

## Cross-Cultural Differences in Creativity: A Process-Based View through a Prism of Cognition, Motivation and Attribution

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### Abstract

Global innovation capabilities including effective leverage of employee's creative potential across various cultural contexts have become increasingly important. Although widely recognized among researchers and practitioners, cross-cultural differences in creativity are yet to be comprehensively explored. The paper examines differences in creativity from a process perspective and identifies distinct mechanisms that underlie differences in creativity across cultures. Specifically, the theoretical framework depicts effects of motivational, cognitive and attribution preferences on information processing strategies at every step of a creativity process and outlines how these differences result in a qualitatively different creative outcome. The perspective presented in the paper traces differences in the degree of novelty and usefulness of a creative idea to the information processing strategies that occur at every given step of a creative process. The proposed model complements prevalent social or normative approaches in the cross-cultural creativity field to provide a process-based explanation for the differences in the degree of creativity that were observed by researchers in the past.

**Keywords:** Innovation; Result; Environment; Globalization; Businesses

### Introduction

In the environment of increased globalization of innovative efforts and greater interpenetration of businesses across cultures [1], understanding of cultural effects on innovative and creative behaviors gains practical and theoretical significance [2]. Differences in creativity across cultures have significant implications for management practice, international business, and economic development; however, theorizing and research in this regard have lagged behind practical needs [3]. Organizations increasingly disperse their innovative activities and consequently amplify the need for increased cross-cultural knowledge in the areas of innovation and creativity. Researchers define creativity as both an outcome and a process. Creativity as an outcome has been described as a solution to a problem that is both novel and useful [4]. Creativity as a process can be described as engaging in certain activities to produce creative outcomes [5]. To date, most of the work exploring differences in cross-cultural creativity has been focused on the outcome aspect as opposed to the specific mechanisms that occur within a creative process. Specifically, drawing on cross-cultural research related to the differences in cultural orientation towards novelty or usefulness, previous authors have theorized that these differences can potentially explain noted variation in levels of creativity between western and eastern societies. Leung and Morris [6] suggest that individuals with western backgrounds put more emphasis on the novelty and uniqueness while individuals from the east pay more attention to usefulness and harmony. Authors point out that these differences might have given a rise to potentially flawed perceptions of westerners as being more creative as compared to their eastern counterparts. A complementary line of research proposes that the nature of creativity is different between eastern and western cultures, where western ideology of creativity prioritizes ideas that dramatically depart from existing ones, while eastern cultures focus on harmony and integration with the environment [7-10]. Although interest in cross-cultural creativity is evident (see the special issue of *Management and Organization Review* from November, 2010) authors note that the research of cross-cultural creativity is still in its nascent stage [11] and call for further theoretical and empirical exploration [12,13].

The present paper seeks to build on the on-going research by

shifting the focus directly on process aspects of creativity. Creative process has been one of the key research topics of the past century [14], and today it continues to intrigue and attract scholars from various fields [15] as a vaguely understood area. While researchers call for an assessment of a multi-step cognitive process involved in individual creativity in general [16], dynamics associated with geographical expansion of innovative activities among organizations [17] present an additional level of complexity and magnify the relevance of the topic. Even though cognitive mechanisms of creativity have received increasing attention among cross cultural researchers, there is still no overarching theoretical framework that describes the psychological mechanisms explaining varying levels of creativity across different cultures [2].

Drawing on the prevalent models of creativity and cross-cultural research, the model presented here identifies specific mechanisms of cultural effect at each of the steps of the creativity process, from problem identification to idea evaluation. Specifically, the framework is built around cultural differences in motivation, cognition and attribution [4,5,12,18,19], mechanisms shown to have significant influence on creativity and proven to vary across cultures with a potential to regulate how individuals proceed through the steps of the creativity process to arrive at a certain outcome or idea. The theoretical argument presented in the paper proposes that cognitive styles, regulatory focus and attribution strategies influence psychological processes and strategies adopted by individuals as part of the creative process and lead to a generation and selection of ideas characterized by various degrees of

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novelty or usefulness. The contribution of the paper is tri-fold. First, the theoretical framework complements on-going research of cross-cultural differences examining creativity as an outcome and focuses specifically on the differences that take place as part of a creativity process. Second, by closely examining end-to-end steps involved in a creative action, the framework sheds light on previously underexplored upstream steps of the process, including task definition and information gathering. Third, the paper identifies specific mechanisms underlying cross-cultural differences in the production of creative outcomes. Overall, the proposed framework highlights qualitatively different information processing strategies that potentially lead to cross-cultural creativity variation related to the degree of novelty and usefulness that was observed and documented earlier.

## Theoretical Background

### Creativity dimensions

The most frequently used definitions of creativity include attributes of “novelty” and usefulness”, where “novel” refers to the production of ideas that are unique compared to other ideas currently available and “useful” characterizes ideas that have a potential to add value in either the short or long term [5]. Idea “novelty” is defined in terms of originality and non-obviousness and idea “usefulness” is generally thought of in terms of relevance (the degree to which the idea applies to problem domain), workability (ability to implement the idea), and thoroughness (the degree to which the idea is thought through) [20]. Novel ideas frequently rely on extensive technological advancement that may or may not be in existence, they require extensive product or process development, significant expenses in R&D, new equipment and infrastructure, and adoption of new organizational routines. They are less related to the existing paradigm and thus less familiar. “Useful” ideas, in contrast, frequently rely on the extension of existing technologies, require less product development and R&D investment, these ideas are easier to implement, they fit the existing paradigm and thus are more familiar.

### Creative process

The main theoretical models of organizational creativity [5], the componential model of creativity by Amabile [4] and the theory of organizational creativity by Woodman, et al. [21], focus on social and contextual influences for employee creativity. However, in order to produce creative outcomes, individuals engage in certain psychological processes to come up with creative solutions, thus a number of creativity process models have been introduced [12]. As a process, creativity involves continuous processing of information in search for solutions to problems. Although there are multiple process models that have been proposed and well-received within psychology and organizational creativity literatures (see Lubart [14] for review), over time the models converged around similar high-level steps with some subtle differences within them [22]. These steps include problem definition, information gathering, idea generation, and idea evaluation [23]. For example, componential theory of creativity [4] includes problem identification, preparation, response generation and response validation as steps involved in the production of a creative outcome. The model of creativity problem solving put forth by Mumford, et al. [23] refers to problem construction, information search, encoding, and category recombination. As Amabile’s model of creativity is well established and widely accepted among creativity scholars [11], terminology from the componential model will be adopted for the purposes of the theory development in this paper. The initial step of the model, problem or task identification occurs as a result of the presentation of a problem

to be solved [24]. During this step of the process, individuals either identify a problem themselves or are introduced to it by others. At this point it is necessary to construct a problem by identifying a goal, potential restrictions and contingencies [23]. The second step, preparation, involves building up, searching and/or reactivation of stored information [18]. Individuals retrieve information from various internal and external sources and synthesize it [22]. The next step, response generation, entails encoding and recombination of the searched information to generate alternative solutions [25]. This is when ideas are actually generated and formulated. The final step of the process, idea evaluation/response validation, includes testing of the response against factual knowledge and other criteria [25]. During this step individuals screen the idea against criteria that they deem appropriate. The theoretical argument developed in this paper will posit that cultural differences manifest themselves at every step of the outlined process and extend their effect to regulate the final outcome.

### Cultural differences

The notion that culture has a strong influence on individual creativity has been well established by past theory and results. Multiple perspectives exist to explain the mechanisms whereby culture affects decision-making and creativity [12]. However, traditional cross-cultural creativity research has focused predominantly on value-based or socio-normative processes as drivers of apparent cross-cultural differences in creativity. For example, concepts highlighted as relevant to creativity in Morris and Leung’s [26] introduction to the special issue ‘Creativity East and West’ include personality psychological perspectives like conformity values and uniqueness motivations as well as social psychological mechanisms like a desire to maintain social harmony and the encoding of social norms in routines and operating procedures. They sum up the special issue and their own views by suggesting: “Culture shapes behavior largely through social norms, contexts that cue them, and motives that drive individuals to follow, ignore, or invert them.” (p. 322). However, cognitive approaches present an alternative lens through which to examine cross-cultural differences in creativity that is fundamentally different than personality, or social accounts [27]. Morris and Leung [26] highlight both cognitive and social aspects of evaluation when they define useful as “practically implementable and socially accepted” (p. 316).

Researchers have agreed that culture can be thought of as a set of cognitions shared by members of a social group [28,29]. Building on this, Nisbett, et al. [30] suggest that despite western psychologies implicit assumption that cognition is a universal phenomenon, there seems to be significant differences across cultures in individual’s attention to contextual details, beliefs about the nature of the world, preferences for knowledge and learning, and even their basic cognitive frameworks. Under the general heading of holistic versus analytic thought, Nisbett et al. [30] presented a series of sociocognitive differences between Eastern and Western cultures. Although recent research has developed a more nuanced view of cultural differences, to highlight fundamental aspects, the cross-cultural creativity process model developed in the current paper will be built around the higher order differences based on the East vs. West dichotomy [31].

In order to understand the effect of culture, it is important to focus on cultural differences that are specifically relevant to the essential components of creativity. The componential model [4,18] identifies creativity relevant skills, intrinsic motivation and domain relevant skills as fundamental for creative performance. Integrating the model with the developments in cross-cultural research, it is logical to propose that culture influences creativity as a result of differences in cognition,

motivation and attention/attribution. Creativity relevant skills are primarily concerned with personality and cognitive styles [32], both of which have been shown to differ across cultures [33]. While the componential model is focused on the distinction between intrinsic and extrinsic motivation, motivation in general is conceptualized as an important factor contributing to creative behavior of specific interest are differences related to regulatory focus as prior research has documented the link between for promotion focus and creativity [11,34]. Finally, the model emphasizes the relevance of domain-relevant skills, suggesting that creativity does not take place in a vacuum and availability of relevant information is critical. Taking this argument further, one can propose that individuals' strategies in attribution are also a foundational factor that determines what information is accessed and processed by an individual. Thus, cross-cultural differences in cognitive style, regulatory focus and attribution are relevant for understanding the differences in creative behavior.

Cognitive style may be defined as "consistent individual differences in preferred ways of organizing and processing information" [35,36]. Although there are numerous frameworks developed in psychology literature, cognitive styles are frequently categorized in terms of a two-dimensional framework of holist-analyst thinkers [37]. Holists are "big picture" people, they see a situation as a whole and can appreciate total context. By contrast, individuals with an analytic cognitive style focus on one or two aspects of a situation at a time. They are likely to be structured, but socially separate, they are generally more controlled. Analysts pay attention to detail, focus on "hard data", and adopt a sequential, step-by-step approach to processing information [38]. Generally, individuals from eastern societies tend to have a holist cognitive style and while individuals from western societies are predominantly analytic [31].

Regulatory focus is an important element underlying individuals' motivation. Regulatory Focus Theory [39] draws on the notion that people approach pleasure and avoids pain and thus suggests the existence of distinct regulatory systems that are concerned with maintaining security or acquiring nurturance [34]. An individual's self-regulation in relation to their goals and aspirations is associated with promotion focus, while an individual's self-regulation towards their duties and obligation is characterized as preventive focus. Research has shown that cultural differences exist in self-regulation such that individuals from western cultures have been shown to demonstrate promotion focus, while eastern cultures tend to gravitate towards preventive focus [34,40].

Individuals from different cultures attend to different aspects of the environment and as a result rely on different attribution strategies [30,33,40]. Specifically, individuals from the West are more inclined to attend to a salient target object and rules governing an object's behavior. Therefore, they are more prone to believe in controllability of the object. Individuals from the East attend more to the field and contextual environment, although they are able to attend to both, object and the field. As a consequence, easterners are more likely to emphasize the role of the environment and recognize limitations related to one's ability to control an object.

In sum, drawing on the earlier research in creativity and cross-cultural fields, one may suggest that differences in cognitive processes, and motivation, and attribution mechanisms are relevant for understanding cross-cultural differences in individual creativity. The following section of the paper will argue that these differences play a role at every step of a creativity process by guiding an individual's information processing and ultimately underlie the variability in creativity outcomes across cultures.

### Proposed theoretical framework

The proposed theoretical argument draws on existing creativity process models and examines how cultural cognitive, motivation and attribution mechanisms interplay to influence information processing strategies and outcomes of each step throughout the process. The overall model is depicted at (Figure 1).

**Problem definition (Step 1):** The creativity process is initiated by problem identification or task definition and it involves processes related to analyzing and articulating the exact nature of a given problem to be solved [14,18]. This initial step is critical, as studies have demonstrated that it provides the context and cues for the consequent stages of the creative process [22] and thus, has wide-ranging implications for creative production and solution generation. In fact, researchers have established that differences in the application of this process step explain creativity above and beyond differences in intelligence and divergent-thinking skills on the resulting creative outcome [22,23].

Task definition involves identifying goals, procedures, restrictions, and information required to solve a problem [23,41]. More often than not, individuals are faced with ambiguous and multi-dimensional problems [32] that they first have to construct or identify and prioritize its dimensions. Problem construction may occur in automatic (less

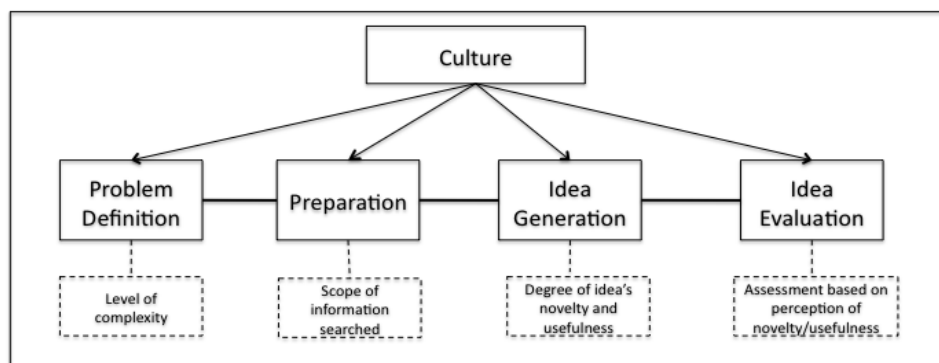


Figure 1: Effect of culture on creativity process.

time consuming) or more involved (more time consuming) manner [23]. In the event that problem construction occurs automatically, problem-solvers rapidly move into the next phase of information search [41,42]. In instances when the task identification process is more involved, problem-solvers go through a complex reconciliation of potentially competing goals, priorities, requirements and limitations [23]. The level of involvement in the task identification process and the complexity of the task definition itself is of importance as both have been linked to the overall quality of solutions developed as a result of the entire creative process [24,43].

Several individual characteristics have been linked to the level of automaticity associated with the task identification problem. For example, it has been shown that the extent of problem-solving experience plays a role in the awareness of a potential multi-dimensional nature of problems and the amount of time spent on defining a problem before moving on to the next phase [22]. It is likely that cultural background will impact the level of complexity of the task definition process and its outcome, through motivational and cognitive mechanisms. Drawing on the Theory of Regulatory Focus [39] one can expect that differences in regulatory focus will influence the likelihood that individuals recognize multi-dimensional and potentially competing elements of the problem at hand. Those with a promotion focus will tend to concentrate on the achievement of successful results and finding a solution for a problem at hand; thus, this group will primarily attend to project goals with little consideration of risks and limitations associated with the potential solution. In contrast, those with a prevention focus will be concerned with avoidance of failure and appearance of incompetence, and thus they will be sensitive to risk factors, possible complications and unforeseen circumstances. During task identification or construction, prevention-focused problem solvers will acknowledge the goal that they have to meet, but will also be likely to make an effort to seek out and understand potential project limitations, restrictions and methodological details.

Furthermore, differences between holistic and analytic thinking styles will impact the level of complexity of information processing associated with task formulation, or the level of automaticity or involvement. Analytic thinkers have a tendency to identify and separate out key features from overall context, they are able to more readily group objects relying on rule-based categories; therefore, they will be better positioned to prioritize attributes associated with task definition and focus on one key aspect. Holistic thinkers tend to assume a "big" picture approach and will be more likely to attend to a wider range of task attributes. This approach would include simultaneous consideration and reconciliation of project limitations, contemplation of possible problem solving methods, and understanding of information needs. Consequently, holistic thinkers will have difficulty prioritizing all the attributes and, as a result, formulate a task characterized by multiple, and possibly opposing, features, and of greater complexity. In sum, problem-solvers from western cultures, as opposed to problem solvers from eastern cultures, will be more likely to rapidly proceed through task identification and end up with a task characterized by lower complexity.

**Proposition 1:** The level of information processing complexity as part of task definition will vary by culture. Due to differences in regulatory focus and cognitive style, problem-solvers with a western background will demonstrate less complexity in information processing associated with task identification as opposed to problem-solvers with an eastern background who would engage in a more complex information processing.

**Proposition 2:** The degree of complexity of the defined task will vary

by culture. Problem-solvers from western backgrounds will produce a task definition that is focused on one attribute, problem resolution, while individuals from eastern societies will produce a task definition characterized by multiple attributes, including problem resolution, potential limitations, restrictions and methods.

**Preparation (Step 2):** The second step of the creativity process involves preparation for the generation of ideas and includes either built up or reactivation of information that is relevant to a given problem [18]. A large and diverse set of information is retrieved and must be synthesized to facilitate creative production [22]. Past research found that the type and the amount of information as well as the encoding strategies deployed by problem-solvers significantly influence creativity outcomes [44]. Specifically, the outcome of the information search depends on the diversity of the information accessed and the ability to sift out what is relevant [45]. Earlier research demonstrates that individuals vary in the scope and level of the diversity of information they access and encoding strategies that they rely on [46,47]. Creativity scholars have established that people who attend to a wider range of information and perform a more extended search tend to produce more creative ideas [23].

Cultural differences in cognitive styles also have an important influence on information search strategies adopted by problem-solvers. Specifically, these differences directly impact the type and range of information that individuals tap into. Individuals who are more holistic in their thinking are more attuned to contextual and environmental factors [40] and they tend to attribute causality to situational factors [30]. Thus, during the information search step, in trying to understand why a given problem exists, these individuals will tend to access information that includes situational factors and overall context. Individuals with more analytic thinking will be more likely to separate the problem from situational factors and will focus on the primary object, dismissing any contextual considerations, while seeking to understand specific factors driving the problem.

Differences in the information search will ultimately impact the outcome of the preparation step of the creativity process. Problem-solvers adopting a more contextualized information search will be likely to come out with information that is more context-specific, while those who gather problem specific information will tend to distill more problem-specific information.

**Proposition 3:** The scope of the information search in preparation for creative idea generation will vary by culture. Due to differences in cognitive styles, individuals from eastern societies will access information relevant to potential contextual or situational causes, while individuals from western societies will only access information that is specific to the problem at hand with lesser consideration for any contextual or situational factors.

**Proposition 4:** The content of information gathered and encoded at the completion of the preparation step will vary by culture. Problem-solvers with western backgrounds will have retrieved information that is more problem- and less context-specific, while problem-solvers with eastern backgrounds will have retrieved information that is fewer problem- and more context-related.

**Idea generation (Step 3):** Idea generation has been equated to creativity and thus has been in the center of creativity research. Idea generation occurs as a result of the combination and reorganization of category information to find new solutions [14,18]. The combination and reorganization process is possibly the most foundational component of idea generation [25]. Making connections among previously

unrelated concepts is often proposed as a basis for the generation of a creative outcome. Strategies to reorganize newly acquired information include either selective recombination or selective comparison [48,49]. Selective recombination is the activity where selected elements of information are composed into an integrated pattern or meaning. This process includes the following sub-processes: identification of key features of categories, mapping of features of one category to features of other categories, construction of new categories and identification of additional features through elaboration. The selective comparison process implies comparing of newly acquired information to the information available in the past to ensure fit and appropriateness [49]. This sub-process relies on pattern recognition abilities and is similar to problem solving by the analogy technique [48]. Individuals need to be able to make a realization that new information is similar or dissimilar to old information in certain ways and use this determination in the reorganization of information. The selection of the information reorganization strategy will have a direct impact on the degree of novelty or usefulness of generated solutions. Selective recombination does not necessarily rely on the existing patterns and thus would lead to more unexpected, original and novel combinations. In contrast, the selective comparison is based on the linkages with existing knowledge patterns and thus is more likely to lead to more familiar combinations and result in the generation of more useful and implementable ideas.

Culture, and differences in cognitive styles, will influence the choice of the information reorganization strategy selected by individuals during the idea generation step. Problem solvers from western societies who are more analytic will be better positioned to identify key features of the categories and thus will have more features available for recombination. Westerners learn rule-based categories more readily than Asians do and they rely more on categories for purposes of deduction and induction [30]. Representatives from eastern societies, who are more holistic, will be less likely to separate out and identify key features across a range of categories and thus less likely to successfully recombine the categories. Furthermore, problem-solvers from eastern societies with holistic thinking have a greater tendency to group objects based on relationships and similarities [30] and are better positioned to consider the entire pattern and recognize familiar patterns. Problem-solvers from western societies, with more analytical thinking will be less likely to keep the big picture in mind and will be less likely to identify patterns.

**Proposition 5:** Recombination strategies that take place at the idea generation step will vary by culture. Problem solvers with western backgrounds will rely primarily on selective recombination strategies, while problem-solvers with eastern backgrounds will prioritize selective comparison strategies.

**Proposition 6:** The attributes of ideas generated at the idea generation step will vary by culture. Because of the differences in information recombination and reorganization strategies, problem solvers with western backgrounds will generate more novel ideas, while problem solvers with eastern backgrounds will generate more useful ideas.

**Idea evaluation (Step 4):** Idea evaluation involves assessment of the correctness of appropriateness of a solution. Ideas are not being evaluated in a vacuum and some sort of a framework is necessary during the idea evaluation step [22]. Although domain relevant skills and expertise are essential at this phase of the process [18], cognitive and personality characteristics are also relevant. Individuals will formulate their opinion of an idea based on their past and present work experiences, as well as expectations of management, colleagues,

and society in general. Previous theorizing on cross-cultural differences in creativity emphasized the importance of cultural values of individualism and collectivism as underlying factors contributing to differences in emphasis placed on either originality or usefulness [50]. However, one can argue that cultural differences during idea evaluation extend beyond the differences in prioritization of novelty vs. usefulness. Specifically, cultural differences related to regulatory focus will greatly influence an individual's perception of the idea's value or appropriateness. Similar to the process of task definition, the idea evaluation step is guided by an individual's focus towards promotion or prevention. For problem solvers with the promotion focus, the primary objective is to advance and solve the problem at hand. While evaluating an idea, they will be comparing solutions to goals that were set out at the initial phase, step 1, and most likely overlook usefulness or appropriateness considerations (i.e. riskiness, practicality and feasibility). Thus, when evaluating ideas, these individuals will be more likely to select a novel solution that is less useful or practical. Problem solvers with a preventive regulatory focus will concentrate on making sure that the project does not fail, that the idea is doable, can work and are successfully implemented. Thus, these problem-solvers will be more likely to select a solution that is not only novel, but also practical and feasible. Cultural differences in evaluation criteria will result in the degree of novelty or usefulness of ideas selected by individuals at the end of the creative process.

**Proposition 7:** Evaluation criteria used at the final stage of the creativity process will vary by culture. Problem-solvers with western backgrounds characterized by the promotion focus will utilize idea novelty as basis for idea evaluation, while problem-solvers with eastern backgrounds, characterized by preventive focus will emphasize idea feasibility and practicality in their evaluations.

**Proposition 8:** Perceived evaluation of an idea as a result of an idea evaluation step will vary across cultures. Problem solvers with western backgrounds will tend to favor ideas that are more novel, while problem solvers with eastern backgrounds will prefer ideas that are more useful.

In summary, cultural differences in cognition, motivation and attribution consistently influence the creativity process such as to enable generation and selection of more novel ideas by problem-solvers from western cultures and more useful solutions by problem solvers from eastern cultures. Thus, building on previous propositions presented in the paper, one can conclude the following:

**Proposition 9:** The degree of novelty and usefulness of developed ideas will vary by culture. At the completion of the creativity process, due to differences in cognitive, motivational and attribution mechanisms, problem solvers with western backgrounds will develop ideas that are more novel, while problem-solvers with eastern backgrounds will develop ideas that are more useful.

## Discussion

### Theoretical contribution

The proposed framework contributes to the field of organizational creativity in three major ways. First, the model incorporates cross-cultural perspective to the model of creativity process and identifies exact mechanisms that interplay at every step of a creative action. Specifically, the argument developed in the paper integrates process models of creativity with cross-cultural knowledge in motivation, cognition and attribution to examine differences in information-processing strategies and evaluation priorities that occur throughout the creativity process. The argument developed in the paper specifies

how these effects impact the outcome of each step of the process and ultimately give rise to variations in the overall outcome of a creative action. The model extends the research in cross-cultural creativity beyond the discussion of different levels of creativity traced to dissimilarities in conceptualizations of creativity, cultural norms and traditions and delivers a more detailed perspective on the underlying processes that result in observed differences in creativity. Second, the presented framework brings into focus previously underrated or underexplored up-stream steps involved in creative action. Specifically, earlier prior research has explored idea generation and evaluation as fundamental elements associated with the production of creative ideas [12,51]. Although major creativity models acknowledge preliminary activities that takes place in preparation to idea generation [21,44,52], these steps remain underexplored in both creativity and cross-cultural context. The creativity process model developed in this paper seeks to provide a more comprehensive end-to-end account of cross-cultural differences that take place before, during, and after the completion of a creative action. Third, the proposed framework contributes to the cross-cultural creativity literature by putting forward an alternative explanation to previously theorized and documented preferences to emphasize either novelty or usefulness aspects based on one's cultural heritage. Earlier research has argued that observed differences in levels of creativity can be explained by westerners' tendency to prioritize novelty aspects of creativity and easterners' propensity to pay more attention to usefulness considerations. The earlier line of research attributes these differences to normative mechanisms related to individualism-collectivism, power distance and uncertainty avoidance [26,50]. Alternatively, the model presented in this paper develops an argument that cognition, motivation and attribution mechanisms impact individual's information gathering and processing strategies throughout creative activity and can potentially account for the resulting differences in the degree of novelty or usefulness that has been observed in earlier studies. This framework advances our understanding of the cultural effect on creativity by going beyond explanations referencing differences in cultural values and introducing specific motivational and cognitive mechanisms manifested at individual level throughout creative process.

### Limitations and Directions for Future Research

Despite important contribution to the field of cross-cultural creativity research, the paper carries certain limitations. The theoretical framework depicting cross-cultural differences is grounded in a well-established but nevertheless relatively high-level East vs. West dichotomy. Cross-cultural researchers, however, have developed a more nuanced understanding of differences across cultures to reflect greater complexity and interdependencies in the field. Therefore, the model presented in this paper, while capturing major cross-cultural implications, may not reflect all of the nuances associated with more subtle differences. Future researchers may build on the framework developed in this paper and explore the effect of more subtle differences during various steps of the creativity process.

Another important limitation of the paper is related to the dynamic nature of contextual factors and its impact on the creativity process. Although the focus of the present paper is on the detailed information-processing strategies, it is important to note that the creative process is highly contextualized and potentially can be influenced by a number of organizational factors. Thus, it is essential to identify contextual factors that may either mitigate or enhance the effect of culture on the processes discussed in the paper. The emergence of multinational and global organizations draw members from different nationalities and

cultures and bring them into close contact and routine interactions at work [53]; multi-cultural teams are becoming a fact of work life in not only international but also domestic organizations. Such organizational reality presents opportunities for cross-cultural researchers to explore how differences in cognition, motivation and attribution originated from national culture would become more or less influential on the creative process [54,55]. Following the logic of the social-cognitive theory of culture, multinational and global organizations and teams provide new sociocultural and organizational contexts within which diverse members from eastern and western origins exhibit their attribution and cognitive preferences. Such new contexts may have the capacity to both modify the original cognitive habits and the effects of those habits. Thus, in the future it would be of importance to depict how organizational factors moderate the effects of cultural differences on creative process [56].

### Practical Implications

The proposed framework carries important implications for management practitioners. Innovation and creativity are central capabilities for organizational success and companies are increasingly looking for ways to enhance their ability to innovate. Furthermore, companies tend to expand location span of their innovative activity and frequently look for novel solutions outside of their home countries. In this environment, improved understanding of the effect of culture on employees' creative performance becomes increasingly important. By shifting the focus on process, one can propose that cultural differences might not necessarily exist at a point of idea generation, but also at earlier and later stages of a creative action. An important proposition of the framework is the notion that it is not necessarily employee's creative potential that varies across cultures, rather their self-filtering information processing and assessment strategies. In other words, one of the consequent takeaways is the recognition that all employees, regardless of their cultural background, are capable of generating novel ideas. Creating an environment that reduces extensive self-filtering and promotes active sharing would result in a greater quantity of proposed ideas many of which are novel with the potential to evolve into highly useful ideas. This implication is quite significant as it highlights the importance of an effective filtering process that can potentially increase organizational capacity to generate ideas, reduce costs associated with their evaluation, improve accuracy of the assessment and as a result increase organizational innovative capability.

If empirical results support the theoretical propositions in this paper it may have important implications for management practices and training programs. The allegation that cross-cultural differences in creative output might be driven by information-processing and evaluative priorities and not necessarily by cultural differences in creative ability should encourage management to promote appreciation for all forms of creative ideas and support creative contribution from people of diverse cultural backgrounds. In response to a greater tolerance for all types of ideas and more appreciative reactions by their management and co-workers, employees will become more proactive in sharing their ideas.

Furthermore, recognizing the difference in information processing strategies and evaluative priorities will enable management to optimize the effectiveness and accuracy of idea assessment processes through careful design of project teams involved in innovative activities. Ensuring that project teams are composed of individuals with diverse cultural backgrounds will result in a balanced assessment of an idea and include a comprehensive consideration of an idea novelty and

usefulness attributes. In sum, theoretical perspective developed in this paper carries significant practical implications that might enable management to maximize creative behaviors of their employees regardless of their cultural background.

## Conclusion

Theoretical framework presented in this paper examines the effect of culture on the creativity process. Specifically, the model depicts the effect of differences in motivational, regulatory and attribution mechanisms on distinct steps of a creative process and outlines how these differences impact information processing strategies at each step and ultimately result in a qualitatively different output of the overall process. Our theorizing shifts the focus from exploring cultural differences in idea generation ability to understanding effect of culture on individual's information processing strategies. By focusing on the differences in the creativity process as opposed to creativity outcome, we provide a different perspective on the origin of cultural differences that were observed by earlier researchers as well as increase comprehensiveness of our knowledge of the creativity process across cultures.

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