A Missing Piece of the Puzzle: The Organizational Context in Cultural Patterns of Creativity

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ABSTRACT In this article, we first review cross-cultural research, especially that concerning similarities and differences between East Asian and Western cultures, on creativity using laboratory tasks and tests. On the basis of this review, we then propose some directions for future cross-cultural research on creativity in the workplace. We emphasize the need to theorize why cultural differences make a difference in creativity and directly investigate, rather than assume, effects of contextual factors on creativity. In this regard, two literatures on creativity – cross-cultural studies using laboratory tasks and organizational studies of employee creativity – can benefit tremendously from integration. We also call for more empirical research examining effects of culture on creativity in the workplace, especially in China.

INTRODUCTION

Creativity refers to the generation of new and useful ideas. Creativity can involve products, services, organizational processes, and work methods – in any functional area, at any organizational level (Amabile, 1996; Oldham & Cummings, 1996; Shalley, 1991; Woodman, Sawyer, & Griffin, 1993; Zhou, 1998). It is essential for organizations' survival and growth. As research and development functions and business activities are increasingly global, and as international collaboration and competition are intensifying, cross-cultural research on creativity in the workplace has practical, as well as theoretical, significance. However, in the concluding chapter of their edited *Handbook of Organizational Creativity*, Zhou and Shalley (2008b: 361) observed, 'A striking omission from this volume is work focused on studying creativity via a cross-cultural or international lens. As creativity research continues to grow in its breadth and depth, and as work organizations continue to become interconnected globally, it is necessary to expand the context of creativity research to the international arena'. Similarly, Anderson, De Dreu, and Nijstad

(2004: 160) identify 'cross-national generalizability and cultural differences' as one of the most promising future research directions in research on creativity and innovation in the workplace. The goal of this article is to identify a missing piece in the puzzle of cultural differences in creativity – the organizational contexts in which creative work takes place – and propose directions for future research in this area.

To reveal the current state-of-affairs of cross-cultural research on creativity, we searched the literature in both English and Chinese language journals. Our search terms were: creativity, innovation, cross-cultural differences, cross-cultural, cross-cultural creativity research, cross-cultural research on creativity, cross-cultural innovation research, cross-cultural research on innovation, culture and creativity, and culture and innovation. For the English literature search, we searched databases including APA PsycNET, Business Source Complete, ISI Web of Knowledge, LexisNexis, Proquest, PsychInfo, and Scopus. For the Chinese literature search, we searched the SCI and CNKI databases (i.e., 中国期刊网).

In the pages to follow, we report the findings of the articles located from the literature search using the keywords listed above. The articles we selected met the following criteria: they (i) examined creativity as an outcome variable; (ii) defined creativity in commonly accepted ways in the contemporary literature on creativity; (iii) used normal adults as research participants; and (iv) used generally accepted scientific methods. The goal is to examine representative research in order to reveal the current state of the topic, instead of providing an exhaustive list of studies conducted to date. As we shall see, cross-cultural research on creativity has overwhelmingly taken an individual differences approach to understanding creativity.[1]

Our article unfolds in three sections. In the first section, we review the extant literature on cross-cultural research on creativity. This literature consists primarily of studies using laboratory tasks or tests to compare levels of creativity in different cultures, in some cases also examining individual differences dimensions as mediators. In the second section, we will introduce a separate and largely independent literature on creativity – the organizational creativity literature. As we shall see, studies of the creative performances of employees in the workplace highlight the role of the immediate social contexts surrounding the creator. The role of the social context may be especially relevant in advancing our understanding of similarities and differences across cultures. In the third section, we propose an agenda for cross-cultural research on organizational creativity, integrating these two disparate literatures.

CROSS-CULTURAL CREATIVITY RESEARCH WITH LABORATORY TASKS

Research in this area has either used laboratory tasks to compare levels of creativity exhibited by research participants from different countries or investigated

individual differences as mediators of creativity levels across cultures. In keeping with this tradition, we will review these two types of studies in turn. We use the term 'laboratory tasks' to refer to studies that used standardized tests or experimental tasks that are contrived to measure creativity rather than assessing the creativity in the real products or performances that people produce in their jobs.

Comparison of Creativity Levels or Performance across Cultures

A large number of studies compare individuals from the East and from the West on tests or laboratory tasks measuring creativity. Such measures often tap different dimensions such as fluency (ease of generating solutions), flexibility (diversity of categories of ideas generated), and originality (uniqueness of the ideas generated). For example, Jaquish and Ripple (1984) compared Chinese's and Americans' creativity scores across different age groups ranging from 9 to 60 years old. They found a main effect of culture: the Americans consistently scored higher on fluency, flexibility, and originality across different age groups than did the Chinese. For originality, however, the Chinese's and the Americans' developmental trends were similar. On the other hand, developmental trend analysis revealed that for the Chinese participants, adolescents (13–17 years old) and young adults (18–25 years) scored better than children (9–12 years), adults (26–39 years), and middle-aged adults (40–60 years) on fluency and flexibility. In contrast, adults and middle-aged adults scored higher on originality than the other age groups.

Saeki, Fan, and Dusen (2001) compared American and Japanese college students' performance on the Torrance Tests of Creative Thinking (TTCT). They found that the American students scored higher on the figural test in TTCT. Further, a close look at individual components of the creativity composite score revealed that the two groups' differences in their overall creativity scores were driven by differences in the elaboration and the abstractness scores. The two groups did not differ on the fluency, originality, and resistance to premature closure scores. To the extent that fluency and originality are key indicators of creativity (Torrance, 1974), it is unclear what the results mean in terms of effects of culture on creativity.

Niu, Zhang, and Yang (2007) asked undergraduate students from Hong Kong and from the U.S. to work on creative writing and insight problem-solving tasks. In the creative writing task, the participants were presented with eight jokes and were asked to write a title for each joke. In the insight problem-solving task, the participants were asked to solve puzzle problems. All task materials were in English, and the participants were required to complete the task in English. Results showed that the American undergraduate students scored higher on both the creative writing and the puzzle-solving tasks than the undergraduate students in Hong Kong.

However, one cannot conclude from these results that the American students were more creative than the Hong Kong students because the tasks were presented and completed in English, which is the American students' first language, but not for the Hong Kong students.

Other studies failed to find any cross-cultural differences in creativity. For example, Riquelme (2002) asked a sample of undergraduate and graduate students to complete a mental graphic design task. The participants were given components including alphanumeric characters, geometric shapes and lines, and were asked to assemble those parts into a creative figure. Creativity was rated by a group of independent judges. Results showed that there were no differences in Chinese and Spanish participants in creativity of the figures they produced.

These four studies exemplify some of the difficulties in drawing conclusions from the extant studies that seek to compare creativity tasks across Eastern and Western cultural groups. Some studies find cultural differences are observed on some dimensions of creativity but not others. Other studies that find overall differences often suffer from methodological problems, such as the confounding factor of linguistic familiarity. Still other studies find no cultural differences.

Individual Differences as Mediators to Explain Cultural Differences

In an attempt to explain why cultural groups differ in creativity, a number of studies measured individual differences variables that were hypothesized to be associated with different levels of creativity. The rationale behind such studies was that if individuals from different cultures score differently on these individual differences variables, and if these variables are associated with creativity, then cultural differences in creativity may be caused by differences in these individual-level variables. However, as we shall see, this mediation model is not always fully tested in this literature. In this review, we focus on four individual differences variables, individualism–collectivism, need for uniqueness, need for cognitive closure, and promotion focus.

Zha, Walczyk, Griffith-Ross, Tobacyk, and Walczyk (2006) compared the extent to which American (born and raised in the U.S.) and Chinese (born and raised in China) graduate students differed on divergent thinking and individualism–collectivism. Divergent thinking was measured in five dimensions: fluency, flexibility, originality, elaboration, and imagination. Results showed that American graduate students scored higher on divergent thinking than the Chinese graduate students. Results also showed that American graduate students scored higher on an individualism measure than the Chinese graduate students. However, the divergent thinking measures were not significantly correlated with the individualism–collectivism measures. These results failed to support the researchers' hypothesis that individualism–collectivism was the factor explaining why the Americans scored higher than the Chinese on the divergent thinking test.

Burns and Brady (1992) showed that American undergraduate students scored higher on need for uniqueness (i.e., the motive to stand out from others) than Malay undergraduate students. To the extent that need for uniqueness is related to creativity (Burns & Krampf, 1991), one may logically deduce that American undergraduate students should have higher levels of creativity than Malay students. Although the idea that need for uniqueness mediates the relation between culture and creativity is interesting. In their study Burns and Brady (1992) did not directly measure levels of creativity exhibited by American and Malay students. As such, it is difficult to draw a firm conclusion on whether need for uniqueness mediates the relation between culture and levels of creativity.

Ip, Chen, and Chiu (2006) showed that American undergraduate students scored higher on promotion focus (an orientation towards maximizing positive outcomes or 'wins'; Higgins, Shah, & Friedman, 1997) than Hong Kong undergraduate students. On the other hand, Hong Kong undergraduate students scored higher on the need for cognitive closure (the desire to reach firm, unambiguous answers; Kruglanski & Webster, 1996) than the American students. As a creativity task, Ip et al. (2006) asked participants to generate examples of categories, which were then coded for their typicality or accessibility (e.g., 'apple' is a highly typical exemplar for the category 'fruits'). Results showed that the typicality of the category score was negatively related to promotion focus and positively related to a need for cognitive closure. The tendency to produce accessible exemplars may restrict individuals' creativity on many tasks (Ward, 1994); therefore, it can be an indication of a lack of creativity. However, the researchers did not directly test whether promotion focus, or need for cognitive closure, mediated the relation between culture and accessibility of category. Perhaps more importantly, although accessibility of category may be related to creativity, it is not a direct measure of creativity (defined as both novel and useful) per se. Rather, it may be a measure of divergent thinking or novelty. Future research should directly test whether the individual differences variables identified in this study, promotion focus and need for cognitive closure, mediate the relation between culture and creativity. In this regard, using a problem-solving task, instead of an example-generation task, would be more desirable because in a problem-solving task, creativity can be properly operationalized as the generation of novel and useful solutions to the problems presented, whereas in an example generation task it would be difficult to measure the usefulness dimension.

Summary of Laboratory Research on Creativity across Cultures

The above studies illustrate some of the limitations of the laboratory study-based research on cultural differences on creativity. The evidence is mixed and ambiguous about whether there are East–West differences and about what individual-level

traits may be responsible for the group differences. Several critiques of this literature raised in a review by Niu and Sternberg (2002) are worth reiterating. First, most comparative studies used creativity tests developed in the West, such as TTCT. Individuals from non-Western countries are unlikely to be familiar with such tasks and the traditions of educational games and puzzles on which they are based. Hence, these creativity tests may favour individuals in the West. Second, Niu and Sternberg note that the beliefs and standards guiding creative performances are domain-specific, so the particular task used to study creativity may determine whether cultural differences appear. In domains such as graphic arts or music, for example, cultures have sharply diverging theories and standards of what constitutes a noteworthy work, whereas in domains such as science or mathematics, the paradigm and standards are fairly convergent across cultures. These observations suggest that the question of whether creativity differs in general may be misplaced, and research attention should focus on how cultural differences in creativity depend on the context or domain.

What are the kinds of contextual factors relevant to cultural differences in creativity? While Niu and Sternberg's (2002) individual-level factor of task familiarity and field-level factor of paradigmatic convergence no doubt account for much variance, there are many different contexts that fall in between these two factors and that have been underexplored by cultural researchers. There is much reason to believe that cultural differences hinge in many ways on the interpersonal relations in which the creative individual is embedded. For richer analyses and investigations of social context determinants of creativity, the organizational creativity literature may be especially informative because that literature has accumulated a large body of evidence on what contextual factors influence individuals' creativity, how these factors influence their creativity, and why such influences take place.

CREATIVITY RESEARCH IN ORGANIZATIONS

Whereas laboratory research tends to operationalize creativity in terms of fluency, flexibility, and originality of responses, organizational creativity research defines creativity as the production of novel and useful ideas (Amabile, 1996; Oldham & Cummings, 1996; Woodman et al., 1993). While the novelty dimension of creativity is present in both definitions, the usefulness dimension is largely missing in laboratory measures of creativity. Indeed, it is hard to say what 'useful' means in a decontextualized, contrived task such as generating examples of categories. However, in an employee's contribution to work on a real problem, usefulness has a very clear meaning. Organizational measures, such as managerial ratings of employees' creativity or innovativeness, take into account not just whether a contribution was original but also whether it succeeded in being implemented and accepted.

As suggested above, the two literatures could benefit from an integration of their respective emphases. For example, the organizational literature provides useful suggestions on what contextual factors influence creativity. Creativity studies with laboratory tasks may inform organizational creativity research on cognitive mechanisms of creativity, which has received increasing attention in the organizational creativity literature (Zhou & Shalley, 2010).

From the review of cross-cultural research on creativity with laboratory tasks, it appears that researchers have not formulated an overarching theoretical framework that describes the psychological mechanisms explaining why individuals from different cultures exhibit different levels of creativity. To facilitate an integration between the two research streams – cross-cultural research on creativity in the laboratory and research on creativity in organizations – we now briefly review three theories developed in organizational creativity research. Then we discuss several broad and important classes of context factors analysed in organizational creativity research.

Theories of Organizational Creativity

We categorize the theoretical frameworks advanced in the organizational creativity literature into motivational, affective, and cognitive approaches.

Intrinsic motivation. Intrinsic motivation theory (Amabile, 1996) identifies three necessary ingredients: domain-relevant knowledge and skills, creativity-relevant skills and strategies, and intrinsic motivation. When individuals find the work itself to be interesting and curious, and to present a positive challenge, the individuals are said to be intrinsically motivated. According to this theory, intrinsic motivation is an essential ingredient for creativity because if high levels of intrinsic motivation are absent, regardless of how much domain-relevant knowledge or creativity-relevant skills individuals possess, they are not likely to use their knowledge and skills to produce creative outputs. This focus on intrinsic motivation has guided researchers to use Deci and Ryan's (1980, 1985) self-determination theory to identify contextual factors that enhance or reduce intrinsic motivation, thereby facilitating or inhibiting creativity.

Self-determination theory posits that whether a contextual factor enhances or reduces individuals' intrinsic motivation depends on whether this factor is informational or controlling (Deci & Ryan, 1980, 1985). When the factor is informational, individuals are likely to feel competent and self-determining, and consequently they experience high levels of intrinsic motivation. In contrast, when a contextual factor is controlling, individuals are likely to perceive that they are being pressured or constrained by external forces, instead of being self-determining. Consequently, they experience low levels of intrinsic motivation. Therefore, contextual factors that are informational will facilitate creativity via

enhanced intrinsic motivation, and contextual factors that are controlling will inhibit creativity via reduced intrinsic motivation. This framework draws our attention to the kinds of interpersonal and managerial contexts employees experience as informational or controlling.

Affect and phases of problem solving.   Research has focused on effects of positive affect or negative affect on individuals' creativity. Whereas some studies have found that positive affect is beneficial for individuals' performance, especially on divergent thinking tasks (e.g., Amabile, Barsade, Mueller, & Staw, 2005; Isen, Daubman, & Nowicki, 1987; Isen, Johnson, Mertz, & Robinson, 1985), other studies have found facilitative impact of negative affect on creativity (George & Zhou, 2002; Kaufmann & Vosburg, 1997). When it comes to solving complex problems in organizational settings, the influences of positive or negative affect on creativity may vary at different phases of problem solving (George & Zhou, 2002; Martin & Stoner, 1996; Schwarz & Clore, 2003). In general, the process of creative problem solving includes three key phases: problem identification, idea generation, and idea selection/refinement. Negative affect may alert individuals of problems needing attention and solution. As such, negative affect may be especially useful at the problem identification phase. On the other hand, once a problem is identified, positive affect may facilitate the individuals' divergent thinking in which many possible ideas or solutions emerge. Negative affect may be useful again at the final stage of creative idea production in which the individual must carefully think through the consequences and implications of each idea generated during the divergent thinking process, and refine and select the ideas that are truly new and useful. A small but growing body of work has lent support to this context-dependency thesis (e.g., George & Zhou, 2002; Zhou & George, 2001). This framework draws attention to the types of social contexts that organizations provide at different phases of problem solving to manage employees' affective states.

Evolutionary model.   Campbell (1960) proposed the evolutionary model of creativity. Essentially, this model posits that the process of generating creative ideas or solutions requires extensive trial and error. This process can be roughly divided into two stages: variation and selective retention. In order for truly creative ideas to emerge, individuals first need to generate a large number of ideas, and then selectively retain the ideas that are truly new and useful.

On the basis of Campbell's (1960) original model, Simonton further developed (Simonton, 1999) the evolutionary theory of creative cognition. He theorized that the variation stage is essential for the novelty of ideas, whereas the selective retention stage is essential for the usefulness of the ideas. The evolutionary model draws attention to the social contexts that foster idea generation and selection, respectively, and how organizations cycle through these to aid the evolution of novel and useful solutions.

Classes of Social Context Factors

Guided by the aforementioned theories, researchers in the organizational creativity research have identified and investigated effects of contextual factors on individual employees' creativity in the workplace. Contextual factors may either directly influence a focal employee's creativity or interact with individual differences variables to affect the employee's creativity. Contextual factors also may exert their influences on employees' creativity at multi-levels: individual, dyadic, team, and organizational levels (Zhou & Shalley, 2008a). The organizational creativity literature has documented research investigating a wide variety of contextual factors, such as the nature of jobs, rewards, goals and deadlines, feedback and evaluations, leadership and supervisory behaviours, coworker behaviours, role models, and social networks on individual employees' creativity (Shalley, Zhou, & Oldham, 2004; Zhou & Shalley, 2003).

Particularly important for understanding cultural differences may be social contexts having to do with the individual's relationships with others at work. Many of the relevant social contexts can be reduced to the following four classes: leaders, supervisors, coworkers, and social networks.

Leaders. Following the tradition in the management literature, we use the term 'leaders' to refer to the formal leaders and the influence of their styles or behaviours on followers. A large number of studies have investigated effects of leadership style on employees' creativity (Amabile & Conti, 1999; Amabile, Conti, Coon, Lazenby, & Herron, 1996; Amabile & Gryskiewicz, 1989; Amabile, Schatzel, Moneta, & Kramer, 2004; Andrews & Farris, 1967; Frese, Teng, & Wijnen, 1999; George & Zhou, 2001; Oldham & Cummings, 1996; Shalley & Gilson, 2004; Shin & Zhou, 2003, 2007; Stahl & Koser, 1978; Tierney & Farmer, 2002, 2004; Tierney, Farmer, & Graen, 1999; Zhou, 2003). For example, using a Korean sample, Shin and Zhou (2003) found that the transformational leadership style is positively related to employees' creativity, and employees' intrinsic motivation partially mediated explained the relation between this leadership style and creativity.

Supervisors. Supervisors are not necessarily leaders, and their behaviours are studied along different dimensions than those of leaders. Most employees frequently, if not daily, receive formal or informal feedback and evaluation from their supervisors. Given the prevalence of feedback and evaluation in employees' work lives, it is important to understand their effects on the employees' creativity (Yuan & Zhou, 2008).

A number of studies investigated effects of actual feedback given by the supervisor, or effects of the expectation of evaluation on creativity (Amabile, Goldfarb, & Brackfield, 1990; Shalley, 1995; Shalley & Perry-Smith, 2001; Zhou, 1998, 2008; Zhou & Oldham, 2001). In general, results were consistent with intrinsic

motivation theory. These studies found that feedback which was predominantly informational facilitated creativity (Shalley, 1995; Zhou, 1998; Zhou & Oldham, 2001), whereas feedback that was primarily controlling inhibited creativity (Amabile, 1979; Amabile et al., 1990; Bartis, Szymanski, & Harkins, 1988; Cheek & Stahl, 1986; Szymanski & Harkins, 1992; Zhou, 1998). Controlling supervisory behaviour inhibits employees' creativity by reducing their intrinsic motivation (George & Zhou, 2001; Stahl & Koser, 1978; Zhou, 2003).

Supervisors may also engage in goal setting for employees. A few studies examined the effects of goal setting on creativity (e.g., Carson & Carson, 1993; Gilson & Shalley, 2004; Shalley, 1995). For example, Shalley (1991) showed that setting a do-your-best creativity goal or a difficult creativity goal led to greater creativity by the goal recipients.

The mere expectation of supervisory evaluation may have effects independent of actually receiving it. Drawing on the evolutionary framework, Yuan and Zhou (2008) investigated the effects of expected evaluations at the idea generation and selective retention stages. They found that, at the idea generation stage, individuals who expected external evaluation generated fewer ideas. However, at the selective retention stage, individuals who expected external evaluation performed better in making selection judgments to improve idea appropriateness. The presence/absence of expected evaluation was varied at each stage, and it was the group who expected evaluation only during selective retention that produced the most creative ideas.

To summarize, research suggests that the social context of supervisors affects creativity in several ways. Supervisors who provide feedback in an informational manner and who set creativity goals enhance their employees' creativity. Further, it may be particularly beneficial for employees' creativity when their supervisors do not create the expectation of evaluation at the stage of generating ideas but then do so at the subsequent phase of selectively retaining and refining ideas.

Coworkers. A few studies have examined influences of coworkers' behaviours on employees' creativity (e.g., Amabile & Gryskiewicz, 1989; Cummings & Oldham, 1997; Hirst, van Knippenberg, & Zhou, 2009; Madjar, Oldham, & Pratt, 2002; Van Dyne, Jehn, & Cummings, 2002; Zhou, 2003; Zhou & George, 2001). Madjar et al. (2002) showed that coworker support benefited employees' creativity. However, a few studies failed to find statistically significant results concerning coworker influences on employees' creativity (e.g., Van Dyne et al., 2002).

Coworkers' influences may be especially helpful when the coworkers serve as creative role models. Role models are known to influence individuals' creativity. Some evidence for this comes from studies of eminent rather than everyday creative accomplishment. Zuckerman (1977) found that role models play an important role in spurring Nobel laureates' creativity. More generally, Simonton (1975, 1984) studied historical figures in arts, science, philosophy, literature, and

music, finding that exposure to creative role models is associated with greater creative achievements.

Whereas studies by Simonton and Zuckerman focused on eminent individuals, Zhou (2003) investigated the influence of creative coworkers on ordinary employees in work organizations. The presence of creative coworkers appears to be a catalyst that interacts with supervisory factors to foster creativity. Zhou (2003) conducted two field studies. In one study, she found that when creative coworkers were present, reduced monitoring by supervisors was associated with increased employee creativity. In the other study, Zhou showed that when creative coworkers were present, the more the supervisors provided developmental feedback, the lower the employees' creativity. These social contexts interact with the personality of the focal employee; specifically the combination of creative coworkers and good supervision had a stronger effect for employees with relatively less creative personalities. It may be that employees who are not dispositionally inclined towards creativity are more sensitive to social context factors that elicit creativity.

The results of these studies support the idea that the presence of creative coworkers serves to provide creative role models so that the employees may learn creativity-relevant skills and strategies that are essential for creative idea production. However, while the creativity-relevant skills and strategies acquired via observing creative role models engaging in creative endeavours allow the employees to be creative, they still may not be motivated to put these abilities to work. Their supervisors play an important role in fostering the employees' intrinsic motivation towards the task. When their supervisors provide developmental feedback or do not engage in close monitoring, employees are intrinsically motivated to use the acquired creativity-relevant skills and strategies to come up with creative ideas.

In addition to serving as creative role models, coworkers may also influence a focal employee's creativity by providing creativity-relevant feedback. For example, consistent with the phase-dependent thesis of affective influences on creativity, Zhou and George (2001) found that when employees' continuance commitment and coworker useful feedback were both high, individuals' job dissatisfaction was positively related to their creativity.

Social networks. Organizational scholars studying social networks have typically assumed that employees with expansive social networks (i.e., characterized by weak ties to disconnected others rather than strong ties within a closed clique) have an advantage in creative problem solving and innovation (Burt, 2004). However, the recent studies that have empirically measured creativity in relation to social networks suggest a more complex picture (e.g., Perry-Smith, 2006; Perry-Smith & Shalley, 2003; Zhou, Shin, Brass, Choi, & Zhang, 2009). For example, Perry-Smith (2006) showed that individuals who are most central in a network (close to all others in a network) show higher creativity when they have fewer ties outside the

network. According to Perry-Smith, centrality helps because centrally connected individuals receive cognitive stimulation internally, and their connectedness makes them comfortable taking risks. When they have many outside ties, however, these ties may hinder their creativity by pulling them in different directions; that is, the external ties may expose employees to standards that are incompatible with those favoured internally, creating more distraction and dissonance than creative stimulation. These results counter the dominant view of how social network contexts affect creativity by suggesting that centrality can be helpful and that, for those who are central in a network, too many external ties can be debilitating.

Other evidence for a link between centrality and creativity comes from research on mid-level managers' professional networks (Chua, Morris, & Ingram, 2010). These researchers found that managers were more likely to share new ideas with the people in their network who are most centrally embedded in this network (i.e., the persons who are connected to many of their other professional contacts). Chua and colleagues also found that affect-based trust, but not cognition-based trust, mediated this effect. In other words, managers develop affect-based trust with close relationships and then share more ideas with those who are centrally embedded in their network.

While the above two examples focused on the effects of structural properties in individuals' social networks on their creativity, Zhou et al. (2009) investigated the interaction of social network structure and individual differences, specifically the value of conformity (a personality trait that is low on creativity). Schwartz (1992: 89) defines the conformity value as individuals' preferences for 'restraint of actions, inclinations, and impulses that may upset or harm others, and violate social expectations or norms'. As one of individuals' fundamental values, conformity guides individuals' attitudes and behaviour in situations involving novel responses and change. Zhou et al. (2009) found that the most creative employees had an intermediate level, rather than a low or high level, of weak ties. They interpret this effect to reflect that employees with too few weak ties are not exposed to enough diverse information and perspectives whereas those with too many weak ties experience a debilitating overload of information and perspectives. This advantage to employees with moderate levels of weak ties was stronger for employees low in valuing conformity rather than high in valuing conformity. This may reflect that, although the weak ties provided the structural opportunity for creativity, employees with low conformity values were able to take advantage of this opportunity by drawing on external contacts to bring new ideas into their organization.

Summary of Organizational Research on Creativity

This interplay of social context and individual differences such as personality traits or values highlights the need to distinguish different classes of social contexts in research on organizational creativity. Whereas we saw that the effect of supervisory

contexts in fostering creativity was greater for those employees *lower* in certain personal traits (e.g., creative personality), the effect of social network contexts in fostering creativity is greater for those *higher* in conformity values. Perhaps favourable types of supervision operate more as a prompt to be creative, which matters most for individuals not already inclined towards creativity, whereas favourable network structures operate more like a resource for creativity that is leveraged more by individuals who are low on conformity values.

Research on organizational creativity has demonstrated the profound influences that the social contexts of organizational relationships – leaders, supervisors, coworkers, and professional networks – have on employees' creativity. This body of literature suggests that it is time for cross-cultural research to go beyond understanding creativity merely in terms of properties of the individual, such as personality, motivational orientations, and values, and to incorporate how the social contexts of organizational relationships may play a role in the similarities and differences across cultures.

SOCIAL CONTEXT AND CREATIVITY ACROSS CULTURES

As we have seen, the organizational creativity literature has drawn upon several theoretical frameworks – intrinsic motivation, affect and cognition, and the evolutionary model – to investigate the social contexts that affect employee's creativity in the workplace, which can be roughly divided into the categories of leader, supervisor, coworker and social network factors. In this section, we propose ways in which these factors may operate differently across cultures. This notion that culture moderates the influence of many organizational social contexts on creativity is illustrated in Figure 1. Let us now consider each category of social context in turn.

Leaders

Culture may moderate the effects of leadership on creativity in that different leadership styles may promote or restrict employees' creativity in different cultures.

Figure 1. An framework of social contexts, culture, and creativity in the workplace
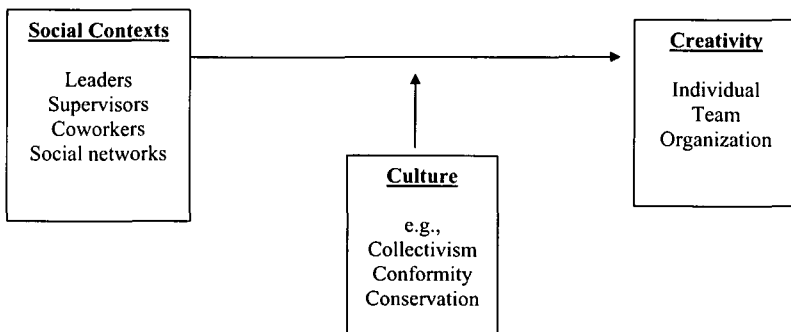
In comparing leadership styles, there is a key distinction between centralized, directive leadership and decentralized, participative leadership. In Western cultures, centralized leadership tends to be viewed as a factor that stifles creativity, and highly directive leadership may actually propel employees to be creative in some Eastern cultures, resulting in greater creativity. For example, in a study conducted in China, Leung, Chen, Zhou, and Lim (2009) found that autocratic leadership and innovative climate interacted to influence innovative behaviour in such a way that employees exhibited the highest innovative behaviour when autocratic leadership and innovative climate were both high. These results are consistent with Hui, Au, and Fock (2004) finding that compared with Westerners, Chinese employees reacted less negatively to low autonomy conditions. A differential effect of leadership style on creativity may be interpretable in terms of the intrinsic motivation framework. Laboratory studies have found that East Asian children, compared with Westerners, sustain intrinsic motivation when tasks were chosen for them by legitimate authority figures as opposed to being chosen by themselves (e.g., Iyengar & Lepper, 1999). As intrinsic motivation is theorized to be an essential contributor to creativity, it may be that directive leadership is less detrimental to creativity for East Asians than Westerners because it is less corrosive to intrinsic motivation for East Asians.

However, there is also evidence that seems to contradict the above results. In particular, in a recent study conducted in the IT industry in China, Zhang and Bartol (2010) found that empowering leadership had a positive impact on employees' psychological empowerment, which, in turn, affected the employees' intrinsic motivation and creative process engagement. The employees' intrinsic motivation and creative process engagement positively affected their creativity. As the Zhang and Bartol study measured slightly different aspects of leadership style than that of Leung et al. (2009), it is not yet clear which type of leadership style is more conducive to employee creativity in China. Future research in China and elsewhere in East Asia is needed to shed light on this issue by directly comparing types of leadership, intrinsic motivation, and creativity with matched samples from Western countries. Such studies may challenge and inform the intrinsic motivation theory of creativity by expanding its assumptions about the antecedents of individuals' intrinsic motivation, and subsequently their creativity.

Another line of inquiry relevant to the relation between leadership and creativity is represented by Shin and Zhou (2003). In that study, which was conducted in Korea, the researchers investigated whether individual differences in employees' conservation value moderated the relation between transformational leadership and employee creativity. Conservation, in values research, refers to the extent to which individuals prioritize tradition, security, and conformity (Schwartz, 1992). Interestingly, Shin and Zhou found that the positive relationship between transformational leadership and creativity was especially strong for highly conservation-oriented employees. It is possible that transformational leadership, which

encompasses intellectual stimulation, inspirational motivation, individualized consideration, and idealized influence (Bass, 1985) was especially conducive to creativity for conservation-oriented employees because it fulfilled their expectations of traditional paternalistic leadership. Future research is needed to directly examine these interesting possibilities.

Supervisors

Culture may moderate effects of supervisory behaviours on employees' creativity. Supervisory feedback and evaluation (including actual or expected evaluation) are among the contextual factors that have received the most attention in the organizational creativity literature. This may be because receiving feedback and evaluation from others is a ubiquitous fact of life for individuals in any field or profession. Comparing the effects of feedback or evaluation on employees' creativity in Eastern vs. Western cultures is a promising line of inquiry. For example, prior cross-cultural research has shown that whereas parents and teachers in Western cultures tended to provide positive feedback to children and students, emphasizing their strengths, parents and teachers in Eastern cultures such as Japan and China tended to provide negative feedback to children and students, emphasizing their weakness. (Heine, Lehman, Markus, & Kitayama, 1999). How do these different patterns of parenting children and educating students influence the feedback recipients' creativity? Are there similar patterns of feedback given in the workplace?

Whether and how managers' and coworkers' feedback and evaluation affect employee creativity in the East vs. in the West are some of the very interesting questions for future research. Previous research in social psychology has shown that after receiving negative feedback, compared with North Americans, Japanese were more motivated and behaviourally persisted longer on tasks (Heine et al., 2001). Hence, it is possible that whereas employees in the U.S. exhibit greater creativity when they receive positive instead of negative feedback from their managers and coworkers, employees in China may exhibit greater creativity when they receive negative instead of positive feedback.

Coworkers

Culture may also moderate coworker influences on employees' creativity. In particular, because of the relatively high levels of collectivism in Chinese society, coworkers may have a stronger influence on an employees' creativity in China than in the West. For example, Farmer, Tierney, and Kung-McIntyre (2003) examined influences of creative role identity on employee creativity, as well as antecedents of creative role identity in Taiwan. They developed hypotheses following Western research on role identity and creativity yet also reasoned about some social context factors that may operate differently in Chinese culture. For instance, Farmer and

co-authors (2003) proposed that in Taiwan employees' development of creative role identity may hinge to a greater extent on their relationships with their coworkers. Results supported the hypothesis that perceived coworker creativity expectations would be positively related to employees' creative role identity. Future research may directly test whether employees in East Asian cultures react more strongly to their coworkers' expectations to be creative (or not to be creative) than employees in Western cultures.

Effects of role models on observers' creativity are likely to constitute another interesting and fruitful area for cross-cultural research on creativity. While there may be a universal impact of role models on creativity, it would also be intriguing to uncover cross-cultural differences, especially differences between Eastern and Western cultures, in the relationship between role models and the observers' creativity. Some studies suggest that role modelling may come not only from one's coworkers but also from leaders (Wu, McMullen, Neubert, & Yi, 2008), historical figures, and even persons the focal individuals observed abroad (Western eminent persons in the eyes of Hong Kong Chinese students as reported in Fu & Chiu, 2007; or Western persons in the eyes of Taiwan employees as reported in Farmer, Tierney, & Kung-McIntyre, 2003).

First, it may be that different cultures emphasize role models in different domains, and this practice has an impact on individuals' creativity-relevant attitudes and behaviour. For example, Fu and Chiu (2007) recently documented that in universities in Hong Kong, eminent individuals from the West, such as Thomas Edison, are considered role models in the work domain, whereas eminent Chinese figures are lauded as role models of morality Obviously, these results are only suggestive with regard to the question of how role models influence employees in the workplace. Much more systematic research is needed to investigate whether different cultures' practices of holding up role models in different domains lead to different levels of creativity in those cultures or lead to emphases on exhibiting creativity in some domains but not others.

Second, leaders' role modelling may elicit creativity from employees. In a study conducted in China, Wu et al. (2008) showed that leaders' focus on promotion was positively related to employee creativity. It would be interesting to compare and contrast effects of leaders' role modelling on employee creativity in the East vs. in the West. It is possible that employees in the East respond more strongly to their leaders' role modelling by exhibiting greater creativity.

Third, having experiences living in a foreign culture may provide individuals with opportunities to observe creative role models that they normally would not have access to in their home culture. In the study by Farmer and coauthors (2003), results showed that exposure to the U.S. culture positively contributed to employees' creativity in Taiwan. This relation was partially mediated by the employees' creative role identity. However, there was also a direct relation between exposure to the U.S. culture and creativity. It may be interesting to explore additional

psychological mechanisms that underlie this effect. It could be that exposure to the U.S. culture gives Taiwanese employees access to more creative role models and boosts creativity in this way.

Social Networks

Finally, culture may moderate effects of social networks on employees' creativity. In a comparative study on Chinese and American managers' professional networks, Chua, Morris, and Ingram (2009) found that their social network configurations involving trust were different. Compared with their American counterparts, the Chinese managers' affect-based trust and cognition-based trust were more positively correlated with each other. In addition, economic dependence (i.e., obtaining or exchanging economic resources such as investment opportunities, jobs, or loans) was more positively related to affect-based trust for the Chinese managers than the American managers. On the other hand, friendship was more closely related to affect-trust for the American managers than their Chinese counterparts. Finally, the managers' contacts' degree of embeddedness in the managers' network increased cognition-based trust for the Chinese managers but not for the American managers. These results were consistent with the researchers' theoretical arguments that familial collectivism, in which family-like relationships define the boundary of the collective and dominate one's interpersonal relationships, provided a template that shape the specific configuration of trust in the managers' professional networks in China.

In a study of social networks and career success conducted in China, Xiao and Tsui (2007) investigated whether the degree of structural holes in an employee's network – a property that emerges from expansive, nonredundant, weak ties – enhances career success as it does in Western studies, and found that it did not. Together, the Chua et al. (2009) study and the Xiao and Tsui (2007) study suggest that the network configurations and their effects on the focal individuals' work-related affect, cognition, and behaviour may be different in the East than in the West. While the Chua et al. (2009) study focused on relations between network configurations and affective and cognitive trust, and Xiao and Tsui (2007) looked at the relation between structural holes and career success, an interesting questions is: what are the effects of these specific network configurations (e.g., structural holes, an alter's degree of embeddedness in an ego's network) on creativity in China?

Unfortunately, few studies have directly examined how network configurations exert differential impact on creativity in work organizations in the East vs. in the West. Although the Zhou et al. (2009) study on social networks and creativity was conducted in China, the researchers' theoretical treatment focused on the interaction between network opportunities and constraints and individual differences in conformity value. They did not make society-level predictions involving collectiv-

ism, social networks, and creativity. It would be interesting to examine whether the results obtained in Zhou et al. (2009) can be replicated in a Western culture. It would also be intriguing to directly compare and contrast collectivism, social network configurations, and creativity in matched companies in Eastern cultures such as China, Japan, and Korea, and Western cultures such as the U.S. No doubt, the general area of social networks and creativity offers tremendous opportunity for cross-cultural theorizing and research.

CONCLUSION

Our review of the cross-cultural creativity literature revealed that much of the research has taken an individual-centered, or individual differences approach to an understanding of levels of creativity in different cultures. Much of this research has focused on sampling college students from different countries, and then simply comparing the students' creative performance on traditional creativity tests such as the TTCT. While some studies found differences in levels of creativity, other studies failed to find differences. More importantly, even for the studies that did detect cross-cultural differences in levels of creativity, it is often difficult to interpret their patterns of results. Context has been almost completely missing from previous theorizing and research in the cross-cultural creativity literature. As a result of the decontextualized approach, the usefulness dimension of creativity has not been considered. Also there has been little theorizing about the proximal social contexts that affect creative work, such as the workers' relationships to supervisors, peers, and associates. This unsatisfactory state-of-affairs provides impetus for more and better theorizing and research in the cross-cultural creativity research area, because, after all, dissatisfaction can be functional for creativity (Zhou & George, 2001)!

Next, we reviewed theory and research in the organizational creativity literature. This review showed that contextual factors can substantially enhance or restrict individuals' creativity. On the basis of this review, we suggest that researchers need to focus on the missing piece of the puzzle in cross-cultural research on creativity: social and organizational contexts. We suggest that contextual factors that focus on social or interpersonal relations at work may be prime candidates for advancing cross-cultural theorizing and research on creativity in the workplace. We present a framework suggesting that future research investigate how and why culture (e.g., collectivism, conservation or conformity values) moderates the influence of social and organizational contexts (i.e., leaders, supervisors, coworkers, and networks) on employees' creativity. For example, we suggest that by investigating whether different leadership styles exert differential impact on employees' intrinsic motivation and subsequent creativity in different cultures, cross-cultural research may extend the intrinsic motivation theory of creativity, which has guided much extant studies on creativity in organizations. We outline different routes that cross-cultural

creativity research may follow to theorize and investigate how, when, and why contextual factors influence creativity in different cultures.

There may never be a better time to conduct cross-cultural research on creativity in organizations than now. Representing perhaps one of the highest level human capacities and yet remaining to be one of the least well-understood psychological processes and behaviours cross-culturally, creativity in different cultures is a fascinating topic for research. Additionally, different cultures' economic prosperity and social development depend on the creative expression of individuals in those cultures, especially managers and employees. As such, cultural research on creativity has both intellectual and practical significance.

NOTE

[1] Readers who are interested in a comprehensive and detailed review of theoretical frameworks, research methods, empirical studies including their theoretical reasoning, research design, and results, and critical but unanswered questions on creativity in the workplace (also called organizational creativity) are referred to Zhou and Shalley (2003) or for a more abbreviated review, Shalley et al. (2004). For a critique of traditional organizational creativity and innovation literature, see Anderson et al. (2004). For recent work in this area that goes beyond traditional paradigms, introducing new analytic methods and theories while also linking the creativity literature to the entrepreneurship, human resource management, and strategy fields, see Zhou and Shalley (2008b), and Zhou and Shalley (2010). Readers seeking a social-psychological analysis focusing on culture and creativity are referred to Leung and Morris (2010).

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