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Unlocking Expatriates' Job Creativity: The Role of Cultural Learning, and Metacognitive and Motivational Cultural Intelligence

Xiao-Jun Xu[1] **and Xiao-Ping Chen**[2]
[1]*Fudan University, China, and* [2]*University of Washington, USA*

ABSTRACT In this article, we extend Amabile's componential theory of creativity to account for cross-cultural creativity by conceptualizing cultural learning as a crucial component in the creativity relevant process. We hypothesize a significant positive relationship between cultural learning and expatriates' cross-cultural job creativity, and that this relationship will be enhanced by domain learning and the cultural distance between the host and home countries. Moreover, we propose that expatriates with higher metacognitive and motivational cultural intelligence will engage in greater cultural learning, which in turn will be related to job creativity. Data from 219 expatriate-supervisor dyads of 36 Chinese multinational companies reveal that metacognitive CQ and motivational CQ are indeed positive antecedents to cultural learning, which in turn positively relates to cross-cultural job creativity, especially for high domain learning expatriates who work in a foreign culture not vastly different from home. Our findings make significant contributions to the existing literature on creativity and provide nuanced understanding of the relationship between cultural intelligence, cultural learning and cross-cultural job creativity. Our findings also have important implications for expatriate management.

KEYWORDS cross-cultural job creativity, cultural distance, cultural learning, domain learning, metacognitive CQ, motivational CQ

INTRODUCTION

Creativity is the production of novel and useful ideas about practices, products, and services for an open-ended task (Amabile, 1983; Amabile & Pratt, 2016; Shalley, Zhou, & Oldham, 2004). Research on creativity has increased dramatically in the past two decades, yielding many insightful findings on its antecedents such as individual intrinsic motivation, passion, autonomy orientation, organizational leadership and climate, and on the consequences of creativity such as organizational innovation and entrepreneurship (Anderson, Potočnik, & Zhou,

Corresponding author: Xiao-Jun Xu (xuxj@fudan.edu.cn)

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2014; Liu, Chen, & Yao, 2011; Shalley, Hitt, & Zhou, 2015). Even though creativity research continues to grow in its breadth and depth, there remains a lack of studies on cross-cultural or international creativity (Zhou & Shalley, 2003). In response, Morris and Leung (2010) edited a special issue entitled 'Creativity East and West: Perspectives and Parallels' in *Management and Organization Review*, with five articles revealing cultural universals and systematic differences in creativity. While this special issue encouraged creativity research to pay attention to cross-cultural contexts (Leung & Chiu, 2010; Mok & Morris, 2010; Tadmor, Galinsky, & Maddux, 2012), creativity is still 'one of the least well-understood psychological processes and behaviors cross-culturally' (Zhou & Su, 2010: 409). In this article, we extend Morris and Leung's effort to examine cross-cultural creativity by focusing on a special group of people who are vital for the globalization of corporations – expatriates, and studying their job creativity in the process of completing overseas assignments.

Expatriates are employees sent abroad from the headquarters on a temporary basis to complete a time-based task (Harrison, Shaffer, & Bhaskar-Shrinivas, 2004). Exposed to a new cultural environment, expatriates are forced to deal with a myriad of previously unseen problems. Even problems that strike expatriates as familiar are oftentimes new ones indeed, which cannot be resolved with knowledge learned under domestic circumstances. These problems call for new perspectives, new knowledge, and a deep understanding of the local culture in order to develop high appreciation and effective strategies. Job creativity is therefore essential for expatriates to effectively deal with problems in a foreign culture, and to successfully complete their overseas assignments (Harvey & Novicevic, 2002). Furthermore, expatriates assigned by the headquarters usually hold pivotal positions in foreign subsidiaries (Adler & Ghadar, 1990; Perlmutter, 1969), and their novel and useful ideas could serve as an important source of inspiration for new practices, products, and services of the foreign subsidiaries (Bharadwaj & Menon, 2000).

To study expatriates' job creativity, we draw on the componential theory of creativity (Amabile, 1983, 1988; Amabile & Pratt, 2016) that articulates a comprehensive model of the social and psychological components necessary for an individual to produce creative work. At the individual level, domain-relevant skills, creativity-relevant processes, and intrinsic task motivation are the three main components affecting creativity. Outside the individual, the social environment in which the individual is working is the main component. A brief review of the literature adopting this theory to study creativity indicates much empirical support (George & Zhou, 2007; Liu et al., 2011; Shalley et al, 2004; Zhou & George, 2001), with the majority of the studies focusing on the intrinsic task motivation component (Amabile, 1996; Amabile & Pratt, 2016; Amabile, Hennessey, & Grossman, 1986; Hennessey, 2003; Shalley & Perry-Smith, 2001; Zhou, 2003), but paying very little attention to domain-relevant skills or the creativity-relevant processes (except for Hirst, Van Knippenberg, & Zhou, 2009; Rigolizzo & Amabile, 2015). The limited research on creativity in cross-cultural settings has indicated that multicultural

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(learning) experience (Leung, Maddux, Galinsky, & Chiu, 2008; Maddux, Adam, & Galinsky, 2010), living abroad (Maddux & Galinsky, 2009), and biculturalism (Tadmor, Galinsky, & Maddux, 2012) are positively related to individual creative performance as well as creativity-supporting cognitive processes. What factors might influence the effect of cultural learning on cross-cultural creativity? And what affects expatriates' cultural learning? In this research, we extend Amabile's componential theory to include cross-cultural learning as a key process through which expatriates achieve job creativity in their overseas assignment. In particular, we propose that expatriates' cultural learning, i.e., learning about host country's values, norms and schemas, combined with domain learning, will enhance their job creativity. Moreover, we argue that the cultural distance between the home and host countries will play a role in facilitating or inhibiting the translation of cultural learning into job creativity.

In addition, we propose that the extent to which expatriates engage in cultural learning is highly related to their cultural intelligence (CQ). Cultural intelligence refers to a person's capability to function and manage effectively in culturally diverse settings (Earley & Ang, 2003; Thomas & Inkson, 2003). Previous research indicates that CQ manifests itself in an individual's cognition, motivation, and behavior regarding culture-related matters (Ang, Van Dyne, Koh, Ng, Templer, Tay, & Chandrasekar, 2007; Earley & Ang, 2003). Individuals with higher metacognitive CQ are more capable of planning, monitoring and revising cultural mental models, and are more aware of others' cultural preferences before and during interactions. Moreover, people with higher motivational CQ are more willing to direct attention and energy toward learning about and functioning in cross-cultural situations. It therefore stands to reason that expatriates with a higher metacognitive and motivational CQ will be more willing to engage in cultural learning and integrate such cultural knowledge into their existing cognitive patterns, hence more likely to come up with novel and useful ideas to solve problems in cross-cultural settings (Rigolizzo & Amabile, 2015).

THEORETICAL BACKGROUND AND HYPOTHESES

What Does Expatriates' Success Depend On?

In general, the expatriation process can be viewed as a process of learning and problem solving. The learning process begins when an expatriate identifies job-related problems in the new cultural work setting, and then proceeds to search for relevant knowledge, acquire it, and then apply it to get the problems solved (Kolb, 1984; Yamazaki & Kayes, 2004). Interestingly, this multi-stage expatriation process has striking similarity to the four stages involved in producing creativity: problem identification, preparation, idea generation, and idea evaluation and implementation (Amabile, 1983; Amabile & Pratt, 2016; Rigolizzo & Amabile, 2015). Amabile's componential theory of creativity proposes that four components – domain-relevant skills, intrinsic motivation, creativity-relevant processes, and the

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social environment – work together to influence individual creativity. As mentioned earlier, a number of studies have been conducted and provided support for the theory regarding the intrinsic motivation component, but much less research has been conducted on the effects of domain-relevant skill and creativity-relevant process components. To offer a remedy, Rigolizzo and Amabile (2015) recently highlighted the domain-relevant skill component, and pointed out the important role of knowledge learning in every stage of the creativity processes. In this paper, we continue this effort and distinguish two types of knowledge learning: domain learning and cultural learning, and articulate why cultural learning is vital in the cross-cultural creativity relevant process when expatriates operate in the new cultural environment.

Expatriates' cultural learning and job creativity. While traditional cross-cultural research adopts the value approach (Hofstede, 1980) in studying cultural differences, Leung and Morris (2015) proposed a situated dynamic framework that offers more accurate predictions of cultural influence on behaviors. This situated approach suggests that while values may predict general patterns of behavior in a weak situation (Mischel & Shoda, 1995, 2010) where few constraints are perceived, schemas play a more important role when situational cues increase their accessibility and relevance, and norms play a more important role when social evaluation is salient. In this sense, values, schemas, and norms are all important components of culture reflecting how people behave. In this paper, we adopt Leung and Morris' (2015) view and define cultural learning as the learning of subjective values, schemas, and norms of a particular culture, rather than the objective cultural knowledge, such as the country's history, politics, economy, institutions, and social conditions.

Following Rigolizzo and Amabile (2015), we articulate that cultural learning is needed at every stage of expatriates' creativity process. Specifically, in the problem identification stage where the key is to make sense of the problem and opportunity and construct the problem in a way open to new solutions, learning new cultural knowledge would help expatriates to engage in routine breaking (March & Simon, 1958), adopting open system view (Senge, 1990), and seeking feedback (Edmondson, 1999), all essential in getting the problem definition right. This ignites the creativity relevant process. In the preparation stage, the key is knowledge acquisition, learning new cultural knowledge would help expatriates to gain a deep understanding of the local cultural norms and values so that relevant information and resources will be gathered, which facilitate the appreciation of the problem space. In the idea generation stage where the recombination of existing concepts and providing high quality ideas are at the center, new cultural learning would help expatriates to explore cognitive connections between the old and new knowledge and to break out of cognitive routines (Mezirow, 1990). This deepens the creativity relevant process. Then in the idea evaluation and implementation stage, the acquired new cultural knowledge would help expatriates to make solid judgment

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about the novelty, usefulness, and practical values of the new ideas in solving the current business problem in the new environment. We therefore predict that expatriates' job creativity will be higher when they engage in more cultural learning.

Previous research findings on individual creativity provide supporting evidence for our prediction. For example, three activities conducive to cultural learning – multicultural learning (Maddux et al., 2010), international experience (Fee & Gray, 2012; Leung et al., 2008), and biculturalism (Leung & Chiu, 2010; Tadmor et al., 2012), were found to be positively related to higher individual creativity. These findings suggest that being exposed to a new culture stimulates the questioning of old cultural norms. Such questioning would then force people to deeply process cultural and social information to reconcile conflict (Benet-Martínez & Haritatos, 2005; Benet-Martínez, Leu, Lee, & Morris, 2002; Mok & Morris, 2010). The deeper this process is, the higher likelihood the reconciliation, the better the integration of knowledge will happen, and the more likely novel ideas will be generated (Amabile, 1983, 1988; Amabile & Pratt, 2016). We thus propose:

Hypothesis 1: Expatriates' cultural learning will be positively related to their job creativity in the new cultural environment.

The moderating effect of domain learning. Cultural learning can only be applied to creative problem solving to the extent that it is combined with domain knowledge. That is to say, the impact of expatriates' cultural learning on job creativity will be influenced by the level of domain learning. Domain learning refers to learning about new expertise and technical skills in the particular domain where the expatriate is working – such as product design or social media marketing (Amabile, 1996). Domain knowledge is not culture specific; instead, we define it as culture free. For instance, computer related knowledge such as how to write code to design a website, or knowledge related to space design that produces the best acoustics effect. We propose that the expertise an expatriate has in a specific domain would facilitate the process of integrating the newly acquired cultural knowledge into creating new solutions to the new business problems he/she encounters in the new culture. While we believe that without a deep understanding of the local culture, domain knowledge often helps to solve problems in a superficial way; we also believe that when expatriates develop a deep understanding of the local culture, they won't be able to come up with creative solutions if they are not equipped with sufficient domain knowledge. A case in point is Starbuck's first coffee shop in Saudi Arabia. At the first-day opening, Starbucks partners were surprised that no customers were lined up to wait for the door to open, which was often the scene in other countries. They quickly learned that men and women are not used to drinking coffee in the same room in Saudi Arabia; therefore, they had to alter the room design to be respectful of the local culture. Once the decision was made, the domain knowledge in designing an attractive space (seating, lighting, space partitioning) for coffee drinkers significantly helped the company to achieve

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the effect desired by the local people in a short time. The domain expertise in designing by the Starbucks team also helped them to redesign the company logo to avoid revealing female flesh while maintaining the overall integrity of the logo. It is evident that a higher level of domain learning can facilitate the faster and more creative implementation of cultural learning to achieve the desired outcome. We therefore propose:

Hypothesis 2: The positive relationship between expatriates' cultural learning and job creativity will be stronger when their domain learning is higher.

The moderating effect of cultural distance. In addition, we suggest that the relationship between cultural learning on expatriates' job creativity will also be moderated by the cultural difference between expatriates' home and host countries – i.e., national cultural distance (Hofstede, 1980, 1991; Shenkar, 2001). National cultural distance is defined as the degree to which the cultural values, norms, and schemas in one country are different from those in another country (Kogut & Singh, 1988). While most of the previous research on cultural distance focused on firm-level effects such as foreign entry mode, cross-border M&A, or joint venture performance and innovation (Shenkar, 2001), more recent studies theorized and found that cultural distance could influence expatriates' job creativity. For instance, Dachs and Pyka (2010) demonstrated that cultural distance between the home and host countries decreased the number of cross-border patents; while cultural similarity spurred overseas innovation activities. Chua, Roth, and Lemoine (2015) also found that cultural distance intensified the negative impact of cultural tightness on marketing experts' engagement and success at foreign creative tasks. We argue that when cultural distance is low, there is not much to learn culturally. In this case, cultural difference should not play much of a role in creativity, and we would not expect a significant impact of cultural learning on creativity. On the other hand, when cultural distance is large, it would impose an important hindrance to creativity (Chua et al., 2015; Dachs & Pyka, 2010), so cultural learning should have a significant positive impact. In other words, we hypothesize that the relationship between cultural learning and creativity will be moderated by cultural distance, such that cultural learning has a stronger, more positive impact on expatriates' job creativity when cultural distance is large than when cultural distance is small. Hence, it is reasonable to propose:

Hypothesis 3: The positive relationship between expatriates' cultural learning and job creativity will be stronger when the cultural distance between host and home country is higher.

Expatriates' Cultural Intelligence and Cultural Learning

Cultural intelligence (CQ) refers to a person's capability to function effectively in situations characterized by cultural diversity (Ang et al., 2007; Earley & Ang, 2003). It includes four distinct dimensions: meta-cognitive CQ – capacity in

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planning, monitoring, and revising mental models of culture, and questioning cultural assumptions; cognitive CQ – knowledge of the norms, practices, and conventions in different cultures acquired from education and personal experiences; motivational CQ – capacity to direct attention and energy toward cross-cultural situations based on intrinsic interest and confidence in cross-cultural effectiveness; and behavioral CQ – capacity to exhibit appropriate verbal and non-verbal actions when interacting with people from different cultures. Accumulated research has demonstrated the differential effects of the four types of CQ on different outcomes (Ang et al., 2007; Chen, Liu, & Portnoy, 2012; Wu & Ang, 2011). These findings suggest that in order to acquire cultural knowledge, i.e., the host country's values, schemas, and norms that will challenge one's current cognitive pattern, metacognitive CQ is essential for such a process to get started, and motivational CQ is crucial to sustain the process until the mental conflict between the old and new systems is resolved.

Expatriates' metacognitive CQ and cultural learning. As metacognitive CQ is related to the monitoring, questioning, and revising mental models and assumptions (Ang & Van Dyne, 2008), it is pertinent to learning new cultural values, schemas, and norms that are sometimes inconsistent or contradictory to one's existing values, schemas, and norms. Ng, Van Dyne, and Ang (2009) analyzed the relationship between metacognitive CQ and expatriates' learning process, contending that metacognitive CQ can enhance an individual's reflective observation, abstract conceptualization, and active experimentation in cross-cultural interactions during their international assignments. In other words, breaking mental schemes and habitual sets shaped by one's original culture requires a high level of metacognitive CQ. Connecting these ideas together, we propose:

> *Hypothesis 4: Expatriates' metacognitive CQ will be positively associated with cultural learning.*

Expatriates' motivational CQ and cultural learning. Once the individual is exposed to a new culture, he or she will need to go through a process of sense-making to figure out how to reconcile the differences between the differing values, schemas, and norms before they can integrate the new knowledge into developing appropriate responses to a business problem. Because such sense-making process may take months or years to complete, motivational CQ is necessary to provide the needed mental resource to sustain this effort. Only a person with high motivational CQ will be intrinsically interested in interacting with, and learning from, the local employees and customers, and through interaction and communication, developing acute awareness and understanding of the intricacies in the environmental cues and social norms that may influence their behavior in one way or another (Chiu, Lonner, Matsumoto, & Ward, 2013; Imai & Gelfand, 2010; Ng & Earley, 2006). In support of this reasoning, Ng et al. (2009)

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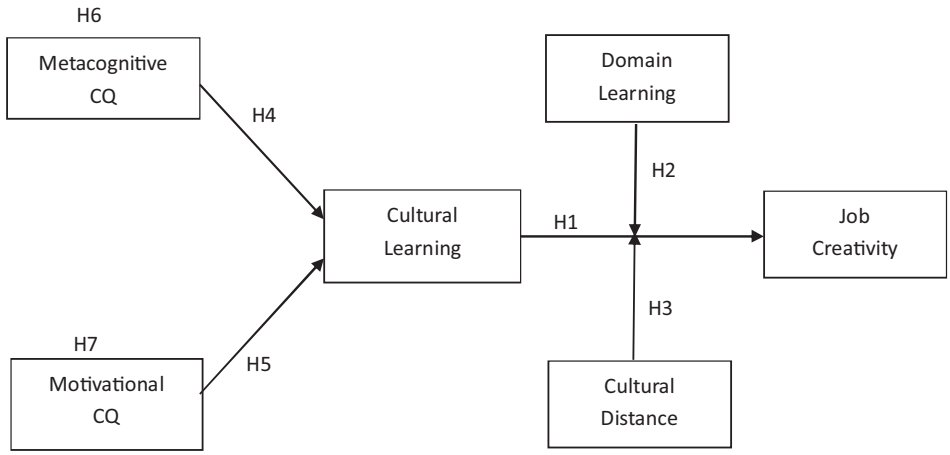

Figure 1. Theoretical framework and hypotheses

proposed that motivational CQ would enhance individual's concrete experience and active experimentation in cross-cultural interactions during their international assignments. Chen et al. (2012) also found that real estate agents who had higher motivational CQ were more successful in cross-cultural sales because they were more willing to spend time and effort to communicate and interact with their clients from different cultures. Motivational CQ is thus crucial to maintain cultural learning in the expatriation process. We propose:

Hypothesis 5: Expatriates' motivational CQ will be positively associated with cultural learning.

The Mediating Effect of Expatriates' Cultural Learning

Earlier we discussed how expatriates' metacognitive CQ and motivational CQ would facilitate cultural learning. We also articulated how expatriates' cultural learning should be positively related to their job creativity. We identified cultural learning as a focal activity for our study of expatriates' job creativity in their overseas assignment. We also discussed that in every stage of the creativity process, from problem identification, preparation, to idea generation, idea evaluation and implementation, learning new cultural knowledge helps to break out of the established cognitive patterns, which is important to developing novel and appropriate ideas to solve problems encountered in the host country. Taking all these hypotheses together, we propose:

Hypothesis 6: The expatriates' metacognitive CQ will have a significant positive relationship with their job creativity mediated by cultural learning.

Hypothesis 7: The expatriates' motivational CQ will have a significant positive relationship with their job creativity mediated by cultural learning.

Putting all hypotheses together, we present our theoretical model in Figure 1.

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METHOD

Participants and Procedures

In this study, the expatriates are Chinese citizens employed by Chinese multinational companies who were assigned to work outside of China in functional areas such as technology, management, and marketing.

To minimize the common method error (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we used three questionnaires to collect data from different sources. The first questionnaire was for the expatriates to report their meta-cognitive CQ, motivational CQ, domain learning and cultural learning. The second questionnaire was completed by the direct supervisors of the expatriates, who evaluated their job creativity. The third questionnaire was completed by the HR manager of the company, who provided basic information on the company including its industry, ownership, and overseas revenue.

From the website of the Department of Outward Investment and Economic Cooperation of the Ministry of Commerce of the People's Republic of China, we obtained a list of Chinese companies with foreign operations that are based in the following large and middle-sized cities: Shanghai, Beijing, Shenzhen, Nanjing, Xi'an, Qingdao, Xuzhou, and Suzhou. We contacted these listed companies through our personal networks of colleagues, alumni, and acquaintances during a two-year period, and 36 companies that were representative of different corporate ownership, industrial structure of Chinese investors, and company internationalization history agreed to participate in the survey. We distributed the questionnaires to 500 expatriates and 268 of their direct supervisors within the 36 Chinese multinational companies through the companies' internal email systems. The completed questionnaires were either returned directly to the authors or to the HR office of the company. Every company mailed back at least one questionnaire. A total of 231 expatriates mailed back their questionnaires, but 12 expatriates among them did not complete their survey so we excluded them from further analyses. In total we received 219 valid questionnaires from 36 companies, ranging from 1 to 39 questionnaires per company. 115 supervisors returned their survey, among whom 101 matched the 219 completed expatriates' responses, so we included these 219 dyadic survey responses in our analysis.

Among the 219 expatriates, 59.4% were male and 40.6% were female. 65.7% were between 30–50 years old, and 33.3% were younger than 30. 67.1% of the respondents had a bachelor's degree, 26% held a graduate degree, and the remaining 6.8% held a college degree or below. In addition, their overseas working or studying experience ranged from 6 months to 15 years, with 47.5% with more than 1 year of overseas experience. 47.5% of the expatriates had middle level positions in the company, 49.8% were from low level positions, while the final 2.7% had high level positions. These expatriates worked in many functional departments, including 21.5% in business administration, 14.6% in technology or in production, and 63.9% in sales, marketing, or post-sale service. The expatriates were located in

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43 countries, including countries in North America, Europe, Australia, Asia, and Africa. The basic information about the participants is presented in Appendix I.

The 36 Chinese multinational companies participating in our study were in a variety of industries such as household appliance manufacturing, machinery equipment trade, automobile and auto accessories trade, telecommunication, transportation, steel trade, maternal and infant durable goods manufacturing, and textiles. Among the 219 expatriates, 53.9% of them worked in the manufacturing industry, and the remainder (46.1%) were in the service industry. Companies with 0.1 billion RMB or less in overseas sales accounted for 17.4% of the 36 companies, while 33.8% of them had 0.1-1 billion RMB in overseas sales, 0.9% had 3–4 billion RMB in overseas sales, 8.7% had 4–5 billion RMB in overseas sales, 26.9% had 5–10 billion RMB in overseas sales, and 12.3% had more than 10 billion RMB in overseas sales. Among the 36 companies, 58.9% were state-owned enterprises, and 41.1% were privately owned companies. Most of these companies were well established in the domestic market and have been expanding their business to foreign markets since the mid or late 1990s.

Measures

We used a 5-point Likert Scale ranging from 1 (Strongly disagree) to 5 (Strongly Agree) to measure all of our key constructs.

Metacognitive CQ. This variable was measured using Ang et al.'s (2007) four-item metacognitive CQ scale. A sample item was 'I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me'. The Cronbach alpha for this scale was 0.81.

Motivational CQ. To measure motivational CQ, we adopted the five-item scale developed by Ang et al. in 2007. A sample item was 'I enjoy interacting with people from different cultures'. The reliability (Cronbach alpha) for this scale was 0.77.

Cultural learning. We adapted Yeh and Xu's (2010) three-item scale to measure cultural learning to make it fit our research context. The three items were: (a) 'During the expatriation, I learned cultural knowledge about local people's value, schema and norms etc.', (b) 'During the expatriation, I learned the knowledge of host country's economics and government policies', and (c) 'During the expatriation, I increased my market and industry sensitivity'. The Cronbach alpha for this scale was 0.79.

Domain learning. To measure domain learning, we focused on the specific job skills and know-how learned during expatriation. We used three items adapted from Yeh and Xu's (2010) five-item scale to fit our research context. The three items were: (a) 'During the expatriation, I increased the skills of judgment and reasoning on

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my job', (b) 'During the expatriation, I increased the skills of data search, collection and information dealing', and (c) 'During the expatriation, I learned the know-how and professional knowledge'. The Cronbach's alpha for this scale was 0.87.

Cultural distance. We computed the cultural distance between the home and host country by using Hofstede's set of first four cultural dimensions- individualism-collectivism, power distance, uncertainty avoidance, and career success-quality of life. We obtained the scores of each cultural dimension for 43 countries from the database established by Hofstede and his research team (see https://geert-hofstede.com/countries.html). To measure cultural distance, we adopted the following index created by Kogut and Singh (1988) based on the deviation along the four cultural values of each country from the Mainland China ranking.

$$CDj = \sum_{i=1}^{4} \left\{ \left(I_{ij} - I_{iu}\right)^2 / V_i \right\} /4$$

Where I_{ij} stands for the index for the i^{th} cultural dimension and j^{th} country, V_i is the variance of the index of the i^{th} dimension, u indicates the Mainland China, I_{iu} refers to the index for the ith cultural dimension of the Mainland China, and CDj is cultural distance of the j^{th} country from the Mainland China. Based on this index, for instance, the cultural distance between China and the United States, Germany, Thailand, and Singapore is 3.13, 3.07, 1.91, and 0.65, respectively.

Job creativity. The direct supervisors who were familiar with the expatriates' work behavior evaluated their job creativity, which was measured using eight items adapted from Zhou and George's (2001) 13-item creativity scale. We dropped 8 items from the original scale to ensure the good fit of the measurement model. We also compared the results based on the 8-item measure and those based on the 13-item measure and found them to be essentially the same. The eight items were: (a) 'Suggests new ways to achieve goals or objectives', (b) 'Comes up with new and practical ideas to improve performance', (c) 'Searches out new technologies, processes, techniques, and/or product ideas', (d) 'Is not afraid to take risks', (e) 'Exhibits creativity on the job when given the opportunity to', (f) 'Often has new and innovative ideas', (g) 'Comes up with creative solutions to problems', and (h) 'Often has a fresh approach to problems'. The Cronbach alpha for this scale was 0.88.

Control variables. We controlled for a number of demographic variables that might affect expatriates' cultural learning and job creativity (Chua & Ng, 2016).These included expatriates' gender (male = 1, female = 0), age (1 = 30 years and less, 2 = 31–35 years, 3 = 36–40 years, 4 = 41–50 years, 5 = older than 50 years), education (1= high school diploma and below, 2 = college diploma, 3 = bachelor's degree, 4 = master's degree, 5 = doctoral degree), job function (1 = business administrators, 2 = technical or production professionals, 3 = marketing or

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post-service professionals), position in the company (1 = high level, 2 = middle level, and 3 = low level), and years of overseas working or studying experience (1= less than 1 year, 2 = 1–2 year, 3 = 2–3 years, 4 = 3–5 years, 5 = 5–10 years, 6 = 10 years or more).

Because a company's degree of internalization would affect its expatriate management (Fee, McGrath, & Yang, 2011; Jaw & Liu, 2004), we included this as a control variable, measured by overseas revenue (1 = 0.1 billion RMB and less, 2 = 0.1 billion -1 billion, 3 = 1 billion -3 billion, 4 = 3 billion-4 billion, 5 = 4 billion-5 billion, 6 = 5 billion-10 billion, 7 = more than 10 billion). We also controlled for the ownership (1 = state-owned, 0 = private owned) and the industry to which the company belonged (1 = manufacturing, 0 = service).

All of the measures were originally written in English. The translation of the original English language version of the questionnaire into Chinese was accomplished through a multistage, translation-back-translation procedure (Brislin, 1986).

RESULTS

Descriptive Statistics and Correlations between Variables

The means, correlations, and measurement reliabilities of all study variables are presented in Table 1. Reliability coefficients are in parentheses along the diagonal; all exceeded 0.76. In general, the correlations among the measures are in the expected direction.

Analytic Strategies

We collected valid dyadic data from 101 supervisors and 219 expatriates. Among them, 20 supervisors rated one expatriate subordinate, 47 supervisors rated two, 31 supervisors rated three, and 3 supervisors rated four expatriate subordinates, respectively. Because each supervisor rated 1–4 employees, we considered the possibility of a nesting problem. The ICC (1) score of job creativity had a value of 0.27, above the recommended value of 0.059 (Cohen, 1988). Generally speaking, compared with a large sample with a low value of ICC (1), a small sample with a high value of ICC (1) has the comparable influence on the inflation of type I error. Because the cluster sizes were small, i.e., 19.8% had a cluster size of one, 46.5% had two, 30.7% had three, 3.0% had four, with the average cluster size of 2.17, we needed to consider the design effect that takes both the ICC and the average cluster size into consideration. This design effect is used to measure whether or not the study underestimates the standard error of the estimates, rejects the null hypothesis, and then leads to type I error. The formula of the design effect, suggested by Muthén and his colleagues (Muthén & Satorra, 1995) was [1+ (average cluster size-1)*$p_{ICC(1)}$]. As Muthén noted, approximate design effects being less than 2.0 does not appear to result in overly exaggerated rejection proportions at p = 0.05 for

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Table 1. Mean, standard deviation, and correlations

	Mean	*SD*	*Metacognitive CQ*	*Motivational CQ*	*Cultural Learning*	*Domain Learning*	*Job Creativity*	*Cultural Distance*	*Gender*	*Age*	*Degree*	*Job Function*	*Position*	*Overseas Experience*	*Overseas Sale*	*Ownership*
1. Metacognitive CQ	3.95	0.54	(0.81)													
2. Motivational CQ	3.77	0.56	0.56**	(0.77)												
3. Cultural Learning	4.02	0.54	0.46**	0.44**	(0.79)											
4. Domain Learning	4.09	0.53	0.32**	0.42**	0.55**	(0.87)										
5. Job Creativity	3.70	0.54	0.24**	0.31**	0.40**	0.32**	(0.88)									
6. Cultural Distance	2.91	1.10	–0.05	0.02	–0.13	–0.13	–0.22**									
7. Gender	0.59	0.49	0.12	0.04	0.13	–0.00	0.17*	–0.08								
8. Age	2.06	0.98	0.13	0.12	–0.01	–0.06	0.06	–0.00	0.13							
9. Degree	3.22	0.60	0.16*	0.14*	0.06	0.09	0.07	–0.00	0.13	0.42**						
10. Job Function	2.43	0.82	–0.07	–0.08	0.11	0.14*	–0.05	–0.07	–0.08	–0.31**	–0.27**					
11. Position	2.47	0.55	0.04	–0.01	–0.04	–0.05	–0.08	–0.03	0.13	–0.29**	–0.16*	0.20**				
12. Overseas Experience	2.26	1.61	0.18**	0.10	0.16*	0.07	0.22**	–0.23**	0.30**	0.33**	0.05	0.06	–0.05			
13. Overseas Sale	3.80	2.27	0.28**	0.16*	0.16*	0.19**	0.28**	–0.27**	0.22**	0.11	–0.02	–0.01	0.20**	0.44**		
14. Ownership	0.59	0.49	0.26**	0.20**	0.23**	0.21**	0.30**	–0.19**	0.35**	0.33**	0.21**	–0.13*	0.22**	0.36**	0.61**	
15. Industry	0.54	0.50	–0.13	–0.11	–0.12	–0.09	–0.19**	0.25**	–0.30**	–0.33**	–0.44**	0.18**	–0.16*	–0.12	–0.16*	–0.38**

Notes: N = 219. *$p < 0.05$, **$p < 0.01$. Reliability coefficients are in parentheses along the diagonal. Metacognitive CQ refers to metacognitive cultural intelligence; while motivational CQ refers to motivational cultural intelligence.

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Table 2. Comparison of alternative measure models

Model	$\chi 2$	$\chi 2/df$	*CFI*	*TLI*	*GFI*	*RMSEA*
1. Six-factor model	549.67	1.78	0.91	0.90	0.85	0.06
2. Five-factor model (a)	662.99	2.11	0.87	0.85	0.82	0.07
3. Five-factor model (b)	633.45	2.02	0.88	0.86	0.82	0.07
3. Four-factor model	744.43	2.34	0.84	0.82	0.79	0.08
4. Three-factor model	966.12	3.01	0.75	0.73	0.72	0.10
5. One-factor model	1709.79	5.28	0.47	0.42	0.55	0.14

Notes: Five-factor model(a): cultural learning and domain learning were combined. Five-factor model(b): metacognitive CQ and motivational CQ were combined. Four-factor model: metacognitive CQ and motivational CQ were combined, and cultural learning and domain learning were also combined. Three-factor model: metacognitive CQ, motivational CQ, cultural learning and domain learning were combined as one variable. One-factor model: All variables were combined together.
CFI, comparative fit index; TLI, Tucker-Lewis Index; GFI, goodness of fit index; RMSEA, root-mean-square error of approximation.

conducting single-level analyses (Heck & Thomas, 2015: 37). We calculated the design effect value of this study, which was 1.32, less than 2.0. Furthermore, we do not aim to investigate a multilevel research topic in this study, and all of the variables were individual level variables except for the three control variables. Therefore, we used single-level approaches to analyze our data and test our hypotheses.

Confirmatory Factor Analysis

We conducted confirmatory factor analyses (CFA) to assess the psychometric properties of the measures used in our survey. CFA demonstrated a good fit of the hypothesized 6-factor model (metacognitive CQ, motivational CQ, cultural learning, domain learning, cultural distance, and job creativity) to the data: $\chi 2$ $(df = 309) = 549.67$, CFI = 0.91, TLI = 0.90, GFI = 0.85, RMSEA = 0.06 ($p < 0.00$). The ratio of chi-square to degree of freedom is 1.78.

Moreover, to examine the distinctiveness of these constructs, we conducted CFA with each of the following five combinations respectively: (a) cultural learning and domain learning; (b) metacognitve CQ and motivational CQ; (c) cultural learning and domain learning, meta-cognitive CQ and motivational CQ; (d) meta-cognitive CQ, motivational CQ, cultural learning and domain learning were combined; and (e) all variables were combined as one variable. Results in Table 2 showed that the 6-factor model yielded a better fit than other alternative models. These results support the construct validity and discriminant validity of our measures.

Hypotheses Testing

We used stepwise regression analysis to test direct and moderating effects, and further used PROCESS procedure to test the mediation effects (Hayes, 2013). PROCESS is a versatile modeling tool for mediation and moderation analysis and integration. It offers measures of effect size for indirect effects in both single and multiple mediator models, and offers tools for probing and visualizing both

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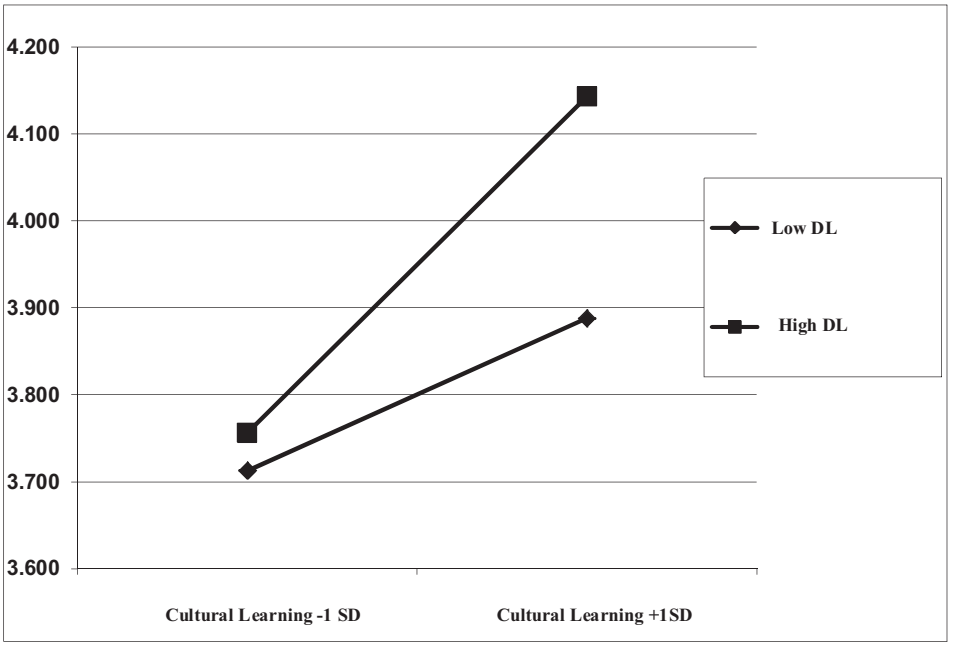

Figure 2. The impact of two-way interaction between cultural learning and domain learning on job creativity
Note: DL refers to domain learning.

two- and three-way interactions. We used Model 4 in PROCESS to verify our hypotheses (Hayes, 2013). The independent, mediating and moderating variables were mean-centered (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003).

Relationships between cultural learning and job creativity. Hypothesis 1 predicted that expatriates' cultural learning would be positively associated with their job creativity. Results presented in Model 4 of Table 3 provide strong support for this hypothesis (B = 0.28, $p < 0.00$). These results suggest that the more cultural knowledge the expatriates could acquire in the host country, the more likely they would solve the business problems encountered in their overseas assignment creatively.

The moderating roles of domain learning and cultural distance. Hypothesis 2 stated that expatriates' domain learning would moderate the positive relationship between cultural learning and job creativity such that higher level of domain learning would strengthen this relationship. Results in Model 5 of Table 3 show that the 2-way interaction between cultural learning and domain learning is significant at the 0.10 level (B = 0.18, $p < 0.10$), providing marginal support for H2. We plotted the interaction effects in Figure 2 (Sibley, 2008). It can be seen that the simple slope in the condition of high domain learning (one SD above the mean) is significant (B_{high}= 0.36, SE = 0.09, t = 4.07, $p < 0.00$), while the simple slope in the condition of low domain learning is not significant (B_{low}= 0.16, SE = 0.10, t = 1.63,

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Table 3. Regression results for cultural learning and job creativity

	Dependent Variable: Cultural Learning		*Dependent Variable: Job Creativity*				
	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*
Constant	3.64(0.32)***	3.97(0.28)***	3.71 (0.31)***	3.93(0.28)***	3.88(0.28)***	3.91(0.29)***	3.76(0.28)***
Gender	0.12(0.08)	0.11(0.07)	0.14(0.08)+	0.10(0.07)+	0.10(0.07)	0.10(0.07)	0.11(0.07)*
Age	–0.05(0.05)	–0.06(0.04)	–0.05(0.05)	–0.02(0.04)	–0.01(0.04)	–0.01(0.04)	–0.01(0.04)
Degree	0.09(0.07)	0.03(0.06)	0.05(0.07)	–0.01(0.06)	–0.01(0.06)	–0.01(0.06)	0.01(0.06)
Job Function	0.09(0.05)+	0.11(0.04)*	–0.03(0.05)	–0.07(0.04)	–0.06(0.04)	–0.07(0.04)	–0.06(0.04)
Position in Company	–0.08(0.07)	–0.12(0.06)+	–0.09(0.07)	–0.06(0.06)	–0.07(0.06)	–0.06(0.06)	–0.06(0.06)
Overseas Experience	0.05(0.03)+	0.02(0.02)	0.07(0.03)**	0.04(0.02)	0.04(0.02)	0.04(0.02)	0.05(0.02)*
Metacognitive CQ		0.31(0.07)***					
Motivational CQ		0.27(0.07)***					
Cultural Learning				0.28(0.07)***	0.26(0.07)**	0.28(0.07)***	0.19(0.08)*
Domain Learning				0.14(0.07)+	0.14(0.07)+	0.14(0.08)+	0.11(0.07)
Cultural Distance				–0.07(0.03)*	–0.07(0.03)+	–0.06(0.03)*	–0.00(0.04)
Cultural Learning X Domain Learning					0.18(0.11)+		0.27(0.12)*
Cultural Learning X Cultural Distance						–0.03(0.06)	0.06(0.08)
Domain Learning X Cultural Distance						.	0.05(0.06)
Cultural Learning X Domain Learning X Cultural Distance							–0.32(0.10)**
Adjusted R^2	0.04	0.29	0.05	0.21	0.22	0.21	0.24
$\triangle R^2$	0.06	0.25	0.07	0.17	0.01	0.00	0.04
$\triangle$F	2.31*	38.05***	2.82*	15.29***	2.94+	0.30	3.39*
F	2.31*	11.85***	2.82**	7.36***	6.98***	6.63***	6.33***

Notes: N=219. +p<0.10, *p<0.05, **p<0.01, ***p<0.001. Std. Error is in the parenthesis.

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$p > 0.10$). These results suggest that when domain learning is high, it enhances the positive relationship between cultural learning and job creativity, but when domain learning is low, there is no relationship between cultural learning and job creativity. These results provide support for Hypothesis 2.

Hypothesis 3 proposed a moderating role of cultural distance in the relationship between cultural learning and job creativity. Specifically, the cultural learning-job creativity relationship will be stronger when cultural distance is larger. Results in Model 6 of Table 3 do not support this hypothesis because the 2-way interaction of cultural learning and cultural distance on job creativity is not significant (B = -0.03, $p > 0.10$).

The relationship between metacognitive CQ, motivational CQ, and cultural learning. Hypothesis 4 predicted that expatriates' metacognitive CQ would be positively related to cultural learning, and Hypothesis 5 predicted the same relationship for motivational CQ. Results in Model 2 of Table 3 provide strong support for both H4 and H5. In particular, metacognitive CQ is positively related to cultural learning (B = 0.31, $p < 0.00$), and motivational CQ is also positively related to cultural learning (B = 0.27, $p < 0.00$). These two factors together explained 25% of the unique variance in expatriates' cultural learning, demonstrating a profound effect of cultural intelligence on expatriates' understanding of local norms, values and schemas.

The mediating role of cultural learning. Hypotheses 6 and 7 stated that cultural learning mediates the indirect relationship between expatriates' metacognitive CQ and job creativity, and that between expatriates' motivational CQ and job creativity, respectively. To test these hypotheses, we conducted PROCESS analyses using model 4 (Hayes, 2013). The results show that expatriates' metacognitive CQ has a positive relationship with job creativity through cultural learning (indirect effect = 0.06, Boot SE = 0.03, 95% bias-corrected Boot CI [0.02, 0.15]). These results provide support for Hypothesis 6. Furthermore, the direct effect of metacognitive CQ on job creativity is not significant (effect = -0.03, SE = 0.08, t = −0.36, 95% bias-corrected CI [-0.18, 0.12]), which means that the impact of metacognitive CQ on job creativity is indirect; its influence goes through the mediation of cultural learning.

Similar analyses reveal that expatriates' motivational CQ has a positive relationship with job creativity through cultural learning (indirect effect = 0.03, Boot SE = 0.02, 95% bias-corrected Boot CI [0.00, 0.09]). These results provide support for Hypothesis 7. In this case, however, the direct effect of motivational CQ on job creativity is significant (effect = 0.15, SE = 0.07, t = 2.04, 95% bias-corrected CI [0.00, 0.30]), suggesting that motivational CQ can exert a direct effect on job creativity, and such effect is partially mediated by cultural learning.

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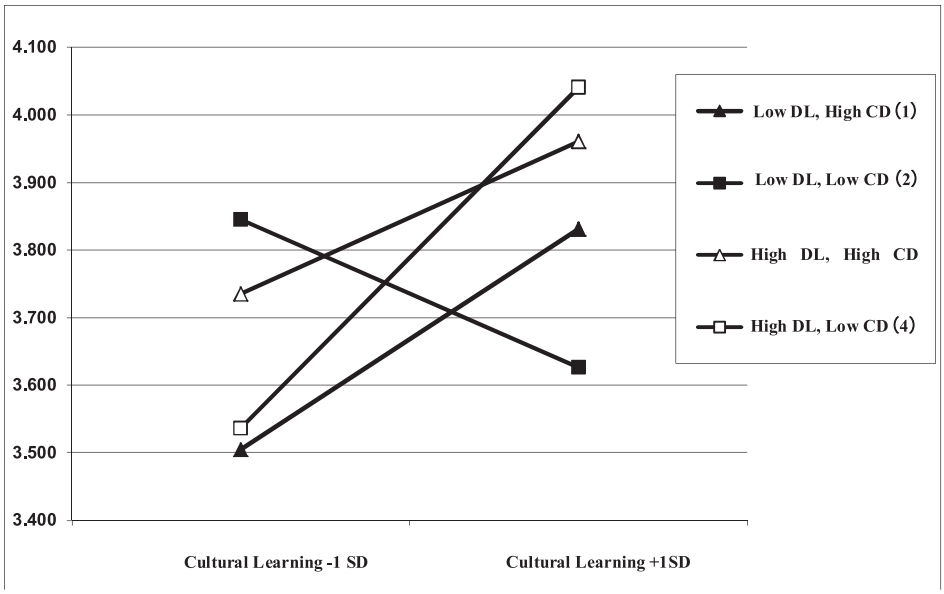

Figure 3. The impact of three-way interaction between cultural learning, domain learning, and cultural distance on job creativity
Notes: DL refers to domain learning, while CD refers to cultural distance.

Exploratory Analyses

Because we did not find a significant effect of cultural distance on the relationship between expatriates' cultural learning and job creativity, we speculated that the moderating role of cultural distance might be further contingent upon expatriates' domain learning. We thus explored a three-way interaction effect of cultural learning, domain learning, and cultural distance on expatriates' job creativity. The results shown in Model 7 of Table 3 indicate that this 3-way interaction was significant (B= -0.32, $p < 0.01$). We plotted the interaction effects in Figure 3 (Sibley, 2008). It can be seen that the simple slope in the condition of high domain learning (one SD above the mean) and low cultural distance (one SD below the mean) is most significant (B (4) = 0.46, SE = 0.12, t = 3.81, $p < 0.00$), whereas the simple slope in the condition of high domain learning and high cultural distance is not significant (B (3) = 0.21, SE = 0.14, t = 1.52, $p > 0.10$). These results suggest that when cultural distance is high, it is difficult for expatriates to integrate cultural learning into their domain knowledge to develop creative solutions. But when cultural distance is low, the integration helps expatriates to creatively solve business problems.

On the other hand, we found that the simple slope in the condition of low domain learning and high cultural distance was significant (B (1) = 0.30, SE = 0.13, t = 2.36, $p < 0.05$), whereas the simple slope in the condition of low domain learning and low cultural distance was not (B (2) = -0.20, SE = 0.19, t = −1.06, $p > 0.10$). These results suggest that when expatriates do not have a

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Table 4. Conditional indirect effect(s) of metacognitive CQ on job creativity via cultural learning

Moderators / *Mediator*	*Domain Learning*	*Cultural Distance*	*Effect*	*Boot SE*	*Boot LLCI*	*Boot ULCI*
Cultural Learning	–0.53	–1.10	–0.10	0.09	–0.29	0.06
	–0.53	1.10	0.09	0.06	–0.03	0.25
	0.53	–1.10	0.12	0.06	0.04	0.28
	0.53	1.10	0.05	0.05	–0.03	0.19

Table 5. Conditional indirect effect(s) of motivational CQ on job creativity via cultural learning

Moderators / *Mediator*	*Domain Learning*	*Cultural Distance*	*Effect*	*Boot SE*	*Boot LLCI*	*Boot ULCI*
Cultural Learning	–0.53	–1.10	–0.09	0.08	–0.28	0.03
	–0.53	1.10	0.08	0.06	–0.01	0.24
	0.53	–1.10	0.11	0.06	0.03	0.24
	0.53	1.10	0.04	0.04	–0.03	0.14

high level of domain learning, cultural learning helps them to achieve more job creativity in a foreign culture that is vastly different from home than in a foreign culture very similar to home. These results are intriguing.

We then went further to test a moderated mediating effect of cultural learning on job creativity. We conducted PROCESS analyses using model 18 (Hayes, 2013). Results in Table 4 show that expatriates' metacognitive CQ has a positive relationship with job creativity through cultural learning only in the condition of high domain learning and low cultural distance (indirect effect = 0.12, Boot SE = 0.06, 95% bias-corrected Boot CI [0.04, 0.28]). Meanwhile, their metacognitive CQ is not significantly related to job creativity via cultural learning in the other three conditions.

Similarly, results in Table 5 show that expatriates' motivational CQ has a positive influence on job creativity through cultural learning in the condition of high domain learning and low cultural distance (indirect effect = 0.11, Boot SE = 0.06, 95% bias-corrected Boot CI [0.03, 0.24]), but not in the other three conditions.

DISCUSSION

In this article, we extend Amabile's componential theory of creativity to account for cross-cultural creativity by focusing on the important function of cultural learning in Chinese expatriates' creativity process in their overseas assignments. Many insightful findings emerged from this study. The most significant is that cultural learning should be included in the componential theory because it is directly related to expatriates' job creativity. Moreover, high domain learning can enhance the positive impact of cultural learning on expatriates' job creativity. Another important discovery is that expatriates' metacognitive CQ and motivational CQ

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are significantly related to their cultural learning, through which, they influence job creativity.

On the other hand, we found that the moderating effect of domain learning on the relationship between cultural learning and job creativity was significant at the 0.10 level, whereas the moderating effect of cultural distance was not significant. These unexpected results prompted us to explore the three-way interaction between cultural learning, domain learning, and cultural distance on job creativity. Our analyses revealed a significant 3-way interaction effect, suggesting that when expatriates' domain learning is high, cultural learning has the largest effect on job creativity in a foreign culture similar to home; whereas when expatriates' domain learning is low, cultural learning has the most impact on job creativity when working in a foreign culture vastly different from home. Our findings are novel and intriguing, and have significant implications for theory advancement and practice.

Theoretical Contributions

Our findings make several contributions to the creativity literature. The most obvious one is that we extend the creativity research into the cross-cultural arena, which is greatly under-studied but highly needed as business is globalizing on a daily basis. Specifically, we extended Amabile's componential theory of creativity to account for cross-cultural creativity in several significant ways. First, we conceptualize cultural learning as a crucial component to achieve job creativity in every stage of the creativity relevant process. Our findings suggest that cultural learning is important to help expatriates view a seemingly similar business problem in a new light, and define it as such. Cultural learning is also important to expand one's horizons in searching for information beyond technical relevance, which provides a more holistic context regarding the problem. Then, in the stage of interpreting and evaluating ideas, cultural learning offers deep insights that help expatriates understand the nature of the problem in the local context, which leads to effective and creative means to solve the problems. Bringing cultural learning into the process of cross-cultural creativity enriches the componential theory and increases its explanatory power.

Second, we studied the extent to which domain knowledge would enhance the effects of cultural learning on expatriates' job creativity and found that largely to be the case. The combination of high cultural learning and domain learning produced the highest level of job creativity. This finding enriches the componential theory of creativity by showing the interaction of the domain learning component and the contextual component; suggesting that the components may not just have independent effects, but can also jointly influence the creativity outcome.

Third, our exploratory finding of the three-way interaction between cultural learning, domain learning, and cultural distance – the difference in values, norms, and schemas between the home and host countries, further suggest that the components in Amabile's theory of creativity can work together in complex ways to

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influence cross-cultural creativity. Even though cultural distance does not directly influence the relationship between cultural learning and job creativity; such influence is actually contingent upon expatriates' level of domain learning. When they had much domain learning, cultural distance weakened the cultural learning-job creativity relationship; but when they had little domain learning, cultural distance actually enhanced the cultural learning-job creativity relationship. These results somewhat speak to Hypothesis 3, implying that cultural learning is most crucial to foster job creativity for expatriates with high domain learning who work in a country with similar norms and values as their home. These findings also suggest that cultural distance is an important contextual component that should be included in Amabile's componential theory as well to account for cross-cultural creativity.

In addition, we demonstrated that the extent to which expatriates engage in cultural learning is related to their willingness to challenge and modify existing cultural cognitive patterns and assumptions (metacognitive CQ), and their willingness to continue to direct attention and energy to reconcile differences and conflicts between the old and new cognitions, and integrate them in coherent ways (motivational CQ). These findings contribute to the CQ literature in several important ways. While CQ has been theorized to have a positive relationship with expatriates' adaptation and creative problem solving, our study is among the first that opened the black box to reveal the mechanism underlying such relationship. That is, learning, especially cultural learning, is an important mechanism that connects CQ and cross-cultural job creativity. Furthermore,we discovered that different types of CQ influenced job creativity in different ways. While metacognitive CQ influenced job creativity indirectly through the mediation of cultural learning, motivational CQ could exert a direct effect on job creativity, but at the same time, channel its effect through cultural learning.

The findings of this study also contribute to the expatriate management literature. In the extant expatriate management research, one consistent finding is the high failure rates of expatriates, in the form of premature return or low performance (Kühlmann & Hutchings, 2010; Yeaton & Hall, 2008). Scholars have offered explanations for such failure, among which lacking cultural knowledge of the host country, and lacking motivation to learn such cultural knowledge were the most prominent ones (Garonzik, Brockner, & Siegel, 2000). Our findings provide supporting evidence for the plausibility of these explanations, and suggest that future research of expatriate management should include metacognitive and motivational CQ as essential components, and cultural learning as an important mechanism, in the study of expatriate performance. As such, our findings provide new insight into the research on expatriate management.

Practical Implications

According to the statistics provided by China's Ministry of Commerce and the National Bureau of Statistics and State Foreign Exchange Administration, Chinese

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enterprises' 'foreign direct investment (FDI) has been on the rise for 13 consecutive years from 2002 to 2014. In 2014, Chinese FDI has reached $123.12 billion, and for the first time it was near equilibrium between Chinese FDI and FDI to China. By the end of 2014, 18,500 Chinese investors had set up 29,700 FDI enterprises abroad, distributed in 186 different countries or regions around the globe. A large number of Chinese employees have been sent abroad to subsidiaries or offices overseas with the mission to open up foreign markets and promote the home company's internationalization. Luo and Rui (2009) and Prange (2012) pointed out that emerging economies such as China in the process of internationalization are faced with the paradox of capability exploitation versus capability exploration, namely that they not only have to seek development under the existing global framework but also need to innovate and create breakthroughs. All this demands expatriates to go beyond regular task completion and problem solving, to break their previous cognitive patterns, and to find creative solutions to newly encountered problems.

Our findings provide guidance for reducing expatriate failure and increasing their creative performance. The immediate implication of our findings is in the identification of, and recruiting potential effective expatriates. HR departments should consider testing the candidates' metacognitive and motivational CQ, and the current level of cultural knowledge before they short-list candidates. In this regard, the CQ scale developed by Ang et al. (2007) can be used, accompanied by the experiential cases developed by the same research team (e.g., Ang & Ng, 2011).

Once the selection is done, HR should consider conducting cross-cultural training to increase the candidates' cultural sensitivity and offer workshops on creativity to help them establish the link between cultural learning and domain learning in analyzing the business problems they might encounter during their overseas assignment. For example, a baby stroller manufacturing company under our investigation sold products in different countries and these baby strollers differ greatly in functional design, security, and fashion (domain knowledge) because they wanted the product to fit the physical characteristics, aesthetic tastes, and temperaments of each nation (country-specific cultural knowledge). As people in Germany value rigor, practicality, and austerity (Tomalin, 2015), they paid particular attention to baby strollers' function and security for the German market, with a color scheme of dark colors such as black and grey. In contrast, Italians often value elegant appearance in a product (Tomalin, 2016), so they adopted the color scheme of blue, red, and grey for the Italian market. In this case, the insight into the host country consumers' values and preferences was well integrated into their design capability, which helped the company to be creative in making products that gained immense popularity in both countries.

Finally, in expatriate performance evaluation, the degree of cultural learning and domain learning should be considered for inclusion in the evaluation metrics, in addition to their job creativity and task performance.

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Limitations and Future Research Directions

The main limitation of our study is that we did not include all components (intrinsic motivation, domain-relevant skill, social context, and other creativity-relevant processes) of Amabile's theoretical model in our test - so we are not able to conclusively claim that cultural learning adds explanatory power above and beyond the existing model to account for cross-cultural creativity. Further research is needed to explore how the full model works and how the intrinsic motivation component, the domain-relevant skill component, the social context component, and other creativity-relevant processes are related to cultural learning respectively. Relatedly, future research should also unfold the creativity-relevant process and examine the important role of cultural learning in the problem definition, information collection, evaluation and judgment making, and solution implementation stages.

Another limitation of this study may be related to our sample. Over 80% of the participants were administrative executives and marketing/post-sales professionals, whose job responsibility included frequent communication and negotiation with people in the host country (e.g., local employees, clients, dealers, and government officials). Technical and production professionals only constitute 14.6% of our sample, and among them even fewer were involved in research and development. On top of that, most of the technical professionals worked in applied research, rather than basic research. We speculate that the finding that cultural learning had a direct influence on expatriates' job creativity might be partly due to the nature of their job responsibilities. Future research can examine R&D expatriates, and compare the differences of creativity models between R&D expatriates and non-R&D expatriates to test the generalizability of our findings.

CONCLUSION

Inspired by Kwok Leung's work on cross-cultural research, and his effort in pushing creativity research into the cross-cultural setting, we drew on the componential theory of creativity (Amabile, 1983, 1996) to study cross-cultural job creativity of expatiates of Chinese multinational companies. We conceptualized and demonstrated the crucial role of cultural learning in helping expatriates to develop creative solutions to business problems in an overseas assignment. In addition, we found metacognitive CQ and motivational CQ to be two important antecedents to cultural learning. These findings together significantly extend Amabile's componential theory to account for cross-cultural job creativity, and connect literatures on creativity, cultural intelligence, and knowledge learning in understanding the creative process expatriates experience. These findings also provide valuable insights into the selection, training, and development of expatriates to prepare them to succeed in their overseas assignment.

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NOTE

We tested all models with the company control variables and they were not statistically significant in the regressions to test hypotheses, so we took them out.

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The two authors made equal contribution to the paper.

APPENDIX I

Basic Information about the Sample

Gender	*Male*	*130*		*59.4%*			
	Female	*89*		*40.6%*			
	Total	*219*		*100%*			
Age	< = 30 years	93	33.3%	Degree	High School and below	0	0.00%
	31–35	82	37.4%		College	15	6.8%
	36–40	43	19.6%		Bachelor	147	67.1%
	41–50	19	8.7%		Master	51	23.3%
	>50	2	0.9%		PHD	6	2.7%
	Total	219	100.0%		Total	219	100.0%
Job Function	Business Administrators	47	21.5%	Position In Company	High level	6	2.7%
	Technical or production professionals	32	14.6%		Middle level	104	47.5%
	Marketing or post-service professionals	140	63.9%		Low level	109	49.8%
	Total	219	100.0%		Total	219	100.0%
overseas (working or studying) experience	Less than 1 year	115	52.5%				
	1–2	30	13.7%				
	2–3	15	6.8%				
	3–5	29	13.2%				
	5–10	21	9.6%				
	> 10 years	9	4.1%				
	Total	219	100.0%				

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Xiao-Jun Xu (xuxj@fudan.edu.cn) is an associate professor at School of Management, Fudan University. She received her PhD in Organizational Behavior and Human Resource Management from Zhejiang University. Her research interests focus on knowledge transfer, expatriate management, and strategic human resource management.

Xiao-Ping Chen (xpchen@u.washington.edu) is Philip M. Condit Endowed Chair Professor and Associate Dean for Faculty and Academic Affairs in the Michael G. Foster School of Business, University of Washington. She is an elected Fellow in the American Psychological Association and Society for Industrial and Organizational Psychology. Professor Chen served as Editor-in-Chief for *Organizational Behavior and Human Decision Processes* (2010–2016) and is currently the Editor-in-Chief for *Management Insights*, a bilingual (Chinese and English) magazine for business educators and practitioners.

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