Reward, Task Motivation, Creativity and Teaching: Towards a Cross-cultural Examination

by Beth A. Hennessey — 2015

Background: *Extrinsic incentives and constraints, such as the promise of a reward or the expectation of an evaluation, have long been used by educators to motivate students. Previous research has consistently found that expected reward consistently undermines intrinsic task motivation and creativity of products and performance in students of all ages. For a majority of learners, the promise of a reward made contingent on engagement in an open-ended task frequently serves to undermine intrinsic task motivation and qualitative aspects of performance, including creativity.*

Purpose: *The implications of these experimental findings for education in the U.S. and around the world are immense. Teachers contemplating the use of reward incentives must avoid them in situations where creativity is at stake. This article explores whether the motivational and performance processes triggered by the promise of a reward are a universal phenomenon or whether they are, at least in part, culturally-dependent.*

Research Design: *Five parallel studies in five separate nations focused on elementary school students who had been randomly assigned to experimental (constraint) and control (no constraint) conditions. The complexities of the relation between task motivation and performance outcomes are reviewed and cross-cultural implications are explored.*

Conclusions: *While there is no consensus on the impact of extrinsic constraints across cultures, there is no evidence to suggest that intrinsic motivation is anything but a powerful and positive driving force for students of all ages and backgrounds—teachers are best advised to work to increase the intrinsic motivation and creativity of their students on a case-by-case basis until we understand more.*

REWARDS CAN BE POWERFUL AND COMPLICATED

Extrinsic incentives or constraints such as the promise of a reward or the expectation of an evaluation have long been used by educators to motivate students. In fact, most activities associated with the learning process involving teachers, parents and students tend

to rely on extrinsic rather than intrinsic motivation (Csikszentmihalyi & Nakamura, 1989). As reported by Csikszentmihalyi and Larson (1984), students in the United States rarely say that they find studying to be intrinsically rewarding. While extrinsic incentives do, in fact, help to ensure that work gets done and that it gets done on time, caution must be exercised when creativity is at stake. In teaching and learning situations where there is one “right” answer and one best path to solution, extrinsic incentives can be extremely effective. However, when more open-ended problems and activities are presented to students, these same extrinsic incentives can kill students’ intrinsic motivation and creativity. They will be unlikely to take risks and not be fueled by an excitement about learning that would allow them to persist with challenging tasks until they achieve a creative outcome.

Researchers focused on the social psychology of classrooms and schools have made significant contributions to our understanding of the complexities of employing extrinsic incentives in the classroom. Rather than investigate intelligence, personality, and other individual difference variables that might serve to impact the effectiveness of teachers and performance of students, social psychologists concentrate on the culture of schools and the social environment of the classroom. One teaching technique that has received considerable research attention is the use of *task-contingent reward*. While many educators assume that the promise of a reward made contingent on task completion will serve to motivate their students and help them to perform at their highest possible level, investigators interested in the social psychology of creative behavior have long understood that the expectation of a reward can be especially damaging to intrinsic task motivation and creativity of performance. In other words, the effects of rewards are complicated.

Pioneers in the research effort to explore the impact of reward were Lepper, Greene and Nisbett (1973) who examined the effect of expected reward on preschoolers’ task interest and artistic performance. Lepper and colleagues found that, for young children who initially demonstrated a high level of intrinsic interest in drawing with magic markers, working for an expected “Good Player” certificate significantly decreased their interest in and enjoyment of the task. When compared with an unexpected reward group and a control (no reward) group, the children who had made drawings in order to receive a highly desirable award spent significantly less time using the markers during subsequent free play periods than did their peers who had not previously been rewarded. Moreover, this undermining of interest in using

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markers 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 drawing done by children in the unexpected reward or control groups (Lepper et al., 1973).

As might be expected, news of Lepper and colleagues’ “Magic Marker Study” findings (1973) soon captured the attention of a number of investigators. Today, some 40 years later, studies focused on the impact of expected reward continue to be carried out. In this body of research a distinction is made between two types of task motivation. *Intrinsic motivation* is generally defined as the motivation to do something for its own sake, for the sheer pleasure and enjoyment of the task itself. *Extrinsic motivation* is seen as the motivation to do something for some external goal, such as a reward made contingent on task completion. In a prototypical research paradigm, study participants are randomly assigned to a constraint (reward) or a no-constraint (control) condition and asked to perform an open-ended task for which multiple solutions, some more creative than others, are possible. Participants then either make self-reports of how interesting, fun, enjoyable or difficult they found the target task to be or their task motivation is inferred via unobtrusive observation of their willingness to engage further in the experimental task either during a subsequent free-time period or in future hypothetical studies. Finally, the creativity of products and performance during the study is assessed.

Expected reward has consistently been found to severely undermine intrinsic task motivation and creativity of products and performance in students of all ages. Early investigations demonstrating this undermining effect in college populations included Deci, 1971, 1972a, 1972b. Studies targeting adolescents also showed similar negative consequences of expected reward: Garbarino, 1975; Kruglanski, Friedman, & Zeevi, 1971; McGraw & McCullers, 1979; Shapira, 1976. And even very young children have consistently been found to be susceptible to the undermining effect of rewards: Greene & Lepper, 1974; Kernoodle-Loveland & Olley, 1979; Lepper, Greene, & Nisbett, 1973; Pittman, Emery, & Boggiano, 1982.

Over time, experimental paradigms and reward contingencies have become increasingly sophisticated and nuanced. Some researchers have investigated gender differences in the effect of extrinsic motivation

on creativity (e.g., Baer, 1998; Conti, Collins, & Picariello, 2001). Others have explored individual differences in cognitive style and tested the possibility that reward effects may vary depending upon the extent to which a promised reward is perceived to be controlling or competence-affirming (e.g., Friedman, 2009; Deci, Koestner, & Ryan, 2001) or the complexity of the task presented (e.g., Baer, Oldham, & Cummings, 2003). A small number of investigators have contrasted the impact of rewards promised for task completion (task-contingent rewards) versus rewards made contingent on performance standards (performance-contingent rewards (e.g., Vansteenkiste & Deci, 2003; Houlfort, Koestner, Joussemet, Nantel-Vivier, & Lekes, 2002). And in one recent paper, Wiechman and Gurland (2009) reported a polarizing effect of extrinsic rewards on intrinsic motivation. In this study, personality differences appeared to moderate the impact of a promised reward on intrinsic motivation, with some rewarded participants spending almost no time on the rewarded task during a subsequent free-choice period, while others spent an especially long time. Finally, a few investigators have been successful in training study participants to interpret and react to the promise of reward in such a way that it does not undermine their intrinsic interest in a task or their performance on that task (see Gerrard, Poteat, & Ironsmith, 1996; Hennessey, Amabile, & Martinage, 1989; Hennessey & Zbikowski, 1993).

The implications of these experimental findings for education in the U.S. and around the world are immense. Reward contingencies play a central role in many classroom environments—from gold stars awarded for success on spelling tests during the early elementary school years to monetary prizes for the “best” papers or poetry produced in university settings. In the seminal “Magic Marker Study” by Lepper et al. (1973), it must be emphasized that only children who had been previously observed to opt to use markers when given a choice of activities were selected into the study. These were preschoolers who showed a passion for drawing. Yet one simple promise of a “Good Player Award,” one simple link established between drawing with markers and the receipt of a reward, was enough to kill preschoolers’ task interest and significantly undermine the quality of their performance. Importantly, at issue here was the children’s completion of a naturally interesting task—an activity that allowed for multiple approaches and creative final products. The detrimental effects of reward are seen when prizes and other extrinsic incentives are paired with inherently interesting tasks such as constructing a haiku poem, finding a practical way to measure the volume of a pond, or writing a story about an undersea civilization. Activities such as these allow for creative solutions and student performance is highly likely to be undermined by

extrinsic incentives. In situations where the goal is to get students to participate in relatively straightforward and less inviting tasks such as mastering the multiplication tables or the spelling of a long list of vocabulary words, extrinsic incentives like rewards may be used without negative consequences. These activities have only one “right” answer and one most straightforward path to a solution. Creative solutions are not at stake.

Teachers contemplating the use of reward incentives must distinguish between these two task types and avoid the use of rewards in situations where creativity is at stake. If students are neither helped to realize their creative potential in the classroom nor taught that creative thinking and problem solving are valued at school, there is less likelihood that they will grow into creative adults. In fact, even in classroom situations where creativity is not the goal, the maintenance of intrinsic motivation is important in its own right. As defined earlier, intrinsic motivation is described in the literature as the motivation to do something for its own sake—for the sheer pleasure and enjoyment of the task itself rather than for some external goal. Researchers have demonstrated that an intrinsically motivated state is characterized by deeply focused attention and enhanced cognitive functioning, as well as increased and persistent activity (Alexander & Murphy, 1994; Maehr & Meyer, 1997). Simply stated, intrinsic motivation leads to deeper, more long-lasting learning. Empirical data supporting this contention come from a variety of sources. As early as 1913, Dewey identified the link between student interest or curiosity and effort expended in the classroom; and, in 1967, Simon empirically demonstrated that learners driven by intrinsic motivation and curiosity try harder and exert more consistent effort to reach their learning goals.

Several studies appearing in the reading literature have demonstrated this link between an intrinsic motivational orientation and enhanced learning outcomes. For example, Guthrie, Wigfield, Metsala, and Cox (1999) reported that intrinsically motivated young readers read more as well as showed significantly higher levels of reading comprehension and recall than students who were not excited by or engaged in the reading process. In a variety of investigations, interest has also been reported to lead to more elaborate and deeper processing of texts. In 2000, McDaniel, Waddill, Finstad, and Bourg found that students asked to read uninteresting narratives focused on individual text elements, such as extracting proposition-specific content, whereas readers of interesting texts tended to engage in organizational processing of information. This research suggests that

student interest (or lack of interest) in the text being read may affect the degree to which processing strategies benefit memory performance.

Supplementing these findings, Conti, Amabile, and Pollak (1995) reported that college students who undertook a learning task with intrinsic motivation demonstrated superior long-term retention of information as compared to their extrinsically motivated peers. And a large number of related investigations have also demonstrated that when students approach new concepts with high levels of curiosity and interest, information is better learned and remembered (e.g., Flink, Boggiano, & Main, 1992; Gottfried, 1985, 1990; Harter & Jackson, 1992; Hidi, 1990; Lepper & Cordova, 1992; Malone, 1981; Malone & Lepper, 1987; Renninger, Hidi, & Krapp, 1992; Schank, 1979; Tobias, 1994). Moreover, intrinsically motivated learners are more likely to take risks and explore solutions to problems that represent for them a moderate level of difficulty and challenge. Extrinsically motivated students, on the other hand, will tend to choose the easiest possible problems (Condry & Chambers, 1978; Harter, 1978; Pittman, Emery, & Boggiano, 1982).

REACHING CONSENSUS

Importantly, there has appeared in the literature a small but significant series of investigations and theoretical pieces challenging the notion that rewards are detrimental to intrinsic task motivation and creative performance. This debate first surfaced in the literature in the mid 1990's, prompting researchers from within and outside the behavioral psychology tradition to publish a series of strongly opposing commentaries, critiques and replies (see Eisenberger & Cameron, 1996, 1998; Hennessey & Amabile, 1998; Lepper, 1998; Sansone & Harackiewicz, 1998). As outlined above, we have now learned that rewards conveying competence information may not undermine intrinsic motivation (and creativity of performance) as much as rewards that convey only controlling information. In fact, when compared with no-reward controls, persons receiving informational rewards have under certain circumstances been shown to experience enhanced intrinsic motivation (Deci & Ryan, 1985a, 1985b; Harackiewicz, Manderlink, & Sansone, 1984). In many of the "token economy" experiments cited by Eisenberger, Cameron and colleagues as evidence of the positive effects of reward, study participants were provided with just this sort of continuous information about their performance as they were promised and received contingent

rewards over long periods of time.

Discrepancies in the ways in which creativity is measured and operationalized may also play a part in determining study results. The majority of target activities used in studies conducted by researchers influenced by the behavior modification perspective have had relatively clear and straightforward paths to completion. Most creativity theorists would argue that such tasks do not really measure creativity, which by its very nature defies algorithmic solution. In fact, in many of the investigations showing that expected reward enhanced creativity, creativity was assessed in terms of scores on a paper-and-pencil assessment resembling items taken from a standard IQ test. What are needed are measures that present to study participants tasks such as story-telling, haiku creation or collage-making that offer many, if not infinite, paths to completion and no one “right” or “best” solution.

As equally important as the format of the task is study participants’ interest level in the task. Intrinsic motivation theorists have long emphasized that it only makes sense to expect an undermining of intrinsic motivation when the target task is initially intrinsically interesting to study participants. If there is no intrinsic interest to begin with, there can be no decrease in intrinsic motivation after rewards are promised and delivered. Innate levels of interest in the target creativity task constitute one crucial distinction between empirical studies showing negative versus positive effects of reward on task motivation and quality of performance.

Now more than ever, researchers and theorists appreciate the fact that individual difference variables coupled with subtle changes in the way that a reward is promised or delivered can work to determine when that reward will have a negative effect on intrinsic task motivation and creativity of performance, no important effect or, under very specific conditions, even a positive effect. Our understanding of the impact of expected reward has grown increasingly sophisticated over the years; but the basic experimental findings remain the same. Hundreds of published investigations reveal that for the majority of persons in the majority of circumstances, the promise of a reward made contingent on engagement in an open-ended task frequently 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, Koestner, & Ryan, 2001; Hennessey & Amabile, 1988a; Hennessey, 2000, 2003.) This robust effect has been

observed across the entire life span, with everyone from preschoolers to graduate students and seasoned professionals in the workforce experiencing the same negative consequences. Amabile (1983, 1996) sums up the situation with what she terms the “intrinsic motivation principle of creativity”: Intrinsic motivation is conducive to creativity and extrinsic motivation is almost always detrimental.

CROSS-CULTURAL APPLICATIONS?

Over the years, studies investigating the impact of expected reward on intrinsic task motivation and creativity of performance have yielded amazingly consistent results across age, gender and other demographic groups. Importantly however, almost all the investigations reported in the literature were carried out in the U.S. or other similarly affluent, Western, industrialized nations. The question that has for some time concerned me and some of my colleagues is whether we can assume that the intrinsic motivation principle of creativity captures a universal construct, a universal relation between motivational orientation and creative performance that holds true in classrooms around the world, or whether this dynamic holds only for students living and learning in certain Western cultural contexts. In the majority of these studies, participants have been fairly affluent young people enrolled in campus “laboratory” preschools, high-performing high schools, or prestigious colleges and universities (see Lonner, 1989). As a discipline, psychology has long assumed that information gathered about this one essentially homogenous student group will reveal important understandings about the behavioral and psychological functioning of students across the globe. But important work carried out by Markus and colleagues (e.g., Markus & Kitayama, 1991, 2003; Markus, Uchida, Omoregie, Townsend, & Kitayama, 2006) shows that from culture to culture, people differ in some basic ways. They are motivated by a wide range of factors and show great emotional variability as well. There are also important culturally-based differences in the nature of self-concept and the functioning of self-esteem.

The bottom line is that research findings on student learning, motivation, and creative behavior may not generalize to classrooms in all cultures. Researchers have neglected to investigate systematically cross-cultural distinctions in the way students (and teachers) think, feel, act and react. They have neglected to consider the possibility that there may be important culturally-based differences in basic

psychological processes.

How might it be possible that culture impacts the ways that individuals interpret and respond to the promise of a reward? An examination of the theoretical explanations advanced to account for the undermining effects of reward reveals that these models are almost entirely predicated on the Western ideals of individuality, free choice, and autonomy. Yet research tells us that in many cultures, a major focus is placed on the overall family or community and what is best for the group.

THE COLLECTIVIST/INDIVIDUALIST DISTINCTION

Psychological researchers and theorists often refer to a collectivism-individualism distinction as they investigate differences between cultures. These constructs, first investigated by Hofstede (1980), are used to talk about the ways in which cultural values and practices influence fundamental psychological processes, including how individuals view themselves and their relation to others both in an immediate social environment such as the classroom and in relation to their larger cultural or national group (Markus & Kitayama, 1991; Nisbett, Peng, Choi, & Norenzayan, 2001; Triandis, 1995; Triandis, McCusker, & Hui, 1990). Under this system, Western culture is typically classified as individualist and many Asian cultures are considered collectivist (Fiske, 2002; Triandis, McCusker, & Hui, 1990). Individualists tend to form their identity based on their own, unique talents, interests and desires. Collectivists, on the other hand, are seen as those who are more likely to derive their sense of self from the role they play in their greater community.

As is the case with most classification systems, one danger of painting with the broad brush of this collectivist/individualist dichotomy is that important subcultural distinctions and individual differences will be masked. Even the most individualistic cultural groups are likely to exhibit some elements of collectivism and vice versa (see Fiske, 1990, 2002; Triandis, McKusker, & Hui, 1990). While investigators have become increasingly mindful of the limitations of this approach, many continue to find the collectivist/individualist framework to be a useful rubric with which to generate research hypotheses. For our own part, my colleagues and I have used the collectivist/individualist distinction to begin to frame our own speculations about cross-cultural differences

in student motivation and creativity in the classroom. At their core, the intrinsic motivation principle of creativity and researchers' operationalizations of intrinsic and extrinsic motivation rest on Western assumptions concerning the universality of self-perception processes and the need to establish and maintain a sense of autonomy.

THEORETICAL EXPLANATIONS FOR REWARDS' UNDERMINING EFFECTS

Theoretical explanations advanced to explain the undermining effect of reward on motivation and creative behavior have been almost entirely predicated on the notion that all persons are driven by the fundamental need to feel autonomous and in control of their behavior. Generally speaking, these explanatory models fall into two distinct categories: cognitive and affective/script.

Cognitive Explanations

Researchers and theorists adopting a cognitive perspective have come to learn that across a wide variety of situations and circumstances people are more often than not unaware of their own motivations. Acting almost like outside observers of their own actions, most individuals appear to use essentially the same rubrics for explaining their own behaviors as they do for explaining the behaviors of others. In situations where both a plausible internal (e.g., I am engaging in this task because it interests and excites me) and a plausible external (e.g., I am engaging in this task because there is a reward or an evaluation at stake) cause of behavior are present, they tend to discount the internal cause in favor of the external cause and intrinsic motivation plummets. When multiple explanations for their behavior are available, persons of all ages have been found to discount their own intrinsic task interest in favor of a purely external explanation for task engagement. Framing this phenomenon in slightly different terms, they assume that their behavior has been driven by an external rather than an internal locus of control.

Researching motivation in the 1970's, one group of social psychologists came to refer to this process as the "discounting principle" (e.g., Kelley, 1973). Other theorists proposed a related explanation termed the "overjustification" hypothesis, an approach derived from the attribution theories of Bem (1972), Kelley

(1967, 1973), and deCharms (1968). According to this model, when a behavior is overjustified (when there exists both a possible internal and external cause for one's own or another's behavior), each of us will tend to overlook the internal cause (the presence of intrinsic task motivation) in favor of the external cause (a reward was at stake). In effect, the majority of people have been found to discount the excess justification for explaining why they did something.

Offering a similar but more contemporary and nuanced view, Deci and Ryan (1985a, 1985b) attempted to expand upon these formulations with a consideration of individual differences. The focus of this theorizing was on causality orientations, or characteristic ways that people develop for understanding and orienting to inputs. More specifically, Deci and Ryan hypothesized that individuals vary in the degree to which they exhibit three such orientations ("autonomy", "control", and "impersonal"), and they argued that these individual differences have important implications for a variety of behaviors in which motivation plays a key role, including creativity. More recently, Deci and Ryan have attempted to more fully explore the need to feel autonomous with the advancement of what they term *self-determination theory* (SDT) (Ryan & Deci, 2000a, 2000b). Within the SDT framework, extrinsic motivation is not seen as the simple absence of intrinsic motivation. Instead, motivational orientation is viewed as a highly complicated and multi-layered continuum.

In practical terms, what this line of research tells us is that when researchers (or teachers) promise students a reward or impose some other form of extrinsic constraint in the classroom, they set into motion a complex sequence of events that run the risk of undermining students' sense of autonomy and do far more harm than good. Extrinsic incentives can help assure that work will get done and be completed on time. If every task required of students were straightforward and algorithmic—with one "right" answer and one best, most straightforward path to solution—extrinsic incentives would make sense. The difficulty rests in the fact that much of the work being done in classrooms calls for open-ended approaches to problems; and if students do not feel a sense of autonomy, if they do not perceive that they are in control of their own behavior, they will be unlikely and perhaps even unable to engage in far-reaching thinking. They will be unwilling to take risks and will not have the deep stores of intrinsic motivation and excitement about learning that would allow them to persist with challenging tasks until they achieve a creative outcome.

Affective/Script Explanations

In addition to cognitive processes, affect may also play a pivotal role in determining whether an anticipated reward will serve to undermine intrinsic motivation and creativity. While the overjustification and discounting models described above have proven useful for understanding the negative effects of reward and evaluation in adults, they have failed to explain adequately why young children have also been observed to suffer decreases in intrinsic motivation and creativity. Simply stated, most children under the age of 7 or 8 years lack the cognitive capabilities necessary for weighing multiple sufficient causes and employing discounting (see, for example, Shultz, Butkowsky, Pearce, & Shanfield, 1975; Smith, 1975). In fact, some studies have indicated that many young children seem to employ an additive algorithm and interpret the expectation of reward as an *augmentation* of intrinsic interest (see, for example, DiVitto & McArthur, 1978; Morgan, 1981). While the majority of theorists have tended to ignore this inconsistency, some have long puzzled over the question of why it is that, when working under the expectation of reward, young children frequently demonstrate decreases in intrinsic motivation and creativity of performance, yet they seem cognitively incapable of engaging in the thought processes that underlie the overjustification and discounting paradigms. One possible explanation for this discrepancy is that the reduction in intrinsic interest in young children (and perhaps persons of all ages) is driven primarily by the learned expectation that rewards 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. Children may learn to react negatively to a task as “work” when their behavior is controlled by a socially imposed reward, 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, Sagotsky, Dafoe, & Greene, 1982) may be what leads to decrements in intrinsic interest (see Hennessey, 1999).

In fact, a review of the literature reveals that contemporary Western views of intrinsic motivation frequently include an affective component. One pair of theorists, for example, has concentrated their attention on the relation between positive affect and intrinsic motivation (e.g., Isen & 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 & Seligman, 1984; Reeve, Cole, & Olson, 1986). And the prolific and influential work of Csikszentmihalyi (Csikszentmihalyi, 1997; Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005; Nakamura & Csikszentmihalyi, 2003) has brought to light the elation that can result from deep task involvement termed “optimal experience” or “flow.” Csikszentmihalyi and colleagues present compelling evidence that individuals find the flow state to be incredibly pleasurable, energizing and satisfying. Persons in flow frequently lose all sense of place and time. They forget to eat or pick up their children from school, and are entirely consumed by the creative problem or task at hand.

In sum, whether investigators take this phenomenological “flow” approach or whether they look to more cognitively- and affectively-based models of intrinsic motivation and the creative process, research into the social psychology of creativity is almost exclusively driven by the long-held Western emphasis on individualism and the celebrated notion of artists, inventors, writers and scientists who work in relative isolation and are driven by an intense passion for and love for their work—oftentimes leading them to sacrifice worldly pleasures and sometimes even their own health and well-being.

THE SELF-CONSTRUAL PERSPECTIVE

Can we be sure that the intrinsic motivation principle of creativity holds in non-Western contexts—most especially classroom settings? Current theoretical explanations for the undermining of intrinsic motivation are almost entirely based on Western models that link the effects of expected reward to threats on students’ sense of individuality and quests for autonomy. Yet a growing body of literature (e.g., Markus & Kitayama, 1991; Nisbett, Peng, Choi, & Norenzayan, 2001; Triandis, 1995; Triandis, McCusker, & Hui, 1990) reveals that in many classrooms around the world, students derive their sense of self from their feelings of belonging to and being accepted and valued by the larger classroom, school and cultural group. Can we be sure that the promise of a reward will have the same deleterious impact on the motivation and creativity of students living and learning in collectivistic cultures in Asia or the Middle-East as it has been shown to have in classrooms in individualistic U.S., Canada, and western Europe? Or are the motivational processes triggered by the promise of a reward distinctly different in collectivist and individualist

cultures?

Importantly, this research question is complicated by the fact that while the individualistic/collectivistic dichotomy is used to describe and distinguish between entire cultural groups, questions of intrinsic motivation must be addressed at the level of each individual student or empirical study participant. Investigations into what researchers term “self-construal” has helped to bridge this theoretical gap. The construct of self-construal, which evolved from a comparison of Western and Eastern populations (Markus & Kitayama, 1991), is seen as an essential part of every individual’s ”self-concept” (Boekaerts, 1995). Self-concept is described in the literature as a coherent structure of beliefs, thoughts and feelings about the self that interact with cognitive processing to significantly impact both a global sense of self-worth and domain-specific feelings about the self (Harter, 1986, 1998). Independent self-construal is seen as a relatively stable trait or personal style. Individuals adopting this style place particular emphasis on internal abilities, thoughts, and feelings and are primarily driven by the need to establish their uniqueness and pursue personal goals. Interdependent self-construal, on the other hand, is far more situation-dependent, flexible and variable. Persons adopting this style are very much concerned with finding their proper place and “fitting in”. In other words, they place their emphasis on public roles and relationships with others. As might be expected, these self-construal typologies have been found to be highly correlated with the more traditional concepts of individualism and collectivism (Bond & Smith, 1996; Hong & Chui, 2001; Kanagawa, Cross, & Markus, 2001; Kashima, 2002; Oyserman, Coon, & Kemmelmeier, 2002; Singelis, 1994; Singelis & Brown, 1995; Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1996; Youn, 1999). In short, self-perception processes are strongly influenced by cultural boundaries and geography.

The introduction of the concept of self-construal into the literature has allowed theorists to move away from a consideration of the more global collectivist/individualist distinction to an examination of possible cultural differences in the self-perception processes adopted by individuals. Marcus and Kitayama (1991), Singelis (1994) and Singelis & Brown (1995) were among the first to offer a conceptual framework that examined self-construal in relation to cultural identity. And there is growing evidence that self-construals are, to some extent at least, culturally determined. For example, Hatano and Inagaki (1998) found that children who grow up in a culture that places high value on mathematics

performance have almost no choice other than to work toward mastery in this area. In cultures where the development of strong mathematical skills is viewed as optional, however, a broad diversity of internal standards for mathematical ability, along with a wide range of anxiety and self-esteem associated with math performance, are shown by students. Related work conducted by Stevenson and colleagues (e.g., Chen & Stevenson, 1995; Stevenson et al., 1990; Stevenson, Chen, & Lee, 1993) has also been instrumental in making educational researchers aware of the powerful impact that cultural differences in motivational beliefs can have on mathematics achievement.

In fact, much of the literature on self-construal points to an integrated cognitive and motivational pattern. Markus and Kitayama (1991) link the independent self-construal that characterizes persons living and learning in the U.S. and Northern Europe with the need to establish and maintain a sense of autonomy and personal control (see also Bandura, 1986; Carver, Lawrence, & Scheier, 1996). Whereas a more interdependent self-construal characteristic of Asian, African, South American and some Southern European cultures is linked with the primary motivational goal of feeling a part of various interdependent relationships.

How do the self-construals of students in different cultures affect their perceptions of learning situations, most especially their perception of control over their learning? Studies carried out in the U.S. and Europe provide strong evidence that teachers' use of external regulations such as rewards undermines their students' sense of autonomy leading to lower levels of enjoyment and satisfaction as well as less successful learning outcomes (Boggiano et al., 1989; Valås & Søvik, 1993). Yet Miller and Bersoff (1998) have argued that this drive to maintain autonomy, the same drive underlying Deci and Ryan's (1990, 2000) self-determination theory and related models, is inconsistent with the internalization and self-construal processes of students living and learning in non-Western environments. Students guided by more interdependent self-construals tend to be fairly amenable to having others regulate their behavior and choose on their behalf (see Pöhlmann, Carranza, Hannover, & Iyengar, 2007).

Extending this line of reasoning, Jonas et al. (2009) delineated how an independent self-construal might naturally lead to psychological reactance. As explained by Worchel (2004), psychological reactance is a motivational state designed both to restore

freedom and to reestablish identity. Like the intrinsic motivation principle of creativity, reactance theories have long been assumed to be universal. Yet Jones and colleagues argued convincingly that culturally formed patterns of values and beliefs should contribute heavily to the specific freedoms that students within a given cultural context perceive and value. Because students in the East are apt to place far less value on autonomy, dominance and independence, reactance may not play a major role in more collectivist classrooms. But this does not necessarily mean that reactance theory can never be applied to persons with a more interdependent sense of self. Jonas et al. (2009) reported four separate empirical studies showing that threats to people's freedom can be felt at the group as well as the individual level. Even though students adopting a collectivist view might be relatively unconcerned about giving up individual freedoms, they were shown to worry much more about the elimination of group or interpersonal freedoms.

While each of the investigations of reactance, restricted choice, self-construal and cultural identity outlined above offers potentially important insights into the relevance of the intrinsic motivation principle of creativity across cultures, no empirical study to date does more to suggest potential cross-cultural differences in the effects of reward than a 1999 investigation carried out by Iyengar and Lepper. In many respects, this research area has come full circle. It seems fitting that Mark Lepper, one of the coauthors of the seminal "Magic Marker study" that first alerted us to the potential negative effects of extrinsic constraints (expected reward) on intrinsic task motivation and quality of performance in the West (1973), would also serve as coauthor on one of the first empirical investigations to demonstrate that the imposition of extrinsic constraints such as restricted choice by a parent or respected teacher might not be expected to undermine the intrinsic task motivation and performance of children being raised to embrace a more interdependent perspective.

In two separate studies, Anglo American elementary school students in grades 2 and 4 were compared to Asian American students in the same grade range. All children were drawn from two schools, each of which served a high percentage of Asian American students. Across the two investigations, the opportunity to choose (among various types of anagram puzzles or among instructionally irrelevant aspects of an educational computer game) enhanced intrinsic task motivation significantly more for Anglo American students than it did for Asian American students. In addition, Anglo American students showed significant decreases in motivation when choices were made for

them by others, while Asian Americans showed the highest levels of intrinsic task motivation when choices were made for them by trusted authority figures or peers. This pattern of results was consistent across both self-report and behavioral measures of intrinsic motivation and it was also replicated on measures of task performance and direct learning. Importantly, however, both Anglo American and Asian American children exhibited significant decrements in intrinsic motivation and task performance when choices were made for them by an out-group member (either the experimenter or hypothetical third graders at another school).

The 1999 publication of this paper set the stage for further investigation of the effect of extrinsic constraints on students' task motivation and performance across cultures. While Iyangar and Lepper were careful to select into their sample only Asian American children who spoke their family's native language at home, the time had come for true cross-national comparisons of the applicability of psychological theories of student motivation and performance. However, in the decade that followed, surprisingly few empirical investigations of this sort were published. Cross-cultural studies of the impact of expected reward on student motivation and creativity of performance have been especially absent from the literature.

OUR OWN EMPIRICAL INVESTIGATIONS

Recently, my colleagues and I set out to begin to fill this omission in the research. We carried out a series of five parallel studies in five separate nations to explore whether the motivational and performance processes triggered by the promise of a reward are a universal phenomenon or whether they are, at least in part, culturally-dependent. An upcoming research article, currently under review, describes in detail these studies focused on elementary school students who had been randomly assigned to experimental (constraint) and control (no constraint) conditions.

Because we needed a baseline against which to compare findings from other nations, we started with an empirical study of the effect of expected reward on the intrinsic task motivation and creativity of children living and learning in the U.S. As had been demonstrated in hundreds of previous studies, children in this U.S. sample of elementary school children demonstrated significant decrements in task

motivation, artistic creativity, and verbal creativity when working for a promised reward. After being randomly assigned to an expected-reward or no-reward (control) condition, all participating children made a collage and told a story to accompany an open-ended set of illustrations from a picture book with no words. Upon completion of each of these two activities, children then went on to create self-reports of task interest and enjoyment. Both the collage and story activities have been used successfully in previous studies (e.g., Amabile, Hennessey, & Grossman, 1986; Hennessey & Amabile, 1988b) and meet three fundamental creativity assessment requirements. They are open-ended enough to allow for a variety of responses; yet at the same time they do not require special skills or previous experience that would favor some study participants over others. In addition, like all the creativity tasks used in research of this type, it was important that the story-telling and collage-making procedures be pre-tested to ensure that children of this age group do, in fact, find them to be intrinsically interesting.

All stories were transcribed and reproduced in such a way that children's narratives appeared next to the specific illustration being described. Following the consensual assessment technique (CAT) procedures outlined by Amabile and colleagues (Amabile, 1982; Hennessey & Amabile, 1999; Hennessey, Amabile, & Mueller, 2011), a group of elementary school teachers then rated the stories and collages. These raters, who each viewed the products in different random orders, first used 7-point scales to make assessments of collage creativity, collage technical goodness and their liking for the collages (in that order). When these product ratings had been completed, the researchers then went on to assess creativity, technical goodness and liking of the children's stories. Judges were not trained by the experimenter to agree with one another. In addition, students were not allowed to speak with one another regarding their ideas about creativity or their assessments. In other words, ratings were made entirely independently and based on each individual judge's own, subjective definition of each of the rating dimensions.

Product ratings were analyzed for interjudge reliability using the Cronbach's coefficient alpha (1951). (For more information see Hennessey, Kim, Zheng, & Sun, 2008). Reliability calculations for each of the three dimensions (i.e., creativity, technical goodness, and liking) for both stories and collages were all highly acceptable (> .78), that is judges agreed with one another in their ratings. The results of this U.S. investigation paralleled closely those seen in previous studies carried out in the U.S., Canada and a handful

of other Western, industrialized nations. On both the story-telling and collage measure, the expectation of a reward made contingent on task completion significantly undermined children's intrinsic task motivation and quality of performance.

Our next step was to decide which nations we would contrast with the U.S. and the data that was collected. Our goal was to begin with cultural groups that we believed might not show a strong undermining effect of expected reward. Based on the theoretical and empirical literature outlined earlier, it was our best guess that the more collectivist, interdependent cultures might best meet these criteria.

Study 2 in this series was a conceptual replication of Study 1, except that in this investigation, study participants were drawn from a population of elementary school children living and learning in Saudi Arabia. Because the CAT is based on the ratings of local experts who have not been trained by the experimenter in any way, we believed that this measurement technique would be free of Western cultural bias and especially suited to cross-cultural investigations of creativity (see Hennessey, Kim, Zheng, & Sun, 2008). In fact, reliability calculations showed that for many product dimensions, the level of agreement among Saudi judges exceeded that of American judges in Study 1 (all reliability calculations > .87). Yet the expectation of reward failed to show any systematic undermining of children's intrinsic task motivation or quality of performance for both the collage and story-telling tasks.

Study 3 investigated both the effect of expected reward and the effect of expected evaluation on the motivation and creativity of elementary school children in South Korea. The expected evaluation manipulation was added to this investigation in an effort to explore more fully the impact of extrinsic constraints on the motivation and creativity of children living and learning in a non-Western environment. There is substantial research evidence to indicate that, like the expectation of reward in Western countries, the expectation of an evaluation frequently decreases the task motivation and creativity of performance of children, as well as persons of other ages (e.g., Harackiewicz, Abrahams, & Wagemen, 1987; Jussim, Soffin, & Brown, 1992). To test for this undermining effect in a non-Western population, children in this investigation were randomly assigned to one of three conditions:expected reward, expected evaluation, or (no-constraint) control.

In this study, the CAT again proved to be especially well-suited for cross-cultural investigations, with reliability calculations for all product dimensions > .80. For this Korean sample, neither the promise of a reward nor the expectation of an evaluation showed any systematic undermining of children's task motivation or quality of performance. In fact, in some cases, the promise of a reward or an evaluation actually appeared to augment levels of task interest.

Can the intrinsic motivation principle of creativity be applied cross-culturally? At this point in our investigative process, we had carried out two studies in collectivist cultures, one in Saudi Arabia and one in South Korea, and the answer appeared to be a resounding "No"! Wishing to explore this question further, we conducted a fourth investigation, this time in Mainland China. Study 4 was a conceptual replication of Study 3 in that it investigated both the effect of expected reward and the effect of expected evaluation on the motivation and creativity of elementary school children. Once again, interjudge reliability was high (all reliability calculations > .75). The results of this Chinese investigation paralleled closely the results reported for the South Korean sample (Study 3). Neither the promise of a reward nor the expectation of an evaluation showed any undermining effects on of children's intrinsic task motivation or quality of performance.

The three collectivist cultures that were studied each failed to demonstrate the undermining effects of expected reward (and expected evaluation). Study 5, the final in this series, was carried out in Turkey. In addition to an expected reward, expected evaluation and a control (no-constraint) condition, a new condition was included: an expected reward contracted-for and received by an entire classroom group. This group reward manipulation was added in an effort to begin to explore the possibility that a promise of reward focused at the group level might have particularly negative consequences for the motivation and creativity of children living and learning in a more collectivist environment. Interrater reliability was again highly acceptable (all values > .80). Results revealed that collages produced by children expecting an evaluation of their performance were judged to be significantly higher in creativity, technical goodness, and liking than were products made by any other of the design groups. However, the expectation of a reward to be delivered either on an individual or a group basis tended to undermine qualitative aspects of performance. Stories produced by children who expected an evaluation of their performance were

judged both to be the most creative and the highest in technical goodness, paralleling the collage results. Turkish children's self-reports of interest in and enjoyment of the story-telling activity showed only one significant between-group difference. Despite the fact that stories made under expectation of evaluation were scored highest for creativity and technical goodness, it was children in the Expected Evaluation group who rated the story-telling task as significantly less enjoyable than did children in the Group Reward condition.

WHERE DO WE GO FROM HERE?

The imposition of extrinsic constraints has consistently been shown to undermine the intrinsic task motivation and creativity of performance of students in the West. In Western nations, these undermining effects have been demonstrated across all grade levels (preschool through college) and appear independent of socio-economic or other individual difference variables. Yet the findings from these five international studies demonstrate that the impact of expected reward and/or expected evaluation is anything but universal. While much more empirical work will need to be done in this area, it would seem that the failure to find systematic negative effects across four populations of young students living and learning in collectivistic cultures is far from a fluke. Data collected on students in South Korea, Mainland China, and Saudi Arabia were strikingly consistent, with no significant differences emerging between constraint and control groups. In Turkey, the expectation of evaluation actually appeared to *augment* children's quality of performance, yet the expectation of reward produced negative performance effects on the collage task.

Findings based on data taken from only two or three elementary school classrooms in each of the five non-Western nations targeted tell us nothing about whether we can expect to find similar results in other schools serving other age groups and/or very different student populations in these same countries. Not only must the scope of our data collection be greatly expanded, but we must also set out to explore the possibility that it is the particular culture of a classroom rather than the culture of the nation in which that classroom is located that plays the greatest role in determining whether the expectation of reward or the imposition of some other extrinsic constraint will have a positive, a negative or perhaps no observable impact on students' task motivation and creativity of performance. Yet because studies conducted in the West have revealed a consistent negative impact of

extrinsic constraints that reaches across student SES levels, subcultures and school types, we think it important to explore whether similarly consistent effects can be found in classrooms in non-Western nations,

Should further investigations continue to reveal consistent cultural differences in the ways that students respond to extrinsic constraints, our next step might be to compare ratings of products made by teachers in the nations where they were produced to Western judges' ratings of those same products. While the CAT has proven extremely valuable at providing assessments of product creativity unbiased by Western standards, it will also be important to compare Western perceptions of product creativity to the perceptions and standards of other cultures.

It will also be essential to discover the psychological mechanisms behind any cultural differences in response to extrinsic constraints. It is possible that the link between intrinsic motivation and creativity does not exist in all cultures, or it may be that the extrinsic constraints that the Western literature has led us to assume will have an undermining effect may not be universal. We found that the reward promised to study participants was highly desirable because in each investigation, we pretested this reward with children in another classroom. And certainly even the youngest of the students tested were familiar with the process of receiving evaluations of their work. If it was not a lack of salience of our experimental manipulations that contributed to our general failure to find significant between-group differences in task performance and motivation, then how can we explain our findings?

Each of the theoretical models and paradigms developed to explain the undermining effects of extrinsic constraints rests on the Western assumption that individuals of all ages are "driven" by an innate need to preserve a sense of autonomy and self-determination—to feel an internal locus of control and to act as "origins" of their own behavior rather than as "pawns" in the classroom. But what would more collectivist, Eastern models predict? In cultural contexts where students adopt a more interdependent self-construal, extrinsic constraints that threaten the happiness, motivation or well-being of the entire group might be expected to show especially negative effects. Our decision in Study 5 to add a group reward manipulation, a contracted-for reward to be delivered to the entire classroom on the condition that every child in the class complete both the collage and story-telling tasks, was intended as a preliminary exploration

of this question.

And what about the fundamental psychological mechanisms underlying potential undermining effects? With further research focused on the imposition of extrinsic constraints that serve to impact entire classroom groups, might we expect to find evidence of what Western theorists have termed overjustification or discounting processes? Or might the motivational and cognitive processes triggered by the promise of a reward or an evaluation be distinctly different in collectivist and individualist cultures? Might it be possible that teachers could use extrinsic constraints to actually *augment* their students' motivation and creativity? One especially important research avenue to explore across cultures will be the role played by affective responses to reward and evaluation and the influence of socially-transmitted scripts about constraints imposed on the group. In fact, as early as 1998, Boekaerts suggested that knowledge of cultural differences in the values attached to social scripts may reveal why social-environmental effects on motivation, learning and performance are culture-dependent.

We have much to learn. But in the mean time, when it comes to decisions about teaching and learning, researchers, theorists, and most especially classroom teachers would do well to remember that powerful learning environments in one culture may not be replicated in another. In fact, studies like that carried out by Iyengar and Lepper (1999) demonstrate that even within a single, seemingly homogenous, classroom, a diversity in student background and national/ethnic origin can point to potentially important differences in how the imposition of extrinsic constraints will be interpreted. Rewards can be complicated. Culture is complicated. Teaching is complicated.

Teachers are best advised to work to increase the intrinsic motivation and creativity of their students on a case-by-case basis until we understand more. Even in classrooms serving especially homogenous populations, what motivates one student may not be what motivates another. While the jury is still out on the impact of extrinsic constraints across cultures, there is no evidence to suggest that intrinsic motivation is anything but a powerful and positive driving force for students of all ages and backgrounds. Classroom teachers at all levels should be advised to help their students to become more proficient at recognizing their own strengths and weaknesses. Students too must be helped to identify the subject areas that give them the most pleasure and ignite their

passion. As revealed by a growing number of investigations (Gerrard, Poteat, & Ironsmith, 1996; Hennessey, Amabile, & Martinage, 1989; Hennessey & Zbikowski, 1993), significant benefits are accrued by students who are explicitly asked to consider and talk about their favorite subjects and activities in school. Students must be helped to discover their own excitement for learning. Intrinsic motivation must be made a regular focus of class discussion because students engage in such conversations far too infrequently.

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