Culture and Creativity: A Process Model

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ABSTRACT   The articles in this forum present many innovative ideas on the role of culture in creativity. In this commentary, we first discuss the contributions of these articles in relation to two recurrent themes: (i) where creativity resides and (ii) what conceptual refinements are needed to push the field forward. Next, we outline a process model of creativity and explain the role of culture at each stage of knowledge creation. We argue that successful innovation involves one or more iterations of the following three stages: (i) authoring new ideas; (ii) selecting, editing, and marketing new ideas; and (iii) acceptance of the new ideas in the market. The desired outcomes are different at the different stages, and culture influences all stages of the process. Specifically, existing knowledge provides a reference point for evaluating the originality of ideas; assumed cultural consensus provides the normative basis for idea selection, editing, and marketing; and actual cultural norms determine how likely an idea will be accepted in a culture. Furthermore, different social and psychological processes are at work at different stages of the creativity process, and culture can affect the outcomes of the creativity process through its effects on these social and psychological processes.

KEYWORDS   creativity, culture, knowledge, multicultural experience

INTRODUCTION

Examples of failures in selling products cross-culturally are not rare. In 2004, Nokia introduced its dual mode (W-CDMA/GSM) phone in Japan, which enabled users to adapt to different phone standards in Japan, Europe, and other parts of Asia. Nokia originally expected this new technology to bring a double-digit market share in Japan, but was able to sell only 200,000 phones in Japan in the 2007 financial year (0.39 percent of the Japanese market). On November 2008, Nokia announced that it was ceasing sales in Japan, except for its high-end Vertu model (Izumi, 2008). A lack of awareness of the Japanese handset users' expectations was a major reason for the inevitable withdrawal of Nokia from Japan (Yanaka, 2009). Japanese mobile phone users have low monthly talking time and high demand for mobile Internet. Thus, Nokia's dual model feature did not appeal to the Japanese consumers. By comparison, local firms that sell handsets with high performance

multifunctional features are more successful in the local market; they make up 95 percent of Japan's mobile phone market. Nonetheless, stories of successful cross-cultural adoption of innovative technology abound. For example, Apple developed its iPhone 3GS with multifunctional mobile Internet features to adapt to the Japanese market and the product topped the bestselling list of smart phones in Japan in July 2009 (Schuster, 2009). These examples underscore the importance of cross-cultural sensitivity and adaptation in human–product interaction and product designs.

   The articles in this forum offer innovative perspectives on the role of culture in creativity. In this commentary, we first discuss the contributions of these perspectives, focusing on two recurrent themes in the articles: (i) where creativity resides and (ii) what conceptual refinements are needed to push the field forward. Next, we offer a process model of creativity and explain the role of culture at each stage of knowledge creation.

CONTRIBUTIONS OF ARTICLES IN THIS FORUM

Where Does Creativity Reside?

The success and failure stories presented at the beginning of this commentary raise the fundamental question of where creativity resides. Is it in the knowledge creators? Is it in the knowledge created? Is it in the collective opinions or shared consensus among the users?

   The articles in this forum offer some refreshing answers to these questions. Simonton and Ting (2010) synthesized historiometric findings to construct profiles of eminent creators in the Eastern and Western traditions. These profiles enable us to visualize what the most creative people in human history were like. For example, Simonton and Ting's analysis reveals that eminent creators typically started young, lived long, remained steadily prolific throughout their careers, and worked in a relatively wide range of domains.

   If creativity resides in the individuals, it is tempting to ask whether individuals from some cultures are more creative than others. This question has captured the scientific imagination of many cross-cultural researchers (see Westwood & Low, 2003) and has become a focus of self-critical popular discourse in some Asian countries, exemplified by the Singaporean bestsellers: *Why Asians Are Less Creative than Westerners* (Ng, 2001) and *Can Asians Think?* (Mahbubani, 2002). Nevertheless, Morris and Leung (2010) urge us to reject sweeping generalizations regarding East–West differences in creativity as naïve cultural determinism. Culture has an important role to play in defining, promoting, and discouraging creative performance. However, as Westwood and Low (2003: 235; see also Zhou & Su, 2010) pointed out in a recent review, cross-cultural differences in creativity 'should not be considered universalistically, simplistically, or unreflexively'.

Morris and Leung (2010: 322) extend a welcome invitation to shift attention to the social norms and situation-dependent motives that drive creative behaviours of the individual. They explicitly argue that 'Culture does not shape an individual's creative behaviour, as is popularly imagined, by imprinting fixed mentalities, worldviews, or talents'. Instead, creativity resides in the shared norms in the pertinent cultural communities.

Mok and Morris (2010) provide compelling evidence for the normative interpretation of creativity. In a culturally mixed environment, on different occasions people may encounter environmental cues that signal different cultural expectations. For instance, East Asian-Americans may encounter cues that signal American norms on some occasions and cues that signal East Asian norms on other occasions. Some bicultural individuals are comfortable with their biculturality; these individuals spontaneously assimilate their cognitive styles to the cultural expectations signalled by environmental cues. For example, among Asian-Americans who are comfortable with their biculturality, cues to American (vs. Asian) culture elicit a higher level of ideational fluency, which is more valued in American (vs. Asian) culture. Some bicultural individuals are still struggling to integrate their dual cultural identities; these individuals tend to act contrarily to the primed cultural expectations – they generate fewer unique ideas when primed with American (vs. Asian) culture.

If creativity resides in cultural norms or social consensus, what is creative is relative to what members of the cultural community and experts in the field agree to be creative (Hempel & Sue-Chan, 2010). From this perspective, a fruitful way to understand how culture impacts creativity is to examine cultural differences in lay constructions of what constitutes creativity.

What Are the Changes We Need?

The authors in this forum have identified conceptual refinements needed to push culture and creativity research forward. These authors advance useful conceptual distinctions to recognize the multidimensional nature of creativity and afford more refined assessment of creative performance. One such distinction is the one between novelty and usefulness. Consistent with the argument that creativity resides in social processes as much as in individual cognitions, these two dimensions refer to attributes that are not inherent to an idea or a person; they are assessments of a solution relative to beliefs and preferences of other people. A solution is novel *relative* to what is already known in the culture, and is useful *relative* to the needs and wants of its potential users. These two dimensions of creative performance should be separated and measured independently. Morris and Leung (2010) also distinguish between fundamental breakthroughs from incremental refinements. These categories also highlight creativity as a social process. Whereas fundamental breakthroughs disrupt the conventional ways of problem solving in a certain domain and

start a new cycle of innovations, incremental refinements are responsible for generating new ideas that expand the boundaries of existing concepts and practices (Rich, 2009).

Second, the authors in this forum recognize that stages of the creativity process can be distinguished. Zhou and Su (2010) decompose creativity into the stages of creative idea generation from idea selection. Likewise, Erez and Nouri (2010) distinguish the stage of idea generation from that of elaboration.

Finally, the authors in this forum recognize the need to construct process models of the culture–creativity relationship. To address this need, Erez and Nouri (2010) construct a model to predict the interactive effects of cultural dimensions and features of task context on creative performance. Zhou and Su (2010) outline a model that clarifies the role of social dynamics in organizational creativity. Mok and Morris (2010) link management of bicultural identity and bicultural experience to creative performance. Hempel and Sue-Chan (2010) propose a plausible model of the temporal trajectory of creative performance of expatriates adapting to foreign cultures.

The conceptual advances reviewed above set the stage for further theoretical integration. In the next sections, we propose a process model of creativity that builds on the exciting ideas of the forum participants to explicate the role of culture in each stage of knowledge creation. To position our model in a broader theoretical context, we will first discuss the role of creativity in cultural evolution. We then describe the process model, comprised of three stages, and discuss the key elements at each stage.

A PROCESS MODEL OF CREATIVITY

Creativity and Cultural Evolution

The fascinating interplay between human creativity and culture can be seen through a comparison with non-human social animals. Recent discoveries in comparative anthropology reveal that, like humans, apes make creative discoveries by exploring the environment and develop cultures of shared behaviours through mechanisms of imitation and conformity (Whiten et al., 2007). What sets human and ape cultures apart is the unique human capability to reproduce and accumulate cultural knowledge. Simply put, human culture builds upon itself and ape culture does not. For example, some orangutans in Kutei, Borneo learned to build a cover on their nest during bright sunshine, but they did not pass this knowledge on to the next generation. Because the next generations have to rediscover this practice again, orangutans do not accumulate modifications of their invention over time. This explains why this practice of providing shelter from the sun has remained primitive for millions of years (Tomasello, 2001).

By comparison, human culture is cumulative. When humans create a piece of new knowledge, other humans take this as a starting point and move forward from

there. In human societies, once the wheel was invented, the next generations did not have to invent it again. Instead, they built on it and invented the carriage, and then the motor vehicle. This uniquely human process is referred to as *ratcheting*, and is the engine for human cultures. Cultural complexity ensues from ratcheting; through ratcheting, sophisticated cultural knowledge and complex cultural practices *evolve over time* (Tomasello, 2001).

Creativity is a knowledge creation and accumulation process that enables formation and evolution of complex human cultures. This process involves active negotiation of what constitutes new knowledge between knowledge creators and the target user communities. A novel idea is one that is new relative to current knowledge. For a novel idea to be selected for cultural transmission and become part of culture, it must succeed in the marketplace of ideas and be selected for cultural transmission. That is, knowledge creators need to come up with novel ideas and market them to the target users. From this perspective, culture consists of knowledge that was novel at the time it was created, has worked (at least in the past), and has been selected for social transmission and reproduction.

A Process Model of Creativity

Figure 1 presents a process model of creativity. According to this model, a successful innovation involves one or more iterations of the following three stages: (i) authoring new ideas; (ii) selecting, editing, and marketing new ideas; and (iii) acceptance of the new ideas in the market. Knowledge creators have control over stage 1 and partial control of stage 2, but often find themselves at the mercy of an audience when they reach stage 3.

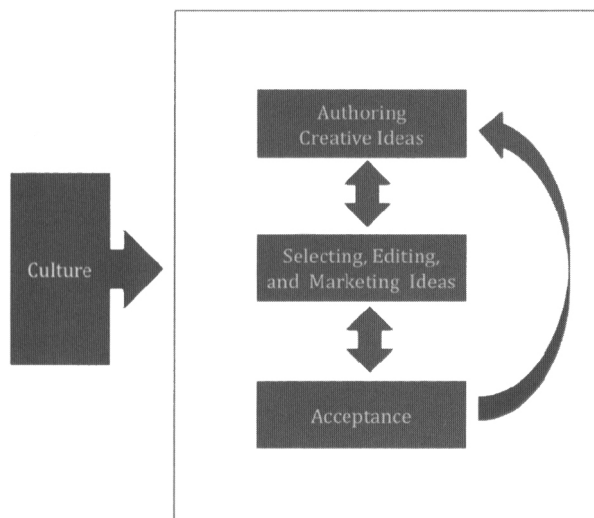Figure 1. A process model of creativity

Table 1. Different stages of knowledge creation

	Authoring	*Selection, editing, marketing*	*Acceptance*
Criteria of evaluation and selection	Novelty, personal utility	Publicity, market value	Collective utility, authority
Desired outcomes	Novelty	Elaboration and acceptance potential	Practical and heuristic value
Outcomes defined in relation to	Existing knowledge	Assumed attitudes, values, and beliefs in the audience	Actual preferences, values, and beliefs in the audience

As illustrated in Table 1, different criteria of evaluation are used at the different stages of knowledge creation. At the authoring stage, the primary criteria for evaluation are the novelty of the idea and the idea's personal utility to the knowledge creator. Ideas that are novel, nonconventional, and counter-intuitive in relation to current knowledge are preferred at this stage. At the selection, editing, and marketing stage, the primary objectives are to select ideas based on their potential success in the market, modify and edit the selected idea to enhance its market value, and enhance the publicity of the idea in the target audiences. At this stage, knowledge creators will consider the assumed attitudes, values, and beliefs of the gatekeepers and the end users. At the acceptance stage, the gatekeepers deliberating on the market entry rights of an idea will consider the collective utility of the idea (including its practical and heuristic value) and the preferences of the pertinent authorities (e.g., expert opinions, the government). The actual preferences of the end users determine the extent of acceptance of the idea in the market.

Knowledge creators have more control over the outcomes at stages 1 and 2 than those at stage 3. Success at stages 1 and 2 involve different skill sets. Whereas success at stage 1 involves the skill set of an inventor, success at stage 2 involves that of a trader. The inventor's goal is to create new ideas and the trader's goal is to create value for the new ideas. For inventors, creativity is about knowledge creation. Inventors evaluate their outputs by standards such as novelty, originality, and technological perfection, and are motivated by the intrinsic satisfaction derived from making new discoveries. They take personal ownership of and attach personal significance to their inventions, sometimes to the extent of being possessive or overly protective of the personal ownership of their ideas.

In contrast, traders are niche finders; they aim to identify innovative uses of new knowledge by actively exploring how to modify and package a new idea to create value for different audiences. Traders are motivated by expected returns from their investments; they evaluate their outputs by their incremental market value and

profitability. They tend not to attach personal or emotional significance to their ideas and welcome market ownership of their inventions. In large organizations, the inventing stage might take place in the R&D division and the trading stage in the marketing division, where different local norms about ideas would prevail (Griffin & Hauser, 1992).

The Role of Culture in the Process Model of Creativity

Culture is intertwined with all three stages of creativity, although the nature of its influences varies across the stages. For example, at the idea authoring stage, existing knowledge in the culture provides the point of reference for determining the originality or novelty of new ideas and is an important source of inspiration. However, under some circumstances, culture may also impede generation of novel ideas.

Culture and authoring. Culture can influence the generation of idea creation at stage one either *directly* or *indirectly*. What is new is relative to what is already known. Hempel and Sue-Chan (2010) illustrate this point vividly with the example of the Ang Lee film *Crouching Tiger, Hidden Dragon*. Western film critics evaluated this film's stylistic innovations more favourably than did their Chinese peers because the film is populated with stylistic innovations that are more novel to Western than Chinese audiences. In creativity research, the originality of ideas is often measured in relation to what ideas are common in the creators' culture (Ward, Patterson, Sifonis, Dodds, & Saunders, 2002).

To knowledge creators, the existing stock of knowledge in their culture is an invaluable source of material and inspiration. Many commercial innovations in Asia (e.g., Shanghai Tang fashion) succeed by appropriating ideas from traditional Asian designs for new purposes. Some innovative products marketed in China are created by combining elements of Chinese culture with those of foreign cultures (e.g., Haagen-Dazs mooncake ice cream; Chiu, 2007).

Indeed, combining disparate ideas from existing cultures is a powerful way of generating new ideas (Wan & Chiu, 2002). People are socialized to think in culturally conventional ways. In this way, cultures create perceptual and mental sets that constrain one's search for solutions to a problem. Nonetheless, authorship of original ideas requires the individual to look at problems from new perspectives, question the current assumptions, and step back from the problem. Research suggests that individuals are more able to break free from their culture's limiting perceptual and mental sets to the extent that they have experiences with foreign cultures (Leung, Maddux, Galinsky, & Chiu, 2008). Moreover, beyond the level of one individual, the social process of combining traditional ideas from diverse cultures can expand the conceptual boundaries of existing knowledge in a culture and facilitate the development of cognitive skills

(e.g., creative re-appropriation of ideas and creative synthesis across disparate categories) that support the generation of novel ideas (Leung & Chiu, forthcoming). Consistent with this idea, Simonton and Ting (2010) report that experiences with cultural diversity are conducive to the development of creativity. For example, in history, political restructuring that weakened the hegemonic influence of the dominant ideology in society promoted creativity, whereas political changes that stabilized the cultural hegemony discouraged creativity. For example, as Simonton and Ting (2010) noted, political fragmentation was associated with decreased cultural homogeneity and hegemonic influence of Roman Catholicism in Western history, whereas in China, after the Qin Dynasty (221–207 BCE), political fragmentation was not accompanied by weakening the hegemonic influence of Confucianism. This may explain why within Western civilization, the level of creativity in a generation is positively related to the number of sovereign states in the previous generation. In contrast, in China, there is no correlation between scientific and technological creativity in a generation and the level of political fragmentation in the previous generation. The lagged intergenerational relationship between political fragmentation and literary creativity is actually *negative* rather than positive.

Laboratory research has provided ample evidence for the creative benefits of submersion in culturally mixed environments (Leung & Chiu, forthcoming; Maddux & Galinsky, 2009). A recent field study has extended the relevance of multicultural experience to organizational innovation. In this study (Dunlap-Hinkler, Kotabe, & Mudambi, 2010), the investigators coded Food and Drug Administration new applications ($n = 1,699$) from 98 firms from 1992 to 2002. They distinguished breakthrough innovations (i.e., innovations that start a new cycle of technological change) from incremental innovations (i.e., innovations in the form of new features, extensions, variations, or complements to an existing product line). The results showed that firms with an established track record in generic incremental innovations before 1992 had lower levels of breakthrough innovations subsequently, indicating that firms that have an established culture of incremental innovations are less likely to produce breakthrough innovations. This finding illustrates how existing culture can create obstacles for original idea generation. More importantly, products that emerged from joint ventures or alliances are more likely to be breakthroughs. According to the investigators of this study, this result 'highlights the benefits associated with exploiting knowledge from foreign centres of excellence' (Dunlap-Hinkler et al., 2010: 106). Interestingly, foreign subsidiary participation in innovation processes was not associated with the likelihood of breakthroughs, a result that is consistent with the recent finding that passive exposure to (vs. active submersion in) foreign culture has little creative benefits (Leung & Chiu, forthcoming; Maddux & Galinsky, 2009).

Nevertheless, there are boundaries of the creative benefits of cultural diversity. First, as already mentioned in this section, what is new is relative to what is already

known. Thus, a new foreign idea will lose its novelty once it has become an established idea in the culture. Thus, the perceived novelty of foreign ideas will decline over time (see Hempel & Sue-Chan, 2010).

Second, under some circumstances, individuals are motivated to adhere to cultural norms and reject foreign cultural ideas. Culture confers important psychological functions to the individual through its sharedness (the core ideas in a culture are widely shared among members of the culture) and continuity (the defining ideas of a culture are passed down from history (Chiu, Leung, Hong, 2010; Chiu, Wan, Cheng, Kim, & Yang, forthcoming). By virtue of its sharedness, culture creates a shared reality for its members (Wan, Torelli, & Chiu, 2010). When solving problems, individuals who need firm and widely accepted answers are inclined to follow cultural norms and avoid 'confusing' foreign perspectives (Chiu, Morris, Hong, & Menon, 2000; Fu, Morris, Lee, Chao, Chiu, & Hong, 2007). Cultures, functioning as shared symbolic conceptions of reality that prevail beyond the physical existence of any individual, not only give meaning and order to existence, but also provide a venue for expanding and perpetuating oneself in a larger beyond (Pyszczynski, Greenberg, & Koole, 2004). That is, cultures carry within themselves the prospect that death can be transcended, either literally or symbolically. As Castano, Yzerbyt, Paladino, and Sacchi (2002: 152) put it, 'through identification with social groups, the individuals can project themselves in space and time, beyond their personal death. They participate in an entity that is not subject to the mortal fate that characterizes them as human beings'. For instance, every culture has its national, religious, and artistic heroes. These heroes – particularly those who represent the culture's core values and thus achieve iconic status – can serve as a buffer against existential anxiety. As Kesebir (2010) notes, the perceived imperishability of cultural heroes is a source of existential stamina for the masses, allowing them to experience immortality-by-proxy. In line with this argument, experimental studies have shown that people who are induced to experience existential anxiety are inclined to follow cultural norms and resist counter-normative ideas (Burke, Martens, & Faucher, 2010).

Yet, existential anxiety could be a powerful driver of extraordinary creativity and path-breaking innovations. The prospect of achieving symbolic immortality by becoming a cultural hero is another way to assuage existential concerns. 'Creating visible testaments to one's existence in the form of great works of art or science, impressive buildings or monuments' (Solomon, Greenberg, Schimel, Arndt, & Pyszczynski, 2004: 16–17) can all aid individuals in their efforts to overcome the excruciating sense of transience by 'leaving their footprints . . . on the sands of time' (Schmitt & Leonard, 1986: 1089). As Rank (1968: 39) remarked, 'in creation the artist tries to immortalize his mortal life'.

In summary, existing knowledge in the cultural realm provides a reference point for determining the originality or novelty of new ideas and is an important source of inspiration. However, established knowledge in the culture may also set up

perceptual and mental sets and create intellectual blind spots. Inspirations from foreign cultures help to break sets and invite creative fusions of cultural ideas. Nonetheless, situationally motivated adherence to local cultural norms could curtail the potential creative benefits of multicultural experiences.

Culture also influences fluency in idea authoring *indirectly* through some intervening variables. These intervening variables may also moderate the relationship between cultural experiences and ideational fluency. Past research has identified some social psychological factors that influence fluency in generating novel ideas. For example, individuals experience greater ideational fluency when they are motivated by gains (vs. aversion of loss; Friedman & Forster, 2001; 2002; Ip, Chen, & Chiu, 2006; Lam & Chiu, 2002), when they are open-minded (vs. close-minded, Leung & Chiu, 2008, forthcoming), and when they are motivated to learn from cultural experiences (Maddux, Adam, & Galinksy, 2010). Moreover, there are systematic cultural differences in these qualities – for example, Americans score higher on gain motivation and open-mindedness than do the Chinese (Ip, Chiu, & Wan, 2006). These motivational qualities or intellectual temperaments also increase the likelihood that individuals can benefit from multicultural experiences (Leung & Chiu, 2008; Maddux et al., 2010).

The authors in this forum have offered other examples of the indirect influence of culture on idea authoring. Erez and Nouri (2010) hypothesize that ideational fluency is fostered in environments that support individualism and egalitarianism (particularly when working in the presence of peers), and cultures differ in how much they value individualism and egalitarianism. Zhou and Su (2010) contend that creative performance is linked to leadership style, supervisor feedback, peer creativity expectations, role models, and social network configuration. Zhou and Su have also suggested several scenarios in which culture can moderate both the direction and strength of associations between these variables and creative performance.

Culture and idea selection, editing, and marketing. When selecting, editing, and marketing ideas, knowledge creators assess and modify their ideas in the direction of the assumed preferences of the audience. Knowledge creators will estimate the preferences of the audience and the public utility of their ideas based on the prevailing cultural consensus on what constitutes creativity (or lay theories of creativity; see Hempel & Sue-Chan, 2010). Having a nuanced understanding of the prevailing cultural norms can facilitate audience design when selecting, editing, and selling a creative idea (Chiu & Hong, 2005).

Knowledge creators who are aware of external expectations may choose to modify their ideas in the direction of the expectations or to stand up against the pressure of conformity. In addition, some cultural and contextual factors can influence conformity expectations. For example, knowledge creators who are answerable to a certain external audience would feel a heightened pressure to

conform to the assumed preferences of the external audience (Briley, Morris, & Simonson, 2000; Gelfand & Realo, 1999). A cultural emphasis on collectivist values, salience of ingroup cultural identity, need for firm answer, and anxious expectation to find meaning in life would also increase conformity pressure (Chao, Zhang, & Chiu, 2010; Fu et al., 2007; Kesebir, 2010). As Simonton and Ting (2010: 329–350) explain, 'Chinese people are enculturated since childhood to be concerned with the opinions of others, especially by family members or clan. Under this traditional orientation, it is hard to imagine there emerging a Chinese equivalent to an Erza Pound, John Cage, or Jackson Pollock – three U.S. creators perfectly willing to produce works that even their own mothers could not love'!

Cultural factors may also affect *how* ideas are edited. For example, Erez and Nouri (2010) hypothesize a greater tendency to elaborate on the usefulness of a creative idea in cultures that value collectivism, power distance, and uncertainty avoidance, particularly when individuals work under the presence of their supervisor or peers, or when they work on tasks with clear task expectations.

Culture and the acceptance of ideas. Gatekeepers and end-users make acceptance decisions. Although knowledge creators can improve the likelihood of having their ideas accepted, they do not have much control over the fate of their creative ideas in the marketplace. When a creative idea is accepted, the knowledge creator may start a new spiral of creative activities. When a creative idea is rejected, some knowledge creators would terminate the project, although they may initiate new projects later. Some knowledge creators would revise the original idea to conform to external feedback. Because there is a bias in the marketplace of ideas towards selecting minimally counter-intuitive ideas (Norenzayan, Atran, Faulkner, & Schaller, 2006), an accommodative response to non-acceptance would likely lead to assimilation of creative ideas to existing knowledge, resulting in incremental innovations. Finally, some knowledge creators would reject the external judgment and even radicalize their initial ideas. Contrarian revisions of the original ideas, if eventually accepted, could result in revolutionary innovations.

Cultures differ in the preferred way of responding to non-acceptance. For example, people who are motivated by prevention of losses are particularly persistent in the face of non-acceptance (Lam & Chiu, 2002). This may explain why cultures with a strong prevention focus (e.g., Japan) are particularly likely to persist, accommodate, and produce incremental innovations, instead of defying the crowd and authoring path-breaking innovations (Morris & Leung, 2010).

IMPLICATIONS AND CONCLUSION

There are different desired outcomes at the distinct stages of the knowledge creation process, and culture is entwined in each stage of the process. For example, current knowledge provides a reference point for evaluating the originality of ideas;

assumed cultural consensus provides the normative basis for idea selection, editing, and marketing; and actual cultural norms determine how likely an idea will be accepted in the culture. Furthermore, different social and psychological processes participate at different stages of the creativity process, and culture can affect the outcomes of the creativity process through its effects on these social and psychological processes.

The process model proposed here was inspired by the rich ideas presented in this forum, and we hope that this model will inspire future research on creativity. For example, future research could identify the strategies and methods for managing the social and psychological processes that participate at each stage of the creativity process. Future research could also help to develop technology to switch knowledge workers back and forth between the idea authorship and idea selection/editing/ marketing modes through environmental engineering or priming. Finally, research can examine how different lay theories of creativity, social orientations, motivational predilections, and other contextual factors in society affect idea acceptance.

In conclusion, culture and creativity influence each other. The articles in this forum highlight the important role of culture in knowledge creation as well as the complex relationship between culture and creativity. The process model presented in this article integrates the insights presented in this forum. We hope that this model will provide a roadmap to guide future explorations of the mutual constitution of culture and creativity.

NOTE

REFERENCES

Briley, D. A., Morris, M. W., & Simonson, I. 2000. Reasons as carriers of culture: Dynamic versus dispositional models of cultural influence on decision-making. *Journal of Consumer Research,* 27(2): 157–178.

Burke, B. L., Martens, A., & Faucher, E. H. 2010. Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review,* 14(2): 155–195.

Castano, E., Yzerbyt, V., Paladino, M.-P., & Sacchi, S. 2002. I belong, therefore, I exist: Ingroup identification, ingroup entitativity, and ingroup bias. *Personality and Social Psychology Bulletin,* 28(2): 135–143.

Chao, M. M., Zhang, Z.-X., & Chiu, C.-y. 2010. Adherence to perceived norms across cultural boundaries: The role of need for cognitive closure and ingroup identification. *Group Processes and Intergroup Relations,* 13(1): 69–89.

Chiu, C.-y. 2007. Managing cultures in a multicultural world: A social cognitive perspective. *Journal of Psychology in Chinese Societies,* 8(2): 101–120.

Chiu, C.-y, & Hong, Y. 2005. Cultural competence: Dynamic processes. In A. Elliot & C. S. Dweck (Eds.), *Handbook of motivation and competence:* 489–505. New York: Guilford.

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(2): 247–259.

Chiu, C.-y., Leung, K.-y., & Hong, Y.-y. 2010. Cultural processes: An overview. In A. K. - Leung, C. - Chiu & Y. - Hong (Eds.), *Cultural processes: A social psychological perspective:* 3–22. New York: Cambridge University Press.

Chiu, C.-y., Wan, C., Cheng, Y.-y., Kim, Y.-H., & Yang, Y.-j. forthcoming. Cultural perspectives on self-enhancement and self-protection. In M. Alicke & C. Sedikides (Eds.), *The handbook of self-enhancement and self-protection.* New York: Guilford.

Dunlap-Hinkler, D., Kotabe, M., & Mudambi, R. 2010. A story of breakthrough versus incremental innovation: Corporate entrepreneurship in the global pharmaceutical industry. *Strategic Entrepreneurship Journal,* 4(2): 106–127.

Erez, M., & Nouri, R. 2010. Creativity in a context: Cultural, social, and work contexts. *Management and Organization Review,* 6(3): 351–370.

Friedman, R. S., & Forster, J. 2001. The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology,* 81(6): 1001–1013.

Friedman, R. S., & Forster, J. 2002. The influence of approach and avoidance motor actions on creative cognition. *Journal of Experimental Psychology,* 38(1): 41–55.

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(2): 191–207.

Gelfand, M. J., & Realo, A. 1999. Individualism-collectivism and accountability in intergroup negotiations. *Journal of Applied Psychology,* 84(5): 721–736.

Griffin, A., & Hauser, J. R. 1992. Patterns of communication among marketing, engineering, and manufacturing: A comparison between two new product teams. *Management Science,* 38(3): 360–373.

Hempel, P. S., & Sue-Chan, C. 2010. Culture and the assessment of creativity. *Management and Organization Review,* 6(3): 415–435.

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.

Ip, G. W.-m, Chiu, C.-y, & Wan, C. 2006. Birds of a feather and birds flocking together: Physical versus behavioral cues may lead to trait- versus goal-based group perception. *Journal of Personality and Social Psychology,* 90(3): 368–381.

Izumi, S. 2008. Nokia to cease sales in Japan. *Reuters,* 27 Nov [Last accessed 9 July 2010.] Available from URL: http://www.reuters.com/article/idUSTRE4AQ1K620081127

Kesebir, P. 2010. Existential functions of culture: The monumental immortality project. In A. K. - Leung, C. - Chiu & Y. - Hong (Eds.), *Cultural processes: A social psychological perspective.* New York: Cambridge University Press.

Lam, T. W., & Chiu, C. 2002. The motivational function of regulatory focus in creativity. *Journal of Creative Behavior,* 36(2): 138–150.

Leung, A. K.-y, & Chiu, C.-y. 2008. Interactive effects of multicultural experiences and openness to experience on creativity. *Creativity Research Journal,* 20(4): 376–382.

Leung, A. K.-y, & Chiu, C.-y. forthcoming. Multicultural experiences, idea receptiveness, and creativity. *Journal of Cross-Cultural Psychology.*

Leung, A. K.-y, Maddux, W. W., Galinsky, A. D., & Chiu, C.-y. 2008. Multicultural experience enhances creativity: The when and how? *American Psychologist,* 63(3): 169–181.

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(5): 1047–1061.

Maddux, W. W., Adam, H., & Galinksy, A. D. 2010. When in Rome. . . Learn why the Romans do what they do: How multicultural learning experiences facilitate creativity. *Personality and Social Psychology Bulletin,* 36(6): 731–741.

Mahbubani, K. 2002. *Can Asians think? Understanding the divide between East and West.* South Royalton, VT: Steerforth Press.

Mok, A., & Morris, M. W. 2010. Assimilation or contrast to cultural norms in creative expression: The effects of cultural cues and bicultural identity integration. *Management and Organization Review,* 6(3): 371–390.

Morris, M. W., & Leung, K. 2010. Creativity east and west: Perspectives and parallels. *Management and Organization Review,* 6(3): 313–327.

Ng, A. K. 2001. *Why Asians are less creative than Westerners?* Singapore: Prentice-Hall, Pearson Education Asia.

Norenzayan, A., Atran, S., Faulkner, J., & Schaller, M. 2006. Memory and mystery: The cultural selection of minimally counterintuitive narratives. *Cognitive Science,* 30(3): 531–553.

Pyszczynski, T., Greenberg, J., & Koole, S. L. 2004. Experimental existential psychology: Exploring the human confrontation with reality. In J. Greenberg, S. L. Koole & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology:* 3–12. New York: Guilford Press.

Rank, O. 1968. *Art and artist: Creative urge and personality development.* New York: W. W. Norton.

Rich, G. J. 2009. Big C, little c, Big M, little m. *American Psychologist,* 64(2): 155–156.

Schmitt, R. L., & Leonard II, W. M. 1986. Immortalizing the self through sport. *American Journal of Sociology,* 91: 1088–1111.

Schuster, M. 2009. Ten big companies that failed in Japan. *Minyanville,* 14 Dec [Last accessed 9 July 2010.] Available from URL: http://www.minyanville.com/businessmarkets/articles. wendys-google-japan-economy-applie-citigroup/12/14/2009/id/25893

Simonton, D. K., & Ting, S.-S. 2010. Creativity in Eastern and Western civilizations: The lessons of historiometry. *Management and Organization Review,* 6(3): 329–350.

Solomon, S., Greenberg, J., Schimel, J., Arndt, J., & Pyszczynski, T. 2004. Human awareness of mortality and the evolution of culture. In M. Schaller & C. S. Crandal (Eds.), *The psychological foundations of culture:* 15–40. Mahwah, NJ: Lawrence Erlbaum Associates.

Tomasello, M. 2001. Cultural transmission: A view from chimpanzees and human infants. *Journal of Cross-Cultural Psychology,* 32(2): 135–146.

Wan, C., Torelli, C., & Chiu, C.-y. 2010. Intersubjective consensus and the maintenance of normative shared reality. *Social Cognition,* 28(3): 422–446.

Wan, W., & Chiu, C.-y. 2002. Effects of novel conceptual combination on creativity. *Journal of Creative Behavior,* 36(4): 227–241.

Ward, T. B., Patterson, M. J., Sifonis, C. M., Dodds, R. A., & Saunders, K. M. 2002. The role of graded category structure in imaginative thought. *Memory and Cognition,* 30(2): 199–216.

Westwood, R., & Low, D. R. 2003. The multicultural muse: Culture, creativity and innovation. *International Journal of Cross-Cultural Management,* 3(2): 234–259.

Whiten, A., Spiteri, A., Horner, V., Bonnie, K. E., Lambeth, S. P., Schapiro, S. J., & de Waal, F. B. M. 2007. Transmission of multiple traditions within and between chimpanzee groups. *Current Biology,* 17(12): 1038–1043.

Yanaka, H. 2009. Is Nokia's withdrawal from Japan inevitable? *IT Consulting Work.* [Last accessed 9 July 2010.] Available from URL: http://consul.pitserv/jp/2009/01/nokia.html

Zhou, J., & Su, Y. 2010. A missing piece of the puzzle: Organizational context in cultural patterns of creativity. *Management and Organization Review,* 6(3): 391–413.

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