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# Personality and Individual Differences

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



# Promotion/prevention focus and creative performance: Is it moderated by evaluative stress?☆



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#### ARTICLE INFO

Article history:
Received 19 March 2016
Received in revised form 11 September 2016
Accepted 27 September 2016
Available online 3 October 2016

Keywords: Creativity Evaluative stress Moderator Regulatory focus

#### ABSTRACT

Previous research has produced contradictory findings about the impact of regulatory focus on individual creativity, particularly for a prevention focus. These studies focused on how regulatory focus affects creativity in combination with evaluative stress. We hypothesized that these effects would depend on what type of stress was situationally induced. Study 1 comprised 209 undergraduate students (138 females) with a mean age of 20.13 years (SD=1.22) from Beijing, China. Study 2 comprised 221 high school students (133 females) with a mean age of 16.21 years (SD=1.01) from Beijing, China. Results indicated that under social-evaluative stress (Study 1), promotion-focused cues produced more original ideas than did prevention-focused cues. Moreover, under self-evaluative stress (Study 2), the effects of regulatory focus on creativity were moderated by self-evaluative stress. Specifically, in the higher self-evaluative stress condition, participants with a chronic prevention focus enhanced in fluency in prevention-focused states relative to promotion-focused in originality in promotion-focused states relative to prevention-focused states relative to prevention-focused states relative to prevention-focused states.

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#### 1. Introduction

Two motivational systems have been proposed to attain a desired outcome: promotion focused and prevention focused (Higgins, 1997, 1998). The promotion-focused system is typically oriented towards achieving positive end-states and encourages individuals to focus on growth and nurturance. In contrast, the prevention-focused system is typically oriented towards avoiding negative end-states and directs individuals' attention towards security and duties.

Regulatory focus theory also differentiates between a chronic and a situational focus. There are individual differences in the chronic tendency to be promotion- or prevention-oriented. On the other hand, context factors in a specific situation (e.g., ideals vs. oughts, gains vs. losses) could induce a promotion or a prevention focus (Freitas, Liberman, & Higgins, 2002; Higgins, Bond, Klein, & Strauman, 1986; Roney, Higgins, & Shah, 1995; Shah, Higgins, & Friedman, 1998).

### 2. Regulatory focus and creative performance

As demonstrated by prior studies, regulatory focus has implications for one's cognition, emotions, goal pursuit, and task performance

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(Brodscholl, Kober, & Higgins, 2007; Higgins, Shah, & Friedman, 1997; Shah & Higgins, 1997; Shah et al., 1998). Various studies have expressed concern with the potential impact that regulatory focus has on creativity. It is generally assumed that being promotion focused bolsters creativity more than being prevention focused does, although, to date, research has not arrived at precise conclusions (Bittner & Heidemeier, 2013; Crowe & Higgins, 1997; Friedman & Förster, 2000, 2001; Herman & Reiter-Palmon, 2011; Lam & Chiu, 2002). Crowe and Higgins (1997) examined the contribution of situationally induced regulatory focus to cognitive performance by asking participants to work on an anagram task. They found that promotion-focused participants generated more solutions than prevention-focused participants did. Friedman and Förster (2001) further investigated this relation with a "pencil-and-paper maze" task, which was initially used to induce a situational regulatory focus. The results showed that promotion cues facilitated both creative insight and divergent thinking relative to prevention cues. Besides situationally induced self-regulatory cues, individuals with a chronic tendency to be promotion-oriented could generate more solutions than those with a chronic tendency to be preventionoriented (Lam & Chiu, 2002).

It is reasonable to assume from existing research that creativity benefits from a promotion focus rather than from a prevention focus. However, some research has expanded on this concept by investigating the positive side of a prevention/avoidance motivation (Baas, De Dreu, & Nijstad, 2011; Freitas, Liberman, Salovey, et al., 2002; Roskes, De Dreu, & Nijstad, 2012). Earlier research argued that prevention-focused participants would prefer to initiate action earlier and pursue their valued

<sup>★</sup> This work was supported by a grant from the National Natural Science Foundation of China (No. 31100757).

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goal even when the expectancy of goal attainment was relatively low, as prevention-focused states rendered the current events to be experienced as necessities; therefore, individuals did not want to be sidetracked by potential distractions (Freitas, Liberman, Salovey, et al., 2002; Lam & Chiu, 2002). Baas et al. (2011) examined the relationship between regulatory focus and creativity within the context of regulatory closure (i.e., whether a goal is fulfilled or not). Prevention-focused individuals in the unfulfilled prevention goals condition were as creative as the promotion-focused ones. These findings suggest that effects of regulatory focus on creative performance may be more complicated than it seems, and it is fruitful to explore under what types of conditions a promotion or prevention focus would benefit creativity.

Past research is helpful for understanding the underlying causes of a self-regulatory focus on creativity. Baas et al. (2011) indicated that activation mediated the effects of the regulatory focus and regulatory closure on creativity. More specifically, activating moods including activating promotion and prevention-related moods, led to a higher level of creativity than deactivating moods such as relaxed and neutral moods did. Studies on the mood–creativity link have also demonstrated that activating moods are more likely to boost creativity than are deactivating moods (for a review, see Baas, De Dreu, & Nijstad, 2008). Further evidence shows that better creative performance emerges when individuals are activated, regardless of whether regulatory focus is concerned with promotion or prevention (Baas et al., 2011; De Dreu, Baas, & Nijstad, 2008).

On the other hand, based on activation theory, a medium degree of stress is most favorable to task performance than an extremely high or extremely low degree, particularly for complicated tasks such as creative tasks (Gardner, 1990). As a major source of stress, evaluative stress can increase arousal and/or activation level (Byron, Khazanchi, & Nazarian, 2010). This may provide a valuable insight into the link between regulatory focus and creativity.

Evaluative stress, whether social- or self-evaluative, is likely to exert psychological distress and distract the individuals' attention from the task due to fear of negative evaluation by others (Burke, 1991; Byron et al., 2010; Silvia & Phillips, 2004; Thoits, 1991). Social-evaluative stress "occurs when an aspect of self is or can be negatively judged by others" (Dickerson & Kemeny, 2004, p. 358), whereas self-evaluative stress stems from the threat of comparing oneself with others (Mussweiler & Bodenhausen, 2002). In fact, social- and self-evaluative stressors are co-dependent. The social environment is important in the formation and development of the self. As evaluation is made by the individual, self-assessment is often based on comparison with an external standard. On the other hand, social- and self-evaluation are different in important aspects such as concept correlation and pressure intensity. First, research has indicated that self-evaluation has a weak direct correlation with social-evaluation, whereas reflected evaluation (i.e., a person's perception of how others see and evaluate him/her) is significantly related to self-evaluation (Bois, Sarrazin, Brustad, Chanal, & Trouilloud, 2005; Hergovich, Sirsch, & Felinger, 2002). Second, although the potential for social-evaluation and self-evaluation can motivate task performance, the impetus could be different. Harkins and colleagues investigated the roles of internal and external sources of evaluation on a creative task (i.e., generating uses of objects). Their findings suggested that when both evaluative conditions are presented, participants are highly influenced by experimenter evaluation instructions, whereas they did not respond to the instructive prescriptions of self-evaluation (Harkins, White, & Utman, 2000). That is, two sources of evaluative stress were not equally powerful for creative performance, as the potential for social-evaluation overpowered the potential for self-evaluation.

#### 3. Current studies and assumptions

This study investigated the relationship between regulatory focus and creativity in combination with social-evaluative stress (Study 1) and self-evaluative stress (Study 2). Furthermore, the effects of chronic

and situational self-regulatory focus on creative tasks were observed. We predicted that the relationship between regulatory focus and creativity depended on different evaluation sources.

When faced with social-evaluative stress, a promotion focus may have stronger endurance than a prevention focus. Similar studies on approach/avoidance motivation suggest that avoidance motivation is related to controlling information processing, which requires cognitive resources and drains energy. Moreover, approach motivation is associated with heuristic and flexible information processing that is much more independent of top-down executive control (Koch, Holland, & van Knippenberg, 2008; Roskes, Elliot, Nijstad, & De Dreu, 2013; Roskes et al., 2012). Another investigation on the effects of prevention focus under stereotype threat revealed that when the threat of failure occurs, being prevention focused would initiate additional cognitive control resources to avoid failure (Ståhl, Van Laar, & Ellemers, 2012). Therefore, any endogenous or exogenous variables that drain cognitive resources can undermine cognitive performance among avoidance/prevention motivation more than approach/promotion motivation (Roskes et al., 2013).

**Hypothesis 1.** Promotion-focused states would be more beneficial to creativity than prevention-focused states; high social-evaluative stress would be more beneficial to creativity than low social-evaluative stress. Social-evaluative stress and regulatory focus would yield no interaction effect on creativity.

The classic theory of Yerkes-Dodson law presumes that cognitive performance is correlated with stress in a curvilinear way. Consistent with this argument, activation theory proposes that cognitive functions related to creative enhancement, such as cognitive flexibility and persistence, working memory, and sustained attention, can be facilitated more at moderate levels of activation than under extremely low or extremely high levels of activation (Byron et al., 2010; De Dreu et al., 2008). Accordingly, we hypothesized that under self-evaluative stress (moderate pressure), promotion-focused and prevention-focused individuals would be capable of showing their advantages. Prior research has argued that individuals who are promotion-focused have a more flexible processing style (Baas et al., 2011; Förster & Dannenberg, 2010; Friedman & Förster, 2001, 2002); however, individuals who are prevention-focused tend to adopt a persistent processing style and invest more cognitive efforts to compensate for these deficiencies (Roskes et al., 2012). According to the dual pathway to creativity model, flexible and persistent processing styles are distinctive pathways to increase creative output (De Dreu et al., 2008; Nijstad, De Dreu, Rietzschel, & Baas, 2010).

**Hypothesis 2.** Self-evaluative stress is more apt to moderate the relation between regulatory focus and creativity. Specifically, under low self-evaluative stress, a promotion focus is better for creativity; under high self-evaluative stress, a prevention focus is better for creativity.

In these studies, both chronic and situationally induced regulatory focuses were involved to probe their fit effect on the creative task. Previous research on regulatory fit reported that the compatibility of chronic and situationally induced self-regulatory mechanisms would lead to enhanced performance on anagram tasks (Förster, Higgins, & Idson, 1998; Shah et al., 1998), mathematical reasoning, and spatial tests (Keller & Bless, 2006).

**Hypothesis 3.** Conformity of chronic and situationally induced regulatory focus will result in increased creative performance.

#### 4. Study 1

#### 4.1. Participants and design

Participants were 209 undergraduate students (71 males, 138 females) with a mean age of 20.13 years (SD = 1.22) from a university

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