taken as an insult, a condemnation of the quality of the meal. Those with experience living in foreign countries should be more likely to see the same form (food leftover on a plate, a smile, a bow) as having dynamic functions and multiple possible meanings (Chiu & Hong, 2006; Galinsky, Maddux, & Ku, 2006).

Third, although culture's established conceptions and conventions provide its members with structured and routinized responses to the environment, these cognitive structures may be destabilized as people acquire alternative conceptions through their experiences in other cultures, particularly as people adapt their own thoughts and behaviors to the new environment. Exposure to multiple environments may even lead individuals to access unconventional knowledge when back in their own cultures. Fourth, having acquired and successfully applied incongruent ideas from other cultures, individuals with these rich multicultural experiences may show an increase in psychological readiness to recruit and seek out ideas from diverse sources and use them as inputs in the creative process, allowing for continued exposure to a wide range of new ideas, norms, and practices.

Finally, foreign cultures may contain values and beliefs very different from or even in conflict with those in one's own culture. Because incongruent concepts provoke exploration into their interrelations, the process of resolving incongruent ideas may lead to greater cognitive complexity in those with multicultural experiences than in those who have had exposure to only one culture or a limited set of cultural norms (Tadmor & Tetlock, 2006). Higher creativity is most likely when the two concepts involved in conceptual expansion are not normally seen as overlapping



Chi-yue Chiu

with each other (Hampton, 1987; Wan & Chiu, 2002), seemingly nonoverlapping concepts sometimes being associated with two distinct cultural sources.

Therefore, an individual who has been exposed to different cultures may be able to spontaneously retrieve seemingly discrepant ideas from each culture and then juxtapose and integrate those ideas in novel ways (Chiu & Hong, 2005). Indeed, many insights result from integrating indigenous cultural exemplars from diverse cultures. For example, furnishing a modern New York apartment with traditional Ming Dynasty furniture may give a creative postmodern feel to the living space. Similarly, a psychologist exploring topics traditionally confined to economics (e.g., auction behavior; Ku, Galinsky, & Murnighan, 2006) or sociologists collaborating with physicists (e.g., understanding collaboration networks through computer modeling; Guimerà, Uzzi, Spiro, & Amaral, 2005) may integrate ideas from each discipline into new insights that were hidden from the individuals working exclusively in their own disciplines.

One intriguing idea and possible implication of the effects of multicultural experience is that such effects may be carried forward to a subsequent unrelated task; that is, the experience of combining nonoverlapping concepts may foster a habitual tendency to engage in creative conceptual expansion when solving a problem. As a result, people may have better performance in subsequent creativity tasks that are *unrelated* to the conceptual combination task (Chiu & Leung, 2007). There is some evidence for this possibility. In one experiment (Wan & Chiu, 2002, Experiment 1), half of the participants were randomly assigned to solve a set of novel conceptual combination problems (e.g., What is a vehicle that is also a kind of fish?). The remaining participants solved a set of ordinary conceptual combination problems (e.g., What is a plant that is also a kind of fuel?). Next, the participants took the Figural tests of the Torrance Tests of Creativity Thinking (Torrance, 1974), a widely used standard test of creativity. As expected, participants who earlier had solved the novel conceptual combination problems had better performance on the creativity test than did those who solved the ordinary conceptual combination problems first. In another experiment (Wan & Chiu, 2002, Experiment 2), participants who had solved the novel conceptual combination problems first built more creative LEGO models than did those who solved the ordinary conceptual combination problems first.

In short, multicultural experience may foster creativity by (a) providing direct access to novel ideas and concepts from other cultures, (b) creating the ability to see multiple underlying functions behind the same form, (c) destabilizing routinized knowledge structures, thereby increasing the accessibility of normally inaccessible knowledge, (d) creating a psychological readiness to recruit ideas from unfamiliar sources and places, and (e) fostering synthesis of seemingly incompatible ideas from diverse cultures.

Empirical Evidence

Thus far, we have presented the theoretical rationale for the relationship of multicultural experience and creativity. In this section, we review the empirical evidence for this relationship and the conditions that facilitate or limit this relationship.

Multicultural Experience and Creative Performance

Some early findings have provided indirect evidence for the potential of multicultural experience to facilitate creativity. In general, this research has shown that being in varied or diverse environments can train individuals to encode information in multiple ways, building a myriad of associations between concepts. For example, bilinguals, who have been exposed to two languages, are more creative than monolinguals (Nemeth & Kwan, 1987; Simonton, 1999). Creativity is found at relatively high rates for individuals who are first or second generation immigrants and for individuals who are ethnically diverse or ethnically marginalized (Lambert, Tucker, & d'Anglejan, 1973; Simonton, 1997, 1999). At the group level, creativity is facilitated within collaborative groups that contain diverse members (Guimerà, et al., 2005; J. M. Levine & Moreland, 2004) and in groups in which heterogeneous opinions are expressed (Nemeth & Wachtler, 1983; Simonton, 2003). Even at the societal level, creativity increases after civilizations open themselves to outside influences and when geographic areas are politically fragmented and relatively diverse (Simonton, 1997).

To find out whether multicultural experience in and of itself *leads to* creative performance, we conducted an experiment involving European American undergraduates who had little knowledge of Chinese culture; we had them watch a 45-minute slide show and then complete a creativity test (Leung & Chiu, in press-a, Study 1). In the unicul-

tural Chinese culture condition, the participants watched a slide show about the arts, architecture, food, and other cultural elements of China. In the juxtaposition condition, the participants watched a slide show about both American and Chinese cultures with images from American and Chinese cultures presented back to back in each slide. In the fusion condition, participants watched a slide show that depicted elements of American–Chinese fusion culture (e.g., Shanghai Tang fashion and *Reflection*, a Vanessa Mae music video). In addition, there were two control conditions in the experiment: an American culture control condition (a slide show of American culture) and a no-slide-show control condition. After watching the slide show, participants received demographic information about Turkey and were asked to write a creative version of the Cinderella story for Turkish children. The measure of creativity in this study did not require knowledge of Chinese culture. The results showed that the participants who had watched either the slide show that presented American and Chinese cultures in juxtaposition or the slide show that presented American–Chinese fusion culture wrote more creative Cinderella stories than did the participants in the other three conditions. It is interesting that the participants in the unicultural Chinese condition did not perform more creatively than those in the other control conditions. This finding has an important implication that we follow up on below.

Amazingly, these creative benefits of multicultural exposure survived the test of time. Five to seven days later, participants were contacted again to generate creative analogies of time, a measure of creativity that also did not require knowledge of Chinese culture. Prior to completing this new creativity task, the participants were asked to write down any thoughts they had about the slide show they had watched in the previous session. Again, only the participants in the juxtaposition and fusion conditions generated more creative analogies than did the control participants.

These results have several important implications. First, they provide direct evidence for the *causal* role of exposure to a foreign culture in creative performance. Because the participants were not familiar with Chinese culture and had been randomly assigned to one of the five experimental conditions, the effects of Chinese culture exposure cannot be attributed to other extraneous variables such as self-selection (creative people voluntarily seek out multicultural experiences, individuals with certain personality characteristics are more creative *and* tend to seek out multicultural experiences) or bilingualism among multicultural individuals.

Second, exposure to Chinese culture produced creative benefits only when both American and Chinese cultures were presented *simultaneously*; participants who watched a slide show only of Chinese culture were not more creative than the control participants. This finding is consistent with the idea that holding seemingly incompatible ideas from two cultures in cognitive juxtaposition invites engagement in creative conceptual expansion (Wan & Chiu, 2002). Furthermore, content analysis concerning the personal thoughts about the slide show materials that participants completed before they performed the time analogy task (the delayed creativity measure) found that most participants in the juxtaposition and fusion conditions compared the similarities and differences between American and Chinese cultures, and many also spontaneously tried to generate new ideas by integrating seemingly contrastive elements of the two cultures (e.g., one participant wrote, "Blending furniture styles of multiple cultures not only emphasizes the extent to which aspects of a certain culture rub off another, but also produces an entirely new style which is aesthetically pleasing"). Participants in the Chinese culture condition rarely generated this kind of response. This finding suggests a link with Langer and colleagues' work on mindfulness, which is the active and explicit act of noticing one's environment and drawing novel distinctions that lead to heightened creativity (Grant, Langer, Falk, & Capodilupo, 2004; Langer, 2000). It is plausible that the juxtaposition and fusion conditions induced a mindful-like state, and it will be useful for future research to explore the overlap between multicultural experience and mindful thinking.

The facts that effects of exposure to Chinese culture were obtained on two creativity tasks that did not require knowledge of Chinese culture and that the benefits remained when creativity was tested again several days after this exposure suggest that multicultural exposure led to the engagement of some cognitive skills (e.g., a spontaneous tendency to engage in creative conceptual expansion) that underlie creative performance. Similar results were obtained when exposure to foreign cultures was measured rather than manipulated. With a newly developed Multicultural Experience Survey (MES; Leung & Chiu, in press-a), which we describe in detail below, we found that European American undergraduates who had more multicultural experiences displayed greater fluency in generating creative ideas than did those who had fewer multicultural experiences (Leung & Chiu, in press-b).

Multicultural Experience and Creative Processes

The evidence reviewed above illustrates the role of multicultural experience in creative performance. We propose that individuals with more extensive multicultural experience will also spontaneously engage in the cognitive processes implicated in creative thinking. We have obtained evidence for two such processes—recruitment of ideas from unfamiliar cultures for creative idea expansion and spontaneous retrieval of unconventional knowledge from memory.

Idea sampling. To test the idea that multicultural experience is positively related to a preference for sampling ideas from unfamiliar cultures, in one study (Leung & Chiu, in press-a, Study 3) we had European American undergraduates with varying levels of multicultural experience perform an idea sampling task that required them to develop a preliminary idea on the psychology of happiness ("People who have more friends are happier") into a creative research idea for a psychology undergraduate thesis. Participants were encouraged to for-

mulate their own original and creative ideas about happiness, although they might seek inspirations from some happiness sayings written by esteemed scholars from the United States, Turkey, or China (they could choose to read up to 7 sayings out of a pool of 15). Brief background information on 15 scholars (5 Americans, 5 Turkish, and 5 Chinese) was presented (a sample scholar description was "an American researcher who has made several discoveries about human motivation."). We conducted a pilot test to ensure that participants' choices were not influenced by the specific contents of the background descriptions, and we counterbalanced the pairing of the background description and the nationality of the scholars. Our major dependent measure was the percentage of happiness sayings written by foreign scholars (Chinese and Turkish) as opposed to American scholars that participants chose to read (i.e., sampling preference).

The MES was developed to measure participants' degree of multicultural experience. This survey assessed participants' family immigration history, the length of time they had spent outside their home state, their foreign language competency, the ethnicity of their closest friends and favorite musicians or musical groups, and the kind of cuisines served in their favorite restaurants (for information about the psychometric properties of the measure, see Leung & Chiu, in press-a). It is important to note that the extent of multicultural experience has not been found to be significantly correlated with scores on the Openness to Experience subscale of the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992; see Leung & Chiu, in press-a, in press-b), which indicates that people who are more open to experience do not necessarily have more multicultural experience, and vice versa. The results supported our hypothesis; participants' extensiveness of multicultural experience was positively related to their tendency to sample foreign sayings in the idea sampling task.

Retrieval of unconventional knowledge. We have also explored whether multicultural experience is positively related to a readiness to retrieve unconventional knowledge from memory by testing whether multicultural experience would be related to the retrieval of unconventional gift ideas (Leung & Chiu, in press-a, Study 2). In a pretest, a group of European American students each listed five gift ideas, and, following the procedures suggested by Barsalou (1985), we scored each gift idea in terms of how many participants also listed that idea, so that a more unconventional gift was associated with a lower score. In the main study, a different sample completed the same gift generation task and filled out the MES. Following T. B. Ward et al. (2002), for each participant, we constructed an index to represent the tendency to spontaneously retrieve unconventional gift ideas by taking into account how accessible a certain gift idea was (based on the ordinal position of that gift in the list) and how conventional that idea was (based on the pretest score for the gift). As expected, participants with richer multicultural experience more readily retrieved gift ideas that were unconventional.

In summary, in a manner consistent with the creative cognition framework described above, multicultural experience was associated with a number of creativity-supporting processes. However, we wished to know among whom and under what circumstances the beneficial effects of multicultural experience would be most pronounced. We now turn to these questions.

Who Is Most Likely to Realize the Potential Benefit of Having Multicultural Experience?

What types of multicultural experiences are associated with increased creativity? In one study we looked at the experiences of living and traveling in foreign countries. We asked master of business administration (MBA) students at a large business school to try to solve the Duncker candle problem (Duncker, 1945), in which the task is to figure out, using only a candle, a pack of matches, and a box of tacks, how to attach the candle to the wall so that the candle burns properly and does not drip wax on the table or the floor. The correct solution—emptying the box of tacks and then tacking it to the wall and placing the candle inside—is considered a measure of creativity because it involves the ability to see objects as performing functions different from their typical functions (i.e., the box is not just a repository for tacks but can also be used as a stand). Overall, we found that people who had lived abroad were significantly more likely to correctly solve the Duncker candle-mounting task (60%) than those who had not (42%) and that the amount of time participants had lived abroad significantly predicted creative solutions. However, the time participants had previously spent traveling abroad did not have an impact on creative insight (Maddux & Galinsky, 2007).

We believe that foreign living but not foreign traveling afforded an enduring creative benefit because the experience of living abroad is qualitatively and quantitatively different from more cursory foreign or domestic experiences. When living abroad, one encounters numerous incentives and opportunities for cognitive and behavioral adaptation and change. Obviously, individual experiences will vary tremendously, but for many tourists, travelers, or temporary visitors, changing one's actual thinking and behaviors to fit into the new culture is rarely required to navigate through a new country; cognitively and behaviorally adapting is much more likely to be necessary if one is actually living abroad. Therefore, we conducted a subsequent study to examine this hypothesis (Maddux & Galinsky, 2007). We had MBA students from a large European business school, a diverse sample that included participants from 40 different nations, perform the Duncker candle exercise, after which we measured their experiences living abroad and their degree of adaptation to foreign countries. We again found that time abroad predicted creative solutions to the Duncker candle exercise even when we controlled for important individual differences such as bilingualism and the Big Five personality variables. In addition, we found that the extent to which individuals *adapted* themselves to the foreign culture while living abroad significantly mediated the link between experience abroad and creativity.

Building on these findings, we have also examined whether openness to experience, a personality variable that

is central to the adaptation process, may also facilitate creativity. Because individuals who are more open to experience are also more receptive to novel ideas (Costa & McCrae, 1992; Feist, 1998; Feist & Brady, 2004; McCrae & Costa, 1987), they should be more ready to appreciate and adapt to the novel practices in foreign cultures. In contrast, when closedminded individuals are exposed to unfamiliar cultures, they may find novel ideas and practices in these foreign cultures overwhelming and threatening and therefore may resist these ideas and retreat to the intellectual comfort zone of their own culture (Hong, Wan, No, & Chiu, 2007). European American undergraduates completed the MES (Leung & Chiu, in press-a), the Openness to Experience subscale of the NEO-FFI (Costa & McCrae, 1992), and two creativity tasks (Leung & Chiu, in press-b). In the first creativity task, participants generated unconventional uses for a common object (a garbage bag), and we measured the number of unusual uses generated (i.e., fluency), as well as how many different kinds of uses were generated (i.e., flexibility) (Guilford, 1959). The second creativity task, an exemplar generation task, assessed how readily participants retrieved from memory nonprototypical or normatively inaccessible exemplars in a domain (e.g., occupation). Our results showed an interaction between openness to experience and multicultural experience. Among the relatively open participants, those with more extensive multicultural experience (a) were more fluent and flexible in generating unusual uses of a garbage bag and (b) generated more normatively inaccessible occupation exemplars than other participants would think of (e.g., dialect coach, optician). In contrast, among the relatively closedminded participants, exposure to multicultural experience was associated with poorer performance on both tests.

Overall, our data suggest that to gain a tangible creative benefit from multicultural experience, it is important for individuals not simply to be exposed to foreign cultures but also to make concrete cognitive and behavioral adaptations or to have an open mind-set that welcomes new experiences. Therefore, what matters is the specific approach individuals take during their multicultural experiences. These findings echo nicely both the previous section on multicultural juxtaposition and the next section, in which we discuss the contextual factors that moderate the creative benefit of multicultural experience.

What Situations Moderate the Beneficial Effects of Multicultural Experience?

Despite the robust relationship between multicultural experience and cognitions and subsequent creativity, we do not believe this pattern is invariant or exempt from situational constraints. Situations and mind-sets that foster attachment to one's own culture or the need for quick and firm answers may weaken the relation between multicultural experience and creativity.

Time pressure and need for cognitive closure. If situations that evoke a mind-set that explores new alternatives and facilitates adaptation can enhance the creative benefits of multicultural experience, situations that evoke a desire for firm answers should limit such benefits. The desire for firm answers is typically referred to as the need for closure (NFC) in the social motivation literature. Need for closure concerns the epistemic desire to seize immediately on a firm answer to an ambiguous issue, and to "freeze" on that answer without considering other alternatives (Kruglanski & Webster, 1996; Webster & Kruglanski, 1994). Individuals with a high NFC tend to be cognitively conservative and to follow cultural conventions (Chiu, Morris, Hong, & Menon, 2000; Fu et al., 2007; Jost, Glaser, Sulloway, & Kruglanski, 2003). They prefer order and predictability, feel uncomfortable with ambiguity, and therefore prefer having firm answers rather than multiple alternatives. Because norms or conventional knowledge provide conventionalized solutions that are widely accepted in the culture, individuals with a high NFC have a tendency to use cultural norms to guide their judgments (Chiu et al., 2000). In a recent study, Ip, Chen, and Chiu (2006) found that the NFC is positively related to people's tendency to access normatively accessible exemplars in a conceptual domain. For example, among American undergraduates, the most normatively accessible exemplars of fruit are apples, oranges, bananas, and strawberries, and the least normatively accessible exemplars are sugarcane, crab apples, cacti, dragon eyes, and rhubarb. Undergraduates with a higher NFC were more likely to list normatively accessible exemplars.

Individuals are particularly likely to have a higher NFC under time pressure (Chiu et al., 2000; Kruglanski & Freund, 1983). For example, doctoral students writing their PhD theses may hesitate to consult an unfamiliar research literature for new inspirations when the deadline for submitting the thesis draws near. Accordingly, when performing a creativity task under time pressure, even those who have plenty of multicultural experience may desire firm answers and hesitate to recruit ideas from unfamiliar cultures. This hypothesis was supported in a study (Leung & Chiu, in press-a, Study 4) in which European American undergraduates performed the idea sampling task described earlier (expanding a simple idea about happiness into a creative thesis through seeking inspirations from happiness sayings). Half of the participants performed the task under time pressure, and the remaining students were assured that they had plenty of time to perform the task. Consistent with predictions, in the low-time-pressure condition, participants with more multicultural experience sampled more foreign sayings, but in the high-time-pressure condition, participants with more multicultural experience sampled fewer foreign sayings. These results suggest that even individuals with multicultural experience prefer firm answers when performing a creativity task under time pressure; they are motivated to anchor on the ideas from their own culture and to resist potentially conflicting ideas from unfamiliar cultures. It is interesting that the effect of time pressure was stronger for those with more multicultural experience, possibly because these individuals are more aware of the potential cultural variations in how ideas can be conceptualized and thus show a situation-specific avoidance of ideas from foreign cultures.

Mortality salience. In addition to time pressure, reminding people of their mortality may also increase their reliance on knowledge from their own culture. According to terror management theory, adhering to culturally shared worldviews can protect people from the existential terror of death (Greenberg, Solomon, & Pyszczynski, 1997). To manage this existential terror, individuals often identify with the core values and ideas in their own culture. By embracing cultural values and ideas that will continue to propagate after their own death, individuals can feel a sense of symbolic immortality and hence lower their existential anxiety (Kashima, Halloran, Yuki, & Kashima, 2004). There is also evidence that when confronted with the thought of their finitude, individuals feel guilty about engaging in creative activities (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999). This could lead individuals whose mortality has been made salient to be reluctant to recruit ideas from other cultures even when they have rich multicultural experience.

In one study (Leung & Chiu, in press-a, Study 5), we asked European American undergraduates to take part in the aforementioned idea sampling task in which they could consult ideas from local (American) or unfamiliar foreign (Chinese, Turkish) cultures to expand a primitive idea about happiness. Before working on this task, some participants, randomly selected, were asked to vividly imagine what would happen to their bodies as and after they died, which is a standard mortality salience manipulation (e.g., Arndt et al., 1999). The remaining participants were asked to describe the experience of dental pain (control condition). In this study, apart from measuring the percentage of foreign ideas participants would consult in the task, we also had participants rate on an 11-point scale how persuasive, helpful, inspiring, and creative their chosen sayings were, thereby providing us with two evaluative scores pertaining to the American sayings and the foreign sayings. As expected, in the control (dental pain) condition, participants with more multicultural experience evaluated the foreign sayings more positively. Conversely, when they were confronted with thoughts of their own death, participants' extent of multicultural experience was unrelated to their ratings of foreign sayings. Mortality salience is another boundary of the beneficial effects of multicultural experience on the creative process.

General Discussion

The research findings reviewed here demonstrate that multicultural experience predicts both creative outcomes and creative processes. Multicultural experience is positively related to performance in solving a problem that requires insight and to producing creative ideas without being confined to the widely known. It also predicts creativity-supporting processes such as the tendency to access unconventional knowledge from memory and to recruit ideas from foreign cultures for creative idea expansion. Moreover, the relationship between multicultural experience and creativity is particularly strong when people adapt and are open to these new experiences and when the creative context deemphasizes the need for firm answers or mortality concerns.

Implications for Management and Education

We believe that examining the relationship between multicultural experience and creativity can have important ramifications for both organizations and student learning. Intercultural dynamics are becoming increasingly salient in both international corporations and educational environments (Jenn, Northcraft, & Neale, 1999; Williams & O'Reilly, 1998). Bringing employees and students from different cultural backgrounds into the same team or department provides one form of multicultural experience that can potentially make people more facile at creative problem solving and idea generation. The same is true for students who study abroad and for employees who are sent to work or receive training in foreign branches.

These trends have important implications for human resources management in organizations. Increasingly, human resources managers and specialists have felt the need to facilitate the positive aspects of the growing workforce diversity to benefit both the organization and its employees. Indeed, an increasing number of multicultural organizations have created the position of chief diversity officer (CDO) to manage workforce diversity (Johansson, 2005). The research presented here on the psychology of multicultural experience and creativity could help diversity specialists implement policies to motivate employees to integrate native and new cultural knowledge; effective integration of the familiar with the unfamiliar should boost cognitive and behavioral flexibility in response to the evolving demands of intercultural business contexts. Our findings that only some types of multicultural experiences and contexts facilitate creativity can also be incorporated into the design of both cultural competence and creativity training programs. Creating certain mind-sets (e.g., adaptive, open to new experiences) and contexts (e.g., reducing time constraints or pressures to articulate firm beliefs) while working to juxtapose or fuse multiple cultures rather than dealing with each in isolation will likely lead to more effective programs.

Second, our research also has significant implications for education. Maehr and Yamaguchi (2001) commented that educators should first recognize the positive features of cultural diversity but that the ultimate challenge is to transform schools into educational enterprises that value diversity. To our knowledge, few studies have systematically explicated the potential beneficial role of multicultural experience in student learning (e.g., acquiring new perspectives and creative abilities). We believe that the current article is able to demonstrate to educators and practitioners the positive aspects of cultural diversity that can benefit every student, thus giving students from diverse ethnic and cultural backgrounds the confidence and motivation to learn in a multicultural education setting. In addition, our studies provide insight into how to structure multicultural exposure to achieve its benefits. Learning about other cultures should involve juxtaposing elements of the new cul-

ture with those of the host culture and contemplating possible fusions of the two.

Finally, our findings may be part of a larger process of becoming culturally intelligent, that is, possessing the ability to make sense of and blend into unfamiliar cultural contexts (Chiu & Hong, 2005; Earley & Ang, 2003; Earley & Mosakowski, 2004). Some individuals may be naturally more adept at blending into new cultural environments than others. However, not only may acquiring the ability to adapt to and mentally juxtapose aspects of different cultures help people become increasingly culturally intelligent, but the mental processes involved in exposure to heterogeneous environments may have the beneficial side effect of enhancing creativity as well.

Despite these possible benefits, our results also indicate that multicultural experience does not guarantee creativity. To begin with, superficial exposure to another culture is not conducive to creativity: Having the motivation to adapt and to contemplate similarities and dissimilarities to one's own culture while immersed in another culture abroad is critical. In addition, multicultural experience does not improve an individual's performance in a creativity task unless the individual is predisposed to being open to experience. Furthermore, a performance context that deemphasizes one's mortality and the desire for firm answers is also important for reaping the creative benefit of multicultural experience. These facilitative and limiting factors deserve serious consideration in the design of diversity education and training programs.

Implications for the Study of Creativity

In this article, we have looked at how larger multicultural environments combine with an individual's current mindset, his or her personality (e.g., openness to experience), cognitive processes (retrieval of unconventional knowledge, the creative process of idea sampling), motivation (need for cognitive closure), and affect (existential anxiety) to affect creativity. This multiperspective approach is consonant with Sternberg and Lubart's (1996) confluence theories of creativity, with which the phenomenon of creativity can be more thoroughly understood.

In addition, although researchers generally agree that culture may affect creativity, previous research on culture and creativity has focused primarily on cultural differences in creative performance or on lay conceptions of creativity (see Niu & Sternberg, 2001). The current research goes beyond this "compilation of differences" approach and explores the possibility of fostering creativity in everyday life through multicultural experience. Furthermore, although the studies reviewed in the present article did not address cultural differences in the relationship between multicultural experience and creativity, to the extent that time pressure and closedmindedness diminish or even reverse the positive relationship between multicultural experience and creativity, and that cultures vary in both pace of life (R. V. Levine & Norenzayan, 1999) and the emphasis placed on intellectual autonomy versus conservatism (Smith, Peterson, & Schwartz, 2002), the association between multicultural experience and creativity may be stronger in societies with a slower pace of life and a heavier emphasis on intellectual autonomy. As such, our findings add new directions for study to the psychology of culture and creativity.

Directions for Future Research

Some studies reviewed in this article have shed initial light on the causal direction of the acquisition of multicultural experience (cause) and the fostering of creativity (effect) through experimentally manipulating different ways of presenting a foreign culture and observing its subsequent effect on creativity. The results of these studies can help eliminate the alternative explanations that multicultural experience is often confounded with bilingual competence and that creative people tend to seek out multicultural experience voluntarily. In future research, we hope to clarify this interpretive issue further by conducting longitudinal studies to verify the causal role of multicultural experience in creativity.

We also want to acknowledge the limitations of the research reviewed above and their implications for future research directions. For example, most of the research reviewed here examined highly educated participant samples, including undergraduate college students and graduate business students enrolled in MBA or Executive MBA programs in the United States and Europe. Although the relatively wide variety of samples indicates a robust and consistent relationship between multicultural experience and creativity, future work is needed on samples that are more representative of the populations at large. For example, research should involve less educated individuals, such as migrant workers, and both student and nonstudent samples in other parts of the world, such as Asia, Africa, and the Middle East.

It is also imperative to look more specifically at how qualitatively different types of living-abroad experiences affect the creative process; for example, the type of country lived in and how different it is, culturally and linguistically, from one's home country may play a particularly important role. It is certainly plausible that the more different a foreign country is in terms of cultural background from an individual's home country, the more creative the individual may become; it is also possible that this relationship is curvilinear such that living in a highly unfamiliar culture would lead to withdrawal and even incite nationalistic resistance against the foreign culture (Chiu & Cheng, 2007). The literature on multicultural experience needs a thorough analysis of the moderators that lead individuals down one path or the other.

A related question concerns the status differences between the host country and the home country. Are the effects on creativity stronger when the host country's status is equal to that of the individual's home country? Or do individuals from higher status countries get particularly valuable insights from being less anchored to their privileged vantage point (especially given the negative relationship between power and perspective taking; Galinsky, Magee, Inesi, & Gruenfeld, 2006). The role of the size of the differences in cultural practices and status is a particularly

fruitful area in which to study the relationship between multicultural experience and creativity in future studies.

Another interesting question concerns the specific amount of time that is necessary for immersion in foreign environments to facilitate creativity. The research reviewed here suggests a general linear trend between multicultural experience and creativity, but it is as yet unclear when a significant effect might start to emerge. Is there a minimum, critical level of time spent living abroad before cognitive changes become enduring? What marginal utility might a third year abroad offer over and above the initial two years? These are important questions for future research.

It is important to note that we do not mean to suggest that some shorter term multicultural experiences are without value. On the contrary, we believe that such experiences can be of great value. In fact, there are numerous examples of high-profile individuals having life-changing experiences during short visits in a foreign country. The late Boris Yeltsin indicated that his ideas of reforming Russia's political economy were inspired by a visit to a Houston supermarket: He was astounded at the wide selection of foods available to any American and appalled that Russians had limited access to these basic necessities. Similarly, Malcolm X's views on racial prejudice were transformed during a pilgrimage to Mecca, where he was stunned to see Muslims of all nationalities and ethnic backgrounds living and worshipping in harmony. Our results also indicate that a 45-minute exposure to a foreign culture can produce enduring creative benefits. What seem to be critical are (a) whether the experience allows for juxtaposition and integration of cultural differences, (b) whether the individual is open to new ideas, and (c) whether the multicultural context encourages learning and minimizes the need for firm answers and existential anxiety. When these critical conditions are met, the opportunities and incentives for people to adapt to a new culture are maximized. In this context, exposure to foreign cultures is expected to have both an immediate and a potentially sustainable effect on creative performance.

Postscript: Multicultural Experience and Creativity From a Global Perspective

Globalization has increased the amount of intercultural contacts and hence the opportunities for acquiring multicultural experiences. People's reactions to globalization have been both diverse and polarized. Skeptics believe that globalization can threaten the viability of local cultures and undermine people's sense of community and cultural identity, whereas enthusiasts believe that globalization is a profoundly enriching process that opens minds, removes cultural barriers, and even strengthens the diffusion of human rights and democracy. Our results are relevant to this dialogue. They suggest that exposure to other cultures has the *potential* to enhance people's creativity, as the globalization enthusiasts posit. However, our results also show that attempts to promote creativity by increasing intercultural contact can be easily thwarted when the situation highlights the need for firm answers or when individuals experience existential threat that leads them to adhere even more rigidly to the typical ideas and practices in their own culture. These individuals may even view foreign ideas and practices not as sources of inspiration, but as contaminants of their heritage culture (Chiu & Cheng, 2007).

Issues concerning the cultural and psychological effects of intercultural interactions have been a consistent focus of major public and academic world forums (Speth, 2003), and the effects of multicultural experience on creativity and psychological resistance to new cultures are at the heart of the ongoing discussions on globalization. The research we reviewed in the present article uses a unique behavioral science perspective to address some of the major issues in these discussions, which we believe can offer important insights into the content of these debates. Ultimately we hope that research on the impact of multicultural experience on creativity will have a part to play in the emerging psychology of globalization and will inspire new research and more evidence-based discussions on the psychological impacts of globalization.

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