



Human Creativity: Reflections on the Role of Culture

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ABSTRACT In commenting on the articles in this Editors' Forum, three questions are addressed: (i) how should we operationalize and measure creative outputs to enable a sound analysis of cross-cultural differences in creativity; (ii) could it be that culture impacts not only the valuation of originality and usefulness but also the psychological processes through which original yet useful ideas and insights are achieved; and (iii) does culture impact the domains in which individuals are more or less motivated to perform creatively? Using recent work on creativity as a starting point, and the key findings reported in this Editors' Forum, I propose that new research on culture and creativity would benefit from separating creative products from creative processes, and would do justice to the nature and functionality of cultures by asking not only when and how individuals and groups achieve creativity, but also why they would bother to be creative in the first place.

KEYWORDS creativity, culture, dual-process model, innovation

INTRODUCTION

The articles in the Editors' Forum document cultural variants and invariants in creative performance. Each in its own way advances our understanding of the psychological processes underlying human creativity in Eastern and Western cultures. Among other things, these works point out that the more socially embedded a performance is, the stronger the cultural differences appear to be. For example, in laboratory experiments (Erez & Nouri, 2010) cross-cultural differences in creative performance emerge when creative endeavours are performed in groups. In historiometric analyses (Simonton & Ting, 2010), social context has a quite different impact on creativity – whereas political fragmentation and civil disturbances, for example, have a rather straightforward positive relationship with creativity in Western contexts, these variables are not or sometimes even negatively related to creativity in Eastern (i.e., Chinese) settings. Finally, variables typically associated with reduced creativity in Western settings, such as directive leadership, appear to

promote creative performance in Eastern contexts (Zhou & Su, 2010), and priming one culture rather than the other may either promote or inhibit creative performance among individuals with a dual cultural identification (Mok & Morris, 2010).

One possible explanation for these rather systematic effects is that, as put by Morris and Leung (2010), Western norms prioritize originality and novelty over usefulness and appropriateness, whereas Eastern norms prioritize usefulness over originality (also see Erez & Nouri, 2010). In our own laboratory, we also saw evidence for this possibility (see Bechtoldt, De Dreu, Nijstad, & Choi, forthcoming). Three-person groups brainstormed about ways to improve university teaching; in two studies these groups were composed of Dutch (individualistic) students; in one study, these groups were composed of Korean (collectivistic) students. Motivating individualistic group members to do their very best increased originality of ideas but did not affect its usefulness; motivating collectivistic group members to do their very best increased usefulness of ideas but did not affect its originality. A final study confirmed that among Dutch students the default norm is to be original. When, through a priming procedure, the norm was changed to being useful rather than original, individualistic students from the Netherlands behaved as their collectivistic counterparts from Korea.

When studying the articles in this Editors' Forum, two concerns emerged. The first concern deals with the very essence of research on creativity – how should we operationalize and measure creative performance? The second concern deals with the fact that the science of human creativity focuses on the psychological mechanisms that drive towards or away from creative performance. Together, the articles in this Editors' Forum are a case in point, revealing the conditions under which human creativity flourishes and how cultural differences further moderate creative processes. However, what is missing in these and similar analyses is another question: *why do humans, alone or in groups, engage in creative activity in the first place?* I will elaborate on this below, proposing that asking the 'why' question leads us to look for creative achievements in areas that have functionality to the individual or group, and that such functionality may be subject to cultural influence.

CREATIVITY AS PROCESS OR PRODUCT

The psychological sciences have greatly advanced our understanding of creativity. Some consider a *person* perspective, focusing on the personality profiles of creative geniuses compared with those of less gifted individuals (e.g., Barron & Harrington, 1981; Feist, 1998). Others have taken a *product* perspective, asking when and why certain outputs are creative (e.g., Simonton, 2003; Simonton & Ting, 2010). Finally, work has considered the cognitive and motivational processes that promote or inhibit creative performance (e.g., Ashby, Isen, & Turken, 1999; also see Erez & Nouri, 2010; Mok & Morris, 2010). Different as these approaches may be, they tend to converge on a definition of creativity as those insights, ideas, problem

solutions, or products that are both novel and useful/appropriate – novel in that they are uncommon, statistically infrequent, and judged to be original, and useful/appropriate because the insight, idea, or product fits the problem and ‘makes sense’ (Amabile, 1996). Thus, an idea that is highly original but not appropriate is not creative – it is bizarre. And an idea that is highly appropriate but not original is not creative either – it is mundane.

Simonton and Ting (2010) nicely summarize this definition as $C(\text{reativity}) = N(\text{ovelty}) \times U(\text{sefulness})$. This multiplicative function shows that for creativity to occur, both novelty and usefulness are needed (i.e., both parameters need to be larger than zero). Their approach allows for an analysis of possible cultural influences on whether something is deemed creative or not. First, culture may influence the assessment of novelty, of usefulness, or both. What the field (i.e., the community of experts that receives, evaluates, and eventually endorses a creative output) sees as novel and/or useful varies across cultures – culture may influence the criteria used to assess novelty and usefulness (see further Hempel & Sue-Chan, 2010).

Second, culture may influence the relative weight accorded to novelty and usefulness – what the field deems more important varies across cultures. Indeed, as Morris and Leung (2010) note, there is quite some evidence that Chinese culture values usefulness more than novelty, whereas Western culture values novelty more than usefulness. To the extent that culturally divergent social norms are salient, individuals with an Eastern background may be more concerned with usefulness than originality and engage different implicit or explicit standards to downplay or elaborate ideas and insights than their counterparts with a Western background (also see Zou, Tam, Morris, Lee, Lau, & Chiu, 2009). For example, team members in an Eastern context may themselves be more concerned with producing useful rather than original ideas, expect others to value usefulness more than originality, and through feedback loops reinforce within their team a norm that values usefulness rather than originality. Such a team culture may sustain over time, as old-timers socialize newcomers up to a point where (expectations of) the team culture may entirely explain why individual team members focus on usefulness rather than originality (it goes without saying that the exact same argument holds for a culture valuing originality rather than usefulness) (for evidence, see Bechtoldt et al., forthcoming). As a result of these culture-induced normative pressures, one may see relatively more useful and less original ideas and insights in Eastern compared with Western cultures (for some evidence, see Bechtoldt et al., forthcoming; Erez & Nouri, 2010; Mok & Morris, 2010).

Third, and related, evaluators (the ‘field’) may use different criteria to evaluate ideas and insights produced. Experts with an Eastern background may judge creative products more in terms of their usefulness than their novelty, whereas experts with a Western background may do the reverse. This may lead to a higher survival probability of useful rather than original ideas and insights in Eastern

compared with Western cultures. Indeed, East Asians prefer abstract figures, pens, and magazine advertisements that represent conformity, whereas European Americans prefer targets that represent uniqueness (Kim & Markus, 1999).

Taken together, the $C = N \times U$ analysis highlights that any difference in observed creativity between individuals from different cultures may be attributed to a number of causes. Controlling these causes through careful measurement or tight experimentation may be difficult but exceedingly important in new cross-cultural research on creativity (for more on this, see Hempel & Sue-Chan, 2010). An additional approach to understanding possible cultural differences is to move away from a singular focus on creative products, and instead examine cultural differences in the psychological mechanisms underlying creative performance. One example of such a process perspective is the Dual Pathway to Creativity Model (DPCM; Baas, De Dreu, & Nijstad, 2008; De Dreu & Nijstad, 2008; Nijstad, De Dreu, Rietzschel, & Baas, 2010).

Dual Pathway to Creativity Model starts with decomposing creativity into creative outputs and creative processes. Creative outputs are those insights, ideas, products, and problem solutions that are both novel and useful. Importantly, within DPCM it is proposed that creative outputs are, first of all, a function of flexible processing of information (cognitive flexibility). The 'flexibility pathway' as an information processing strategy captures so-called set-breaking (Smith & Blankenship, 1991), and the use of flat associative hierarchies (Mednick, 1962). It manifests itself in divergent thinking, using broad and inclusive cognitive categories, and relatively frequent switching among cognitive categories (De Dreu, Nijstad, & Baas, forthcoming-a).

In addition to flexibility, DPCM proposes that creative outputs are a function of cognitive persistence. The 'persistence pathway' as an alternative information processing strategy captures the notion that creative insights and originality need more or less deliberate, focused, and structured exploration of a few cognitive categories or perspectives (Finke, 1996; Schooler, Ohlsson, & Brooks, 1993; Simonson, 1999). Persistence manifests itself in the generation of many ideas within a few categories (i.e., within-category fluency; e.g., Nijstad & Stroebe, 2006), or in longer time on task (De Dreu et al., 2008; Ericsson, 1999). According to DPCM, both cognitive flexibility and cognitive persistence emerge to the extent that the individual is mentally activated and engaged, and has the necessary working memory capacity to engage in computational and combinatorial processing. Any trait or state that influences mental activation and/or working memory capacity thus affects creativity, through their influence on either cognitive flexibility, or cognitive persistence. Especially the latter pathway involves hard work and takes time – but given that such effort is invested, the individual may move from combining old elements into relatively mundane new products to combining old elements into increasingly novel yet appropriate ideas, insights, and solutions (Rietzschel, De Dreu, & Nijstad, 2007).

For a cultural analysis of creativity, DPCM offers three insights. First, it highlights the possibility that culture impacts the pathway to creativity people are inclined to take. Cultural values, beliefs, and norms surrounding the individual may predispose him or her to engage in flexible, loose processing, to take risks and explore the unknown without fearing to be ridiculed for coming up with distracting and bizarre ideas and insights. Other cultural values, beliefs, and norms may, however, predispose individuals to engage in more incremental, cautious, and analytical processing, to avoid excessive risk and trying to be incremental and cumulative. Perhaps Western cultural norms, with their emphasis on individual freedom and independence, steer individuals towards the flexibility pathway whereas Eastern cultural norms, with their emphasis on social connectedness and interdependence, nudge individuals towards the persistence pathway. Obviously, this is not to say that culture strictly determines the individual's capacity to think flexibly or persistently but rather that it affects the likelihood with which a particular course of processing is taken.

Dual Pathway to Creativity Model offers a second insight, in that it reveals the importance of task and time. Some creativity tasks used in laboratory research capitalize on divergent thinking and global processing – they thus conflate creative processes (flexibility in this case) with creative performance (original ideas in this case). Sometimes time limits are present, and this again benefits individuals inclined to engage in flexible rather than persistent processing (Baas, De Dreu, & Nijstad, 2008). If cultural differences exist in the way individuals approach creative tasks, using tasks that capitalize on flexible processing or inducing time limits benefits individuals with a cultural background that promotes flexible thinking, and limits individuals with a cultural background that promotes persistent processing. Observed cultural differences in creative performance reflect, in fact, creative processes that were implicitly permitted or blocked.

The third insight offered by DPCM is that the same level of creativity, as a composite of novelty and usefulness, may be achieved through either flexible or persistent processing and provided both pathways can be engaged, it may well be that individuals with an Eastern background achieve the same level of creativity as those with a Western background but for different reasons. Again, separating product and process may be quite useful in future research on cultural differences in creative performance.

At a meta-theoretical level, there may be another insight. Specifically, DPCM has an implicit focus on when and why humans create novelty more than on when and why humans create usefulness. This implicit focus shows up in a recent meta-analysis that found both flexibility and persistence to be positively related to originality of ideas ($r = 0.34$ and $r = 0.12$, $ps < 0.05$) but neither process to relate to usefulness ($r = -0.02$ and $r = -0.09$; Nijstad et al., 2010). Put differently, DPCM combines earlier (Western) work on both divergent (flexible) and convergent (persistent) processing as key antecedents to creative performance, but it does not cover

aspects of the creative process such as problem finding and idea evaluation, and it remains an open issue whether flexible vs. persistent processing affects problem finding and idea evaluation in similar or quite different ways (De Dreu, Nijstad & Baas, forthcoming-b). Moreover, it remains an open yet highly interesting question whether cultural differences operate in similar or quite different ways when it comes to problem finding or idea evaluation, compared with idea generation and creative problem solving. Research performed in Eastern cultures (e.g., Zhou & Su, 2010) offers important insights into not only how to proceed with such research cross-culturally, but also where basic research on creativity, whether conducted in the East or West, could go from here.

WHY CREATE?

Now, I return to the question of why humans engage in creative activity in the first place. Typically, a psychological analysis of creative performance focuses on when individuals or groups perform, and through what mechanism. In that sense, DPCM discussed above is no different from the perspective taken in the articles in this Editors' Forum. Yet, the very fact that humans are creative is intriguing because, from a conservation of energy principle (Tooby & Cosmides, 1992), humans should be rather reluctant to engage in creative endeavours. After all, being creative means that one stands out from the crowd, thus rendering oneself vulnerable to outside threat. Moreover, creative endeavours are costly endeavours with uncertain payoff – Vincent van Gogh died a poor man. In short, individuals have strong incentives to stick to the status quo, to engage in habituated action, to follow the well-trodden path, and to conform to the views and perspectives of the majority. However, the flip side of this line of reasoning is equally plausible. To survive and prosper, individuals need to be creative (Runco, 2004). Creative displays may enhance one's status within the group, and makes one a more attractive mating partner (Griskevicius, Cialdini, & Kenrick, 2006; Miller, 2000). Creativity is needed to solve problems and to materialize opportunities, and it facilitates in winning disputes and disagreements (De Dreu & Nijstad, 2008). In short, creativity has survival functionality and individuals have strong incentives to seek change, to explore the unusual and unknown, to deviate from the habitual course of action, and to disagree with the majority views and perspectives.

That creativity is both costly and beneficial, and both detracts from and contributes to survival and prosperity implies, first of all, that humans have an evolved propensity for being creative that transcends generations and both geographical and cultural boundaries. Given that human survival chances have been affected by creativity throughout our biological evolution, it is likely that some psychological processes supporting creativity were hardwired into *Homo sapiens* long before Eastern and Western cultures coalesced. Hence, some aspects of the psychology of

creativity are likely to be culturally invariant. Second, that being creative is both costly and beneficial implies that humans engage their inherent propensity for being creative more in some circumstances than in others. Organizational structures, group pressures and normative influences are just a few examples of exogenous influences on human creativity. Here, culture plays a significant role in driving humans towards or away from creative performance. As the articles in this Editors' Forum nicely illustrate, whether and how the human propensity for creativity manifests itself is culturally variant.

Asking why humans would engage in creative activity has some implications for the study of creative behaviour in general, and for a cultural analysis of creative performance in particular. Cultural background shapes what is important to the individual, what should be considered relevant issues and problems, what constitutes threats and opportunities – it may explain why certain cultures, at certain times, are so creative in some domains and not others. Thus, in Chinese civilization, war intensity has a positive effect on scientific and technological creativity (domains that matter in times of war) but not on literature and philosophical creativity (domains that matter less directly in times of war) (Simonton & Ting, 2010). Likewise, cultures that value risk-taking and independence more than status and interdependence see higher rates of entrepreneurial activity than cultures that value risk-taking and independence less (Williams & McGuire, 2010). However, this does not mean that cultures valuing status and interdependence are less creative overall – they may actually be highly creative in domains that 'fit' their cultural values more (for example, Korea with its strong cultural valuation of status and interdependence is world leader in the industry of massively multiplayer simulation games, which involve accruing and using status and maintaining coalitions; *The Economist*, December 11, 2003). And at lower levels of analysis (e.g., in work teams), one may see greater creativity in preserving smooth interpersonal relations among individuals from cultures valuing harmony and group cohesion, and more creative ideas about acquiring and maintaining independence and individual freedom among individuals from Western cultures. Put differently, cultural differences may show up not only in the extent to which, or the pathway through which individuals or groups are creative, but also in the specific areas in which their creativity emerges. Individuals may be more creative in some domains than in others because their cultural background values those domains and focus the individual's cognitive and motivational resources. Culture activates the individual to perform in some domains more than in others, and given such activation, the individual may work flexibly or persistently towards relevant creative outputs.

CONCLUSION

Three interrelated issues were raised: (i) how we should operationalize and measure creative outputs to enable a sound analysis of cross-cultural differences in

creativity; (ii) whether culture may impact not only the valuation of originality and usefulness but also the psychological processes through which original yet useful ideas and insights are achieved; and (iii) whether culture may impact the domains in which individuals are more or less motivated to perform creatively. The analysis by no means is exhaustive and the answers and conclusions I have reached throughout this commentary are partial and tentative. Each in their own way, the articles in this Editors' Forum illuminate the cultural (in)variance of human creativity, and each in their own way trigger excellent questions for new research. Such new research would benefit from separating creative products from creative processes, and would do justice to the nature and functionality of cultures by asking not only when and how individuals and groups achieve creativity, but also why they would bother to be creative in the first place.

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REFERENCES

- Amabile, T. M. 1996. *Creativity in context: The social psychology of creativity*. Boulder, CO: Westview Press.
- Ashby, F. G., Isen, A. M., & Turken, A. U. 1999. A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review*, 106(3): 529–550.
- Baas, M., De Dreu, C. K. W., & Nijstad, B. A. 2008. A meta-analysis of 25 years of research on mood and creativity: Hedonic tone, activation, or regulatory focus? *Psychological Bulletin*, 134(6): 779–806.
- Barron, F. B., & Harrington, D. M. 1981. Creativity, intelligence, and personality. *Annual Review of Psychology*, 32: 439–476.
- Bechtoldt, M. N., De Dreu, C. K. W., Nijstad, B. A., & Choi, H.-S. forthcoming. Motivated information processing, social tuning, and group creativity. *Journal of Personality and Social Psychology*.
- De Dreu, C. K. W., & Nijstad, B. A. 2008. Mental set and creative thought in social conflict: Threat-rigidity versus motivated focus. *Journal of Personality and Social Psychology*, 95(3): 648–661.
- De Dreu, C. K. W., Baas, M., & Nijstad, B. A. 2008. Hedonic tone and activation in the mood – creativity link: Towards a Dual Pathway to Creativity model. *Journal of Personality and Social Psychology*, 94(5): 739–756.
- De Dreu, C. K. W., Nijstad, B. A., & Baas, M. forthcoming-a. Behavioral activation links to creativity because of increased cognitive flexibility. *Social Psychological and Personality Science*.
- De Dreu, C. K. W., Baas, M., & Nijstad, B. A. forthcoming-b. The emotive roots of creativity: Basic and applied issues on affect and motivation. In M. Mumford (Ed.), *Handbook of organizational creativity*. New York: Elsevier.
- Erez, M., & Nouri, R. 2010. Creativity: The influence of cultural, social, and work contexts. *Management and Organization Review*, 6(3): 351–370.
- Ericsson, K. A. 1999. Creative expertise as superior reproducible performance: Innovative and flexible aspects of expert performance. *Psychological Inquiry*, 10(4): 329–333.
- Feist, G. J. 1998. A meta-analysis of the impact of personality on scientific and artistic creativity. *Personality and Social Psychology Review*, 2(4): 290–309.

- Finke, R. A. 1996. Imagery, creativity, and emergent structure. *Consciousness & Cognition*, 5: 381–393.
- Griskevicius, V., Cialdini, R. B., & Kenrick, D. T. 2006. Peacocks, Picasso, and parental investment: The effects of romantic motives on creativity. *Journal of Personality and Social Psychology*, 91(1): 63–76.
- Hempel, P. S., & Sue-Chan, C. 2010. Culture and the assessment of creativity. *Management and Organization Review*, 6(3): 415–435.
- Kim, H., & Markus, H. R. 1999. Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of Personality and Social Psychology*, 77: 785–800.
- Mednick, S. A. 1962. The associative basis of the creative process. *Psychological Review*, 69(3): 220–232.
- Miller, G. 2000. *The mating mind*. London: Vintage.
- Mok, A., & Morris, M. W. 2010. Asian-Americans' creative styles in Asian and American situations: Assimilative and contrastive responses as a function of bicultural identity integration. *Management and Organization Review*, 6(3): 371–390.
- Morris, M. W., & Leung, K. 2010. Creativity East and West: Perspectives and parallels. *Management and Organization Review*, 6(3): 313–327.
- Nijstad, B. A., & Stroebe, W. 2006. How the group affects the mind: A cognitive model of idea generation in groups. *Personality and Social Psychology Review*, 10(3): 186–213.
- Nijstad, B. A., De Dreu, C. K. W., Rietzschel, E. F., & Baas, M. 2010. The dual-pathway to creativity model: Creative ideation as a function of flexibility and persistence. *European Review of Social Psychology*, 21: 34–77.
- Rietzschel, E. F., De Dreu, C. K. W., & Nijstad, B. A. 2007. Personal need for structure and creative performance: The moderating influence of fear of invalidity. *Personality and Social Psychology Bulletin*, 33(6): 855–866.
- Runco, M. A. 2004. Creativity. *Annual Review of Psychology*, 55: 657–687.
- Schooler, J. W., Ohlsson, S., & Brooks, K. 1993. Thoughts beyond words: When language overshadows insight. *Journal of Experimental Psychology: General*, 122: 166–183.
- Simonton, D. K. 1999. *Origins of genius: Darwinian perspectives on creativity*. New York: Oxford University Press.
- Simonton, D. K. 2003. Scientific creativity as stochastic behavior: The integration of product, person, and process perspectives. *Psychological Bulletin*, 129(4): 475–494.
- Simonton, D. K., & Ting, S.-S. 2010. Creativity in Eastern and Western civilizations: The lessons of historiometry. *Management and Organization Review*, 6(3): 329–350.
- Smith, S. M., & Blankenship, S. E. 1991. Incubation and the persistence of fixation in problem solving. *The American Journal of Psychology*, 104(1): 61–87.
- Tooby, J., & Cosmides, L. 1992. The psychological foundations of culture. In J. Barkow, L. Cosmides & J. Tooby (Eds.), *The adapted mind*: 19–136. New York: Oxford University Press.
- Williams, L. K., & McGuire, S. J. 2010. Economic creativity and innovation implementation: The entrepreneurial drivers of growth? Evidence from 63 countries. *Small Business Economics*, 34: 391–412.
- Zhou, J., & Su, Y. 2010. A missing piece of the puzzle: The organizational context in cultural patterns of creativity. *Management and Organization Review*, 6(3): 391–413.
- Zou, X., Tam, K., Morris, M. W., Lee, L., Lau, I., & Chiu, C. Y. 2009. Culture as common sense: Perceived consensus vs. personal beliefs as mechanisms of cultural influence. *Journal of Personality and Social Psychology*, 97(4): 579–597.

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