

Singapore Management University

Institutional Knowledge at Singapore Management University

Research Collection School of Social Sciences

School of Social Sciences

3-2010

Multicultural experience, idea receptiveness, and creativity

Angela K. Y. LEUNG

Singapore Management University, angelaleung@smu.edu.sg

Chi-Yue CHIU

Nanyang Technological University

Follow this and additional works at: https://ink.library.smu.edu.sg/soass_research



Part of the [Multicultural Psychology Commons](#), and the [Personality and Social Contexts Commons](#)

Citation

LEUNG, Angela K. Y., & CHIU, Chi-Yue.(2010). Multicultural experience, idea receptiveness, and creativity. *Journal of Cross-Cultural Psychology*, 41(5-6), 723-741.

Available at: https://ink.library.smu.edu.sg/soass_research/1005

This Journal Article is brought to you for free and open access by the School of Social Sciences at Institutional Knowledge at Singapore Management University. It has been accepted for inclusion in Research Collection School of Social Sciences by an authorized administrator of Institutional Knowledge at Singapore Management University. For more information, please email libIR@smu.edu.sg.

Multicultural Experience, Idea Receptiveness, and Creativity

Angela Ka-yee Leung¹ and Chi-yue Chiu²

Abstract

Inspired by recent advances in creative cognition research, the authors examined in the current research some creative benefits of multicultural experiences. Study 1 showed that European American undergraduates had better creative performance immediately after being exposed to American *and* Chinese cultures or to a hybrid culture formed by fusing American and Chinese cultures; this effect was also observed 5 to 7 days after the initial exposure. Studies 2 and 3 showed that exposure to multicultural experiences is positively related to the likelihood of engaging in some creativity-supporting processes—generation of unconventional ideas (Study 2) and receptiveness to ideas originated from foreign cultures (Study 3). Finally, in Studies 4 and 5, the authors found that need for cognitive closure (or the need for firm answers) and existential terror significantly attenuated the positive link between multicultural experiences and receptiveness to ideas originated from foreign cultures. The authors discussed these findings' implications on multicultural learning and creativity.

Keywords

multicultural experience, receptiveness to foreign ideas, creativity, need for cognitive closure, terror management theory, motivated cultural cognition

The increased level of global connectivity in contemporary societies has presented new opportunities for acquiring multicultural experiences. Not surprisingly, psychologists are increasingly aware of the need to make multicultural competence a defining feature of psychological practice, education and training, and research (Sue, Bingham, Porche-Burke, & Vasquez, 1999).

A major research question in multicultural competence research concerns the potential beneficial effects of multicultural experiences on cognitive complexity and cognitive flexibility. For instance, researchers contend that multicultural experiences afford opportunities to develop higher cognitive complexity as well as the ability to recognize and integrate alternative viewpoints from other cultures (Benet-Martinez, Lee, & Leu, 2006; Tadmor & Tetlock, 2006). Chiu and Hong (2005) posit that multicultural experiences may increase the propensity to flexibly recruit intellectual resources from other cultures to meet current task demands. There is evidence that individuals

¹Singapore Management University, Singapore

²Nanyang Technological University, Singapore

Corresponding Author:

Angela K.-y. Leung, School of Social Sciences, Singapore Management University, Level 4, 90 Stamford Road, Singapore 178903.

Email: angelaleung@smu.edu.sg

with extensive bicultural experiences can flexibly switch between cultural frames in response to the cultural cues that are salient in the situation (Fu, Chiu, Morris, & Young, 2007; Hong, Chiu, & Kung, 1997; Hong, Morris, Chiu, & Benet, 2000; Sui, Zhu, & Chiu, in press).

The present research builds on these findings and examines the facilitative effects of multicultural experiences on creativity and receptiveness to unconventional ideas or ideas from foreign cultures. In this research, we systematically examined two important theoretical issues: (a) Do multicultural experiences predict better creative performance and higher receptiveness to unconventional or foreign ideas? (b) Under what conditions will the creative benefits of multicultural experiences be enhanced or diminished?

Multicultural Experiences and Creative Performance

Although no known studies have directly examined whether exposure to multicultural experiences would lead to better creative outcomes, some past studies have provided suggestive evidence for this link. First, exposure to diverse normative views in groups or work teams consisting of culturally diverse members is positively related to the development of creative potential (Guimerà, Uzzi, Spiro, & Amaral, 2005; Levine & Moreland, 2004; Nemeth & Kwan, 1987; Nemeth & Wachter, 1983), possibly because such exposure increases tolerance or expression of heterogeneous opinions in the groups or teams. Second, bilingualism research has examined the creative performance of bilinguals who have been exposed to two languages in their attendant linguistic cultures. In these studies, bilinguals tended to have higher creative performances compared to monolinguals (Lambert, Tucker, & d'Anglejan, 1973; Ricciardelli, 1992). In addition, there is also evidence that ethnically diverse (vs. ethnically homogeneous) groups, such as first- or second-generation immigrants, are more creative (Simonton, 1999). Finally, at the societal level, creativity increases after civilizations open themselves to outside influences and when geographic areas are politically fragmented and relatively diverse (Simonton, 1994, 1997).

Consistent with these past findings, we contend that exposure to multicultural experiences has positive effects on creative performance. Our contention is based on the creative cognition perspective. According to this perspective, creative conceptual expansion—a cognitive process that involves extension of boundaries of an existing concept by adding to it attributes of other *seemingly irrelevant* concepts—can lead to creative performance (Ward, Smith, & Vaid, 1997). For instance, psychologists may create new instances of a psychodynamic construct (e.g., transference) by adding to it ideas from information-processing theories (Andersen & Berk, 1998).

It is likely that prior knowledge can heavily affect performance on creative imagination (Ward, 1994). For example, when people generate creative exemplars in a novel conceptual domain (e.g., animals on planet Mars), the exemplars tend to resemble a preexisting conceptual category (e.g., animals on Earth, with eyes and legs; see Rubin & Kontis, 1983; Ward, 1994; Ward, Patterson, Sifonis, Dodds, & Saunders, 2002). Apparently, culture consists of learned routines or conventional knowledge that individuals habitually use to grasp experiences (Chiu & Hong, 2006). To the extent that preexisting conceptual structures may limit creative generation, culture as a set of routinized, chronically accessible ideas may also limit creativity.

Whereas experience in a single culture may limit creativity, multicultural experiences may foster creative expansion of ideas. For example, consider two ideas: A and B. Idea A has high categorical accessibility in Culture I and low categorical accessibility in Culture II, and the reverse is true for Idea B. An individual who has extensive experiences in both cultures may be able to retrieve both ideas spontaneously, cognitively place them in juxtaposition, and through creative insights integrate the two ideas into a novel idea. Indeed, many instances of creative conceptual expansion in daily life result from integrating indigenous cultural exemplars from diverse cultures. For example, furnishing a Chicago apartment with Ming Dynasty Chinese

furniture may give the apartment a creative postmodern feel. Consistent with this idea, creative cognition research has shown that original ideas often result from combining two or more seemingly nonoverlapping concepts, and this creative conceptual expansion process has been singled out as an ordinary cognitive process that produces extraordinary results in everyday creative pursuits (Wan & Chiu, 2002; Ward, 2001; Ward et al., 1997; Ward et al., 2002).

Multicultural Experiences and Creativity-Supporting Processes

The foregoing analysis implies that multicultural experiences would increase creative performance only when individuals with multicultural experiences readily sample ideas from foreign cultures as they engage in creative conceptual expansion. The second objective of the current research is to test this idea directly.

When people encounter new cultures, they often experience and hence become less intimidated by the practices, artifacts, and concepts that are different from or even in conflict with those in their own culture. Therefore, exposure to multicultural experiences should lower people's resistance (or increase their readiness) to *sample* ideas from foreign cultures. This sampling preference resulting from multicultural experiences may increase the likelihood that cognitive elements from two or more diverse cultures will be placed in juxtaposition and hence facilitate creative synthesis of these ideas. As a result, people will be relatively free from the influence of conventionalized conceptual knowledge in their own culture. For example, when asked to list exemplars in a conceptual category (e.g., "fruit"), they are more likely to spontaneously list exemplars that are not conventionalized in their own culture (e.g., "durian" or "lychee" rather than "apple" or "orange"). Based on this analysis, we hypothesize that exposure to multicultural experiences would be associated with a greater likelihood of (a) generating unconventional ideas and (b) sampling ideas from cultures other than one's own.

Some Possible Motivators

We posit that some motivational concerns may attenuate the positive association between multicultural experiences and receptiveness to unconventional or foreign ideas. Some researchers hold that multicultural experiences can sometimes promote immigrants' emotional attachment with conventional ideas in their heritage culture and hence slow down the acculturation process (Berry, 2001; Chao, Chen, Roisman, & Hong, 2007). Furthermore, under some circumstances, independent of their level of multicultural experiences, individuals may be motivated to rely on conventional ideas in their own culture and resist ideas from foreign cultures (Chiu & Hong, 2005; Leung & Chiu, 2006).¹

According to the theory of motivated cultural cognition (Chiu, Morris, Hong, & Menon, 2000), individuals do not passively receive cultural influences. Instead, they view ideas from different cultural traditions as intellectual resources (Chiu & Hong, 2005) and selectively recruit ideas from local and foreign cultures to address their current motivational concerns. Thus, when the current motivational concerns call for adherence to conventional norms in one's own culture, individuals independent of their amount of multicultural experiences are likely to resist ideas from foreign cultures. Two motivational concerns that have been shown to motivate cultural conformity are the need for cognitive closure (NFCC) and existential terror. Another goal of the present investigation is to examine whether the NFCC and existential terror may moderate the link between multicultural experiences and receptiveness to ideas originated from foreign cultures.

The NFCC or the need for firm answers may limit the beneficial effects of multicultural exposure on receptiveness to ideas from foreign cultures. Because cultural conventions provide definite answers with high consensual validity and individuals with high NFCC prefer firm answers and

dislike ambiguities, these individuals are particularly motivated to follow cultural conventions (Fu et al., 2007). Specifically, high (vs. low) NFCC individuals are more likely to display culture-characteristic social perceptual styles (Chiu et al., 2000) and to readily retrieve conventional exemplars for a conceptual category (e.g., high NFCC European Americans tend to retrieve apple vs. durian as an exemplar of fruit; Ip, Chen, & Chiu, 2006). High (vs. low) NFCC immigrants or sojourners adhere more strongly to their heritage culture and are more unsettled in the host culture, particularly when they move to the host culture with their co-nationals (Kashima & Loh, 2006; Kasic, Kruglanski, Pierro, & Mannetti, 2004). Finally, high (vs. low) NFCC American Chinese bicultural individuals are less susceptible to situational cueing of culture-characteristic judgments—unlike their low NFCC counterparts, they do not make characteristically Chinese (American) judgments when primed with Chinese (American) culture in the presence of Chinese (American) cultural cues (Fu et al., 2007).

Being exposed to a mortality salient situation may also limit multicultural individuals' receptiveness to unconventional and foreign ideas. According to the terror management theory (TMT; Greenberg, Solomon, & Pyszczynski, 1997), when individuals are reminded of their eventual finitude, they would experience existential terror. To cope with it, they will increase their adherence to cultural conventions and through this strategy obtain a sense of symbolic immortality—the body may perish after death, but the culture one belongs to will continue to propagate (Solomon, Greenberg, Schimel, Arndt, & Pyszczynski, 2004). TMT researchers have garnered considerable evidence for this hypothesis. As shown in many studies, increasing the salience of mortality in the situation can result in stronger cultural identification (Kashima, Halloran, Yuki, & Kashima, 2004), more favorable responses to people who support their cultural worldview and less favorable responses to those who threaten it (e.g., Christians respond more positively to a fellow Christian than to a Jew; Greenberg et al., 1990; American students respond more favorably to an exchange student who praises America than to a student who criticizes America; Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994), and greater affective aversion toward creative activities (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999).

Overview of Studies

We reported five studies designed to achieve these research objectives described above. In Study 1, we seek to establish the role of multicultural experiences in creative performance. Specifically, we examined the immediate and delayed effects of exposure to a foreign culture on creative performance—we measured performance on two creativity tasks immediately after exposing European American students to a foreign culture and 5 to 7 days after the exposure. In this study, we also varied how multicultural experience was presented to the participants and examined how the different ways of presenting a foreign culture may affect immediate and delayed creative performance.

In Studies 2 and 3, we seek to test the relationship between multicultural experiences and some psychological processes that support creative performance. In Study 2, we tested the hypothesized positive relationship between multicultural experiences and the likelihood of generating unconventional ideas. In Study 3, we tested the hypothesized positive relationship between multicultural experiences and the likelihood of sampling foreign ideas (as opposed to ideas originated from the local culture) in a creative expansion task.

In Studies 4 and 5, we examined how two induced motivational concerns may limit the potential creative benefits of multicultural experiences. We hypothesize that although multicultural experiences may facilitate receptiveness to ideas from foreign cultures, when the situation activates high NFCC (Study 4) or existential terror (Study 5), the association between multicultural experiences and receptiveness to foreign ideas will be significantly attenuated.

Study I

The current study tested the hypothesis that exposure to a foreign culture would facilitate creative performance. All participants were European American undergraduates. There were five conditions in the current study. In one condition, European American undergraduates were not exposed to any culture (control condition). In another condition, they were exposed to American culture only. These two groups of participants served as comparison groups. The remaining three groups were exposed to Chinese culture, but the format of presentation varied across the three groups. In the Chinese culture only condition, the participants were exposed to elements of Chinese culture. In the dual cultures condition, they were exposed to both Chinese and American cultures. In the fusion culture condition, they were exposed to elements of American Chinese fusion culture (e.g., rice burgers). We hypothesize that exposure to Chinese culture in all three experimental conditions will facilitate creative performance (relative to the two comparison groups). Moreover, according to the creative cognition perspective, placing seemingly nonoverlapping cultural elements in juxtaposition will further activate a creative mindset and improve subsequent creative performance (Ward, 2001). Thus, we predicted the facilitation effect of Chinese cultural exposure on creative performance to be greater in the dual cultures and fusion culture conditions than in the Chinese culture only condition. We included the fusion culture condition because Americans are often exposed to Chinese culture through experiencing elements of a fusion culture (e.g., Chinese American movies, music, and cuisine). Past research has shown that when presented with elements of Chinese American fusion culture, American undergraduates tend to juxtapose American and Chinese cultures in their mind (Chiu, Mallorie, & Keh, 2007). Thus, we predicted that the creative benefits in the fusion culture condition and the dual cultures condition will have a similar magnitude.

Following the manipulation, participants completed a creativity test immediately. To assess relatively long-term effects of the manipulation on creative performance, all participants were invited to come back 5 to 7 days later to complete a different creativity task. To assure that creative performance was not confounded with increased knowledge about Chinese culture in the Chinese culture exposure conditions, we used creativity tasks that did not require any knowledge of Chinese culture (rewriting the Cinderella story for Turkish children and generating creative analogies of time).

Method

Sixty-five European American undergraduates (29 females; mean age = 19.05 years) participated in two experimental sessions in exchange for course requirement credit. Participants were led to believe that the study examined how people made sense of our everyday experiences. In the first session, all participants (except those in the control condition) watched a 45-minute multimedia PowerPoint presentation (with pictures, music, and videos) that depicted different aspects of one or two cultures. The participants were randomly assigned to one of the five experimental conditions: (a) American culture only, where they viewed a presentation of American culture; (b) Chinese culture only, where they viewed a presentation of Chinese culture only; (c) dual cultures, where they viewed a presentation of American and Chinese cultures; (d) fusion culture, where they viewed a presentation of a hybrid culture created by fusing American and Chinese cultures (e.g., McDonald's rice burger; *Reflection*, a Vanessa Mae's music video); and (e) control condition, where the participants did not see a presentation and proceeded directly to completing a creativity task. For participants in the four experimental conditions, subsequent to viewing the slideshow, they completed a creativity test. Five to 7 days later, they came back to complete a different creativity test.

The presentation in the four experimental conditions consisted of 160 still pictures (with background music from the corresponding culture) (20 minutes), four music video segments (10 minutes), and four movie trailers (15 minutes) projected on a large white screen with an LCD projector. In the American (Chinese/fusion) culture condition, all materials depicted characteristic aspects (architecture, scenery, landscape, home decorations, furniture, apparel, cuisine, life, entertainment, recreation, music, movies, arts, and literature) of American (Chinese/fusion) culture. In the dual cultures condition, 80 still pictures, two music video segments, and two movie trailers from each culture were shown. Characteristic features of American and Chinese cultures were presented back to back (e.g., a picture of American architecture was followed by one of Chinese architecture).

We assessed creative performance in the first session with a fairy tale writing task. Participants read a summary of the Cinderella tale and were asked to develop a new version of it for Turkish children. They were encouraged to use their wildest imagination to rewrite the story to make it creative, original, and coherent. Along with the summary of the original story, participants were also given some quick facts about Turkey's geographical location, climate, religion, economy, and industries and a narrative of Turkish people's everyday life. It is important to point out that the participants were not familiar with Turkish culture. Before rewriting the story, participants indicated their familiarity with Turkish culture on a 1 to 7 scale. The mean rating was 1.17 ($SD = 1.74$).

Two independent coders (blind to the participants' experimental condition) used a 7-point Likert-type scale to rate each participant's fairy tale on its creativity based on their own subjective definition of creativity (interrater $r = .94$). The judges were not provided with a specific definition of creativity. Instead, they were told to read all the fairy tales and then go back to evaluate the perceived novelty and uniqueness of each fairy tale. Given the high interrater agreement, we took the average of the two raters' ratings to form a creativity score.

To avoid practice effects, a different creativity test was used in the second session that took place 5 to 7 days later. Before taking part in this creativity task, participants in the experimental conditions were given a blank page to write down whatever thoughts that came to their mind about the slideshow materials. This thought exercise was designed to remind the participants of what they saw in the multimedia presentation during the first experimental session. Next, the participants were asked to construct two creative analogies of "time" and described the connections between time and the analogies. An example analogy generated by the participants was *Time is like a newspaper*. Two coders, blind to the participants' experimental conditions, used a 7-point scale to rate each analogy's level of creativity after first reading all analogies in the sample (interrater reliability was acceptable for both analogies: interrater $r = .73$ for the first analogy and $.70$ for the second). We took the mean ratings of the two raters and collapsed the mean ratings of the two analogies to form the second creative performance index. The interrater reliability for evaluating the analogies was slightly lower than that for evaluating the fairy tales probably because the analogies were short and did not contain as much information as the Cinderella stories.

Results

The results are summarized in Table 1. The cultural exposure manipulation had a significant effect on the creativity of the fairy tales the participants created, $F(4, 60) = 2.82, p < .03, \eta_p^2 = .16, p_{rep} = .91$. Planned contrast analyses using orthogonal contrasts showed that creative performance in the American culture condition did not differ significantly from that in the control condition ($t = 0.52, ns$). We predicted that the effects of exposure to a foreign culture on creative performance would be strengthened when the environment provides opportunities to place

Table 1. Mean Creative Performance (Average Creativity in Turkish Fairy Tale Writing and Time Analogy Authoring) in the Five Experimental Conditions in Two Experimental Sessions

	Turkish Fairy Tale (First Session)		Time Analogy (Second Session)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Control (<i>N</i> = 14)	3.86	1.61	3.57	1.30
American culture (<i>N</i> = 12)	4.17	1.90	3.79	0.89
Chinese culture (<i>N</i> = 13)	4.46	1.56	3.19	0.84
Dual cultures (<i>N</i> = 12)	5.75	0.87	4.25	1.23
Fusion culture (<i>N</i> = 14)	4.71	1.49	4.28	0.67

elements of two cultures in juxtaposition. Consistent with this prediction, creative performance following either dual cultures exposure or fusion culture exposure was significantly higher than that in the control condition ($t = 2.72, p < .01$). Creative performance in the dual cultures condition and the fusion culture condition did not differ from each other ($t = 1.72, ns$). Exposure to Chinese culture also resulted in higher creative performance compared to exposure to American culture only ($t = 0.48, ns$) or to the control condition ($t = 1.03, ns$). However, both planned contrasts were not significant.

Similar creative benefits of exposure to dual cultures or a fusion culture were obtained when creative performance was tested 5 to 7 days later in a different creativity task. The cultural exposure manipulation also had a significant effect on creative performance in the second experimental session, $F(4, 60) = 2.77, p < .04, \eta^2_p = .16, p_{rep} = .89$. Participants generated more original analogies of time following exposure to dual cultures or a fusion culture (vs. control) ($t = 2.08, p < .05$). Exposure to dual cultures and a fusion culture produced similar levels of creative performance ($t = 0.09, ns$). Compared to the control condition, exposure to American culture only ($t = 0.55, ns$) and exposure to Chinese culture only ($t = 0.98, ns$) did not result in higher creative performance.

Discussion

To summarize, the participants who watched a presentation of American or Chinese culture did not have better creative performance than the control participants; however, those who watched the dual cultures or fusion culture presentation had better creative performance than the control participants in both experimental sessions, which were at least 5 days apart.

Although previous studies have found suggestive evidence that exposure to foreign cultures is positively related to creative performance, the current study is the first known study that provided evidence for the *causal* role of multicultural experiences in creative performance. Furthermore, the effects persisted 5 to 7 days after the manipulation. In the second experimental session, after having been reminded of their previous exposure to Chinese culture, participants in the dual cultures and fusion culture conditions displayed better creative performance than the participants in the comparison groups.

These findings are important because they rule out several alternative explanations for the previously obtained correlations between multicultural experiences and creative performance. These alternative explanations include (a) creative people tend to seek out multicultural experiences and (b) a third variable (e.g., bilingual competence, openness to experience) is responsible for both multicultural experiences and higher creativity.

In addition, by manipulating how participants were exposed to a foreign culture (whether they were exposed to a foreign culture only or to a foreign culture and their own culture together), we

were able to verify the role of cognitive juxtaposition of local and foreign cultures in promoting creative synthesis of ideas from diverse cultural sources. Our findings supported the idea that cognitive juxtaposition of seemingly nonoverlapping ideas from two cultures activates a creative mindset and produces creative outcomes (Ip et al., 2006; Wan & Chiu, 2002).

Moreover, because performance in the two creativity tests did not require knowledge of Chinese culture, our results are not due to increased knowledge of Chinese culture following the cultural exposure manipulation. Instead, the evidence suggests that multicultural experiences may activate a creative mindset—individuals under the influence of this mindset tend to think more unconventionally and be more receptive to ideas from foreign cultures. In the current study, we did not measure unconventional thinking and receptiveness to ideas from foreign cultures. In the next two studies, we measured individuals' extent of multicultural experiences and tested its relationship to unconventional thinking and receptiveness to ideas originated in foreign cultures.

Study 2

Whereas the previous study manipulated participants' *exposures* to local and/or foreign cultures, in the current study we tested the hypothesis that people with more extensive multicultural *experiences* would be more likely to generate relatively unconventional ideas. We assessed European American undergraduates' exposure to foreign cultures with a newly developed Multicultural Experience Survey (MES) and measured how readily the participants came up with unconventional gift ideas. Although the experimental procedures used in Study 1 allows us to determine the causal role of multicultural experiences in creative performance, the MES allows us to assess how exposure to naturally occurring multicultural experiences is related to the creativity-supporting processes under investigation. We hypothesize a positive relationship between extensiveness of multicultural experiences and the likelihood of generating unconventional gift ideas.

Method

The study consisted of two parts. In the norm study, 72 European American students (40 females, mean age = 19.21 years), who participated in exchange for course requirement credits, were asked to write down the first five gifts that came to their mind if they were to offer a gift to an acquaintance. Following Barsalou (1985) and Battig and Montague (1969), except for responses that reflect minor variations in inflection (e.g., flower and flowers) and responses that were close synonyms of others (e.g., cash and money), all different responses were coded as distinct gift ideas. Next, for each gift, we counted the number of participants who listed it. This score is referred to as the *output dominance* score (Ward et al., 2002); more popular ideas have a higher output dominance score.

In the main study, another 39 European American undergraduates (23 females, mean age = 19.49 years) from the same student population performed the same gift generation task and filled out the MES described below. Following Ward et al. (2002), we recorded each gift idea's ordinal position on its author's list and took the average output position across all participants who had listed this gift idea to form its rank. For example, Gift Idea A was on 10 participants' list and its average output position across the 10 participants was 1.5. Its rank would then be 1.5. An idea with a low rank is one that would quickly come to the mind of an average participant in the group. Next, for each idea, we obtained its output dominance score from the norm study. We then divided the dominance score of an idea by its rank to yield a dominance/rank score. An idea with a high dominance/rank ratio is one that many participants readily generated. Finally, for each participant, we computed the mean of the dominance/rank ratios of the five ideas generated.

MES. The MES was developed specifically for the purpose of the current research to measure European American undergraduates' multicultural experiences. Participants indicated in the survey the percentage of their lifetime they had lived outside their home state (Item 1: 0% to 100%), whether they spoke a foreign language (Item 2: yes or no), and whether their father and mother were born outside the United States (Items 3 and 4: yes or no). They also rated on an 11-point scale the extent of their exposure to a culture other than mainstream American culture (Item 5: 0 to 10). Next, they listed their five most favorite restaurants, five most favorite musicians, and their five closest friends. For each item listed, they indicated the kind of cuisine served in the restaurant (e.g., Thai) or nationality of the musician/friend. We tallied the number of close friends from other countries (Item 6), the number of the listed restaurants that served non-American cuisines (Item 7), and the number of foreign musicians (Item 8). To give equal weights to the eight items, we rescaled the items so that each ranged from 0 to 1. For Item 1, we converted the percentage into a proportion that ranges from 0 to 1; for Items 2 to 4, we recoded "yes" as 1 and "no" as 0; for Item 5, we divided the number by 10; and for Items 6 to 8, we divided the number by 5. The sum of the rescaled items forms our measure of multicultural experiences.

To establish the reliability and validity of the MES, we obtained data from a comparable sample of 64 European American undergraduates who did not participate in the current study (32 females; mean age = 19.56 years). The reliability of the MES was acceptable, with Cronbach's $\alpha = .71$. In addition, analyses of the item-total correlations showed that deleting any of the eight items would not increase the measure's reliability. We also performed a principal component analysis on the eight items. The scree test result supported a one-factor solution, with all items loaded significantly on the first principal component (factor loadings ranged from .36 to .72). The marker items with factor loadings $> .70$ were as follows: Items 3 and 4 (father's and mother's country of origin), Item 5 (self-reported exposure to a culture other than mainstream American culture), and Item 6 (percentage of foreign close friends) (see Table 2 for the eight items' factor loadings). These results provided evidence for the internal reliability and content validity of the measure. Based on these results, we treated the MES as a unidimensional measure of exposure to multicultural experiences.

To further establish the validity of our measure, we had the participants in the main study rate their familiarity with American, Chinese, and Turkish cultures on a 0 (*not at all familiar*) to 10 (*very familiar*) scale. They rated themselves as being very familiar with American culture ($M = 9.16$) and relatively unfamiliar with Chinese ($M = 2.57$) and Turkish cultures ($M = 1.08$). More important, as predicted, extensiveness of multicultural experiences was positively correlated with familiarity with Chinese culture ($r = .29, p < .008$) and Turkish culture ($r = .32, p < .004$) but unrelated to familiarity with American culture ($r = -.10, p < .93$).

One concern is whether the MES is simply a measure of Openness to Experience. It is possible that open individuals tend to seek out multicultural experiences. However, although some multicultural experiences are acquired voluntarily, others are not (e.g., parents' country of birth). Similarly, the availability of foreign cultures in one's living environment is not entirely under personal control. For example, independent of their openness to experience, European Americans living in San Francisco or New York are likely to have more exposure to foreign cultures than those living in the American Midwest. Furthermore, the Openness to Experience Scale (NEO Five-Factor Inventory [NEO-FFI]; Costa & McCrae, 1992) was not designed to measure openness to multicultural experiences. For instance, two sample items on the scale are as follows: "I have a lot of intellectual curiosity," and "I am intrigued by the patterns I found in art and nature." Thus, the association between the multicultural experience score and Openness to Experience is predicted to be mildly positive. Our data with another comparable sample of 65 European American undergraduates supported this prediction. These participants filled out the MES and the Openness to Experience Scale (NEO-FFI). Extent of multicultural experiences was positively

Table 2. Factor Loadings of the Eight Multicultural Experience Survey Items

Item	Factor Loading
Item 1:The percentage of lifetime you had lived outside your home state	.37
Item 2:Whether you speak a foreign language	.49
Item 3:Whether your father was born outside the United States	.72
Item 4:Whether your mother was born outside the United States	.71
Item 5:The extent of your exposure to a culture other than mainstream American culture	.72
Item 6:A list of your five most favorite restaurants	.44
Item 7:A list of your five most favorite musicians	.36
Item 8:A list of your five closest friends	.72

but not significantly correlated with Openness to Experience ($r = .20$, ns). This finding provided evidence for the MES's discriminant validity.

Results and Discussion

Some participants generated mostly conventional gift ideas (ideas with higher dominance/rank index), whereas other participants generated many unconventional gift ideas (ideas with lower dominance/rank). Some examples of conventional gift ideas were chocolate, CDs/DVDs, and movie ticket, and some examples of unconventional gift ideas were poetry, donation in their friend's name, and bread basket. As expected, the extent of multicultural experiences ($M = 2.43$, $SD = 1.55$, $range = 0.10$ to 7.69) was negatively correlated with the gifts' average dominance/rank index, $r(39) = -.34$, $p < .03$. This result indicates that people with greater exposure to foreign cultures are less likely to generate conventional gift ideas that many people in their community would readily generate. In other words, as predicted, the more multicultural experiences people have, the more likely they would generate culturally unconventional gift ideas.

Study 3

Method

In Study 3, we developed an idea sampling task to measure participants' receptiveness to ideas from foreign cultures. Eighty-three European American undergraduates (42 females; mean age = 18.84 years) with varying levels of multicultural experiences from a public university in the Midwest participated in the study for course requirement credit.

Idea sampling task. In this task, participants were presented with a preliminary idea proposed by an undergraduate student for his psychology honor thesis: *People who have more friends are happier*. The participants' task was to develop this idea into a creative research idea about happiness. Before they started working on the task, they were given an opportunity to seek inspirations from the writings of esteemed scholars who had written on the nature of happiness.

The participants were then given 15 envelopes on which some brief background information of 15 scholars (5 Americans, 5 Turks, and 5 Chinese) was printed. A sample background description is "An American [Chinese or Turkish] novelist who has authored three collections on human relationship." The participants could consult the sayings of up to 7 scholars. A pilot study with an independent sample of European American students was conducted to ensure that participants' choices were not influenced by the specific contents of the background descriptions. Specifically, participants in the pilot study read a set of background descriptions without the scholars'

nationality information and rated on a 7-point scale how likely they would consult each scholar's saying to better understand the meaning of happiness. The scholar descriptions included in the current study received similar ratings on this measure in the pilot study. To further ensure that the main study participants' choices of the sayings were not systematically influenced by the descriptions of the scholars, we randomly divided the 15 scholar descriptions into three groups of five descriptions. Three different versions of the scholar descriptions were formed by pairing each group of sayings with American, Chinese, and Turkish scholars. For example, in Version 1, we paired Group 1 descriptions with American scholars, Group 2 descriptions with Chinese scholars, and Group 3 with Turkish scholars. In Version 2, we paired Group 1 descriptions with Chinese scholars, Group 2 with Turkish scholars, and Group 3 with American scholars. Participants were randomly assigned to read one version of the descriptions.

After participants had decided whose and how many sayings to consult, the experimenter gave them the corresponding number of sayings, which unbeknownst to the participants were randomly selected from a pool of 15 sayings. These sayings were matched on ratings of familiarity, originality, inspiringness, and persuasiveness collected in another pilot study (a sample saying is "Happiness is not a destination. It is a method of life."). In the pilot study, we had 20 European American students rate 150 happiness sayings on the above four characteristics, and the 15 sayings we selected for the current study received similar ratings across all characteristics. This can ensure that these 15 sayings were equally preferable; participants preferred one saying more than the other not because of, for example, its higher familiarity but instead because of it being labeled as written by a scholar of a particular ethnicity. The percentage of foreign sayings sampled (out of 15) formed the major dependent measure in the study.

Self-perceived creativity. To provide further evidence for the link of multicultural experiences and creativity, we included a 22-item Creativity subscale of the Personal Value Scales (Scott, 1965) at the end of the survey. Participants indicated on a 5-point Likert-type scale how well their own behaviors matched the behavior depicted in each item. A sample item is "developing new and different ways of doing things." The scale has acceptable reliability in the current study (Cronbach's $\alpha = .77$).

Results and Discussion

The reliability of the MES was slightly lower than that in Study 2, with Cronbach's $\alpha = .65$. Recall that each participant could choose up to seven sayings from five American sayings and 10 foreign (Chinese and Turkish) sayings. A Multicultural Experience (mean centered) \times Participant Gender General Linear Model (GLM) fitted to the percentage of foreign sayings sampled revealed the predicted Multicultural Experience main effect, $F(1, 76) = 4.31, p < .04, \eta_p^2 = .05, p_{rep} = .89$. No other effects were significant in this analysis ($F_s < 0.98$). As expected, extensiveness of multicultural experiences ($M = 2.00, SD = .99$, Range = 0.10 to 4.40) was positively related to the percentage of foreign sayings chosen ($r = .24, p < .03$). Furthermore, participants with more extensive multicultural experiences scored higher on the Creativity subscale of the Personal Value Scales ($r = .46, p < .01$). In summary, extensiveness of multicultural experiences is positively associated with the tendency to sample ideas from other cultures in a creative expansion task and with self-perceived creativity.

Study 4

Having established some creative benefits of multicultural experiences, we now turn to some motivational concerns that could limit these benefits. The current study examined the NFCC as a moderator of the link between multicultural experiences and receptiveness to ideas from

foreign cultures. Time pressure has been used in past research as a way to manipulate the NFCC (Heaton & Kruglanski, 1991). When placed under time pressure, individuals desire firm answers and dislike ambiguities (Kruglanski & Webster, 1996). They also crave for cultural consensus and tend to display culture-characteristic social perceptual processes (Chiu et al., 2000). Thus, in the current study, we used time pressure to manipulate participants' NFCC.

Method

The participants were 64 European American undergraduates (28 females; mean age = 18.69 years) at a Midwestern university who took part in the study to fulfill their course requirement. As in the previous study, we used the MES to measure participants' extent of multicultural experiences and the idea sampling task to assess how receptive the participants were to ideas from foreign cultures.

Before working on the idea sampling task, we randomly assigned half of the participants to the high time pressure condition; they were told that they had limited time to complete the task and the experimenter regularly reminded them of the time and hinted that they needed to work on the task quickly. The remaining participants were assigned to the low time pressure condition; they were assured that they had plenty of time and should work on their own pace. Manipulation check indicated that participants in the high time pressure (vs. low time pressure) condition were more likely to feel the time urgency during the task ($M = 5.67$ vs. $M = 3.67$ on a 7-point scale item that asked about how much they experienced time pressure in the testing environment, $t(62) = 3.77, p < .001$). Following the manipulation, the participants completed the idea sampling task, the MES, and the Openness to Experience Scale.

Results and Discussion

The Cronbach's α of the MES was .68. Extent of multicultural experiences ($M = 1.95, SD = .96$, range = 0.10 to 4.40) was not significantly correlated with Openness to Experience ($r = .23, ns$). The predicted Multicultural Experience X Time Pressure interaction in the Multicultural Experience (mean centered) X Time Pressure X Gender GLM performed on the percentage of foreign sayings sampled was significant, $F(1, 56) = 4.72, p < .03, \eta_p^2 = .08, p_{rep} = .91$. No other effects were significant in this analysis ($F_s < .83$). As expected, the amount of multicultural experiences and the percentage of foreign sayings sampled were positively correlated in the low time pressure condition ($r = .33, p < .04$) and not correlated in the high time pressure condition ($r = -.23, ns$).

Furthermore, simple slope analyses revealed that at a low level of multicultural experiences (1 SD below the mean), the main effect of time pressure was not significant, $F(1, 56) = 1.92, ns, \eta_p^2 = .02$. However, at a high level of multicultural experiences (1 SD above the mean), time pressure significantly lowered the percentage of ideas sampled from foreign cultures, $F(1, 56) = 3.86, p < .05, \eta_p^2 = .07, p_{rep} = .88$.

These results indicate that when people are not under time pressure, those with more extensive multicultural experiences are more motivated to recruit ideas from unfamiliar cultures. However, this association is significantly attenuated when individuals are placed under time pressure, possibly because time pressure increases the NFCC and hence resistance to ideas from other cultures.

Study 5

Method

This study tested the moderation effect of existential terror on the positive association between multicultural experiences and receptiveness to ideas from foreign cultures. The participants were

64 European American undergraduates (36 females; mean age = 18.88 years) who took part in the study to fulfill their course requirement.

In the current study, we used the same idea sampling task in Studies 3 and 4 to measure participants' receptiveness to ideas from foreign cultures. Before working on the idea sampling task, half of participants received the standard mortality salience manipulation used in the TMT research (Rosenblatt, Greenberg, Solomon, & Pyszczynski, 1989); they were asked to vividly visualize what would happen to their body as they died and after they died. The remaining participants were assigned to the control condition and asked to describe the experience of dental pain.

Past studies (Greenberg et al., 1997) showed that the mortality salience effect is particularly pronounced on perceived desirability of symbolic elements from out-group cultures. Thus, after participants had finished writing the essay, we asked them to use an 11-point scale to rate each sampled saying on four attributes: persuasiveness, helpfulness, inspiringness, and creativity. For each participant and on each attribute, we computed the mean rating of all American sayings sampled. Next, we created a measure of evaluative attitude toward American sayings by taking the mean of the four attribute ratings (Cronbach's $\alpha = .88$). Using the same procedure, we created a measure of evaluative attitude toward foreign (Chinese and Turkish) sayings (Cronbach's $\alpha = .82$). After completing the idea sampling task, the participants completed the MES and the Openness to Experience Scale.

We hypothesize that in the control condition, participants with more (vs. fewer) extensive multicultural experiences would sample more ideas from foreign (Chinese and Turkish) cultures and rated these ideas more positively. However, in the mortality salience condition, this association between multicultural experiences and receptiveness to ideas from foreign cultures would be significantly attenuated.

Results and Discussion

Consistent with the previous three studies, the MES had acceptable reliability: Cronbach's $\alpha = .71$. Again, extensiveness of multicultural experiences ($M = 1.81$, $SD = 1.07$, range = 0.4 to 5.23) and openness to experience were not correlated ($r = .09$, *ns*). We also checked if the mortality salience manipulation had any effect on the measures of multicultural experiences and openness to experience. As expected, the main effect of the mortality salience manipulation was not significant, $F(1, 60) = 0.49$, *ns*, $\eta_p^2 = .01$, for extensiveness of multicultural experiences and $F(1, 60) = 2.51$, *ns*, $\eta_p^2 = .04$, for openness to experience.

The predicted Multicultural Experience \times Mortality Salience interaction was not significant in the Multicultural Experience (mean centered) \times Mortality Salience (dental pain vs. death essay) \times Gender GLM fitted to the percentage of foreign sayings sampled, $F(1, 56) = 0.81$, *ns*, $\eta_p^2 = .01$. However, a Cultural Origin of Sayings (within-subjects factor: American or Foreign) \times Multicultural Experience (mean centered) \times Mortality Salience \times Gender GLM performed on the two evaluative attitude measures of American and foreign sayings revealed the predicted three-way Cultural Origin of Sayings \times Multicultural Experience \times Mortality Salience interaction, $F(1, 54) = 6.03$, $p < .05$, $\eta_p^2 = .10$, $p_{rep} = .93$. No other effects were significant in this analysis, $F_s < 2.50$. The Cultural Origin of Sayings \times Multicultural Experience interaction was significant in the control (dental pain) condition, $F(1, 26) = 6.46$, $p < .02$, $\eta_p^2 = .20$, $p_{rep} = .93$, but not in the mortality salience condition, $F(1, 28) = 1.43$, *ns*, $\eta_p^2 = .05$.

We subtracted the rating of American sayings from that of foreign sayings to form an index of relative evaluation of ideas from foreign (vs. American) cultures. In the control condition, this index was positively correlated with the multicultural experience score ($r = .42$, $p < .05$). In this condition, participants with rich multicultural experiences (2 *SDs* higher than the mean) evaluated the American sayings significantly less positively ($M = 3.96$ vs. $M = 7.08$) and the foreign sayings significantly more positively ($M = 6.10$ vs. $M = 5.54$) than those with less multicultural

experiences (2 *SDs* lower than the mean). In the mortality salience condition, amount of multicultural experiences was not related to the relative evaluation of ideas from foreign (vs. American) cultures ($r = -.13$, *ns*). For the distal defense effect to occur, a brief delay between the mortality salience manipulation and the idea sampling task is necessary (Greenberg et al., 1994). The lack of mortality salience effect on the relative evaluation of foreign sayings in the current study may result from the absence of such delay; immediately after the mortality salience manipulation, the participants proceeded to the idea sampling task.

General Discussion

Recent theorizations in multicultural psychology tend to emphasize the positive association between multicultural experiences and receptiveness to unconventional ideas or ideas from foreign cultures. Some indirect evidence also suggests that exposure to diverse cultures predicts better creative performance. In the current investigation, we obtained supportive evidence that multicultural experiences can provide a valuable cognitive resource for creative thinking—there are significant immediate and delayed creative benefits of exposing European American participants to American and Chinese cultures simultaneously or a hybrid American-Chinese culture. Our experimental evidence also indicates that the association of multicultural experiences and creative performance does not result from a third variable (e.g., bilingual competence, openness to experience) acting on both bicultural experiences and creativity. Moreover, the cognitive benefits of experiencing Chinese culture were obtained even when the participants responded to creativity tasks that did not require knowledge of Chinese culture (writing a fairy tale for Turkish children and constructing analogies of time). This suggests that their multicultural exposure might have engaged them in some creativity-supporting cognitive skills, such as a spontaneous tendency to sample ideas from divergent sources and to attempt creative integration of seemingly unconnected ideas (Wan & Chiu, 2002; Ward, 2001).

Studies 2 and 3 further showed that extensiveness of multicultural experiences is associated with the tendency to generate unconventional ideas and to sample ideas from diverse cultures in a creative expansion task. Moreover, we also identified two motivational factors that could attenuate the positive relationship between multicultural experiences and receptiveness to sampling foreign ideas. Specifically, this relationship was found only when the situation does not evoke a NFCC (Study 4) or existential terror (Study 5). This result is consistent with past research on the effects of NFCC and mortality salience on conformity to in-group cultural norms (see Chiu & Hong, 2005; Chiu et al., 2000; Fu et al., 2007). Furthermore, the finding on the effect of experimentally induced NFCC suggests that parallel effect may be obtained with respect to individual differences in the NFCC. For individuals with a chronic need to achieve closure, they may resist ideas originated from foreign cultures even when they have the opportunities to encounter these ideas (Ip et al., 2006).

The current findings have important implications on multicultural learning. First, Study 1 results showed that a creative mindset will be activated in a situation where dissimilar ideas from different cultural sources are presented simultaneously. This happens probably because when individuals are aware of the differences among these ideas, they would want to arrive at a deeper, more complex understanding of these ideas through comparison, differentiation, and identification of the commonality. With repeated engagement in such cognitive processes over time, individuals with rich multicultural experiences may become more cognitively complex and are therefore more capable of organizing their received cultural representations from multiple interpretative frames (Benet-Martinez et al., 2006; Gutierrez & Sameroff, 1990). The increased cognitive complexity resulting from multicultural learning may in turn increase cultural sensitivity and flexible adjustment of behavioral strategies when responding to the

changing demands in different cultural situations (Benet-Martinez et al., 2006; Chiu & Hong, 2006; Leung & Chiu, 2007).

Second, results from Studies 1 and 3 showed that multicultural experiences are linked to better creative performance and receptiveness to ideas from foreign cultures. Although we do not have evidence that idea receptiveness is related to better creative performance, it is possible that individuals who are more willing to learn from other cultures will acquire more ideas that they can use to form novel combinations of ideas (Weisberg, 1999). As a result, they are more capable of thinking out of the box; they can use the large amount of alternative conceptions acquired from other cultures (rather than conventionalized ideas) for creative problem solving. This contention is consistent with the Study 2 results that multicultural experiences are associated with a greater tendency to generate unconventional gift ideas.

Finally, in Study 1, we found that participants in the dual cultures and fusion culture conditions had better creative performance than did control participants. In contrast, the Chinese culture only condition did not increase creative performance. This result suggests that an optimal multicultural learning environment for enhancing creative performance should encourage the individual to mentally place ideas from two or more diverse cultures in juxtaposition (Leung, Maddux, Galinsky, Chiu, & Law, 2006; Maddux & Galinsky, 2005). The perceived conceptual contrast between these ideas may motivate the individual to creatively integrate or synthesize seemingly incompatible ideas from different cultural sources (Wan & Chiu, 2002; Ward et al., 1997). Indeed, our results showed that when the multicultural learning environment exposes individuals to ideas from two or more cultures simultaneously and encourages individuals to synthesize seemingly nonoverlapping ideas from these cultures, even a 1-hour encounter with multiple cultures could yield significant creative benefits.

Why then may the creative benefits of multicultural experiences seem much more difficult to be obtained from real-life multicultural exposure? Aside from the obvious reason that not all multicultural encounters encourage creative synthesis of ideas from different cultures, as results from Studies 4 and 5 indicated, some motivational factors may create obstacles to effective multicultural learning. Although there is a positive relationship between multicultural experiences and receptiveness to ideas from foreign cultures, this relationship is significantly attenuated in situations where individuals crave firm answers or are preoccupied with mortality concerns. Therefore, effectiveness of intercultural learning should improve when learning takes place in an intercultural environment that does not evoke the NFCC and existential concerns.

Our results also explain why sometimes multicultural experiences do not increase creativity. For example, intercultural contacts in war zones (where soldiers need firm answers and are concerned about mortality) seldom lead to intercultural learning and creative problem solving. Cultural encapsulation provides another example where bicultural experiences do not increase creativity. Cultural encapsulation happens when migrants become culturally encapsulated within the dominant values that are characteristic of their homeland during an earlier era. As a result, these immigrants or ethnic minorities may espouse the values in their native culture more strongly than their counterparts living in the home country (Kim, Yang, Atkinson, Wolfe, & Hong, 2001). We submit that cultural encapsulation may arise when people migrate to an unfamiliar environment where they encounter a lot of uncertainty and are hence motivated to secure cognitive closure, which may then create obstacles for multicultural experiences to produce creative benefits.

The past findings on the role of emotion regulation in enhancing receptiveness and openness to unfamiliar cultural experiences are consonant with our finding that time pressure and mortality threat moderate the link between multicultural exposures and receptiveness to foreign ideas. In the face of culturally shocking or conflicting encounters, people may experience negative emotions that lower their receptiveness to new cultural experiences (see Matsumoto & LeRoux, 2003; Yoo, Matsumoto, & LeRoux, 2006). For instance, whereas mortality salience produces existential

anxiety, lack of cognitive closure generates epistemic insecurity, and both are negative emotional states. Thus, it is possible that emotionally intelligent migrants who are good at managing negative emotions tend to be receptive to and hence be able to benefit from ideas in the host culture. This possibility merits further investigation.

In summary, the current research illustrates the role of multicultural experiences in creative performance and the likelihood of engaging in some creativity-supporting psychological processes. We also identify some factors that may limit the potential creative benefits of multicultural experiences. We hope that our findings will inspire future works on the relationship between multicultural experiences and creativity.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

Note

1. For some multicultural individuals, which culture is the heritage culture and which is the foreign one could be a matter of how they negotiate their identity between the native and host cultures (Tsai, Mortensen, Wong, & Hess, 2002). For example, to a European American student who is studying abroad in Japan, American culture is likely to be the heritage culture and Japanese culture the foreign culture. To a second-generation American-born Taiwanese, however, depending on how he or she interprets his or her bicultural experiences or responds to social situations (Chao et al., 2007), American culture may be perceived as the heritage culture or the host culture and likewise for the Taiwanese culture.

References

- Andersen, S. M., & Berk, M. S. (1998). The social-cognitive model of transference: Experiencing past relationships in the present. *Current Directions in Psychological Science*, 7, 1-7.
- Arndt, J., Greenberg, J., Solomon, S., Pyszczynski, T., & Schimel, J. (1999). Creativity and terror management: Evidence that creative activity increases guilt and social projection following mortality salience. *Journal of Personality and Social Psychology*, 77, 19-32.
- Barsalou, L. W. (1985). Ideals, central tendency, and frequency of instantiation as determinants of graded structure in categories. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11, 629-654.
- Battig, W. F., & Montague, W. E. (1969). Category norms for verbal items in 56 categories: A replication and extension of the Connecticut category norms. *Journal of Experimental Psychology Monographs*, 80 (3, Pt. 2), 1-46.
- Benet-Martinez, V., Lee, F., & Leu, J. (2006). Biculturalism and cognitive flexibility: Expertise in cultural representations. *Journal of Cross-Cultural Psychology*, 37, 386-407.
- Berry, J. W. (2001). A psychology of immigration. *Journal of Social Issue*, 57, 615-631.
- Chao, M., Chen, J., Roisman, G. I., & Hong, Y.-y. (2007). Essentializing race: Implications for bicultural individual's cognition and physiological reactivity. *Psychological Science*, 18, 341-348.
- Chiu, C., & Hong, Y. (2005). Cultural competence: Dynamic processes. In A. Elliot & C. S. Dweck (Eds.), *Handbook of motivation and competence* (pp. 489-505). New York: Guilford.
- Chiu, C., & Hong, Y. (2006). *The social psychology of culture*. New York: Psychology Press.
- Chiu, C.-y., Mallorie, L., Keh, H.-t., & Law, W. (2009). Perceptions of culture in multicultural space: Joint presentation of images from two cultures increases in-group attribution of culture-typical characteristics. *Journal of Cross-cultural Psychology*, 40, 282-300.

- Chiu, C.-y., Morris, M., Hong, Y., & Menon, T. (2000). Motivated cultural cognition: The impact of implicit cultural theories on dispositional attribution varies as a function of need for closure. *Journal of Personality and Social Psychology*, 78, 247-259.
- Costa, R. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Fu, H.-y., Morris, M. W., Lee, S.-l., Chao, M.-c., Chiu, C.-y., & Hong, Y.-y. (2007). Epistemic motives and cultural conformity: Need for closure, culture, and context as determinants of conflict judgments. *Journal of Personality and Social Psychology*, 92, 191-207.
- Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veedeo, M., & Kirkland, S. (1990). Evidence for terror management theory II: The effects of mortality salience on reactions to those who threaten or bolster the cultural world view. *Journal of Personality and Social Psychology*, 58, 308-318.
- Greenberg, J., Pyszczynski, T., Solomon, S., Simon, L., & Breus, M. (1994). Role of consciousness and accessibility of death-related thoughts in mortality salience effects. *Journal of Personality and Social Psychology*, 67, 627-637.
- Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 61-139). New York: Academic Press.
- Guimerà, R., Uzzi, B., Spiro, J., & Amaral, L. A. N. (2005). Team assembly mechanisms determine collaboration network structure and team performance. *Science*, 308, 697-702.
- Gutierrez, J., & Sameroff, A. (1990). Determinants of complexity in Mexican-American and Anglo-American mothers' conceptions of child development. *Child Development*, 61, 384-394.
- Heaton, A. W., & Kruglanski, A. W. (1991). Person perception by introverts and extroverts under time pressure: Need for closure effects. *Personality and Social Psychology Bulletin*, 17, 161-165.
- Hong, Y., Chiu, C., & Kung, M. (1997). Bringing culture out in front: Effects of cultural meaning system activation on social cognition. In K. Leung, Y. Kashima, U. Kim, & S. Yamaguchi (Eds.), *Progress in Asian social psychology* (Vol. 1, pp. 139-150). Singapore: Wiley.
- Hong, Y., Morris, M., Chiu, C.-y., & Benet, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist*, 55, 709-720.
- Ip, G. W.-m., Chen, J., & Chiu, C.-y. (2006). The relationship of promotion focus, need for cognitive closure, and categorical accessibility in American and Hong Kong Chinese university students. *Journal of Creative Behavior*, 40, 201-215.
- Kashima, E. S., Halloran, M., Yuki, M., & Kashima, Y. (2004). The effects of personal and collective mortality salience on individualism: Comparing Australians and Japanese with higher and lower self-esteem. *Journal of Experimental Social Psychology*, 40, 384-392.
- Kashima, E. S., & Loh, E. (2006). International students' acculturation: Effects of international, conational, and local ties and need for closure. *International Journal of Intercultural Relations*, 30, 471-485.
- Kim, B. S. K., Yang, P. H., Atkinson, D. R., Wolfe, M. M., & Hong, S. (2001). Cultural value similarities and differences among Asian American ethnic groups. *Cultural Diversity and Ethnic Minority Psychology*, 7, 343-361.
- Kosic, A., Kruglanski, A. W., Pierro, A., & Mannetti, L. (2004). The social cognitions of immigrants' acculturation: Effects of the need for closure and reference group at entry. *Journal of Personality and Social Psychology*, 86, 796-813.
- Kruglanski, A. E., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review*, 103, 263-283.
- Lambert, W. E., Tucker, G. R., & d'Anglejan, A. (1973). Cognitive and attitudinal consequences of bilingual schooling: The St. Lambert project through grade five. *Journal of Educational Psychology*, 65, 141-159.
- Leung, A. K.-y. & Chiu, C.-y. (2008). Interactive effects of multicultural experiences and openness to experience on creativity. *Creativity Research Journal*, 20, 376-382.

- Leung, A. K.-y., & Chiu, C-y. (in press). Multicultural experiences and intercultural communication. In A. K.-y. Leung, C-y. Chiu, & Y-y. Hong (Eds.), *Cultural processes: A social psychological perspective*. New York: Cambridge University Press.
- Leung, A. K.-y., Maddux, W., Galinsky, A., & Chiu, C-y. (2008). Multicultural experience enhances creativity: The when and how. *American Psychologist*, 63, 169-181.
- Levine, J. M., & Moreland, R. L. (2004). Collaborations: The social context of theory development. *Personality and Social Psychology Review*, 8, 164-172.
- Maddux, W. W., & Galinsky, A. D. (2009). Cultural borders and mental barriers: The relationship between living abroad and creativity. *Journal of Personality and Social Psychology*, 96, 1047-1061.
- Matsumoto, D., & LeRoux, J. A. (2003). Measuring the psychological engine of intercultural adjustment: The intercultural adjustment potential scale (ICAPS). *Journal of Intercultural Communication*, 6, 37-52.
- Nemeth, C., & Kwan, J. (1987). Minority influence, divergent thinking and detection of correct solutions. *Journal of Applied Social Psychology*, 17, 788-799.
- Nemeth, C., & Wachter, J. (1983). Creative problem solving as a result of majority vs. minority influence. *European Journal of Social Psychology*, 13, 45-55.
- Ricciardelli, L. A. (1992). Creativity and bilingualism. *Journal of Creative Behavior*, 26, 242-254.
- Rosenblatt, A., Greenberg, J., Solomon, S., & Pyszczynski, T. (1989). Evidence for terror management theory I: The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality & Social Psychology*, 57, 681-690.
- Rubin, D. C., & Kontis, T. C. (1983). A schema for common cents. *Memory and Cognition*, 11, 335-341.
- Scott, W. A. (1965). *Values and organizations: A study of fraternities and sororities*. Chicago: Rand McNally.
- Simonton, D. K. (1994). *Greatness: Who makes history and why*. New York: Guilford.
- Simonton, D. K. (1997). Foreign influence and national achievement: The impact of open milieus on Japanese civilization. *Journal of Personality and Social Psychology*, 72, 86-94.
- Simonton, D. K. (1999). *Origins of genius: Darwinian perspectives on creativity*. New York: Oxford University Press.
- Solomon, S., Greenberg, J., Schimel, J., Arndt, J., & Pyszczynski, T. (2004). Human awareness of morality and the evolution of culture. In M. Schaller & C. S. Crandall (Eds.), *The psychological foundations of culture* (pp. 15-40). Mahwah, NJ: Lawrence Erlbaum.
- Sue, D. W., Bingham, R. P., Porche-Burke, L., & Vasquez, M. (1999). The diversification of psychology: A multicultural revolution. *American Psychologist*, 54, 1061-1069.
- Sui, J., Zhu, Y., & Chiu, C.-y. (2007). Bicultural mind, self-construal, and recognition memory: Cultural priming effects on self- and mother-reference effect. *Journal of Experimental Social Psychology*, 43, 818-824.
- Tadmor, C. T., & Tetlock, P. E. (2006). Biculturalism: A model of the effects of second-culture exposure on integrative complexity. *Journal of Cross-Cultural Psychology*, 37, 173-190.
- Tsai, J. L., Mortensen, H., Wong, Y., & Hess, D. (2002). What does "being American" mean? A comparison of Asian American and European American young adults. *Cultural Diversity and Ethnic Minority Psychology*, 8, 257-273.
- Wan, W., & Chiu, C.-y. (2002). Effects of novel conceptual combination on creativity. *Journal of Creative Behavior*, 36, 227-241.
- Ward, T. B. (1994). Structured imagination: The role of conceptual structure in exemplar generation. *Cognitive Psychology*, 27, 1-40.
- Ward, T. B. (2001). Creative cognition, conceptual combination, and the creative writing of Stephen R. Donaldson. *American Psychologist*, 56, 350-354.
- Ward, T. B., Patterson, M. J., Sifonis, C. M., Dodds, R. A., & Saunders, K. N. (2002). The role of graded category structure in imaginative thought. *Memory and Cognition*, 30, 199-216.

- Ward, T. B., Smith, S. M., & Vaid, J. (1997). Conceptual structures and processes in creative thought. In T. B. Ward, S. M. Smith, & J. Vaid (Eds.), *Creative thought: An investigation of conceptual structures and processes* (pp. 1-27). Washington, DC: American Psychological Association Books.
- Weisberg, R. W. (1999). Creativity and knowledge: A challenge to theories. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 226-250). Cambridge, UK: Cambridge University Press.
- Yoo, S. H., Matsumoto, D., & LeRoux, J. A. (2006). The influence of emotion recognition and emotion regulation on intercultural adjustment. *International Journal of Intercultural Relations*, 30, 345-363.

Bios

Angela Ka-ye Leung is an assistant professor of psychology at the Singapore Management University. She received her PhD in social psychology at the University of Illinois, Urbana-Champaign. Her research seeks to understand how people participate actively in dynamic cultural processes in both intra- and intercultural contexts as well as the psychological implications for multicultural competence (e.g., creativity and intercultural communication). She is also interested in the role of embodiment (or bodily interactions with the environment) in the acquisition and endorsement of cultural values.

Chi-yue Chiu is a professor of management and marketing at Nanyang Technological University. He received his PhD in social-personality psychology at Columbia University and taught at the University of Hong Kong and the University of Illinois before moving to Nanyang Technological University. His current research focuses on cultures as knowledge traditions and the social, cognitive, and motivational processes that mediate the construction and evolution of social consensus. He is also interested in the dynamic interactions of cultural identification and cultural knowledge traditions and their implications for cultural competence and intercultural relations.