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The Creativity–Motivation–Culture Connection

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How does creativity happen? This is a question that has long fascinated and mystified philosophers, psychologists, and laypersons alike. As early as 1874, Galton published a study of the biographies and autobiographies of well-known creative figures and set out to identify the unique qualities of intellect and personality that differentiate this group from their less creative peers (Galton 1874). Over time, this concentration on creative geniuses and individual difference variables has been gradually expanded to also include a consideration of everyday creativity and the environmental factors that might serve to impede or promote creative thinking. One conceptual model that has been especially useful in guiding my own thinking is the "Creative Intersection". This approach first proposed by Amabile in the 1980s (see Fig. 7.1) proposes that there are three necessary ingredients for creative performance: Domain-relevant skills (i.e., knowledge or expertise in a given area or areas), creativity or problem-solving skills, and task motivation. In the context of schools or workplace environments where creative thinking and problem solving is desirable, the majority of educators and managers do a good job of equipping their students or adult workers with information and specific domain knowledge. And many schools and businesses also promote creativity-type, problem-solving skills as a formal part of their training. But

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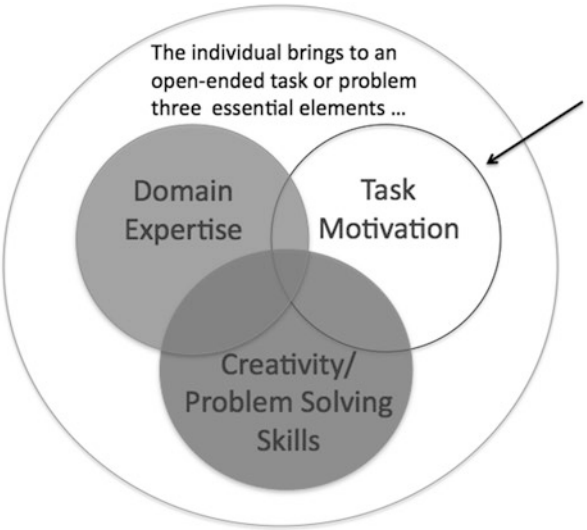

Fig. 7.1 The creative intersection

what most schools and businesses fail to do is to address directly issues of motivational orientation. This omission comes despite the fact that decades of careful empirical work show that motivation holds the key—the key to persons of all ages becoming fully immersed in a problem so that they can engage deeply and eventually perhaps come up with a creative idea, a creative product, or a long-awaited solution. Motivational orientation forms the boundary between what an individual is capable of doing and what that individual will actually do in any given situation. Without the appropriate motivation, each of us is unlikely to be willing to take risks or to playfully explore a variety of avenues and options.

Theorizing About Motivational Orientation

Psychologists have long been interested in, if not perplexed by, behaviors such as exploration and challenge seeking that have no clear external reinforcements. As far back as 1926, investigators like Cox (1983) were already theorizing about the importance of internal sources of motivation; and slowly, theorists began to view high levels of task motivation and the human capacity to become lost in a project or problem as central to the creative process. Kohut (1966) proposed that creativity and the motivation that drives it was a positive transformation of narcissism. Hebb (1955) and Berlyne (1960) offered

that the activities or questions most likely to capture and keep our attention are those that present an optimal level of novelty. And White (1959) and Harter (1978) suggested that a sense of competence and mastery are central components of the motivation behind creative behavior.

In the creativity literature and beyond, the bifurcation of motivational orientation into intrinsic and extrinsic components was driven initially by the work of Heider, who in the late 1950s, set out to explore individuals' explanations for their own and others' behavior (Heider 1958). The founder of the modern field of social cognition, Heider proposed an Attribution Theory designed to specify the circumstances under which behavior will be attributed to an individual's disposition (e.g., personality traits, personal motives, or attitudes) or to situational variables (e.g., external pressures, social norms, peer pressure, or environmental factors). Heider was the first to make the argument that when attempting to make sense of our own or another's behavior, we tend to overemphasize internal, dispositional causes over external causes—this phenomenon later became known as the "fundamental attribution error" (Ross 1977).

The use of the terms "intrinsic" and "extrinsic" began to appear with some regularity in the motivation literature around 1970; and today, when researchers and theorists attempt to model the association between motivation and creative behavior, this intrinsic/extrinsic distinction tends to dominate the discussion. Pioneering theorists in this area were deCharms (1968), Deci (1971), and Lepper and colleagues (1973) who placed their emphasis on a sense of control. According to this view, when an individual perceives their task engagement as externally controlled, they are driven by extrinsic rather than intrinsic motivation. Most contemporary theorists define extrinsic motivation as the motivation to do something for some external goal, a goal outside the task itself. Intrinsic motivation, on the other hand, is seen as the motivation to engage in an activity for its own sake, for the sheer pleasure and enjoyment of the task. Persons who approach an activity, question, or problem with an intrinsic motivational orientation are seen as being propelled by a sense of curiosity. In addition, they feel a certain degree of competence, believe that their involvement is free of external control, and have a sense that they are playing rather than working (Hennessey 2003b, 2004). Taken together, intrinsic and extrinsic motivational orientations have been shown in the social psychology literature to play a major role in determining whether a creative product will be produced or a creative solution to a problem will be generated. Motivational orientation marks the dividing line between what a creative individual is capable of doing and what he or she actually will do in a given situation (see Amabile 1990, 1996).

Importantly, motivation (and creativity for that matter) can be viewed either as a relatively enduring trait or as a situation-specific state. Bem's seminal work on self-perception (1967, 1972), for example, construes motivational orientation as a relatively stable individual-difference variable. DeCharm's (1968; deCharms et al. 1965) early studies of motivation and personal causation revealed that some persons reported that they often felt like pawns of authority, and that these same individuals tended to be primarily extrinsically motivated. On the other hand, persons who were more likely to feel like they were the origins of their own behavior tended to be driven by perceptions of self-investment and were most often intrinsic in their motivational orientation. Similarly, Deci and Ryan (1985a) also found individual differences in enduring motivational orientations. More recent empirical investigations of creativity in business (e.g., Amabile 1988, 1990; Dewett 2007; Shin and Zhou 2007) have also shown the utility of operationalizing the motivational orientation of adult workers as being relatively trait-like and stable across time. And, in fact, investigations involving samples of elementary school children, high schoolers, and college students have all yielded data arguing for such stability. In addition, a longitudinal investigation spanning the middle-elementary through high school years (Gottfried et al. 2001) showed continuity in the relation between levels of academic intrinsic motivation and demonstrations of creativity. Taken together, these studies and others like them offer considerable empirical evidence to suggest that both motivational orientation and creativity can be conceptualized as fairly stable individual difference variables. However, the bulk of the literature linking motivation and creativity has taken the opposite approach—operationalizing creative behavior and the intrinsic motivation that drives it as the result of fleeting and situation-specific states.

Empirical Investigations of the Social Psychology of Creativity

This second somewhat different theoretical orientation is typified in the social psychological study of the impact of extrinsic constraints on motivation. One of the first published studies in this now firmly established research tradition (Deci 1971) focused on the undermining effects of expected reward and was soon supplemented by other papers reporting similar declines in intrinsic task motivation subsequent to the offer of reward (Deci 1972; Kruglanski et al. 1971). In 1973, Lepper, Greene, and Nisbett expanded on this research paradigm when they set out to examine the effects of reward on both motivational

orientation and quality of performance. These researchers found that preschoolers who initially displayed especially high levels of intrinsic interest in drawing with magic markers showed significant decreases in their interest in and enjoyment of drawing when they made pictures in order to receive a "Good Player Award" certificate. When compared with an unexpected reward group and a control (no reward) group, the children who had made drawings for the experimenters in order to get the certificate spent significantly less time using the markers during subsequent free-play periods than did their non-rewarded peers. Moreover, this undermining of interest persisted for at least a week beyond the initial experimental session; and, importantly, the globally assessed "quality" of the drawings produced under expected reward conditions was found to be significantly lower than that of the unexpected reward or control groups.

Although this study was probably the first to demonstrate empirically the deleterious effects of expected reward on both intrinsic task motivation and quality of performance, speculations about the impact of extrinsic constraints on performance were not new. As early as 1954, Carl Rogers had talked about the "conditions for creativity" and the importance of setting up situations of what he called "psychological safety and freedom". But it was this 1973 paper authored by Lepper and colleagues that captured the attention of researchers and theorists alike, and a wide variety of empirical investigations of reward contingencies and their impact on performance, most especially creativity ensued (e.g., Garbarino 1975; Greene and Lepper 1974; Loveland and Olley 1979; McGraw and McCullers 1979; Pittman et al. 1982; Shapira 1976). In a series of three experimental studies, Amabile et al. (1986) went on to show a negative impact of contracted-for reward when the reward was delivered *prior* to task engagement. In fact, one study in this series served to demonstrate that if it is described to subjects as a reward, an experimental task can itself serve to undermine subsequent motivation and creativity of performance.

Hundreds of published investigations have revealed that the promise of a reward made contingent on task engagement often serves to undermine intrinsic task motivation and qualitative aspects of performance, including creativity (for a more complete review of the literature, see Amabile 1996; Deci et al. 2001; Hennessey 2000, 2003b; Hennessey and Amabile 1988). This effect is so robust that it has been found to occur across a wide age range, with everyone from preschoolers to seasoned business professionals and retired R&D scientists experiencing essentially the same negative consequences.

Importantly, reward has not been the only extrinsic constraint to be manipulated experimentally. Amabile et al. (1976) reported a negative impact of time limits on subsequent task motivation; and investigations focused on

situations of competition have shown that the expectation that one's work will be judged and compared to products produced by others may well be the most deleterious extrinsic constraint of all. In one study, Amabile (1982a) showed that competitive elements were especially harmful to children's intrinsic task motivation and creativity on an artistic activity; and Amabile et al. (1990) found similar findings for college students.

Proposed Mechanisms

Expected reward, expected evaluation, competition, and time limits have each been shown to be dangerous killers of intrinsic task motivation and creativity of performance. In an effort to explain the mechanism behind the powerful undermining effects, the Intrinsic Motivation Principle of Creativity was developed: Intrinsic motivation is conducive to creativity, and extrinsic motivation is almost always detrimental (Amabile 1983, 1996). According to this model, in the face of an expected reward, evaluation, or other extrinsic constraint, the goal is to "play it safe"—to generate a suitable idea or solve a problem as quickly and efficiently as possible. The most straightforward path to a solution is likely to be the one chosen, as risk taking might result in a less than acceptable outcome. For a creative idea or solution to be generated, however, it is often necessary to temporarily "step away" from environmental constraints (Newell et al. 1962), to become immersed in the task or problem, to suspend judgment, to experiment with alternative pathways, and to direct attention toward the more seemingly incidental aspects of the task. The more focused an individual is on a promised reward or evaluation, the less likely it is that these alternative paths will be explored. This tendency to avoid potential pitfalls and opt instead for a safe albeit mediocre solution appears to capture the thought processes and behavior of the majority of persons who approach an open-ended, "creativity-type" task in the face of extrinsic constraints.

As empirical investigations of the impact of extrinsic constraints on motivation and qualitative aspects of performance have become increasingly finely tuned over the years, researchers now have a far more sophisticated and nuanced understanding of reward and evaluation effects. Investigations reveal that under certain specific conditions, the delivery of a competence-affirming evaluation or reward or the expectation of an evaluation can sometimes increase levels of extrinsic motivation without having any negative impact on intrinsic motivation or performance. In fact, some forms of evaluative feedback and reward expectation can actually enhance creativity of performance. These complex effects have been demonstrated empirically in several

laboratory studies focused on what has come to be termed a sort of "motivational synergy" (e.g., Amabile 1993; Jussim et al. 1992; Harackiewicz et al. 1991). Evidence from nonexperimental field studies coupled with observations of and interviews with persons who rely on their creativity for their life's work echo these results. For example, in an investigation of commissioned and noncommissioned works done by professional artists, the extrinsic incentive of a commission was seen by some respondents as a highly controlling constraint; and the creativity of their work plummeted. Yet for those who viewed the commission as an opportunity to achieve recognition or a confirmation of their competence by respected others, creativity was enhanced (Amabile et al. 1993).

How can these individual differences in response to extrinsic constraints be explained? Researchers and theorists exploring the relevance of self-perception processes to motivational orientation report that in situations where both a plausible intrinsic and extrinsic explanation for our actions are available, we tend to dismiss the internal cause in favor of the external cause. Early theorizing carried out by social psychologists variously referred to this process as "discounting" (e.g., Kelly 1973) or "over-justification", a formulation derived from the attribution theories of Bem (1972), Kelley (1967, 1973) and deCharms (1968). Later research efforts in this area supplemented these discounting and overjustification models with Cognitive Evaluation Theory or CET (Deci 1975; Deci et al. 1975; Deci and Ryan 1985a); and building on this work, Deci and Ryan more recently offered a conceptual refinement of the CET Model in the form of Self-Determination Theory (SDT) (Deci and Ryan 1985a, b, 1996, 2000, 2008a, b).

SDT focuses on innate psychological needs and the degree to which individuals are able to satisfy these basic needs as they pursue and attain their valued goals. Integrating a variety of literatures, this model offers a long overdue ambitious synthesis of what up until recently had been a conglomeration of related but distinct motivational approaches (including areas of intrinsic motivation and internalization). SDT places the focus on causality orientations, or characteristic ways that each of us develops for understanding and orienting to inputs. More specifically, Deci and Ryan have hypothesized that individuals vary in the degree to which they exhibit three such orientations ("autonomy", "control", and "impersonal"), and they have argued that these individual differences have important implications for a variety of motivationally involved processes, including creative performance. Within this SDT framework, extrinsic motivation (termed "controlled motivation" by Deci and Ryan) and intrinsic motivation (termed "autonomous motivation") are viewed as the anchors of a highly complex and multilayered continuum.

Affect and Individual Differences

In addition to individual differences in cognition, affect too may play a pivotal role in determining whether an anticipated reward, evaluation, or other extrinsic constraint will serve to undermine or enhance intrinsic motivation and creativity. One hypothesis is that the reduction in intrinsic interest that comes with the imposition of extrinsic incentive may be driven primarily by the learned expectation that rewards and evaluations are usually paired with activities that need to be done, activities that are often not fun and sometimes even aversive. The undermining of intrinsic interest may result as much from emotion or affect as it does from thoughts or cognitive analysis. Persons of all ages may learn to react negatively to a task as "work" when their behavior is controlled by socially imposed factors (such as rewards), and they may react positively to a task as "play" when there are no constraints imposed. Negative affect resulting from socially learned stereotypes or scripts of work (see Ransen 1980; Morgan 1981; Lepper et al. 1982) may be what leads to decrements in intrinsic interest (see Hennessey 1999).

In fact, a review of the literature reveals that contemporary views of intrinsic motivation frequently include an affective component. One group of theorists, for example, has concentrated their attention on the relation between positive affect and intrinsic motivation (e.g., Isen and Reeve 2005). Others have focused specifically on the affective components of interest and excitement (e.g., Izard 1977). Some researchers have presented data emphasizing the link between intrinsic motivation and feelings of happiness, surprise, and fun (Pretty and Seligman 1983; Reeve et al. 1986). And the prolific and influential work of Csikszentmihalyi and colleagues (Csikszentmihalyi 1997; Csikszentmihalyi et al. 2005; Nakamura and Csikszentmihalyi 2003) has brought to light the elation that can result from deep task involvement in the state they call "optimal experience" or "flow". Taken together, these scholarly explorations make a strong argument for the connection between motivational orientation and emotion, culminating with Izard's argument (1991) that like motivation, emotions too can function as both traits and states.

A Sampling of More Recent Investigations

Researchers have found it all too easy to undermine intrinsic motivation and creativity of performance with the imposition of extrinsic constraints. For the majority of persons in the majority of situations, intrinsic motivation has

been shown to be a most delicate and fleeting entity. The Intrinsic Motivation Principle of Creativity (Amabile 1983, 1996) assumes that intrinsic and extrinsic sources of motivation can be expected to work in opposition to one another. Working much like a hydraulic water pump, this formulation predicts that when the "flow" of intrinsic motivation is decreased, the level of extrinsic motivation will necessarily be increased. Indeed, many researchers and theorists have operationally defined intrinsically motivated behaviors as those that occur in the absence of extrinsic motivators (e.g., Deci 1971; Lepper et al. 1973). Yet, over time, theorists, investigators, and practitioners including teachers in the classroom and managers in the workplace have come to understand that the relation between environmental constraints, motivational orientation, and creativity of performance is not nearly as straightforward as was once believed. As outlined by Deci and Ryan in their SDT (1985a, b, 1996, 2000), extrinsic motivation must be understood as far more than the simple absence of intrinsic motivation and researchers continue to uncover important and not entirely infrequent exceptions to the hydraulic system.

A review of the newer experimental literature in this area reveals few recent investigations modeled after the original basic experimental paradigm contrasting the creative behavior and motivation of persons randomly assigned to constraint and no-constraint conditions. Instead, researchers interested in the effect of environmental factors on creativity have turned their attention to a variety of new, more nuanced questions. Rather than attempt to construct a "one-size-fits-all" model of the impact of extrinsic constraints on intrinsic motivation and creativity of performance, more recent studies have tended to explore individual difference variables and to measure more directly the cognitive, affective, and emotional impacts of a variety of factors in the creator's environment.

Joussemet and Koestner (1999), for example, explored the possibility that the impact of an expected reward contingency might transfer to a subsequent no-reward situation. Isen and Reeve (2005) carried out two experiments showing that positive affect not only fosters intrinsic motivation and enjoyment of novel and challenging tasks but also promotes extrinsic motivation and responsible work behavior in situations where less interesting tasks need to get done. Reporting data that appear to contradict these findings, Kaufmann and Vosburg (1997) found in two separate studies that positive mood led to significantly poorer creative problem-solving performance, whereas no significant effects of positive or negative mood states were found for analytic problem-solving tasks. Building on these initial studies, Kaufmann (2003) provided additional evidence showing that under certain routine conditions, positive mood can impair creativity, whereas negative and neutral moods can

sometimes promote insight and solutions to problems. And related findings from three experiments carried out by Friedman et al. (2007) offered a motivationally based account for the influence of mood on creative generation. Taken together, these studies at least partially supported the prediction that positive and negative moods should enhance effort on creative generation tasks construed as compatible with the motivational orientations they elicit. Specifically, positive moods were observed to enhance effort on tasks construed as fun and silly, whereas negative moods tended to bolster effort on tasks construed as serious and important.

Putting the "Social" Back into the Social Psychology of Creativity

Just like each of the hallmarks of intrinsic and extrinsic motivation outlined earlier, this focus on mood also rests on the individual's inner psychological state. Both motivational orientation and affect / mood are seen to arise from an internal, entirely individualized, and especially complex process. Researchers ask why the expectation of a reward or an evaluation to be delivered by a teacher or employer might undermine an individual's intrinsic motivation and creative performance, and they explain this phenomenon via internal cognitive mechanisms. While this approach has proven useful to some extent, the localization of motivational orientation (and creativity) entirely within the individual is problematic at best. It is high time that researchers and theorists put the "social" back into the study of the social psychology of creativity (see Hennessey 2003a). In the words of Markus and Kitayama (2003), we must become "really social social psychologists" (p. 277). We must start at the most basic level and ask how the culture into which we are born impacts our creative development, and, perhaps even more importantly, we must set out to examine how our cultural background serves to frame the very way we conceive of creativity and motivation, ask our investigative questions and construct and conduct our experiments.

Experimental studies and theorizing in psychology have, since their inception, been dominated by a Western bias. The vast majority of data upon which psychological theories and models are built has been collected on university students living and learning in the USA (see Arnett 2008; Henrich et al. 2010). As a field, psychology has been far too quick to assume that much of human behavior and the motivations behind it are universal. The majority of psychological theorists have long taken for granted that the responses of

study participants in the industrialized West will mirror nicely the responses of persons living, learning, and working all around the world. Yet this is a serious and dangerous mistake. Take, for example, the Fundamental Attribution Error mentioned previously (Ross 1977). For many decades, psychologists in the West have assumed that when trying to make sense of their own or another's actions, all of us have a common tendency to overemphasize internal, dispositional causes of behavior and underestimate external, environmental causes. Even the name given to this phenomenon, the *FUNDAMENTAL* Attribution Error, presumes that this correspondence bias is universal. And, certainly, the creativity and motivation literatures have long been dominated by this tendency to stress what is seen as a universal drive for individual autonomy and perceive persons as independent and self-contained. Yet investigations conducted in more interdependent/collectivist societies reveal important cultural differences in the ways knowledge about the self or the other is processed, organized, and retrieved (Markus and Kitayama 1991). In studies carried out by Miller (1984) and Shweder and Bourne (1984), for example, Americans were found to focus on dispositions when describing close acquaintances or explaining the behavior of others, while descriptions and explanations made by study respondents in India were more situational, context-specific, and relational. The Fundamental Attribution Error may not be nearly as fundamental or universal as once thought. Moreover, many of the emotional and motivational models underpinning the creativity literature may also be culture-specific and biased toward what might be termed a European–American theory of mind (see Markus and Kitayama 1991; Lillard 1997).

Csikzentmihalyi (1999, 2006) has been a pioneer in the effort to conceptualize and investigate creativity from a cultural perspective. Toward this end, he was one of the first theorists to propose a systems model of creativity, examining simultaneously interactions among individuals, social contexts, and cultural domains. In fact, his three-part model proposes that it is the cultural context that will both determine the domain knowledge, tools, values, and practices that fuel the creative process and decide which innovations will be retained and which will be discarded. Glăveanu also includes a consideration of culture in his own theorizing (Glăveanu 2010a, b). In Glăveanu's view, cultural expression and the process of enculturation impact every stage of the creative process. While psychologists have long tended to view creative breakthroughs as stemming from the talents and efforts of idealized lone "geniuses", creative behavior never occurs in isolation (see Purser and Montuori 2004). Moreover, research and theorizing must in no way be limited only to considerations of "Big C" creativity manifested by wildly successful inventions

or groundbreaking paradigm shifts. Also in need of exploration are creative breakthroughs at the professional level and instances of everyday, or "little c", creativity (see Kaufman and Beghetto 2009).

Whatever the level of creativity being examined, as explained by Csikszentmihalyi (1999), the creative act is as much a product of social and cultural influences as it is cognitive or psychological. The background knowledge and domain skills necessary for a creative breakthrough are the result of decades, maybe centuries, of cultural evolution. Consider one operationalization of creativity commonly employed in contemporary investigations. Amabile (1996) stipulates that a product can be deemed creative only if it is both a novel and appropriate response to an open-ended task. Embedded in this definition is an implicit assumption that some group, some community of persons beyond the individual creator him or herself, or perhaps even some centuries-old cultural tradition, will be the arbiters for judgments of appropriateness and, ultimately, creativity. Taking this argument one step further, Csiksentmihalyi (1999) requires that a creative idea, product, or problem solution be both novel and socially valued. According to this view, the society or culture in which a product is produced will serve as the gatekeeper and decide which ideas will be celebrated and which will be ignored or even squelched. In short, it is impossible to make judgments about creativity without a consideration of cultural context.

But what exactly do we mean when we talk about culture? As defined by Lubart (1999), culture refers to a shared system of cognitions, behaviors, customs, values, rules, and symbols that are learned and socially transmitted. Pursuing these ideas further, the interface between the preservation of cultural traditions and the infusion of new, creative breakthroughs is captured in a framework offered by Greenfield (2009) who suggests that even as cultural values, expectations, and practices are learned in social contexts and passed down from generation to generation, they are modified by persons within that culture and in interaction with persons from other cultures and in the face of new needs. In a complex sort of symbiotic relationship, creativity moves cultures forward and cultures place boundaries on what will be deemed innovative and appropriate and what will be discarded as bizarre, worthless, or even dangerous (see Cohen 2012). Yet cultures must be seen as far more than gatekeepers, because without culture, there would be no artifacts, no materials with which to innovate and create. A review of the literature reveals that, until recently at least, little attention was given to the question of how culture might impact the link between motivation and creative behavior. In fact, the infusion of culture into this theoretical mix necessitates a re-examination of how both motivational orientation and creativity itself should best be operationalized.

Cultural Considerations in the Understanding of Motivation and Creativity

Scholarly explorations of the impact of culture have long been dominated by a distinction made between individualistic and collectivist traditions. Individualist cultures, typified by the USA, Canada, and many Western European nations, tend to value personal achievement over group goals, resulting in a strong sense of competition. Conversely, collectivist cultures, like those of India, China, Korea, and Japan, tend to emphasize the needs and well-being of one's family, business organization, or work group over individual needs or desires. This dichotomy has for some time been influential in both the creativity and intrinsic/extrinsic motivational literatures (e.g., Deci and Ryan 2008a, b; Hernandez and Iyengar 2001; Ng 2001, 2003). When applied to theorizing about motivation, this individualist/collectivist paradigm's emphasis on "self-construal" highlights important parallels between the interaction between the individual and the situation and the interaction between the self and the prevailing culture. There are a number of significant differences between Eastern and Western perspectives of the self, and nowhere are these differences more striking than in cross-cultural comparisons of assumptions about control. In the East, emphasis tends to be placed on forces of control imposed by the environment, or the culture at large, wherein the individual is expected to adapt. Persons raised in collectivist cultures, in other words, are thought to exercise what Ng (2001) terms "secondary control", shaping their internal needs and desires in order to maximize the goodness of fit with existing reality. In the West, on the other hand, people are socialized to rise above and even bristle at externally imposed constraints and are driven to alter their environment so as to better meet their own, personal needs. In these Western cultural contexts, children from an early age are socialized to exercise "primary control". As characterized by Ng (2001), these two very different orientations lead Eastern societies and citizens to place more value on extrinsic motivation, while Western societies and citizens tend to value intrinsic motivation.

Although researchers and theorists must be careful not to oversimplify the pervasive impact of culture with this individualist/collectivist distinction, this rubric does, in fact, suggest a host of applications to study of the social psychology of creativity. The social psychology literature is replete with claims about the robustness of the Intrinsic Motivation Principle of Creativity: Intrinsic motivation is conducive to creativity, and extrinsic motivation is almost always detrimental (Amabile 1983, 1996). And, in fact, the

deleterious effects of extrinsic constraints on intrinsic interest and creativity of performance has been found to occur across a wide age range, with everyone from preschoolers to seasoned business professionals and retired R&D scientists experiencing essentially the same negative consequences. Yet the overwhelming majority of studies demonstrating these effects have been based on Western conceptualizations of motivational orientation and creativity and carried out in Western cultural contexts. Do these operationalizations of intrinsic and extrinsic motivation hold up in more collectivist societies? Do the creativity criteria of novelty and appropriateness fit conceptions of creativity worldwide? And when it comes to the creative intersection between domain-relevant skills, creativity-relevant skills, and task motivation, how, if at all, does culture enter the mix?

Most Western scholars of creativity appear fairly comfortable with a definition of creativity that incorporates both a novelty and appropriateness or usefulness component. But might there be important cross-cultural distinctions in the ways that individuals conceptualize creativity? Value creativity? Measure creativity? Exercise their own creativity? Psychologists, sociologists, and anthropologists report that creativity is an integral part of the human experience. Every cultural group incorporates some form of visual or performance art, literature, music, and even technology. Yet just because creativity is a universal phenomenon does not mean that it plays the same role in every culture, nor can it be assumed that creative efforts receive similar kinds of social support worldwide (Simonton and Ting 2010).

Researchers and theorists exploring the influence of culture on people's views of creativity have found important differences (most especially East/West differences) between groups. Contemporary Eastern conceptions of creativity often include the establishment of a connection between the old and the new (Niu and Sternberg 2006). The explicit definitions developed by Eastern researchers and theorists, as well as the implicit views offered by their non-academic counterparts, are more likely to emphasize the internal process of creativity and see the creative process as a vehicle for gaining a sense of personal fulfillment, enlightenment, or a feeling of connection between the inner and outer realms of reality (Lubart 1990; Westwood and Low 2003). Also central to many Eastern definitions is a consideration of whether a creative idea or solution fits with existing social and moral values and contributes to the greater good (Rudowicz and Yue 2000). Indian theories, for example, have been described to emphasize interpersonal skills such as sociability, compassion, and social responsibility. In India, imitation, repetition, and conventionality are not necessarily viewed as barriers to novelty and creativity. Rather, efforts to maintain tradition are seen to complement the drive toward new

and different modes of expression (Panda and Yadava 2005). In this Eastern sense, creativity encompasses the reinterpretation of existing ideas; whereas Western definitions of creativity tend to emphasize novelty, the special talents or characteristics of the individual viewed as responsible for the generation of a creative product or breakthrough, and the breaking with tradition (Niu and Sternberg 2002).

Philosophers and theorists continue to explore these culturally driven differences in the ways that creativity is viewed. For the time being, it seems fruitless and even inadvisable to seek a universal definition of creativity that would cut across time and place. Yet if researchers are to attempt an exploration of the interface between culture and creativity, some sort of conceptual framework upon which to base models and investigations is needed. Toward this end, my colleagues and I have suggested that creativity be viewed as an important vehicle for cultures to advance their purpose (Hennessey and Altringer 2014). Of course, one culture's purpose may be very different from another's; but in all cases, creativity can be used to tell stories that serve to pass on knowledge and values from one generation to the next. Creativity can be used both to preserve traditions and to modify or renovate those traditions. Creativity can provide entertainment, improve living conditions, and make possible economic and business gains. Creativity is what moves cultures forward. But at the same time, cultural norms, values, and expectations serve to dictate just what will be deemed acceptable, interesting, or exciting and what will be discarded as useless, inappropriate, or even profane.

Empirical investigations into the social psychology of creativity have long relied on the Consensual Assessment Technique (CAT) (Amabile 1982b, 1996; Hennessey 1994; Hennessey et al. 2011). This procedure recruits experts in the field in which products were produced or ideas articulated and asks them to use their own, subjective definitions of creativity as they rate these products relative to one another rather than against a set of criteria or norms imposed by the experimenters. Despite the fact that these judges have no opportunity to confer with one another nor are they trained in any way, high levels of consensus are almost always obtained. Although product creativity may be difficult to define, it is something that raters agree about when they see it. As originally conceived, the CAT was not necessarily intended to be employed cross-culturally. Yet happily for researchers, it has proven to be an especially useful research tool in this regard. Because the CAT enlists judges who are indigenous to the area in which products are produced and who share the cultural heritage of those doing the creating, this methodology allows for the unbiased assessment of product creativity—freed from the imposition of Western values or assumptions (Hennessey et al. 2008).

The impact of culture on creative behavior cannot be overstated. Yet when it comes to creative potential, there is no reliable evidence of widespread cultural differences. Stereotypes aside, comprehensive reviews of the literature (e.g., Leung et al. 2004) show that most psychologists and scholars focused on the components of the creative process agree that creative behavior results from a normative human cognitive capacity (see Ward et al. 1999; Weisberg 1993). All persons of normal intelligence are thought to be capable of producing creative ideas or products, and there is no reason to hypothesize that individuals of some cultural backgrounds would be inherently more (or less) likely to generate creative problem solutions than would others. Cultural norms help to determine when and in what form creative ideas and innovations will be accepted and adopted. But investigators have never identified innate differences in the fundamental capacity for creativity and innovation (see Hennessey and Altringer 2014); and recent comparisons of the R&D climate in the USA and Asia find few cultural differences (e.g., Nagaoka and Walsh 2009).

In fact, research indicates that certain key components of the creative process may best be viewed as culturally universal. The same quality/quantity relationship long documented in the West where fluency (sheer number of ideas generated) is positively correlated with originality (uniqueness of ideas) has also been shown to pertain to Eastern populations. Similarly, highly facilitative effects of mentoring or exposure to highly creative coworkers also appear to cut across cultures (Morris and Leung 2010). Importantly, however, there is also strong research evidence that cultures differ substantially not only in their social expectations but also in terms of the relative emphasis they place on certain personality factors, problem framing approaches, and solution "styles" (Westwood and Low 2003). In fact, it appears that while some specific cultural practices, socialization techniques, and expectations serve to inhibit the human capacity for risk-taking and creative inquiry, other cultural practices may serve to especially enhance these behaviors (see Hennessey and Altringer 2014).

The ways in which cultural elements can advance or constrain creative behavior are complex and varied. Popularized truisms proclaiming that Westerners are inherently better at innovation while their Eastern counterparts are relegated to imitation fall far short of capturing the rich diversities of creativity and innovation worldwide (Morris and Leung 2010). Japan's rise to international prominence in areas of technological innovation flies in the face of East/West stereotyping. Moreover, an historical analysis of cultural contributions over time debunks any notion of a "creatively-challenged" Asian populace. But we have a long way to go before we can even begin to appreciate the many ways in which culture impacts creative cognition and behavior.

There Is No One Path to Creativity

The road to creativity in one cultural context may be very different from the road taken in another culture. In fact, recent research suggests that creative problem solving can proceed either from the kinds of loose, flexible inference strategies that characterize Western laboratories and think tanks or from a much more cautious, persistent inference strategy common to many Eastern institutions (Nijstad et al. 2010). As reported by Nagaoka and Walsh (2009), inventions result more frequently from projects with incremental objectives in Japan (66 %) than they do in the USA (48 %); while projects with breakthrough objectives succeed more often in the USA (24 %) than they do in Japan (8 %). What might be the explanation for these cultural differences?

Neuroscientific evidence points to socio-cultural influences that may serve to impact thinking, judgment, and behavior (including creative behavior) even at the most fundamental physiological level. Studies in developmental neuroscience reveal that both the structure and function of the human brain are shaped by the social environment (Miller and Kinsbourne 2012). And, in turn, the social environment is in large part dictated by culture. Cutting-edge investigations in the exciting new area of cultural neuroscience are now beginning to reveal just how many psychological processes, processes manifested by both overt behavior and brain activation that were once believed to be universal, are significantly affected by cultural experience. In fact, some recent papers point to the conclusion that even the most basic brain functions can show important underlying cultural differences at the level of the neuron (Rule et al. 2013). In an exploration of the role of language on brain function, researchers found that native speakers of Chinese, whose language focuses on images and writing, utilized distinctly different brain areas when solving simple mathematical problems, as compared to native English speakers, whose language focuses on letter-sound correspondence. Although study participants in both groups could easily come up with the correct numerical answers, the internal paths they took to get there appeared to be distinctly different (Tang et al. 2006). Performance differences on perceptual tasks have also been linked to study participants' culture. On the classic Rod-And-Frame Test, differences emerge in terms of visual attention and the neural circuitry that is recruited to complete the task (Hedden et al. 2008). Culture impacts how individuals see, what they pay attention to, and what they think they see (Freeman et al. 2009).

This influence of culture on psychological and cognitive processes is especially evident in relation to the ways in which individuals come to think about themselves and their relationships with others. As outlined earlier, persons from

more independent cultures have been found to emphasize their autonomy and uniqueness and typically value highly opportunities for self-expression. Individuals from more collectivist or interdependent cultures, on the other hand, tend to emphasize social harmony and conformity and strive to follow group norms (Gaur 2011; Hernandez and Iyengar 2001; Markus and Kitayama 1991, 2003). Intriguing examples of these group differences come from work carried out by Iyengar and colleagues. Iyengar and Lepper (1999) found, for example, that intrinsic motivation was maximized for Asian American children when choices were made for them by either their mother or a group of peers. European American children, however, showed a loss of intrinsic motivation under these conditions; and their motivation was highest when they were permitted to make their own choices. Studies such as this one that focus on the motivational orientation of persons raised in more interdependent cultures call into question the boundaries between intrinsic and extrinsic motivation. While in a more Western framework, working to please one's mother would be construed as an extrinsic orientation: If an individual's mother contributes significantly to one's sense of self, the motivation to please mom might well be seen as intrinsic. In fact, there is now some fMRI evidence to show that these cultural differences in the so-called self-system are, once again, reflected at the neuronal level of brain function. Zhu and colleagues (Zhu et al. 2007) reported that a portion of the brain implicated in processing self-referential information was activated in Western study participants only when deciding whether a given adjective described themselves; yet among Chinese participants, there was no difference in brain activation when processing adjectives describing oneself and one's mother.

How might this cultural difference in the ways that individuals construe the self inform our understanding of the interface between culture, motivation, and creative performance? In answer to this question, it would seem that the individualistic identity makes some motivational orientations and behaviors far more likely than others. With Westerners socialized from a young age to strive for their independence and autonomy, it is easy to understand why a teacher's, a manager's or an experimenter's imposition of an extrinsic constraint such as the promise of reward might have an especially deleterious effect. This Western orientation stands in direct contrast to more collectivistic permeable or fluid boundaries between the self and the other. For persons living, learning, and working in a more interdependent cultural environment where children are socialized to view themselves as part of a larger web of interrelations, the imposition of a reward or evaluation contingency might not be expected to undermine intrinsic task motivation or creativity of performance because intrinsic motivation is intertwined with the goal of meeting

the wishes of and achieving the shared goals of the entire group. In fact, the cross-cultural management literature highlights the fact that in some parts of the world, the maintenance of employees' sense of autonomy, an ingredient long thought to be essential to intrinsic motivation and creativity, may not be as important as the creation of a work setting that promotes an atmosphere of relatedness or the sense of personal security in relationship with others (e.g., Beswick 2013; Iguisi 2009).

As outlined earlier, SDT rests on the assumption that the psychological need for competence, autonomy, and relatedness is common to people of all cultures (Deci and Ryan 2007). According to this view, while cultures may shape people in fundamental and powerful ways, all humans are driven to fulfill certain basic needs. Culture, in other words, may influence the means by which these needs are met but it in no way determines these needs. A more culturally relativist view espoused by researchers and theorists like Markus and colleagues (see Markus et al. 1996) argues that these so-called "basic" needs, including autonomy and relatedness, are in fact culturally transmitted. Is autonomy a thoroughly Western construct rooted in cultures emphasizing the drive toward individualism and the need for control? Do East Asians and persons from other collectivist cultures find that they have little need to establish a sense of autonomy in their own lives? Or might cultures simply differ in the ways in which the need for autonomy and the development of a sense of agency are manifested? The proposal that a small number of universal psychological needs drive human motivation need not diminish the importance of culture, but it could provide a basic framework with which the complexities of cultural differences as well as individual differences in motivational orientation could be explored.

A thorough delineation of the social and cultural context driving motivation is essential to any investigation of the psychology of creativity. Researchers and theorists must determine how individuals view themselves and their possibilities. Do they feel comfortable pushing any and all boundaries and exploring the limits of their own creative potential, or are they looking for group consensus? Are they driven by an overwhelming need to feel autonomous and in control of their situation or are they more content to look within themselves for evidence of that control? Recent work carried out by Walker (2009) proposes that self-construal must be viewed as an important intervening variable between culture and motivation. Importantly, when we add considerations of culture and self-systems to our conceptions of the creativity-motivational orientation connection, we must revisit what were once considered to be basic assumptions about both motivation and creativity. For example, reflections offered by De Dreu (2010) explore the influence of culture not only on the

nature and number of creative insights achieved but also on the information processing strategies used to reach those creative solutions as well as cultural group members' motivation to explore certain domains in the first place. De Dreu reminds us that we have yet to understand how cultural differences may impact problem finding, idea generation and evaluation, and creative problem-solving strategies. Cultural background helps to determine what is salient, what will be considered important issues and interesting problems to be pursued, and what questions or opportunities will likely be avoided because they are seen as less interesting, potentially threatening, or even dangerous.

Studies of Achievement Motivation

An emphasis on the intrinsic/extrinsic distinction has long dominated discussions of the link between motivation and creativity. In fact, a careful review of the motivation literature reveals almost a complete rift between the social–psychological research and theorizing reviewed in this chapter and work being done on what has come to be termed Achievement Goal Theory. Like SDT and the modeling being done within the framework of a social psychology of creativity, Achievement Goal Theory (see Anderman and Wolters 2006; Meece et al. 2006; Pintrich 2000) is based on a social-cognitive view of motivation. While more than 25 years of research and theorizing has established this approach as an especially prominent and influential theory of motivation (Anderman and Wolters 2006; Pintrich 2000), its influence has been almost entirely restricted to work carried out in classroom settings. Rather than emphasize self-perceptions and causal attributions, Achievement Goal Theory focuses on the types of goals pursued in achievement situations, most especially goals involving the development and demonstration of competence (Maehr and Nicholls 1980; Nicholls 1984). Earlier applications of Achievement Goal Theory contrasted learning versus performance goals (Dweck and Elliott 1983), task-involved versus ego-involved goals (Nicholls 1984), and mastery versus ability-focused goals (Ames 1992; Ames and Archer 1988). More recent work has tended to subsume these categories into a more general mastery versus performance dichotomy. The parallels between these mastery/performance goal orientations and the operationalizations of intrinsic and extrinsic motivation are striking. So too are the similarities in the behavioral outcomes reported in the two literatures. Achievement-related behavioral patterns that come with a mastery orientation resemble closely attitudes and behaviors associated with high levels of creative performance. At all grade levels, students who focus on mastery goals persist at difficult tasks

(Elliott and Dweck 1988; Stipek and Kowalski 1989), show high levels of task involvement (Harackiewicz et al. 2000), effort, and persistence (Grant and Dweck 2003; Miller et al. 1996; Wolters 2004), and report enhanced feelings of self-efficacy (Meece et al. 1988; Midgley et al. 1998; Roeser et al. 1996; Wolters 2004).

Achievement Goal Theory has proven useful for categorizing individual differences in student motivation, and it has also provided researchers with a valuable framework for analyzing the impact of classroom environment on student motivation and learning outcomes. Yet even the most comprehensive reviews of Achievement Goal Theory fail to reference the complementary literature exploring the social psychology of motivation (and vice versa). One exception to this rule is an empirical research report authored in 2006 by Vansteenkiste, Lens, and Deci. This paper demonstrates unequivocally the fruitful insights that can come from a combination of these two theoretical viewpoints. Results from many studies reported in the Achievement Goal Theory literature underscore the important role played by students' perceptions of their learning situations, and researchers working within this tradition have recently come to understand that it is an individual's interpretation of a reward or evaluation contingency and not the reward or evaluation itself that will determine whether intrinsic motivation (and creativity) will be enhanced, undermined, or remain relatively unchanged. Moreover, an examination of the Achievement Motivation literature reveals that culture has frequently been demonstrated to influence this interpretive process.

Salili et al. (2001) argue that the impact of culture has received special attention from educational researchers due to the fact that Asian students, as compared to their Western counterparts, consistently evidence superior achievement on standardized tests. Many observers of this so-called "Asian advantage", both educators and lay persons alike, marvel at this phenomenon and look to genetic explanations and/or to cultural differences in parenting, teaching style, or overall societal expectations as sources of explanation. In fact, numerous studies reveal that cultural values and practices influence students' motivational orientation in a number of respects. Usher and Kober (2012) observe that children from different cultural backgrounds engage in school in a variety of different ways. The educational values of their culture are reinforced by their families with parenting behavior that serves to shape students' ideas about their own identities, abilities, and goals. Along these same lines, Tripathi and Cervone (2008) found that even among adult workers who scored equivalently on indices of motivational strength and motivational orientation, American and Indian employees differed substantially in motivational orientation, with Americans focused on self-promotion and Indians

tying their sense of achievement more strongly to concerns for extended family, coworkers and the wider community.

Traditionally, investigations of achievement motivation have focused on so-called task goals and performance/ability goals; and important differences have been found between cultural groups. Experimental work carried out by a variety of researchers (e.g., Duda 1986; Maehr and Nicholls 1980; McInerney 2008; Niles 1995) argues, however, that when considerations of culture are incorporated into research exploring achievement motivation, an examination of additional perspectives such as the motive to gain social approval and/or build or maintain social relationships with family is also essential. Finally, Moneta (2004) reports a cultural variation of the flow model with Chinese students experiencing the highest level of state intrinsic motivation in situations of mastery practice (low challenge/high skill) rather than in conditions combining high challenge and high skill that have come to characterize the flow state in the West. Moneta argues that this cultural difference is partially explained by the internalization of collectivist values and goes on to advocate for a multi-cultural revision of both Flow Theory (Csikzentmihalyi 1990, 1997) and SDT (Deci and Ryan 1985a, b, 1996, 2000, 2008a, b).

Taken together, these studies and others like them argue for a re-examination of existing motivational constructs as well as the incorporation of a variety of new dimensions into rubrics designed to model achievement motivation, and all types of motivation, across cultures. At present, neither cognitive dimensions nor cultural distinctions such as differences in the construal of the self have been sufficiently integrated into empirical investigations or the theory-building process.

Beyond Generalizations and Dualisms: Where Do We Go from Here?

By their very nature, the study of complicated constructs like motivation and creativity, not to mention culture, will always be messy and especially challenging. If we are to understand more fully the interface between culture, motivation, and creativity, we must work to develop far more precise and culturally sensitive definitions and operationalizations of creative behavior, performance goals, motivational orientation, and the like—operationalizations free of the Western cultural bias that plagues so many of the measurement tools and theoretical models currently employed (Panda 2011). Moreover, it will never be enough to "paint with a broad brush" in search of overarching models that

describe the dynamics at play for entire cultural groups. While such generalizations may initially prove useful as we begin to build systems models, researchers, and theorists must also strive to understand the interface between culture, motivational orientation, and creativity from each individual's own, unique perspective and experience. As evidenced by the research and theories summarized in this entry, we have already made considerable headway in many of these areas. A melding of what have remained up until this point parallel but isolated research traditions, theories, and findings is one obvious important next step. Also essential will be a reframing of the way in which investigators focused on the influence of culture pose their research questions and then go about answering those questions. As described by Raina (1991), the cross-cultural psychology literature has for far too long been dominated by mindless attempts to replicate around the globe findings from experiments originally conducted in North America.

Recent important work being done by persons indigenous to non-Western cultures argues that if any real progress is to be made, investigators must abandon altogether the dualism between intrinsic and extrinsic motivation or self and other. As argued previously, research on creativity and motivation coming from mainstream psychology is still very much tied to an individualistic framework (Purser and Montuouri 2004). And, in many respects, it may be this theoretical orientation that has prevented the majority of researchers from making serious attempts to infuse an examination of culture into their work. The adoption of a more holistic view of the self both necessitates a consideration of culture and leads directly to the understanding that creativity is both social and context-embedded. As explained by Panda (2011), for individualists, social and cultural factors are seen as epiphenomenal; but in the eyes of theorists adopting a more collectivist position, "the individual is simply expressing the social, political and economic forces of the times" (p. 469). In this view, it is the person, the creator, who is epiphenomenal—"the vehicle for social forces which play themselves out with or without any particular individual" (Panda 2011, p. 469).

Without exception, comparisons of creative behavior across cultures suffer from a fatal flaw in that the groups being compared may not share a common reference point. Panda (2011) explores these difficulties with a detailed account of conceptions of and beliefs about creativity in India. Like many definitions developed in the West, Indian conceptions of creativity also emphasize the new and the different. But implicit in the Indian viewpoint is the stipulation that in order to be deemed creative, ideas and products must digress from the usual in such a way that harmony with nature is maintained. Panda (2011) further explains that the creative product can never be

evaluated independent of the actions and social virtues of the creator him or herself. Both the finished product and the efforts that went into producing that product are seen as parts of a larger social process. In stark contrast to the Western view of the lone genius or creative rebel, in this Indian framework, creator and society are required to work in harmony (Panda 2011). In fact, in some indigenous Indian cultures, creators remain anonymous: Creative work is considered to belong to the entire community (Misra et al. 2006).

Panda (2011) goes on to report that many products deemed creative in Indian society are valued not because they offer new insights or solutions to a problem (as conceptualized in the West) but because they incorporate imitation and repetition, two hallmarks that in the West would be considered antithetical to creativity. In India, "imitation, repetition, novelty, conventionality or unconventional expressions all form a continuum of creative behavior" (Panda 2011, p. 479). Importantly, it is this notion of a continuum that may prove central to research and theorizing moving forward. Rather than focus their attention on dualisms like individual versus society, originality versus conformity, intrinsic versus extrinsic, or East versus West, investigators must strive to model motivational systems that move far beyond the boundary between self and "other". As argued earlier, the dominant construct common to virtually every contemporary understanding of motivation coming from mainstream (Western) psychology is the quest for control—the individual's need to control the environment rather than be controlled. This need for self-determination is assumed by Western theorists to be at the core of all human behavior. Yet scholars of Indian and Asian psychology report that in the East, the experience of control is distributed and located neither entirely within the individual nor entirely within the environment (Gaur 2011). Continuum rather than dualism. Distribution instead of dichotomy.

The study of creative behavior and motivational orientation across cultural and national contexts is highly complex. Researchers and theorists must be ever mindful of the potential for simplistic ethnocentric assumptions and cultural bias, most especially Western bias, to distort their work. Carefully controlled empirical studies that rely on cross-cultural comparisons and operationalize culture as an external force that works independently of persons to impact their motivation and behavior, while sometimes useful, must be supplemented with ethnographic investigations based on the view that culturally driven differences in a variety of psychological processes, perhaps most especially how individuals view themselves in relation to others, result in overt differences in all facets of human cognition and behavior, including creative behavior. The contributions of so-called indigenous psychology, a movement with roots outside of North America and Western Europe, will also be

important as we go forward. The goal of this group is to carry out research that is more appropriate and relevant to their native cultural contexts than are traditional Western approaches. Exciting work is being done in this area, yet even indigenous studies can fall prey to many of the same biases and problems of interpretation that plague more traditional cross-cultural investigations.

Individual difference variables and environmental factors that support a motivational orientation conducive to creative behavior in one cultural context may have no important effect, or even a negative effect, in another culture. There is nothing simple about culture, and the relation between culture, motivation, and creativity is multi-faceted. Cultural norms and expectations have important consequences at all phases of the creative process. Workplace environments as well as classrooms are becoming ever more culturally diverse; while at the same time, corporate managers and educational leaders are under increased pressure to push the creativity and innovation of employees and students. These multi-cultural contexts provide especially challenging and exciting research contexts for investigators and theorists.

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