



THE CREATIVITY-PERFORMANCE RELATIONSHIP: HOW REWARDING CREATIVITY MODERATES THE EXPRESSION OF CREATIVITY

CHRISTINA SUE-CHAN AND PAUL S. HEMPEL

Researchers have argued that creativity is intrinsically motivated, and that rewarding creativity can stifle creativity. Using a sample of 310 employees reporting to 50 different supervisors, we instead show that rewarding creativity influences the relationship between creativity and performance by changing the nature of expressed creativity. We do this by examining novelty and usefulness as separate dimensions. High perceived reward enhances the relationship between novelty and performance while diminishing the relationship between usefulness and performance. The moderating effect of reward for creativity on the relationship between creativity and performance was not observed when we operationalized creativity as an integrated, unidimensional construct. © 2015 Wiley Periodicals, Inc.

Keywords: reward for creativity, novelty, usefulness, creativity

Creativity is widely believed to be necessary for performance (Gilson, 2008; Simonton, 2000), success, and advancement (e.g., Elsbach & Hargadon, 2006; George & Zhou, 2002), and is viewed as the basis for innovations (e.g., Shin & Zhou, 2007) and competitive advantage (Brockbank, 1999). There is also widespread belief that creativity is positively related to employee performance (Simonton, 2000), yet there is scant empirical support for this (Gilson, 2008). Instead, previous research (e.g., George & Zhou, 2001) has often used creative performance as the outcome and has created criterion confusion by not differentiating between creativity and performance (Montag, Maertz, & Baer, 2012).

Human resource management (HRM) practices have long been suggested (Brockbank, 1999) and empirically demonstrated to play a significant

role in employee creativity (Binyamin & Carmeli, 2010; Dul, Ceylan, & Jaspers, 2011). One HRM practice that researchers examining employee performance have frequently examined is extrinsic rewards, yet the efficacy of such rewards for encouraging creativity remains subject to considerable debate (George, 2007; Shalley, Zhou, & Oldham, 2004), possibly because creativity is considered to be driven primarily by intrinsic motivation (Amabile, 1983, 1996; Hennessey & Amabile, 1998). This widely accepted view has been supported empirically (e.g., Shin & Zhou, 2003; Tierney, Farmer, & Graen, 1999). Thus, our focus in this article is to address the still controversial role that extrinsic rewards play in the creative process.

Rather than asking whether extrinsic rewards stimulate or hinder creativity (e.g., Eisenberger & Cameron, 1996, 1998; Hennessey & Amabile,

Correspondence to: Christina Sue-Chan, Department of Management, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong S.A.R, China, Phone: 852-34428177, Fax: 852-34420309, E-mail: csuechan@cityu.edu.hk

Human Resource Management

© 2015 Wiley Periodicals, Inc.

Published online in Wiley Online Library (wileyonlinelibrary.com).

DOI:10.1002/hrm.21682

Downloaded from <http://www.elearnica.ir>

1998), a potentially more interesting way to resolve this debate is to ask whether such rewards change the nature of creativity being expressed. By expression of creativity, we refer to how creativity is shown to and consequently observed by others. Early researchers of creativity (e.g., Guilford, 1950) viewed creativity as a trait, but more recently, creativity has been examined as a behavior or outcome (e.g., Elsbach & Kramer, 2003). In the same way that organizational climate influences creative expressions (Amabile, 1996), by either encouraging or discouraging the expression of creative behaviors, so, too, would rewards influence the way in which creative impulses are expressed as ideas or behaviors. In explicitly rewarding creativity, organizations hope to shape the expression of creativity toward behaviors or suggestions that benefit the organization. Thus, changing how creativity is expressed would also have the potential to influence the creativity-performance relationship.

In explicitly rewarding creativity, organizations hope to shape the expression of creativity toward behaviors or suggestions that benefit the organization.

An examination of the way in which expressed creativity changes due to extrinsic rewards must begin with a consideration of the conceptualization of creativity. Most published organizational research has adopted Amabile's (1982, 1983) conceptualization of creativity as consisting of two dimensions, novelty and usefulness, and most empirical research has treated creativity as a unitary construct (e.g., Oldham & Cummings, 1996). Although it is clear that both are needed for creativity, an inherent tension between novelty and usefulness exists (Ford & Kuenzi, 2008; Litchfield, 2008; Yuan & Zhou, 2008), which implies that

the expression of either might be more suitable for different situations, such as when finding versus evaluating solutions (D. T. Campbell, 1960; Ford & Gioia, 2000; Osborn, 1953; Rietzschel, Nijstad, & Stroebe, 2006). Consequently, recent experimental (e.g., Yuan & Zhou, 2008) and macro organizational studies (e.g., Fleming, Mingo, & Chen, 2007) have begun to separately examine novelty and usefulness.

Creativity is not absolute or general but is relative and specific to the domain or sphere of activity in which the creative act or outcome occurs (Csikszentmihalyi, 1997). For example, Ang Lee's movie *Crouching Tiger, Hidden Dragon* was viewed as highly creative by Western reviewers, while Asian reviewers thought it was his weakest movie (Hempel & Sue-Chan, 2010; Niu & Sternberg, 2002). Given that the domain determines what is

creative, behaviors or outcomes will not be considered creative unless the creativity is directed or focused on what the domain values. What a domain or organization values is signaled through incentives (Latham & Sue-Chan, 2014). Accordingly, rewards for creativity can likewise cue employees that they need to shift the focus of their work behavior from only expressing usefulness to emphasizing novelty more.

There are thus several tightly intertwined themes here: the two components of creativity, the effect of extrinsic rewards on the expression of creativity, and the relationship between creativity and job performance. We seek to tie these themes together by integrating motivated information processing theory (Kunda, 1990) with agency theory (Eisenhardt, 1989; Kang & Yanadori, 2011; Wiseman, Cuevas-Rodriguez, & Gomez-Mejia, 2012) to investigate the yet unanswered question, "How does rewarding creativity influence the relationship between creativity and performance?"

Amabile and colleagues (Amabile, 1983, 1996; Hennessey & Amabile, 2010), while noting the critical role of intrinsic motivation in creativity, nevertheless acknowledged the positive role that extrinsic rewards could have in the creative process, depending on the information implicit in the extrinsic reward. The informational value individuals derive from extrinsic rewards can be understood using motivated information processing theory (Kunda, 1990; Nickerson, 1998). This theory states that cognitive processes are motivated and hence determined by the pursuit of different goals. Accordingly, extrinsic rewards are processed by employees for information about which goals their organization wants them to achieve. Novelty and usefulness represent unrelated goals (Litchfield, 2008), so this theory can offer insights into how extrinsic rewards support an individual's intrinsic motivation to express novel and useful behaviors. Agency theory holds that agents, the employees of organizations, often pursue goals that are independent of their principal, the employing organization (Eisenhardt, 1989). Extrinsic rewards are one means to align agent and principal goals (Kang & Yanadori, 2011) and, in the case of creativity, are a means to ensure that an employee's creative expressions are aimed at meeting organizational goals.

Creativity

Some creativity scholars refer to creativity as the ability to produce novel ideas that are task appropriate and consider it to be a "property of an individual" (Sternberg, 2001, p. 361), while others, by stating that creativity is a process of psychological engagement in a creative activity that may or may

not lead to a creative outcome, have expanded the scope of creativity to characterize the activity, not just the individual (Drazin, Glynn, & Kazanjian, 1999). Still others emphasize products or responses having attributes of novelty and appropriateness as constituting creativity (Amabile, 1982, 1983, 1988; Oldham & Cummings, 1996). The implication is that creativity is not an end in itself but does have distinct consequences, including noncreative ones. The question that arises is whether one outcome of creativity is performance. Amabile's (1982, 1983, 1988) widely adopted conceptualization of creativity reveals how creativity can be related to performance.

Amabile (1982, 1983, 1988), defined creativity as a product or response that is novel and appropriate or useful. This definition follows from Osborn's (1953) recommendation, adopted by brainstorming scholars (e.g., Rietzschel et al., 2006), to allocate the task of new idea generation (novelty) and the task of judging the feasibility or value of those ideas for solving problems (usefulness) to different individuals. In referring to creativity as a product (e.g., *a new and implementable idea* for solving a problem) or a response or action (e.g., *generating* a new and implementable idea for solving a problem), Amabile's (1982, 1983) conceptualization of creativity is broader than Drazin et al.'s (1999) as it states that the outcome of the creative process and the process of creativity can interchangeably be used to define creativity (cf. Woodman, Sawyer, & Griffin, 1993). It also, importantly, facilitates the measurement of creativity, for it recognizes that while creativity is a property or trait of individuals (Sternberg, 2001), it is expressed behaviorally. By observing behaviors, others can assess an individual's creativity. Most operationalizations of creativity in organizational research are consistent with Amabile's more encompassing conceptual definition (e.g., George & Zhou, 2001; Gong, Huang, & Farh, 2009; Oldham & Cummings, 1996; Tierney et al., 1999).

Questionnaire measures of creativity comprise items that assess novelty and usefulness as well as blend the two together, thus collapsing and integrating the two theoretical dimensions of creativity into a single dimension. Both novelty and creativity are needed for creativity to occur, but this doesn't then imply that a unidimensional measure is appropriate, as there is clear evidence that these two pathways may be independent of each other (Ford & Gioia, 2000; Grant & Berry, 2011; Mumford & Gustafson, 1988; Yuan & Zhou, 2008). For example, an individual who was useful but not novel might be described as pragmatic, while a novel individual lacking usefulness might be described as a dreamer. Different pathways

lead to these two dimensions of creativity (Ford & Gioia, 2000; Rietzschel, Nijstad, & Stroebe, 2007). Moreover, the two dimensions represent different goals (Litchfield, 2008), and some researchers have concluded that various states, traits, and cognitive and affective processes influence the two dimensions of creativity in dissimilar ways (DeDreu, Baas, & Nijstad, 2008; Ford & Kuenzi, 2008).

Creativity and Performance

Numerous theories of creativity are concerned with what influences creativity (Amabile, 1988, 1996; Drazin et al., 1999; Elsbach & Hargadon, 2006; Perry-Smith & Shalley, 2003; Sternberg, 2001; Woodman et al., 1993). They are incomplete because they do not explain how creativity influences performance. The distinct cognitive and psychological processes associated with novelty and usefulness (Grant & Berry, 2011; Litchfield, 2008; Yuan & Zhou, 2008) provide a means of understanding how these two dimensions of creativity are related to performance.

Drawing from D. T. Campbell's (1960) variation-selection-retention theory of creativity, scholars have suggested that novelty is variance inducing while usefulness is variance reducing (Ford & Kuenzi, 2008; Yuan & Zhou, 2008). Originality or novelty requires variation in the number of ideas produced as well as the uncommonness of ideas produced (De Dreu et al., 2008; Yuan & Zhou, 2008). It is this part of creativity that requires people to go beyond "the average, the routine, the normal, the habitual" (Weiner, 2000, p. 253). This can be achieved only by disregarding rules, standards, established role expectations, and norms of rationality (Glaveanu, 2011; Weiner, 2000). However, ideas or solutions that deviate too much from existing norms, organizational rules, technologies, policies, and practices are unlikely to be accepted as useful or valuable (Csikszentmihalyi, 1997; Ford & Kuenzi, 2008), and their proposers could be labeled as crazy (Weiner, 2000) or even harmful for suggesting "strange doctrine" that ignores established routines and tradition (Niu & Sternberg, 2006, p. 32). That creativity incorporates usefulness ensures that people will produce creative ideas that would not be dismissed as crazy or harmful. The process of generating useful ideas or solutions effectively reduces the variance in ideas or solutions to those that can be incorporated into a familiar set of proven solutions. This aspect of creativity is critical for organizational effectiveness, for it enables the production of ideas that improves upon already existing products or processes without deviating from the core character of the product or functioning of the process (Litchfield, 2008; March, 1991).

From the employees' perspective, determining whether novelty or usefulness should be expressed to solve the problems that must be overcome to achieve organizational goals requires processing the information cues available in their organizational environment (cf. Mischel & Shoda, 1995). Of the two dimensions of creativity, we argue that usefulness *always* contributes to job performance. This is because performance is "the total population of behaviors and activities that are judged to be important for accomplishing the goals of the organization" (C. H. Campbell et al., 1990, p. 278). Motivated information processing theory states that people cognitively process and act on information that is consistent with their goals (Kunda, 1990; Nickerson, 1998). Organizations such as

The agency theory perspective leads to the conclusion that extrinsic rewards are needed to ensure that employee creative impulses are directed toward expressions of creativity that meet organizational objectives rather than personal employee objectives.

Motorola, for example, routinely set performance goals for employees when they annually review their performance, the achievement of which will accrue rewards for employees (Motorola, n.d., para. 1, 3). Achieving performance goals for which they are accountable will motivate employees to focus on producing useful ideas or solutions because people cognitively process information in such a way that their conclusions support their prior beliefs and expectancies (Kunda, 1990; Nickerson, 1998). A belief that people have is that the most useful ideas are the ones that effectively solve problems (Grant & Berry, 2011) that are obstacles to attaining desired levels of performance. Absent signals from the organization to act differently, people will continue to produce ideas for solving problems that are useful and appropriate within the boundaries

of established routines because this allows them to efficiently attain the goals of their organization (March & Simon, 1958).

Novelty, in contrast, is unlikely to always be important for accomplishing organization goals and thus is unrelated to performance. This is because novelty requires a departure from routine performance and expected norms of behavior (Ford & Kuenzi, 2008; Weiner, 2000) and requires risk taking. Unless individuals receive support for their risk taking (Madjar, 2008), they are unlikely to undertake such activity. We thus hypothesize the following:

Hypothesis 1: Usefulness is more positively related to job performance than is novelty.

So far, we have argued that solutions to problems that are useful or appropriate are positively related to performance, whereas novelty, the "defining feature of creativity" (Niu & Sternberg, 2006, pp. 24, 34), is not because to be novel is to go beyond accepted norms and routines (Weiner, 2000). Following routines, though efficient for accomplishing the goals of an organization (March & Simon, 1958), can, however, also be a source of inertia (Hannan & Freeman, 1983) and inflexibility (Gersick & Hackman, 1990) that thwarts the expression of novelty. For this reason, being novel could be harmful for individuals who may be sanctioned for not complying with norms and following routines (Amabile, 1983; May, 1975). For novelty to be related to performance, employees must perceive that there is a clear signal that rather than being sanctioned for their novelty, they will be supported. Reward for creativity is one way to provide that clear signal.

The Moderating Effect of Reward for Creativity

The central theoretical question addressed by this article concerns the relationship between extrinsic rewards and creativity. Much of the existing research (e.g., Dul et al., 2011; George, 2007; Shalley et al., 2004) has focused on extrinsic rewards as an antecedent of creativity, so that extrinsic rewards act to increase or decrease the level of expressed creativity. The former position is advocated and empirically demonstrated by Eisenberger and colleagues (e.g., Eisenberger & Cameron, 1996, 1998), while the latter is theorized to occur because extrinsic rewards are thought to undermine the positive effect of intrinsic motivation on creativity (Amabile, 1982, 1983).

In addition to hopefully motivating higher creativity, extrinsic rewards also serve another function, which is to both signal organizational objectives and direct employees' behaviors toward those objectives (Eisenhardt, 1989; Wiseman et al., 2012). When creativity is driven by personal and intrinsic motivations (Amabile, 1982, 1983), there is no guarantee that employee creativity is directed toward organizational objectives, and thus extrinsic rewards can help ensure the congruence of individual and organizational goals underlying creativity.

The overall effectiveness of extrinsic rewards in enhancing creativity thus seems to be unclear, and this is reflected in the empirical evidence (for a review, see Hennessey & Amabile, 2010). The agency theory perspective leads to the conclusion that extrinsic rewards are needed to ensure that employee creative impulses are directed toward expressions of creativity that meet organizational

objectives rather than personal employee objectives. At the same time, the argument that creativity is mainly driven by intrinsic motivation leads to the conclusion that reliance on extrinsic rewards would drive out the intrinsic motivation to be creative.

The recognition that creativity consists of two distinct components, novelty and usefulness, provide one way of resolving this seeming contradiction. Rather than discussing whether extrinsic rewards enhance or suppress creativity, a more insightful question would be to ask whether extrinsic rewards change the way in which creative impulses are expressed. By providing extrinsic rewards for creativity, organizations are explicitly signaling that creativity is a key outcome. Motivated information processing theory suggests that people selectively process and act on information that is consistent with their goals and expectations (Kunda, 1990; Nickerson, 1998). By tying rewards to creativity, employees are motivated to turn their cognitive efforts toward creativity and are more likely to express ideas or behaviors that are creative in nature.

In focusing their cognitive efforts on creativity, employees will rely on their implicit theories of creativity, which tend to heavily emphasize the novelty aspect of creativity (Gilson, 2008; Rietzschel et al., 2007). Some have argued that “novelty is the defining feature of creativity” in modern Eastern and Western societies (Niu & Sternberg, 2006, pp. 24, 34). Absent rewards for creativity, creative individuals will still be creative, but the focus will be to generate ideas that satisfy the individual’s goals. However, when creativity is being rewarded, the employee will be focusing his/her creativity on *novel* ideas that are congruent with organizational goals. This is the enabling function of extrinsic rewards (Hennessey & Amabile, 2010)—to signal to employees that the expression of their creativity is supported by the organization.

Note that we do not argue that people become more novel when they perceive they are being rewarded for creativity. When an employee is creative to satisfy internal desires, the novel ideas generated are not necessarily directed toward organizational goals. When employees are being rewarded for creativity, they make sure that the novelty they express is directed toward attaining goals valued by the organization. Given that employee performance is defined based on the achievement of goals set by the organization (C. H. Campbell et al., 1990), rewarding creativity will lead to novelty being more strongly related to performance.

A final point to be made is that it is cognitions related to rewards that motivate employees to seek novel solutions that satisfy organizational objectives. Research examining the relationship between extrinsic rewards and performance suggests that it is the perception of reward rather than actual rewards that may be the more relevant construct. St. Onge (2000) found that actual pay for performance was only one factor that influenced employees’ pay perceptions, while Heneman and Werner (2005) concluded that merit pay plans require employees to perceive a relationship between pay and performance.

We thus hypothesize:

Hypothesis 2a: Reward for creativity would moderate the relationship between novelty and performance, so that high levels of reward would be associated with a stronger (positive) relationship between novelty and performance.

Employees understand that in a business setting they need to be both novel and useful. This leads employees to focus on generating novel ideas that will help achieve organizational goals, which means that those novel ideas need to be potentially useful and of value to the organization.

Absent rewards for creativity, employees will be concentrating on job performance, which requires them to be generating useful ideas about how to perform well. The situation changes somewhat when people perceive that they are being specifically rewarded for creativity. Employees understand that in a business setting they need to be both novel and useful (Amabile, 1982, 1983; Gilson, 2008; Rietzschel et al., 2006). This leads employees to focus on generating novel ideas that will help achieve organizational goals, which means that those novel ideas need to be *potentially* useful and of value to the organization. The notion of offering external incentives to spur novelty that is potentially useful is not new. Ever since the early 1700s, before the first Industrial Revolution, when Great Britain began to offer monetary rewards to its citizens to spur novel solutions to technological problems (Weiner, 2000), society has explicitly offered extrinsic rewards to individuals to produce novel solutions of potential value to society. In rewarding creativity, and thus emphasizing novelty, the organization also shifts employees’ focus from job performance (actual usefulness) to potential usefulness. We are not arguing that employees will cease to be useful; rather, in shifting their focus to ensuring that their novelty is congruent with performance objectives, the actual usefulness of

their ideas may diminish. This is because novelty requires a departure from norms, routines, and other habitual behaviors that had previously been useful but may no longer be so valuable in terms of helping the organization achieve its goals. We accordingly hypothesize the following:

Hypothesis 2b: Reward for creativity would moderate the relationship between usefulness and performance, so that high levels of reward would be associated with a weaker relationship between usefulness and performance.

So far, drawing from motivated information processing theory (Kunda, 1990; Nickerson, 1998), we have suggested that rewards for creativity will serve as a contextual cue that will make salient organizational support for being creative. We suggest that this cue will shift people's focus to expressing their creativity in ways that will help them to achieve the performance objectives set by their employers, rather than using their creativity to achieve their own intrinsically driven objectives. Consistent with motivated information processing theory (Kunda, 1990), we have hypothesized that employees under conditions of perceived reward for creativity do not express more of their novelty or usefulness traits. Rather, they simply alter their expression of novelty so that it meets organizational performance objectives. At the same time, as attention is shifted toward novel ideas with potential usefulness, less attention is devoted to actual usefulness and performance.

The use of extrinsic rewards is thus expected to create offsetting reactions in employees. Novel ideas that serve organizational objectives are generated, while emphasis is shifted away from actually useful behaviors toward potentially useful creative behaviors. This shift is unlikely to be detected when creativity is operationalized as a one-dimension measure that combines novelty and usefulness in the same scale or even item. Accordingly, our final hypothesis is as follows.

Hypothesis 2c: The moderating role of reward for creativity in the creativity-performance relationship is more observable when novelty and usefulness are discrete rather than integrated in a single dimension.

Method

As published measures of creativity have integrated the two dimensions of creativity into unitary scales (e.g., Oldham & Cummings, 1996), we needed to more distinctly separate the two dimensions in order to allow a test of our hypotheses. We thus adapted existing measures of creativity by

following Hinkin's (1995) recommendations for developing valid scales. Consistent with the belief that creativity is inherent in all individuals (e.g., Sternberg, 2001; Weiner, 2000), the participants in our scale validation studies were adults currently studying full-time or part-time.

Adaptation of Existing Measures of Creativity

It is important to note that our purpose was not to develop a new measure of creativity but to adapt existing measures in order to more clearly differentiate the two dimensions of creativity. We did this in two steps, each using different samples. The first step was to adapt existing creativity instruments (e.g., Choi, 2004; George & Zhou, 2001; Tierney et al., 1999) to a two-dimensional instrument using exploratory factor analysis (EFA). This first step was preceded by input from field experts, namely, 20 managers and professional employees who were asked to provide critical incidents of creativity that they experienced or witnessed at work. The second step was to collect an independent sample, and to use confirmatory factor analysis (CFA) to confirm the dimensionality of the instrument obtained in the first step. The CFA also allowed us to show that these two dimensions, while distinctive from each other, are constituent components of an overall creativity factor that is also related to Oldham and Cummings's (1996) unitary, integrated measure of creativity.

In brief, the first step, using a sample of 224 full-time, Year 2 management students attending one of the universities in Hong Kong to conduct a principal components EFA to explore the dimensionality of items measuring creativity, derived from previously published literature and supplemented by input from managers and professionals, revealed a two-factor structure for our measure of creativity consisting of a set of six items each for novelty ($\alpha = .88$) and usefulness ($\alpha = .76$). The two factors, each with eigenvalues greater than 1.0, accounted for a cumulative variance of 55.27 percent. Item loadings ranged between .54 and .84. The final 12 items and their loadings appear in Table I.

A brief commentary on the face validity of these items is necessary. Considering that these items are largely extracted from previously published items, consistent with research that has built upon Amabile's (1983) and Drazin et al.'s (1999) conceptualization of creativity (Gong et al., 2009; Zhou & George, 2001), it is unsurprising that our items assess participants' ability to produce creative products, broadly defined as outcomes ("I have *original ideas*") as well as creative processes ("I *generate* unprecedented solutions to

TABLE I EFA Study: Factor Loadings of Items Assessing Novelty and Usefulness

	Novelty	Usefulness
I have <i>original</i> ideas.	.672	
I often have a <i>fresh</i> approach to problems.	.801	
I have a <i>unique</i> perspective.	.747	
I generate <i>unprecedented</i> solutions to a problem.	.811	
My solution is often <i>different</i> from traditional ways of doing a task.	.755	
My solution is <i>out-of-the box</i> .	.835	
I develop solutions focused on the <i>needs of the user</i> , not on the functions of a product.		.641
I produce <i>simple</i> solutions to problems.		.544
I <i>identify</i> opportunities for <i>implementing</i> new products/processes.		.621
I develop adequate <i>plans</i> for the <i>implementation</i> of new ideas.		.636
I <i>integrate</i> multiple perspectives in a <i>constructive</i> manner.		.707
I <i>combine</i> ideas in a <i>constructive</i> manner.		.748

a problem"; "I *integrate* multiple perspectives in a constructive manner") because creativity has been measured as the production of an outcome as well as a process (Woodman et al., 1993). It is also noteworthy that some of our usefulness items (e.g., "I *identify opportunities* for implementing new products/processes") may appear to be measures of innovation. Our items, however, are consistent with conceptual definitions of usefulness as being able to find or identify ways to make a novel idea or solution an appropriate or implementable solution to a problem (Hennessey & Amabile, 2010). Finally, an examination of some of our items may raise questions about how clearly our EFA was able to differentiate novelty from usefulness items. All of our novelty items capture some aspect of being different, deviating from the old, newness, or disregard of rules, while all usefulness items have some aspect of value, complying with rules, fitting in with the old.

The results of Step 1 suggest that novelty can be differentiated from usefulness. To verify the divergent validity of our measure, and to assess its convergent validity with a previously validated measure of creativity (Oldham & Cummings, 1996), we proceeded to Step 2 to confirm the two-dimension structure of creativity.

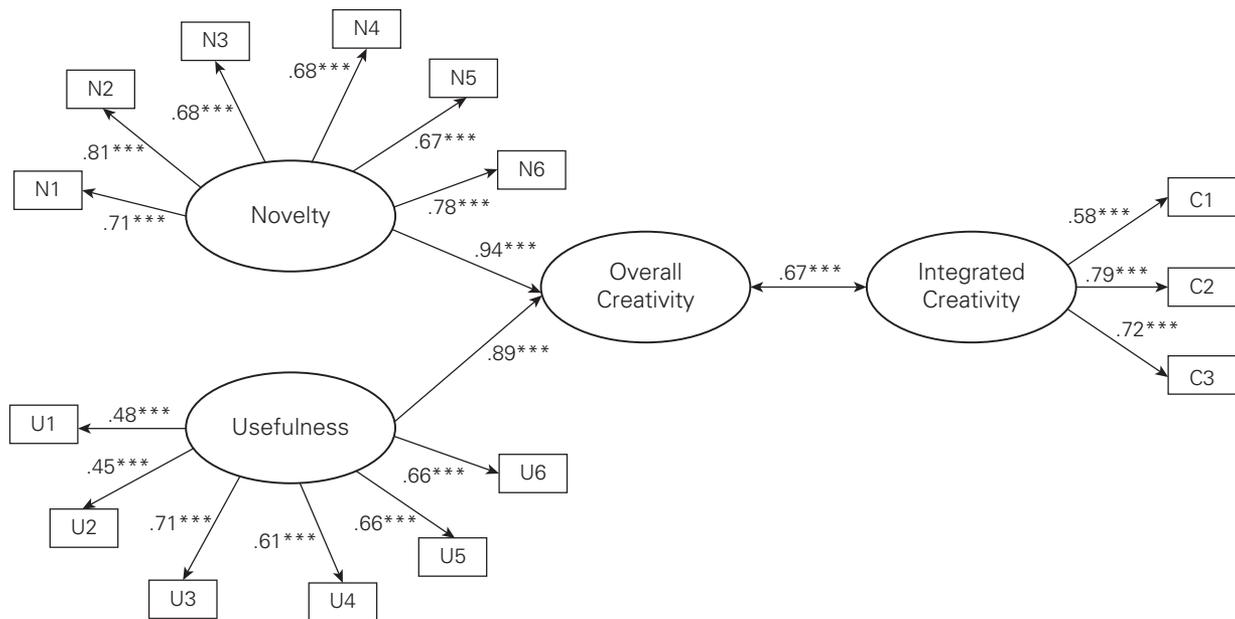
In Step 2, we used CFA to confirm the factor structure of the 12-item measure established in Step 1 (cf. Farh, Cannella, & Lee, 2006). The sample for this step was 264 Year 2 management students attending one of the universities in Hong Kong. The 12 items developed in Step 1 to assess novelty and usefulness (see Table I) along with Oldham and Cummings's (1996) 3-item integrated measure of creativity were administered to our participants.

For the CFA, we modeled a second-order factor analysis with the items assessing novelty and usefulness loading on a second-order creativity factor and the Oldham and Cummings items assessing integrated creativity loading on a first-order factor.

The CFA of the items indicated that the theoretical model provided a good fit to the data (χ^2 [87, $N = 264$] = 149.01, $p < .001$, comparative fit index [CFI] = .95; Tucker-Lewis index [TLI] = .94; root mean square error of approximation [RMSEA] = .05; standardized root mean square residual [SRMR] = .05) according to traditionally accepted guidelines (e.g., Bentler & Bonett, 1980). All of the item loadings were significant at the $p < .001$ level. Moreover, novelty and usefulness had significant loadings ($p < .001$) on the second-order creativity factor of .94 (novelty), and .89 (usefulness). This second-order creativity factor was also significantly related (.67) to Oldham and Cummings's (1996) integrated creativity factor. The integrated measure of creativity ($\alpha = .72$) was

distinct though related to our two dimensions of novelty ($\alpha = .87$) and usefulness ($\alpha = .77$). This second-order model fit the data better than a first-order, one-factor model consisting of novelty, usefulness, and the integrated measure of creativity (χ^2 [248.38, $df = 90$, $N = 264$]: CFI = .87; TLI = .85; RMSEA = .08; SRMR = .06; [$\Delta\chi^2$ (3, $N = 264$) = 65.99, $p < .0001$]). The relationships among novelty, usefulness, and integrated creativity (Oldham & Cummings, 1996) are depicted in Figure 1. These

All of our novelty items capture some aspect of being different, deviating from the old, newness, or disregard of rules, while all usefulness items have some aspect of value, complying with rules, fitting in with the old.

**Notes:**

N = 264.

Standardized coefficients shown.

All loading greater than *** $p < .001$ (two-tailed). χ^2 (df = 87): 149.01***; CFI = .95; TLI = .94; RMSEA = .05; SRMR = .05.**FIGURE 1.** CFA Study: Relationships among Novelty, Usefulness, and Integrated Creativity

results support our measure of creativity as consisting of, yet clearly differentiated between, novelty (six items) and usefulness (six items) that is also related to an integrated measure of creativity (three items).

Main Study Design

To minimize concerns about common method bias, we collected our data from both employees and their supervisors. Subordinates' performance was assessed by their supervisors. We also asked supervisors to assess their subordinates' creativity that clearly differentiated novelty from usefulness as well as provide an integrated assessment of their subordinates' creativity using the Oldham and Cummings (1996) scale. Asking supervisors to report on their subordinates' creativity rather than asking employees to self-report their own creativity is consistent with Csikszentmihalyi's (1997) view that the field or community of expert in which creativity is expressed determines what constitutes creativity as well as Amabile's (1983) view that what is considered to be creative is a subjective evaluation.

Subordinates reported their perception of whether they are being rewarded for being creative, which is in response to Heneman and Werner (2005), who called for researchers to pay more attention to perceptions of rewards received.

Asking subordinates for their perception of the social cues in their environment is also consistent with motivated information processing theory, which states that people selectively process information cognitively in order to draw conclusions that would support their prior beliefs and expectations (Kunda, 1990). Practically, asking employees for their perception of whether they are being rewarded for creativity is also consistent with Kerr (1975), who cautioned against the folly of assuming that what organizations are actually rewarding (A) (e.g., attendance) is equivalent to what they are hoping to reward (B) (e.g., performance). Kerr argued that the folly results from a mismatch in employers' perception of what they are rewarding and what they are actually rewarding. Motivated information processing theory (e.g., Grant & Berry, 2011; Kunda, 1990) suggests that employee perceptions could also result in a mismatch between A and B, hence the need to directly measure employees' reward perceptions.

Sample

Consistent with Axtell et al. (2000) and Madjar (2008) that any employee in any job can have creative ideas, we surveyed the creativity of employees working in a company providing short-term accommodation to travelers. The company, located in northern China, is managed by a global hotel operator. The founders of the global

operation were guided by their values of organizing and managing creatively in an industry with well-defined hierarchies, job titles, and job descriptions; presumably, these values were a reason why our study site was receptive to a scholarly investigation of employee creativity. The organization in Beijing employs approximately 550 employees. We obtained completed questionnaires from approximately half of these employees ($n = 310$), who reported to 50 different supervisors.

The sample was 46 percent male and 54 percent female, with an average age of 30.72 (standard deviation [SD] = 9.74) years. The majority (52 percent) were educated up to the high school level, while an additional 26 percent had a post-secondary qualification and a further 17 percent had at least a bachelor's degree. Participants had, on average, 9.96 (SD = 9.54) years of full-time work experience. The 50 supervisors to whom these 310 participants reported had an average age of 39.36 years (SD = 8.52), and 56 percent were female.

Procedure

Participants were asked to complete the questionnaires during normal working hours. A research assistant answered any questions respondents had regarding understanding of the items on the questionnaires while they completed the questionnaires. Supervisors completed their assessment of employees' novelty, usefulness, integrated creativity, and performance in one session approximately one month after employees completed the measure of reward for creativity.

Measures

The original English version of all measures was translated into simplified Chinese by following the commonly used translation-back translation procedure (Brislin, Lonner, & Thorndike, 1973). All variables, with the exception of performance, were rated on 6-point Likert-type scales (1 = definitely disagree; 6 = definitely agree). Performance was assessed on a 7-point Likert-type scale (1 = very poor; 7 = excellent). Because supervisors rated multiple participants, scale properties were evaluated using Cronbach's alpha as well as multilevel confirmatory factor analyses (MCFA) in order to control for any potential supervisor effects.

Reward for Creativity

This was self-assessed by subordinates using a five-item measure ($\alpha = .93$) ("In this company, individual creativity is rewarded"; "This company rewards employees for developing novel responses"; "This company rewards employees for appropriate responses"; "Employees in this company receive special recognition for unique contributions";

"This company rewards employees for novel and appropriate responses") adapted from published measures of this construct (Baer, Oldham, & Cummings, 2003; George & Zhou, 2002). Consistent with previous research (e.g., George & Zhou, 2002), we used a measure of reward that required employees to provide responses about when they were novel only, useful only, and novel and useful at the same time so that the concept of creativity rather than its separate dimensions would be salient. In part, this is driven by the practices of organizations that reward "creativity" rather than "novelty" and "usefulness." This also allowed us to provide a more robust test of our hypotheses, as respondents would be responding based on their implicit theory of creativity.

We did not ask about specific reward practices in the organization for theoretical and statistical reasons. St. Onge's (2000) findings show that reward perceptions are influenced more by employee perceptions than the actual pay-performance relationship. Heneman and Werner (2005) also noted that examinations of perceptions of rewards have been neglected in empirical research. Statistically, within the context of a single organization with the same pay structure, because perceptions are variable and actual pay is not, perceptions of extrinsic rewards would likely generate the required variance necessary to detect statistically significant relationships. The MCFA indicated a satisfactory fit ($\chi^2 = 24.04$, $df = 11$, $CFI = .97$, $TLI = .95$, $RMSEA = .06$, $SRMR_{within} = .04$).

Novelty

Novelty was assessed using the same six items ($\alpha = .89$) we described earlier (Table I). In the main study, however, supervisors rated subordinates on these items. Use of observers' assessment is a common practice in contemporary creativity research (Davis, 2009). Thus, the items were adapted for this purpose and preceded by the instruction, "Please indicate the extent to which you disagree/agree with the following statements describing the work of your employee" (sample item: "The perspective was unique"). The MCFA indicated a satisfactory fit ($\chi^2 = 21.89$, $df = 19$, $CFI = .99$, $TLI = .99$, $RMSEA = .02$, $SRMR_{within} = .04$).

Usefulness

Usefulness was assessed using the same six items ($\alpha = .86$) we described earlier (Table I). As with the measure of novelty, supervisors evaluated subordinates' usefulness and the items were adapted accordingly and preceded by the same instruction described earlier (sample item: "Opportunities for implementing new products/processes were identified"). A multilevel CFA indicated a satisfactory

fit ($\chi^2 = 30.21$, $df = 18$, $CFI = .97$, $TLI = .95$, $RMSEA = .05$, $SRMR_{within} = .03$).

Integrated Creativity

Creativity as an integrated, unitary variable was assessed using the three items ($\alpha = .84$) developed by Oldham and Cummings (1996). The items were assessed by the participants' supervisor. The MCFA indicated a satisfactory fit ($\chi^2 = .02$, $df = 1$, $CFI = 1.00$, $TLI = 1.00$, $RMSEA = .00$, $SRMR_{within} = .00$).

Performance

Supervisors assessed three different components of their subordinates' performance using Ancona and Caldwell's (1992) measure (i.e., adherence to schedule; adherence to budget; work excellence). The Cronbach alpha reliability coefficient was $\alpha = .93$. The MCFA indicated a satisfactory fit ($\chi^2 = 0.00$, $df = 0$, $CFI = 1.00$, $TLI = 1.00$, $RMSEA = .00$, $SRMR_{within} = .00$).

Results

The correlation coefficients among the variables are shown in Table II. We proposed no cross-level effects; however, employees (level 1) were nested within supervisors (level 2); thus, the data had multilevel characteristics. In order to account for the potential biasing effects of between-group variance (i.e., supervisory effects) (Hofmann, Griffin, & Gavin, 2000), we used the MPlus software program (Muthén & Muthén, 1998–2007) to conduct our multilevel path analysis. We selected supervisors' age and sex as the level 2 control variables. The intraclass correlations (ICC(1) and (2)) for performance, the between-level dependent variable, was .44 and .82, supporting the appropriateness of our multilevel analyses (Bliese, 2000; Carvajal, Baumler, Harrist, & Parcel, 2001). Subordinates' demographic characteristics were not significant, and were therefore not included as control variables in the final model.

In support of our first hypothesis, usefulness ($b = .37$, $p < .01$) but not novelty ($b = .15$, ns) was positively related to performance. Reward for creativity had a positive moderating effect on the relationship between novelty and performance ($b = .26$, $p < .001$), supporting Hypothesis 2a, while it had a negative moderating effect on the relationship between usefulness and performance ($b = -.20$, $p < .05$), thus supporting Hypothesis 2b. The fit of this model was acceptable (χ^2 ($df = 6$) = 22.25, $p < .01$; $CFI = .96$; $TLI = .90$; $RMSEA = .09$; $SRMR_{within} = .06$). Figure 2a shows the model testing our Hypotheses 1, 2a, and 2b.

To further demonstrate the utility of examining novelty and usefulness separately, we combined

our novelty and usefulness items to form a single measure of creativity consisting of novelty and usefulness. Our measure of creativity that combined novelty and usefulness together for analytical purposes does not have a significant moderating effect associated with reward for creativity ($b = .05$, ns).

Finally, as per Hypothesis 2c, the model using integrated creativity (Oldham & Cummings, 1996), as shown in Figure 2b, does not have a significant moderating effect associated with reward for creativity ($b = .06$, ns). This result supports Hypothesis 2c. The fit of this model was also acceptable (χ^2 ($df = 0$) = 0, ns ; $CFI = 1.00$; $TLI = 1.00$; $RMSEA = .00$; $SRMR_{within} = .00$). These index values indicate that the model is just identified and no other models can fit the data.

Examining the interaction effect on performance more closely using the Aiken and West (1991) interaction probing procedure (see Figure 2c), we found that novelty had an effect on performance under high levels of perceived reward for creativity ($b = .37$, $p < .05$, 95 percent confidence interval [CI]: $.04 < b < .70$). In contrast, it was only under low levels of perceived reward for creativity that usefulness is significantly related to performance ($b = .53$, $p < .0001$, 95 percent CI: $.32 < b < .76$). Thus, perceived reward for creativity can enhance the influence of novelty on performance while reducing the influence of usefulness on performance. These contrasting effects would not have been identified in studies using a single-dimension, integrated measure of creativity.

Discussion

Amabile (1996) had concluded that creative performance is distinct from ordinary performance because extrinsic rewards undermine the former while facilitating the latter. This argument was likely influenced by Deci and Ryan's (1985) earlier work on cognitive evaluation theory (CET), which found that intrinsic motivation was undermined by extrinsic rewards. In contrast, Eisenberger and his colleagues, testing their own interpretation of CET, found that expected pay-for-performance enhances creativity, operationalized as an integrated, unidimensional construct. They found that this was because pay-for-performance leads individuals to perceive that they have self-determination or performance pressure, both of which then act on their intrinsic interest, which subsequently influences their creativity (e.g., Eisenberger & Aselage, 2009). This result is similar to the earlier goal-setting theory (Locke & Latham, 1990) finding that assigned, external goals become intrinsic or personal goals once people commit to the external goals (Meyer & Gellatly, 1988). Rather than viewing external rewards for creativity as an "either-or"

TABLE II Correlations among Study Variables

Variable	Mean	s.d.	Supervisor's Age	Supervisor's Sex	Age	Sex	Work Experience	Reward for Creativity	Novelty	Usefulness	Integrated Creativity	Performance
Supervisor's Age	39.36	8.52	–									
Supervisor's Sex	.56	.50	-.51**	–								
Age	30.72	9.74	.36**	-.16**	–							
Sex	.54	.50	-.11	.38**	-.02	–						
Work Experience	9.96	9.54	.35**	-.18**	.85**	-.05	–					
Reward for Creativity	3.97	1.03	.02	.11*	-.05	.13*	.05	.93				
Novelty	4.05	.82	-.07	.17*	-.09	.11	-.14*	.24**	.89			
Usefulness	4.31	.70	-.04	-.02	-.07	-.06	-.13*	.22**	.77**	.86		
Integrated Creativity	4.08	.71	-.04	.02	.01	.05	.01	.20**	.54**	.62**	.84	
Performance	4.81	.95	-.11	.14*	-.06	.14*	-.08	.26**	.41**	.45**	.45**	.93

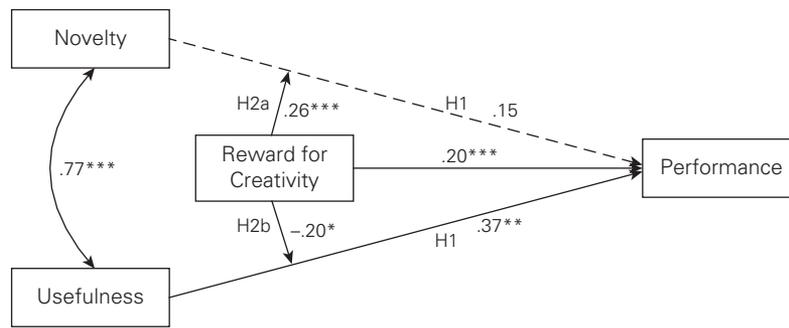
Notes:

N = 310.

Cronbach's alpha coefficients on diagonal.

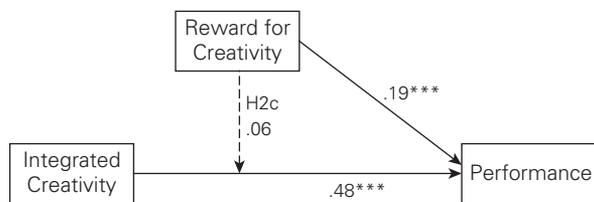
* $p < .05$ (2-tailed), ** $p < .01$ (two-tailed).

Data were reported by employees' supervisors except age, sex, work experience, and reward for creativity, which were self-reported by employees.



Notes:
 N = 310.
 Standardized coefficients shown.
 * $p < .05$ (2-tailed); ** $p < .01$ (two-tailed); *** $p < .001$ (two-tailed).
 χ^2 (df = 6) = 22.25, $p < .01$; CFI = .96; TLI = .90; RMSEA = .09; SRMR_{within} = .06.

FIGURE 2A. Path Diagram Depicting Moderating Influence of Reward for Creativity on the Relationships between Novelty/Usefulness and Performance



Notes:
 N = 310.
 Standardized coefficients shown.
 * $p < .05$ (2-tailed); ** $p < .01$ (two-tailed); *** $p < .001$ (two-tailed).
 χ^2 (df = 0) = 0, ns; CFI = 1.00; TLI = 1.00; RMSEA = .00; SRMR_{within} = .00.

FIGURE 2B. Path Diagram Depicting Moderating Influence of Reward for Creativity on the Relationship between Integrated Creativity and Performance

proposition (harmful or beneficial), our theoretical contribution is to demonstrate that rewards for creativity can influence the association between creativity and ordinary performance, either positively or negatively, depending on which dimension of creativity is emphasized. This finding supports motivated information processing theory (Kunda, 1990; Nickerson, 1998), which states that because people pursue different goals, they differentially process and act on information that supports their prior beliefs (e.g., I was rewarded because my useful ideas and solutions contributed to my performance that was valuable for attaining organizational goals) and expectations (e.g., I am now rewarded because my novel ideas and solutions contribute to my performance that is of value for attaining organizational goals). Novelty and usefulness represent two different goals (Lichtfield, 2008). When people perceive that creativity is less likely to be rewarded, they ensure that their usefulness is important for performance. When they perceive that creativity is more likely

to be rewarded, they express their novelty in such a way as to ensure that their novelty is related to performance, that is, valuable to the organization. When people are being rewarded by the organization for creativity, they understand that they need to express both novelty and potential usefulness, not just usefulness. In these situations, they would be more likely to apply their creative ideas to areas that satisfy organizational objectives. That reward for creativity effects this shift also supports agency theory, which states that goal alignment between heretofore independent principal and agent goals can be accomplished through the usage of a human resource practice, namely, rewards (Kang & Yanadori, 2011).

These contradictory relationships are not apparent when creativity is examined as a combined, unidimensional construct since unitary measures of creativity do not allow us to see which of the two aspects of creativity are emphasized. Our theoretical contribution is to show that novelty and usefulness have different consequences, with the moderating effect of reward for creativity having differential impacts on the relations between each of the two conceptual dimensions of creativity and performance. These results, as we showed, would not have been apparent with traditional, integrated measures of creativity that combine novelty and usefulness together in a unidimensional scale. Reward for creativity enhances the association between novelty and performance, dampens the relationship between usefulness and performance, and has no influence on the relationship between integrated creativity and performance. In other words, reward for creativity shifts how creativity is related to performance. This article thus adds an additional link to a more comprehensive model of creative behavior as called for by Amabile (1996) by viewing rewards for creativity

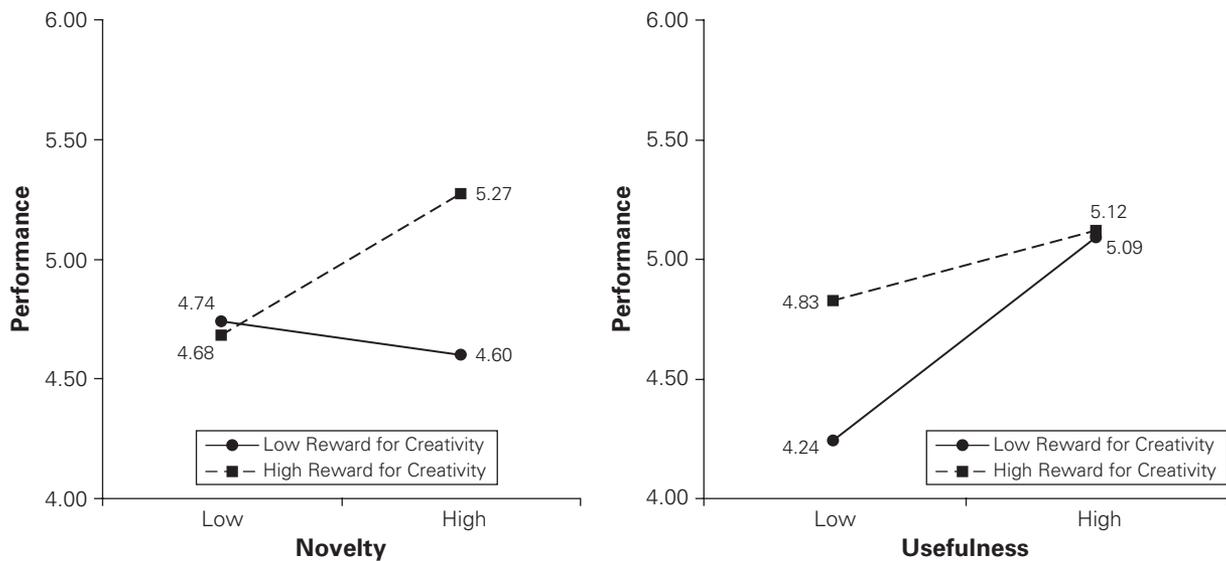


FIGURE 2C. Interactive Effects of Novelty/Usefulness and Reward for Creativity on Employees' Performance

not as an antecedent of creativity but as a contextual cue for employees to express their creativity in a way that contributes to their performance. Rewards have long been considered an important HRM practice that signals what employees need to do to gain favorable performance evaluations (Latham & Wexley, 1994). From the perspective of motivated information processing theory (Kunda, 1990; Nickerson, 1998), knowing that creativity will be rewarded changes employees' focus on what aspect of their job performance needs to be emphasized. This means ensuring that their novelty is related to their performance. When rewards are not perceived to be offered, however, employees focus more on being useful in order to attain their expected performance goals.

Perhaps the most important result of this research is that it reinforces the idea that the novelty and usefulness components of creativity should be examined separately (e.g., Rietzschel et al., 2006). Our findings show that when creativity is rewarded, individuals tend to focus on the novelty aspect of creativity, to the detriment of useful-oriented work behaviors. Our explanation for this lies in the fact that people's implicit theories of creativity emphasize novelty. Given the importance of both novelty and usefulness, the implication is that researchers continue further examining how to differentially influence both of these criteria. There are a number of avenues through which novelty and usefulness might be usefully examined separately. For example, a temporal approach to the creativity-performance relationship could start by emphasizing novelty in the early stages of a project, and then shift

to emphasizing usefulness in later stages. This approach to examining novelty and usefulness as separate dimensions through time could prove valuable in teasing out the way in which creativity enables innovation.

A possible limitation of our research is that the moderator variable we examined, reward for creativity, previously had been found to be related to creativity (e.g., Dul et al., 2011). We did not offer this as a hypothesis but did find support for it (Table II). However, the inclusion of previously examined variables allows us to advance theory by showing that rewards for creativity function in a different way—to shift the focus from being useful to being novel as a way to attain performance goals. To further increase the generalizability of our findings regarding novelty and usefulness, however, other contextual variables should be examined in future research. For example, we examined only reward for creativity as a moderator of the effects of novelty and usefulness on performance. Other characteristics of organizations, such as safety climate, may enhance rather than inhibit the relationship between usefulness and performance while simultaneously inhibiting rather than enhancing the novelty–performance relationship. This is because performance in a workplace that values safety would place a premium on error-free performance. Because the variance-increasing properties of novelty are inherently risk prone while the variance-decreasing characteristics of usefulness are innately risk averse, it is reasonable to expect opposite effects for safety climate as a moderator than were observed in the current study for reward for creativity.

Common method variance could be raised as another limitation of this research because supervisors assessed subordinates' novelty, usefulness, creativity, and performance. However, Evans (1985) and, more recently, Siemsen, Roth, and Oliveira (2010) demonstrated that significant moderation effects cannot be artifacts of common method variance.

While our sample provided a conservative test for our study hypotheses since it was collected from an industry not known for requiring creativity to survive (as noted by the founders of the organization from which we drew our sample), it may be a limitation. Would our results generalize to other industries where creativity is more vital to survival and growth, such as the pharmaceutical or electronics industry?

Managers should reward creativity if they want employees to be more novel but continue to reward only performance if they want their employees to continue to be useful.

In such industries, novelty or thinking outside the box is highly prized, and we would thus expect even more pronounced moderation effects than observed in the current study.

Implications for Managerial Practice

Simply put, our results show that organizations get what they pay for. Organizations need to think carefully about what they want before setting up reward systems related to creativity. They also need to ensure that the reward system signals what they are seeking by measuring employees' perception of what they are being rewarded for. This is because people's implicit theory of creativity emphasize novelty, and rewarding "creativity" may be misconstrued as rewarding "novelty" only, without concern for usefulness.

Managers who are responsible for motivating their subordinates to express their creativity in ways that will benefit their performance may need to implement different interventions to affect creativity depending on whether they want those individuals to express their novelty or to express their usefulness. Managers should reward creativity if they want employees to be more novel but continue to reward only performance if they want their employees to continue to be useful. Explicitly

stating support for and expectations of novelty versus usefulness (cf. Madjar, 2008; Unsworth & Clegg, 2010) through other HRM practices, such as coaching (Sue-Chan, Wood, & Latham, 2012), may be another such intervention.

Because novelty and usefulness represent separate goals (Litchfield, 2008), an intriguing possibility for cuing employees to focus on novelty versus usefulness could be to subconsciously motivate goals (Latham & Piccolo, 2012; Shantz & Latham, 2011) to demonstrate one or the other dimension of creativity through deliberate design of the physical work environment (Dul et al., 2011). HR policies could be implemented to require placement of company artifacts to subconsciously motivate the desired dimension of creativity throughout the organization. Novelty, for example, could be primed with photographs of lighted light bulbs while photographs of employees concentrating on their work may prime usefulness.

Finally, our findings suggest that offering rewards for creativity can be an effective way to switch employees' focus from contributing useful ideas and solutions to the problem of maintaining established routines, norms, and habits to contributing novel ideas and solutions when problems arise because routines, norms, and habits are no longer efficient for attaining organizational goals. In the latter situation, employees who are asked to be creative but who do not perceive that they will receive any reward for doing so may produce ideas and solutions that may not necessarily be of value to organizations. Offering rewards to employees for being creative can effectively focus employees on ensuring their novel ideas are of value because the reward signals the specific criteria that will be used to assess novelty—the extent to which it also enables the attainment of organizational goals. Usage of rewards for creativity can increase the likelihood that the novelty generated from a brainstorming session or a "suggestion box" program, for example, are potentially useful.

Acknowledgment

This research was fully supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (Project No. CityU 1411/06H) awarded to the authors.

CHRISTINA SUE-CHAN has a broad research interest in human resource management with a specific focus on employee motivation. Her recent research has focused on how leaders and culture frame the context of an interaction with subordinates to motivate employee performance, creativity, and adaptability.

PAUL S. HEMPEL has a research focus on the management of technology and knowledge workers within China, with a particular emphasis on how Chinese management is evolving as company strategies have begun to focus on technology and innovation. Recently, his research has started to focus on individual and group creativity. In addition to conducting research in China, he is also currently serving as an officer in the International Association for Chinese Management Research.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology*, 43, 997–1013.
- Amabile, T. M. (1983). Social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology*, 45, 357–377.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. In M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 10, pp. 123–167). Greenwich, CT: JAI.
- Amabile, T. M. (1996). *Creativity in context*. Boulder, CO: Westview Press.
- Ancona, D. G., & Caldwell, D. F. (1992). Bridging the boundary: External activity and performance in organizational teams. *Administrative Science Quarterly*, 37, 634–665.
- Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., Waterson, P. E., & Harrington, E. (2000). Shop floor innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational and Organizational Psychology*, 73, 265–285.
- Baer, M., Oldham, G. R., & Cummings, A. (2003). Rewarding creativity: When does it really matter? *Leadership Quarterly*, 14, 569–586.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588–606.
- Binyamin, G., & Carmeli, A. (2010). Does structuring human resource management processes enhance employee creativity? The mediating role of psychological availability. *Human Resource Management*, 49(6), 999–1024.
- Bliese, P. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations* (pp. 349–381). San Francisco, CA: Jossey-Bass.
- Brislin, R. W., Lonner, W. J., & Thorndike, R. M. (1973). *Cross-cultural research methods*. New York, NY: Wiley.
- Brockbank, W. (1999). If HR were really strategically proactive: Present and future directions in HR's contribution to competitive advantage. *Human Resource Management*, 38(4), 337–352.
- Campbell, C. H., Ford, P., Rumse, M. G., Pulakos, E. D., Borman, W. C., De Vera M. V., & Riegelhaupt, B. J. (1990). Development of multiple job performance measures in a representative sample of jobs. *Personnel Psychology*, 43, 277–300.
- Campbell, D. T. (1960). Blind variation and selective retention in creative thought as in other knowledge processes. *Psychological Review*, 67, 380–400.
- Carvajal, S. C., Baumler, E., Harrist, R. B., & Parcel, G. S. (2001). Multilevel models and unbiased tests for group based interventions: Examples from the safer choices study. *Multivariate Behavioral Research*, 36, 185–205.
- Choi, J. N. (2004). Person-environment fit and creative behavior: Different impacts of supplies-values and demands-abilities versions of fit. *Human Relations*, 57, 531–552.
- Csikszentmihalyi, M. (1997). *Creativity: Flow and the psychology of discovery and invention*. New York, NY: HarperCollins.
- Davis, M. A. (2009). Understanding the relationship between mood and creativity: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 108, 25–38.
- De Dreu, C. K. W., Baas, M., & Nijstad, B. A. (2008). Hedonic tone and activation level in the mood-creativity link: Toward a dual pathway to creativity model. *Journal of Personality and Social Psychology*, 94, 739–756.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press.
- Drazin, R., Glynn, M. A., & Kazanjian, R. K. (1999). Multilevel theorizing about creativity in organizations: A sensemaking perspective. *Academy of Management Review*, 24(2), 286–307.
- Dul, J., Ceylan, C., & Jaspers, F. (2011). Knowledge workers' creativity and the role of the physical work environment. *Human Resource Management*, 50(6), 715–734.
- Eisenberger, R., & Aselage, J. (2009). Incremental effects of reward on experienced performance pressure: Positive outcomes for intrinsic interest and creativity. *Journal of Organizational Behavior*, 30, 95–117.
- Eisenberger, R., & Cameron, J. (1996). Detrimental effects of reward: Reality or myth? *American Psychologist*, 51, 1153–1166.
- Eisenberger, R., & Cameron, J. (1998). Reward, intrinsic interest, and creativity: New findings. *American Psychologist*, 53, 676–679.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14, 57–74.
- Elsbach, K. D., & Hargadon, A. B. (2006). Enhancing creativity through "mindless" work: A framework of workday design. *Organization Science*, 17, 470–483.
- Elsbach, K. D., & Kramer, R. M. (2003). Assessing creativity in Hollywood pitch meetings: Evidence for a dual-process model of creativity judgments. *Academy of Management Journal*, 46, 283–301.
- Evans, M. G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes*, 36(3), 305–323.
- Farh, J. L., Cannella, A. A., Jr., & Lee, C. (2006). Approaches to scale development in Chinese management research. *Management and Organization Review*, 2, 301–318.

- Fleming, L., Mingo, S., & Chen, D. (2007). Collaborative brokerage, generative creativity, and creative success. *Administrative Science Quarterly*, 52, 443–475.
- Ford, C., & Kuenzi, M. (2008). "Organizing" creativity research through historical analysis of foundational administrative science texts. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 65–92). New York, NY: Erlbaum.
- Ford, C. M., & Gioia, D. A. (2000). Factors influencing creativity in the domain of managerial decision making. *Journal of Management*, 26, 705–732.
- George, J. M. (2007). Creativity in organizations. *Academy of Management Annals*, 1, 439–477.
- George, J. M., & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, 86, 513–524.
- George, J. M., & Zhou, J. (2002). Understanding when bad moods foster creativity and good ones don't: The role of context and clarity of feelings. *Journal of Applied Psychology*, 87, 687–697.
- Gersick, C. J., & Hackman, J. (1990). Habitual routines in task performing groups. *Organizational Behavior and Human Decision Processes*, 47, 65–97.
- Gilson, L. L. (2008). Why be creative: A review of the practical outcomes associated with creativity at the individual, group, and organizational levels. In J. Zhou & C. E. Shalley (Eds.), *Handbook of Organizational Creativity* (pp. 303–322). New York, NY: Erlbaum.
- Glaveanu, V. P. (2011). Creating creativity: Reflections from fieldwork. *Integrative Psychological and Behavioral Science*, 45, 100–115.
- Gong, Y. P., Huang, J. C., & Farh, J. L. (2009). Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy. *Academy of Management Journal*, 52, 765–778.
- Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective-taking, and creativity. *Academy of Management Journal*, 54, 73–96.
- Guilford, J. P. (1950). Creativity. *American Psychologist*, 5, 444–454.
- Hannan, M. T., & Freeman, J. R. (1983). Structural inertia and organizational change. *American Sociological Review*, 29, 149–164.
- Hempel, P. S., & Sue-Chan, C. (2010). Culture and the assessment of creativity. *Management and Organization Review*, 6(3), 415–435.
- Heneman, R. L., & Werner, J. M. (2005). Merit pay: Linking pay to performance in a changing world. Greenwich, CT: Information Age.
- Hennessey, B. A., & Amabile, T. M. (1998). Reward, intrinsic motivation, and creativity. *American Psychologist*, 53, 674–675.
- Hennessey, B. A., & Amabile, T. A. (2010). Creativity. *Annual Review of Psychology*, 61, 569–598.
- Hinkin, T. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967–988.
- Hofmann, D. A., Griffin, M. A., & Gavin, M. B. (2000). The application of hierarchical linear modeling to organizational research. In K. J. Klein & S. W. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations* (pp. 425–466). San Francisco, CA: Jossey-Bass.
- Kang, S. C., & Yanadori, Y. (2011). Adoption and coverage of performance-related pay during institutional change: An integration of institutional and agency theories. *Journal of Management Studies*, 48, 1837–1865.
- Kerr, S. (1975). On the folly of rewarding A, while hoping for B. *Academy of Management Journal*, 18(4), 769–783.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, 108(3), 480–498.
- Latham, G. P., & Piccolo, R. F. (2012). The effect of context-specific versus nonspecific subconscious goal on employee performance. *Human Resource Management*, 51(4), 535–548.
- Latham, G. P., & Sue-Chan, C. (2014). Motivational tactics. In B. Schneider & K. Barbera (Eds.), *Oxford handbook of organizational climate and culture* (pp. 65–78). London, England: Oxford University Press.
- Latham, G. P., & Wexley, K. N. (1994). *Increasing productivity through performance appraisal* (2nd ed.). Reading, MA: Addison-Wesley.
- Litchfield, R. C. (2008). Brainstorming reconsidered: A goal-based view. *Academy of Management Review*, 33(3), 649–668.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. New York, NY: Prentice Hall.
- Madjar, N. (2008). Emotional and informational support from different sources and employee creativity. *Journal of Occupational and Organizational Psychology*, 81, 83–100.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71–87.
- March, J. G., & Simon, H. A. (1958). *Organizations*. New York, NY: Wiley.
- May, R. (1975). *The courage to create*. Toronto, Ontario, Canada: Bantam.
- Meyer, J. P., & Gellatly, I. R. (1988). Perceived performance norm as a mediator in the effect of assigned goal on personal goal and task performance. *Journal of Applied Psychology*, 73, 410–442.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102, 246–268.
- Montag, T., Maertz, C. P., & Baer, M. (2012). A critical analysis of the workplace creativity criterion space. *Journal of Management*, 38(4), 1362–1386.
- Motorola. (n.d.). Financial rewards. Retrieved from <http://responsibility.motorola.com/index.php/employees/financialrewards/#overview>
- Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, 103, 27–43.
- Muthén, L. K., & Muthén, B. O. (1998–2007). *Mplus user's guide* (5th ed.). Los Angeles, CA: Muthén & Muthén.
- Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, 2, 175–220.
- Niu, W., & Sternberg, R. (2002). Contemporary studies on the concept of creativity: The East and the West. *Journal of Creative Behavior*, 36(4), 269–288.

- Niu, W., & Sternberg, R. J. (2006). The philosophical roots of western and eastern conceptions of creativity. *Journal of Theoretical and Philosophical Psychology*, 26, 1001–1021.
- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39, 607–634.
- Osborn, A. F. (1953). *Applied imagination: Principles and procedures of creative problem-solving*. New York, NY: Charles Scribner's Sons.
- Perry-Smith, J. E., & Shalley, C. E. (2003). The social side of creativity: A static and dynamic social network perspective. *Academy of Management Review*, 28, 89–106.
- Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2006). Productivity is not enough: A comparison of interactive and nominal brainstorming groups on idea generation and selection. *Journal of Experimental Social Psychology*, 42, 244–251.
- Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2007). Relative accessibility of domain knowledge and creativity: The effects of knowledge activation on the quantity and originality of generated ideas. *Journal of Experimental Social Psychology*, 43, 933–946.
- Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, 30, 933–958.
- Shantz, A., & Latham, G. P. (2011). The effect of primed goals on employee performance: Implications for human resource management. *Human Resource Management*, 50(2), 289–299.
- Shin, S. J., & Zhou, J. (2003). Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of Management Journal*, 46, 703–714.
- Shin, S. J., & Zhou, J. (2007). When is educational specialization heterogeneity related to creativity in research and development teams? Transformational leadership as a moderator. *Journal of Applied Psychology*, 92, 1709–1721.
- Siemsen, E., Roth, A., & Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods*, 13, 456–476.
- Simonton, D. K. (2000). Creativity: Cognitive, personal, developmental, and social aspects. *American Psychologist*, 55, 151–158.
- St. Onge, S. (2000). Variables influencing the perceived relationship between performance and pay in a merit pay environment. *Journal of Business and Psychology*, 14(3), 459–479.
- Sternberg, R. J. (2001). What is the common thread of creativity? Its dialectical relation to intelligence and wisdom. *American Psychologist*, 56, 360–362.
- Sue-Chan, C., Wood, R. E., & Latham, G. P. (2012). Effect of a coach's regulatory focus and an individual's implicit person theory on individual performance. *Journal of Management*, 38, 809–835.
- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52, 591–620.
- Unsworth, K. L., & Clegg, C. W. (2010). Why do employees undertake creative action? *Journal of Occupational and Organizational Psychology*, 83, 77–99.
- Weiner, R. P. (2000). *Creativity and beyond: Cultures, values, and change*. Albany: State University of New York Press.
- Wiseman, R. M., Cuevas-Rodriguez, G., & Gomez-Mejia, L. R. (2012). Towards a social theory of agency. *Journal of Management Studies*, 49, 202–220.
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review*, 18, 293–321.
- Yuan, F., & Zhou, J. (2008). Differential effects of expected external evaluation on different parts of the creative idea production process and on final product creativity. *Creativity Research Journal*, 20, 391–403.
- Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, 44, 682–696.