



Contents lists available at ScienceDirect

Organizational Behavior and Human Decision Processes

journal homepage: www.elsevier.com/locate/obhdp

Paradoxical frames and creative sparks: Enhancing individual creativity through conflict and integration

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ARTICLE INFO

Article history:

Received 26 March 2010
Accepted 31 March 2011
Available online 7 May 2011
Accepted by Linn Van Dyne

Keywords:

Paradoxical frames
Creativity
Paradox
Conflict
Integrative complexity

ABSTRACT

Across industries, organizations operate in increasingly complex and uncertain environments. To succeed in such environments, organizations require their members to think creatively and integrate conflicting demands. We propose that the adoption of paradoxical frames—mental templates that encourage individuals to recognize and embrace contradictions—increases creativity. In four laboratory studies using different creativity tasks and different manipulations for eliciting paradoxical frames, participants who adopted paradoxical frames were more creative than their counterparts who did not. Our results suggest that the positive influence of paradoxical frames on creativity is due to the paradoxical relationship between task elements and not merely to their joint activation. This paradoxical relationship creates a sense of conflict in individuals and enhances their ability to integrate contradictions, which in turn increases creativity.

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Introduction

Creativity management in organizations is rife with tensions and paradoxes (DeFillippi, Grabher, & Jones, 2007), requiring employees to integrate conflicting agendas and contradictory demands (Lewis, 2000). Copywriters, for example, are asked to generate original slogans that are also meaningful and useful as advertisement campaigns (Beersma & De Dreu, 2005). Similarly, product developers have to consider cost issues and follow specifications when developing new ideas (Lewis, Welsh, Dehler, & Green, 2002; Miron, Erez, & Naveh, 2004); and employees have to think outside of the box when solving problems and at the same time offer practical solutions that can be implemented given organizational constraints (Oldham & Cummings, 1996).

Organizational members' typical reactions to these and other contradicting demands include a sense of threat, defensiveness, and a tendency to focus on one demand at the expense of the other (Lewis, 2000). Yet focusing on only one demand can be maladaptive. Too much focus on originality, for example, with little or no emphasis on constraints (such as cost) may result in novel but overpriced products that do not meet consumers' needs (Wind &

Mahajan, 1997). By contrast, overemphasis on specifications and constraints can thwart the flexibility and exploration required for creativity (Benner & Tushman, 2003).

It has been suggested that, to facilitate the integration of conflicting agendas and contradictory demands, managers and employees should adopt *paradoxical frames* (Lewis, 2000; Smith & Tushman, 2005). According to Lewis, "[p]aradox denotes contradictory yet interrelated elements—elements that seem logical in isolation but absurd and irrational when appearing simultaneously" (Lewis, 2000, p. 760). Accordingly, paradoxical frames are mental templates that individuals impose on an environment in order to recognize and embrace contradictions (Smith & Tushman, 2005, p. 523). More specifically, throughout this paper, we define paradoxical frames as *mental templates individuals use to embrace seemingly contradictory statements or dimensions of a task or situation*. When embracing the paradox, individuals recognize the contradictions inherent in the dimensions or statements, yet understand their potential relationship as complementary or reinforcing. For example, an employee may receive directions from her boss that seem contradictory (e.g., "Make sure everything is planned and organized for the release of our new product. Also be sure to remain flexible so that we can deal with last-minute requests from customers in a timely manner"). If a paradoxical frame is activated when an employee receives these directions, she recognizes the inherent incompatibility of simultaneously achieving high levels of planning and flexibility but also understands the potential for planning and flexibility to complement or positively reinforce

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one another. Planning and organizing, for example, can help prepare for alternative reactions of customers and thus enable greater flexibility when addressing their needs (Vera & Crossan, 2005). But if a paradoxical frame is not activated, then the employee is likely to focus on only one dimension and not the other and miss the opportunity to achieve both.

In general, paradoxical frames encourage “paradoxical inquiry,” in which a problem is identified, its contradictory elements and their links are revealed and explored, and alternative solutions are found and tested (DeFillippi et al., 2007; Luscher & Lewis, 2008). The degree to which managers understand and accept contradictions affects whether they “embrace the tensions and benefit from them or are halted by the inconsistencies” (Smith & Tushman, 2005, p. 526). Furthermore, scholars have argued that adopting paradoxical frames improves managers’ ability to attend to and deal with strategic contradictions (Smith & Tushman, 2005) and leads managers to reach new insights to existing problems (Luscher & Lewis, 2008). Despite these important insights into the possibilities of paradoxical frames, no empirical study has examined the effects of paradoxical frames on creativity.

Addressing this gap, the present work examines the influence of paradoxical frames on the ability of individuals to be creative. We bring the phenomenon of paradoxical frames into a controlled laboratory setting and manipulate paradoxical frames using different priming tasks. Across four laboratory studies, we also employ different creativity tasks to examine the generalizability of our findings and explore the psychological mechanisms explaining the relationship between adopting paradoxical frames and creativity.

Paradoxical frames and creativity

Paradoxical frames provide individuals with a structure of assumptions and boundaries that influence the way they make sense of a situation, seek information, and make decisions (Smith & Tushman, 2005). Instead of eliciting “either/or” thinking, paradoxical frames elicit the type of “both/and” thinking that can result in the discovery of links between opposing forces and the generation of new frameworks and ideas (Lewis, 2000; Luscher & Lewis, 2008). When adopting a paradoxical frame, one acknowledges the tension between opposing task elements, yet understands that combining opposing task elements tempers the undesirable side effects of each element alone and leads to new solutions that integrate both elements (Gebert, Boerner, & Kearney, 2010; Lewis, 2000).

Paradoxical frames may be especially effective in helping people perform creative tasks. Creativity is commonly defined as the generation of novel yet useful ideas or solutions to a problem (Amabile, 1983; Amabile, 1996). The ideation process consists of making new combinations of associative elements and selecting an idea or solution that is useful or appropriate to a given problem (Mednick, 1962). This process is guided by the available cognitive elements that individuals bring to the process and combine into new ideas or solutions as well as by the relationship between these elements (Finke, Ward, & Smith, 1992). The larger the number of cognitive elements that are relevant to the task and activated during the ideation process, the higher the likelihood that unusual associations or solutions will be generated and the larger the pool of available novel ideas (Amabile, Barsade, Mueller, & Staw, 2005; Simonton, 1999). Yet, only knowledge accessible to memory can be used in the creativity process. Increasing the accessibility of less retrievable knowledge enlarges the number of generated ideas (Rietzschel, Nijstad, & Stroebe, 2007).

Compared to either/or frames, paradoxical frames encourage cognitive juxtaposition of inconsistent elements and therefore increase the breadth of attention and the accessibility of knowledge related to the different elements. Broader attentional span and di-

verse knowledge allow greater flexibility and generation of new connections between activated elements. For example, comic book writers who combined diverse knowledge from various genres were more creative than those who based their ideation process on a limited number of genres (Taylor & Greve, 2006). Similarly, priming individuals with two knowledge categories (e.g., nutrition and hygiene) increased their creativity compared to priming them with only one category (Rietzschel et al., 2007). In a similar vein, people primed with paradoxical frames are likely to generate more ideas compared to individuals primed with only one of the contradictory elements (an either/or frame).

Creative ideas can also result from an unusual perspective on old problems as well as from new combinations of familiar ideas (Hargadon & Bechky, 2006; Schooler & Melcher, 1995). Paradoxical frames reduce the likelihood that people will fall back on conventional lines of thought (Luscher & Lewis, 2008). Research suggests that individuals tend to draw primarily on typical thinking, or implicit assumptions and prior experience, when solving a problem. Specifically, they tend to approach a problem in the usual way for that class of problems, to make implicit assumptions without their own awareness, and to be guided by mental mindsets acquired through prior experience (Smith, 2003). Even when individuals are encouraged to think creatively and respond uncritically to problems (Paulus, Larey, & Ortega, 1995; see also Paulus & Yang, 2000), they may apply creative solutions discovered within a given context to other contexts (Goldenberg, Mazursky, & Solomon, 1999).

The atypical relationship between primed task elements in a paradoxical frame signals that an environment is unusual and allows elements that would typically be perceived as contradictory to be reconciled (Smith & Tushman, 2005). This perception of the environment may result in frame-breaking experiences and recognition of new combinations of old knowledge into new meanings and solutions (Lewis, 2000). For example, research examining the relationship between ambivalent emotions and creativity found that individuals who perceived an environment as unusual showed an enhanced ability to recognize unusual associations (Fong, 2006). In a similar vein, paradoxical templates have been found to be associated with greater tolerance for interpersonal conflicts and willingness to solve them through compromise (Peng & Nisbett, 1999).

By inspiring individuals to discover how contradictory elements can coexist and even reinforce each other, paradoxical frames stimulate the reconciliation of elements that are assumed to be contradictory. Goldenberg et al. (1999) showed that the activation of uncommon mental templates channeled the ideation process and enhanced the originality and value of generated ideas in a product-development task. Similarly, we suggest that paradoxical frames channel individuals’ idea generation process and encourage them to integrate seemingly opposing elements into new concepts and solutions. Specifically, we propose that individuals who employ a paradoxical frame are more likely to engage in creative behavior and to combine knowledge in new ways than are individuals not primed with paradoxical frames or individuals primed to focus on only one of the contradictory elements. Thus, we hypothesize that:

Hypothesis 1. Individuals are more creative when they are primed with paradoxical frames than when they are primed with other cognitive frames.

Explaining the link between paradoxical frames and creativity

We propose that paradoxical frames elicit a sense of conflict in individuals and increase their willingness and ability to recognize

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