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A regulatory focus model of self-evaluation

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Abstract

Regulatory focus theory [Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1–46). New York: Academic Press.] argues that concerns with growth and nurturance (i.e., a promotion focus) and concerns with safety and security (i.e., a prevention focus) produce different motives and perception. The current studies test whether regulatory focus also affects individuals' strivings for self-evaluation. Specifically, we argue that a promotion or a prevention focus directs the self-evaluation process to self-esteem or self-certainty, respectively. Two studies supported this prediction by demonstrating that regulatory focus affects the strength of self-evaluation goals and individuals' reactions to goal failure. In Study 1, we found that a promotion focus led to a stronger self-esteem goal (as measured by greater accessibility of esteem-related words), whereas a prevention focus led to a stronger self-certainty goal (as measured by greater accessibility of certainty-related words). In Study 2, a promotion failure led to lower self-esteem than a prevention failure, but a prevention failure led to lower self-certainty than a promotion failure. This research suggests an unrecognized role of nurturance and safety concerns in understanding the self-evaluation process.

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Although “Who am I?” may be a simple question, the process people use to generate an answer is not. A large literature on self-evaluation, which refers to how individuals collect and maintain self-knowledge, has documented that the motivational basis of self-evaluation is multi-faceted (Sedikides & Strube, 1997). Some people are motivated to describe themselves accurately, others to confirm what they already know, others to define themselves positively, and still others to improve themselves. Given the multiplicity of motives, it is critical to explore potential moderating variables that determine the presence of each motive

(Sedikides & Strube, 1995). We argue that these motives depend in part on individuals' regulatory focus (Higgins, 1998), that is, on individuals' approaches to their desired end-states.

Previous research reveals two approaches to achieving desired end-states. A *promotion focus* directs individuals' attention to their hopes, ideals, and wishes, and causes them to focus on achieving positive outcomes, but a *prevention focus* directs individuals' attention to duties and obligations, and causes them to focus on avoiding negative outcomes. If the desired end-state is to be smart, promotion focused individuals would work to achieve good grades and the respect of peers, whereas prevention-focused individuals would work to avoid failing grades and the disrespect of peers. As an individual difference or situationally inspired, regulatory focus has implications for cognition, behavior, goal pursuit, and emotion.

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Compared to a promotion focus, a prevention focus leads individuals to be less creative (Friedman & Förster, 2001), use less abstract language (Semin, Higgins, de Montes, Estourget, & Valencia, 2005), initiate action earlier (Freitas, Liberman, Salovey, & Higgins, 2002), and experience less success when negotiating (Galinsky, Leonardelli, Okhuysen, & Mussweiler, 2005). Furthermore, both types of regulatory focus increase the strength of individuals' goals, leading to greater persistence and goal intensity, although they do so in different ways: a promotion focus strengthens the motivation to attain a positive outcome, whereas a prevention focus strengthens the motivation to avoid a negative one (e.g., Förster, Grant, Idson, & Higgins, 2001).

It is the connection of regulatory focus to emotion that most strongly implies a connection between regulatory focus and self-evaluation. Failure at promotion goals leads to greater dejection-related emotions, but failure at prevention goals leads to greater agitation-related emotions (e.g., Higgins, 1989; Higgins, Shah, & Friedman, 1997). If we assume that individuals' emotions are closely connected to self-evaluation (Brown, 1993), then failure at promotion and prevention goals would also affect self-evaluation. More importantly, however, is whether the two types of regulatory focus affect the self-evaluation process in different ways. Although some work has investigated this connection (cf. Moretti & Higgins, 1990), the links between regulatory focus and self-evaluation have not been fully explored or empirically established. We argue here that a promotion or prevention focus sheds light on an individual's self-evaluation strivings, but in different ways: a promotion focus motivates the pursuit of self-esteem, but a prevention focus motivates the pursuit of self-certainty.

Self-esteem and self-certainty as global self-evaluation motives

By the pursuit of self-esteem and self-certainty, we refer to the motivations to build and maintain a positive or certain self-concept, respectively. The current self-motives literature distinguishes among four types of self-evaluation motives: self-enhancement, self-improvement, self-assessment, and self-verification. Although each motive is distinct, they can also be categorized in terms of more global evaluative concerns. Self-enhancement and self-improvement seem to reflect a desire for self-esteem, whereas self-assessment and self-verification seem to reflect a desire for self-certainty.

Self-enhancement and self-improvement seem to reflect a desire for self-esteem because both are related to building and maintaining a positive self-concept. Self-enhancement is regarded as seeing the current self-concept as positively as possible (Sedikides & Strube, 1997), and is likely to occur when self-knowledge cannot be easily changed (Dunning, 1995). By contrast, self-improvement occurs when people are motivated to improve themselves. It can be distinguished from self-enhancement by its focus on the future

and tendency to result in actual changes to the self-concept (Taylor & Lobel, 1989; Taylor, Neter, & Wayment, 1995). That is, self-enhancement causes individuals to view their current, less modifiable self-knowledge positively, whereas self-improvement motivates individuals to make modifiable self-knowledge more positive. These motives manifest under similar conditions. For example, cancer patients compared themselves to patients who were worse off to make them feel better about aspects of their lives that they could not change (self-enhancement), while making contact with patients who were better off in an effort to seek inspiration and to improve their circumstances (Taylor & Lobel, 1989). Thus, the motives can co-occur and share the common global objective to achieve or maintain positive self-knowledge (i.e., a concern for self-esteem).

Self-verification and self-assessment seem to reflect a desire for self-certainty because both are related to building and maintaining self-knowledge that is held with confidence and conviction. Self-assessment motivates the attainment of diagnostic self-knowledge, of changing an uncertain self into a more confident one (Trobe, 1980, 1982; Trope & Brickman, 1975), and is likely to occur when uncertainty prevails (Sedikides, 1993). By contrast, self-verification motivates the maintenance of consistent self-knowledge (Swann, Pelham, & Krull, 1989; Swann, Rentfrow, & Guinn, 2003) and is likely to occur when certainty about oneself prevails (e.g., Chen, Chen, & Shaw, 2004; Maracek & Mettee, 1972; Swann & Ely, 1984). Both motives are thus closely connected to building and maintaining self-knowledge held with a high degree of confidence. The motivation for self-certainty may be of great value as it provides a source of predictability and control.

The self-motives literature thus seems to reflect the more global self-evaluative motives of self-esteem and self-certainty. Moreover, this literature points to the relative independence of these motivations, even though they are positively related. The pursuit of self-integrity (Steele, 1988), of seeing the self as simultaneously "competent, good, coherent, unitary, stable" (p. 262), associates self-esteem with self-certainty, and evidence reveals that self-esteem and self-certainty are positively connected (Baumgardner, 1990; Campbell, 1990). Recognizing this literature, we operate from a model where the pursuit of self-esteem and self-certainty are distinguishable, but positively related.

Regulatory focus and global self-evaluation motives

The global self-evaluation motives identified above can be linked to particular regulatory foci. We argue that a *promotion focus* will primarily activate the pursuit for self-esteem. First, like the motivations for self-enhancement or self-improvement, a promotion focus is associated with achieving positive rather than avoiding negative outcomes. Second, individuals predisposed to pursue goals using a promotion focus are "more likely to have had caretakers who encouraged them as children by providing them with

self-enhancing feedback...” (Higgins, 1996, p. 1075). Finally, correlational evidence supports this idea: individuals reported lower self-esteem to the extent that they reported failing to achieve their promotion goals, but reports of prevention failure were unrelated to self-esteem (Moretti & Higgins, 1990). Thus, some support exists for the idea that a promotion focus is primarily associated with the pursuit for self-esteem.

By contrast, we argue that a *prevention focus* will primarily activate the pursuit of self-certainty. First, a prevention focus is concerned with safety and security and on avoiding negative outcomes (Higgins, 1998). Similarly, the motivations for self-assessment and self-verification have been associated with achieving a sense of security (Swann, 1990) and avoiding negative outcomes such as uncertainty (Swann et al., 1989; Trope & Brickman, 1975). Second, individuals who are predisposed to pursue goals using a prevention focus are “more likely to have had caretakers who protected them by providing them with accurate, realistic feedback” (Higgins, 1996, p. 1075), suggesting that a prevention focus is tied to identifying and maintaining confidently held self-knowledge. Although theory supports the idea that a prevention focus is associated with the pursuit of self-certainty, we know of no empirical research that has established this connection. Thus, the current studies were the first to test this prediction.

Overview

The current studies test whether regulatory focus affects the self-evaluation process by affecting self-evaluation goal strength (Study 1) and individuals’ feelings of self-certainty and self-esteem (Study 2). Goal strength reflects the extent to which individuals are focused on and in pursuit of a particular goal (Förster et al., 2001; Higgins et al., 1997) and has been demonstrated to increase the intensity of individuals’ reactions to goal attainment (Higgins et al., 1997). Goal strength thus represents a critical aspect of motivational systems and Study 1 tested whether a promotion and prevention focus would lead to stronger self-esteem and self-certainty motives, respectively. Study 2 investigated individuals’ reactions to failure at a promotion or prevention goal, and whether this failure would lead to lower feelings of self-esteem or self-certainty, respectively. Together, these studies experimentally test the outlined predictions with two different operations of regulatory focus (focus only; goal failure) and two different dependent measures (goal strength; self-reported self-evaluation).

Study 1: Regulatory focus and goal strength

Past research has operationally defined goal strength as goal accessibility (Higgins et al., 1997), where the quicker individuals respond to goal-related concepts and tasks (i.e., the more cognitively accessible the goal), the stronger a particular goal will be. Following this research, we used

an accessibility measure of goal strength, where the speed at which participants responded to esteem-related and certainty-related words was measured. We predicted that those with a promotion focus would be quicker to respond to esteem-related words (thus exhibiting greater self-esteem goal strength), but those with a prevention focus would be quicker to respond to certainty-related words (thus exhibiting greater self-certainty goal strength).

Method

A total of 60 Northwestern University undergraduates (26 men, 34 women) participated in exchange for \$10 payment. Most were Caucasian/European-American ($n = 25$; 42%) or Asian/Asian-American ($n = 27$; 45%); five (8%) were Black/African-American and three (5%) were Latino/Hispanic. Age ranged from 18 to 34 ($Mdn = 19$).

On arrival, participants were seated at computers in cubicles divided by partitions. They were informed that they would participate in two experiments, one on goal achievement and another on the psychological processes associated with information processing. In the first study, participants were directed to describe their achievements, but were randomly assigned to one of two sets of directions (similar to manipulations used by Higgins, 1998). Those assigned to the *promotion focus* condition read: “Please take a couple of minutes to briefly describe below your current hopes and aspirations. Mention how achieving these hopes can help you to promote and achieve positive outcomes happening in life.” Those assigned to the *prevention focus* condition read: “Please take a couple of minutes to briefly describe below your current duties and obligations. Mention how meeting your obligations and duties can help you avoid and prevent negative outcomes from happening in life.” On average, participants spent almost 3 min (168 s) working on the essay, and time spent working did not differ by experimental condition, $F < 1$, $p = .75$.

Participants then began the lexical decision task, which contained the dependent measures. Participants were told that this “second” study investigated word comprehension, and examined how quickly participants could accurately identify whether letter strings presented on a computer screen were English words or non-words. To make these judgments, participants were told to hit the “Z” key for words or the “/” key for non-words. In addition, directions emphasized that they should keep their index fingers over these keys and respond quickly and accurately. Participants then completed eight practice trials to become familiar with the task, and then completed the lexical decision task. Of primary interest were six esteem-related words (positive, good, optimistic, negative, bad, pessimistic)¹

¹ Upon reflection, optimism and pessimism could reflect a stronger connection to self-certainty (Carver & Scheier, 1992). Therefore, a second set of analyses was conducted on esteem-related words without including optimism and pessimism. This analysis yielded the same effects as those reported in the text.

and six certainty-related words (certain, sure, decisive, unsure, doubtful, undecided). These 12 words were part of a large set of 138 letter strings (70 non-words and 68 words, presented in random order) so that participants would not become suspicious of the purpose of this study. Reaction times for the six esteem-related words were averaged and ranged from 449 to 1102 ms ($M = 645.20$, $SD = 151.93$); reaction times for the six certainty-related words were averaged and ranged from 423 to 1291 ms ($M = 640.73$, $SD = 166.19$). On both measures, faster times (i.e., lower scores) reflected *stronger* goal strength. When the lexical decision task was completed, participants were debriefed and thanked for their participation.

Results and discussion

To confirm that participants followed the directions for the regulatory focus manipulation, five essays were randomly selected from each condition. Analysis of their content revealed that individuals followed instructions: those in the promotion focus condition wrote about hopes and aspirations, and those in the prevention focus condition wrote about duties and obligations. In addition, previous research recognizes that self-esteem and self-certainty are positively associated (Baumgardner, 1990; Campbell, 1990); similarly, we found that the strength of self-esteem and self-certainty goals were positively associated, even when controlling for individual differences in reaction times to other (word and non-word) stimuli, $r(57) = .54$, $p < .001$. Because this positive association might suppress the competing effects predicted by regulatory focus on the two types of goal strength, the analyses reported below include covariates; when self-esteem goal strength is submitted to analysis, self-certainty goal strength is included as a covariate, and vice versa.

Mean self-esteem goal strength was submitted to an analysis of covariance with self-certainty goal strength as a covariate and regulatory focus as a between-participants factor. In addition to the significant covariate, $B = .70$, $F(1,57) = 70.05$, $p < .001$, the effect of regulatory focus was significant, $F(1,57) = 10.89$, $p = .002$. Consistent with predictions, participants in the promotion focus condition responded faster to esteem-related words ($M_{\text{adj}} = 606.43$, $SE = 19.54$) than did those in the prevention focus condition ($M_{\text{adj}} = 698.10$, $SE = 19.54$). Thus, a promotion focus produced greater self-esteem goal strength.

Mean self-certainty goal strength was also submitted to an analysis of covariance, but with self-esteem goal strength as a covariate and regulatory focus as a between-participants factor. In addition to the significant covariate, $B = .79$, $F(1,57) = 70.05$, $p < .001$, the effect of regulatory focus was significant, $F(1,57) = 9.74$, $p = .003$. Consistent with predictions, participants in the prevention-focus condition responded faster to certainty-related words ($M_{\text{adj}} = 592.78$, $SE = 20.76$) than did those in the promotion-focus condition ($M_{\text{adj}} = 685.25$, $SE = 20.76$).

Thus, a prevention focus produced greater self-certainty goal strength.

When we developed our measure of self-esteem and self-certainty goal strength, we included words that reflected both positive and negative valences of self-esteem (positive, negative) and self-certainty (certain, doubtful). Thus, we also tested whether regulatory focus affected the accessibility of positive (positive, certain) and negative (negative, doubtful) word valence. However, analyses with word valence as an additional variable revealed no moderation ($ps > .11$).

Overall, the data support the prediction that a promotion focus leads to greater self-esteem goal strength (as was evident by the greater accessibility of esteem-related words), whereas a prevention focus leads to greater self-certainty goal strength (as was evident by the greater accessibility of certainty-related words). A second study was conducted to replicate these basic findings in a new domain with new operations of the key variables.

Study 2: Reactions to goal failure

Study 1 revealed that a promotion focus was more closely associated with the pursuit of self-esteem and a prevention focus was more closely associated with the pursuit of self-certainty. Study 2 replicated the basic findings from Study 1, extending them in three ways. First, the regulatory focus manipulation was changed from a focus on individuals' *current* promotion or prevention goals to reflecting on a past incident where individuals were *not* able to successfully accomplish a promotion or prevention goal. Manipulating or measuring individual's goal focus or goal attainment has been a successful approach in past regulatory focus research (e.g., Higgins et al., 1997), and using both types of operations would generalize the effects of Study 1. Second, instead of measuring goal strength, Study 2 evaluated individuals' self-reported feelings of self-esteem or self-certainty. This change allowed a test of whether regulatory focus affects a different aspect of the self-evaluative process. Specifically, it was predicted that failure at a promotion goal rather than a prevention goal would lead to lower self-esteem, but failure at a prevention goal rather than a promotion goal would lead to lower self-certainty.

Finally, this study also investigated whether regulatory focus affected individuals' specific ability-related or more global self-evaluative states. We expected that the failure manipulation would affect individuals' self-esteem and self-certainty about their abilities. Self-evaluations of ability refer to individuals' perceptions of competence (self-esteem about ability) or confidence in their competence (self-certainty about ability), and both types of self-evaluations about ability are firmly rooted in the literatures on self-efficacy (Bandura, 1977), self-handicapping (Arkin & Oleson, 1998; Jones & Berglas, 1978), and self-evaluation (Tafarodi & Swann, 1995). These self-evaluations have been closely linked to individuals' reactions to success and failure, and thus, we expected that ability-related

measures of self-evaluation would be most likely to yield reactions to goal failure. However, we also tested whether failure at promotion and prevention goals would affect individuals' more global evaluations of self-esteem and self-certainty, as this would assess how broadly an individual's reaction to a promotion or prevention failure can affect the self-evaluation process.

Method

Participants and procedure

A total of 48 students from The Ohio State University (22 men, 26 women) participated for course credit. Most were European-American ($n = 37$; 77%); five (10%) were Black/African-American, two (4%) Asian/Asian-American, two (4%) Latino/Hispanic, and two (4%) classified themselves as "other." Age ranged from 18 to 21 ($Mdn = 18$).

On arrival, participants were told that this experiment evaluated individuals' thoughts and feelings about themselves. They were then randomly assigned to complete one of two packets that represented the *failure type* manipulation. In both packets, participants first completed a trait generation exercise, where those in the *promotion failure* condition were asked to "Please enter up to 5 qualities, traits, or characteristics that you would ideally like to be or to possess," and those in the *prevention failure* condition were asked to "Please enter up to 5 qualities, traits, or characteristics that you think you should possess or that you are obligated to possess." After the trait generation, individuals selected the trait that they found to be most important, and then wrote an essay for 10 min about how they got close to but ultimately failed to achieve what the trait represented. Immediately following, all participants completed a series of dependent measures, were debriefed and thanked for their participation.

Dependent measures

To evaluate individuals' levels of self-esteem and self-certainty, self-reported feelings on both ability-related and global measures of self-esteem and self-certainty were collected.

Ability-related self-evaluations. To measure ability-related self-esteem, we included the 10-item self-competency scale (Tafarodi & Swann, 1995), which measures the extent to which individuals view themselves as competent (e.g., "I am a capable person") and is considered a fundamental part of more global assessments of self-esteem. Participants responded to these items, as well as those from the other scales identified below, using a 6-point scale (1 = *Strongly Disagree*; 6 = *Strongly Agree*). After recoding reverse-scored items, item ratings were averaged, with higher numbers indicating greater self-competency. The scale exhibited high internal consistency ($\alpha = .90$), and scores ranged from 3.10 to 6.00 ($M = 4.84$, $SD = .75$). To measure ability-related self-certainty, we used the self-doubt subscale of the

Subjective Overachievement Scale (Oleson, Poehlmann, Yost, Lynch, & Arkin, 2000). The 8-item self-doubt scale measures individual differences in self-doubt about one's ability to perform important tasks (e.g., "More often than not, I feel unsure of my abilities"). Because our purpose was to compare individuals' levels of self-certainty and self-esteem after goal failure, items were recoded and averaged so that higher numbers indicated greater *self-certainty* about ability. The scale exhibited high internal consistency ($\alpha = .90$), and scores ranged from 1.63 to 5.75 ($M = 4.16$, $SD = .93$).

Global self-evaluations. We included the 10-item Rosenberg self-esteem scale (Rosenberg, 1965) to measure global self-esteem (e.g., "On the whole, I am satisfied with myself"). Internal consistency was strong ($\alpha = .92$); after reverse-scoring negatively worded items, ratings were averaged so that higher numbers indicated greater self-esteem. Scores ranged from 1.90 to 6.00 ($M = 4.76$, $SD = .91$). In addition, we included two items from the self-concept clarity scale (Campbell et al., 1996a, 1996b) to evaluate global self-certainty: "I seldom experience conflict between the different aspects of my personality"; "In general, I have a clear sense of who I am and what I am." Self-concept clarity reflects individuals' perceptions of their general state of clarity, including how clearly and confidently individuals see themselves, but also how internally consistent and stable (over time) individuals see themselves. As not all of the scale items apply to feelings of self-certainty, we selected the two items that we thought best reflected individuals' global state of self-certainty. Although internal consistency was weak ($\alpha = .54$), analysis of separate items revealed effects consistent with the average score; thus, an average score was presented to simplify presentation. Higher numbers indicated higher self-concept clarity; scores ranged from 2.00 to 6.00 ($M = 4.10$, $SD = .90$).

Results

Ability-related self-evaluations

Because self-esteem and self-certainty are positively associated (for ability-related measures, $r(43) = .74$, $p < .001$), we submitted self-esteem as measured by the self-competency scale to an analysis of covariance with self-certainty about abilities as a covariate and failure type as a between-participants factor. In addition to a significant effect of the covariate, $B = .63$, $F(1,42) = 70.63$, $p < .001$, the analysis revealed a significant effect of failure type, $F(1,42) = 6.37$, $p = .02$. Consistent with predictions, individuals in the promotion failure condition reported lower self-esteem about their abilities ($M_{adj} = 4.67$, $SE = .10$) than those in the prevention failure condition ($M_{adj} = 5.02$, $SE = .10$).

Mean scores of self-certainty about abilities were also submitted to an analysis of covariance, but with self-esteem about abilities as a covariate. In addition to a significant effect of the covariate, $B = .99$, $F(1,42) = 70.63$, $p < .001$,

the analysis revealed a significant effect of failure type, $F(1,42) = 5.84$, $p = .02$. Consistent with predictions, individuals in the prevention failure condition reported lower self-certainty about their abilities ($M_{\text{adj}} = 3.94$, $SE = .12$) than those in the promotion failure condition ($M_{\text{adj}} = 4.36$, $SE = .12$).

Global self-evaluations

Because self-esteem and self-certainty are positively associated (for global measures, $r(43) = .34$, $p < .001$), we submitted self-esteem as measured by the Rosenberg scale to an analysis of covariance with self-concept clarity as a covariate and failure type as a between-participants factor. In addition to a significant effect of the covariate, $B = .40$, $F(1,42) = 8.13$, $p < .001$, the analysis revealed a significant effect of failure type, $F(1,42) = 4.49$, $p = .04$. Consistent with predictions, individuals in the promotion failure condition reported lower global self-esteem ($M_{\text{adj}} = 4.50$, $SE = .17$) than those in the prevention failure condition ($M_{\text{adj}} = 5.02$, $SE = .18$).

Mean scores of self-concept clarity were also submitted to an analysis of covariance, but with global self-esteem as a covariate and failure type as a between-participants factor. The analysis revealed a significant effect of the covariate, $B = .41$, $F(1,42) = 8.13$, $p < .01$. Consistent with predictions, individuals in the prevention failure condition reported lower self-concept clarity ($M_{\text{adj}} = 3.96$, $SE = .18$) than those in the promotion failure condition ($M_{\text{adj}} = 4.23$, $SE = .18$), but the effect of failure type was not statistically significant, $F(1,42) = 1.04$, $p = .31$.²

General discussion

The studies reported here represent the first empirical demonstration that promotion focus and prevention focus are associated with different self-evaluative strivings. Specifically, Study 1 demonstrated that a promotion focus led to stronger self-esteem goals than a prevention focus, whereas a prevention focus led to stronger self-certainty goals than a promotion focus. Study 2 replicated and extended this finding by demonstrating that thinking about a promotion failure relative to a prevention failure led to lower (ability-related and global) self-esteem, but that thinking about a prevention failure relative to a promotion failure led to lower (ability-related) self-certainty.

Together, these data suggest a previously unrecognized role for regulatory focus in self-evaluative processes. That is, this research demonstrates that a promotion focus more than a prevention focus is connected to the pursuit of self-

esteem. To our knowledge, only one published study has explored a similar idea (Moretti & Higgins, 1990). Individuals reported lower self-esteem as they were more likely to believe that they had failed to attain their promotion goals (what the authors called “actual-ideal discrepancies”), but failure to attain prevention goals (called “actual-ought discrepancies”) did not affect self-esteem. We replicate this effect in Experiment 2, showing that a promotion failure more than a prevention failure leads to lower self-esteem. In addition, however, the present research also finds that a prevention failure leads to lower self-certainty than a promotion failure, demonstrating that a prevention focus affects a different part of the self-evaluation process. Moreover, Study 1 revealed that both types of regulatory focus increase the strength of self-evaluation motives, albeit in different ways. A promotion focus relative to a prevention focus increased the strength of the self-esteem motive, but a prevention focus relative to a promotion focus increased the strength of the self-certainty motive. This work is the first to investigate goal strength associated with self-evaluation motives, a topic that poses an interesting direction for future research. Certainly, the lexical decision task yielded suggestive evidence. Additional tests could further support the motivational basis of this evidence by exploring whether accessibility of esteem or certainty-related words persist over time (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001) or increase the motivation to repair low self-evaluations (of self-esteem or self-certainty, respectively) or reduce self-discrepancies (actual-ideal or actual-ought discrepancies, respectively; Higgins et al., 1997).

The evidence also suggests a previously unrecognized role of the self in regulatory focus. Past research has indicated that individuals' attainment of promotion and prevention goals leads to different kinds of emotional reactions (Higgins et al., 1997), but has not fully explored how regulatory focus affects the most basic, fundamental feelings that individuals have: peoples' feelings about themselves. This work goes beyond the correlational evidence collected to date (Moretti & Higgins, 1990) and experimentally demonstrates that promotion and prevention goals affect feelings of self-esteem and self-certainty. In fact, it is possible that the emotional reactions individuals experience when failing to attain promotion and prevention goals may be the consequence of changes in self-evaluation. An individual who has just failed at a promotion goal may be likely to experience dejection to the extent that it first decreases self-esteem. Similarly, an individual who has just failed at a prevention goal may feel agitation to the extent that it first engenders feelings of self-doubt. Thus, an interesting direction for future research would be to consider the extent to which individuals' emotional reactions to promotion and prevention goal attainment depends on whether there have been changes in self-evaluation.

Not only does this work inform the regulatory focus and self-evaluation literatures, it might also inform other domains where self-evaluation plays a prominent part, such as the literature on self-handicapping. Self-handicapping is

² An alternative, but more cumbersome, approach to analyzing these data is to submit them to a mixed design, with regulatory focus as a between-participants factor and word type (esteem-related, certainty-related; Study 1) or self-evaluation type (self-certainty, self-esteem; Study 2) as a within-participants factor. In both cases, the results reveal significant interactions, and the interpretation is identical to what is reported in the text.

described as a self-protective behavior, where individuals who are uncertain about their abilities engage in behaviors that undermine their performance to provide an external attribution for failure (Arkin & Oleson, 1998). From our regulatory focus model of self-evaluation, we would argue that individuals who self-handicap will be more likely to be in a prevention focus. If this is the case, then what is known about individuals with a prevention focus may apply to individuals who self-handicap. That is, their affective lives reflect relief rather than joy when positive events occur, and positive events are construed as the avoidance of objective failures where one's self can be implicated as the cause. Research has revealed that, by contrast, some individuals (particularly those with high self-esteem) engage in self-handicapping in an effort to achieve self-enhancement (Tice, 1991). They attempt to make themselves look better by imposing a handicap and then performing well in spite of it. It is possible that individuals with a promotion focus may be likely to engage in this type of self-handicapping. The idea that phenotypically similar behavior can stem from distinct motivational bases is just as exciting for future research exploration as the idea that behaviors that are phenotypically quite distinct (e.g., self-handicapping, overachievement) can stem from the same motivational basis (self-doubt and prevention focus).

An important implication of this research is that it identifies conditions under which individuals will or will not be receptive to changing self-knowledge. A fundamental goal of education, business training, and psychotherapy is to promote conditions that will encourage individuals to improve upon themselves, to change negative or low ability self-perceptions into more positive, higher ability ones. This research suggests that encouraging a promotion focus might be more beneficial to changing negative self-knowledge. A promotion focus is associated with the pursuit of self-esteem, and negative self-knowledge is in direct conflict with this motive. As a result, a promotion focus may be useful in motivating individuals to change negative beliefs into positive ones. By contrast, a prevention focus may strengthen an individual's resistance to change. That is, given that a prevention focus is associated with the pursuit of self-certainty, confidently held beliefs will be preferred to non-confident ones and as a result, will be actively maintained (even if they are negative).

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References

- Arkin, R. M., & Oleson, K. C. (1998). Self-handicapping. In J. M. Darley & J. Cooper (Eds.), *Attribution and social interaction: The legacy of Edward E Jones* (pp. 313–371). Washington, DC: American Psychological Association.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- Bargh, J. A., Gollwitzer, P. M., Lee-Chai, A., Barndollar, K., & Trötschel, R. (2001). The automated will: nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology*, 81(6), 1014–1027.
- Baumgardner, A. H. (1990). To know oneself is to like oneself: self-certainty and self-affect. *Journal of Personality and Social Psychology*, 58(6), 1062–1072.
- Brown, J. D. (1993). Self-esteem and self-evaluation: Feeling is believing. In J. M. Suls (Ed.), *Psychological perspectives on the self* (Vol. 4, pp. 27–58). Hillsdale, NJ: Erlbaum.
- Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology*, 59(3), 538–549.
- Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996a). Self-concept clarity: measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology*, 70(1), 141–156.
- Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996b). Self-concept clarity: measurement, personality correlates, and cultural boundaries: correction. *Journal of Personality and Social Psychology*, 70(6), 1114.
- Carver, C. S., & Scheier, M. F. (1992). Confidence, doubt, and coping with anxiety. In D. G. Forgays, T. Sosnowski, & K. Wrezesniewski (Eds.), *Anxiety: Recent developments in cognitive, psychophysiological, and health research* (pp. 13–22). Washington, DC: Hemisphere Pub. Corp..
- Chen, S., Chen, K. Y., & Shaw, L. (2004). Self-verification motives at the collective level of self-definition. *Journal of Personality and Social Psychology*, 86(1), 77–94.
- Dunning, D. (1995). Trait importance and modifiability as factors influencing self-assessment and self-enhancement motives. *Personality and Social Psychology Bulletin*, 21(12), 1297–1306.
- Förster, J., Grant, H., Idson, L. C., & Higgins, E. (2001). Success/failure feedback, expectancies, and approach/avoidance motivation: how regulatory focus moderates classic relations. *Journal of Experimental Social Psychology*, 37(3), 253–260.
- Freitas, A. L., Liberman, N., Salovey, P., & Higgins, E. T. (2002). When to begin? Regulatory focus and initiating goal pursuit. *Personality and Social Psychology Bulletin*, 28(1), 121–130.
- Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology*, 81(6), 1001–1013.
- Galinsky, A. D., Leonardelli, G. J., Okhuysen, G. A., & Mussweiler, T. (2005). Regulatory focus at the bargaining table: promoting distributive and integrative success. *Personality and Social Psychology Bulletin*, 31(8), 1087–1098.
- Higgins, E. T. (1989). Self-discrepancy theory: What patterns of self-beliefs cause people to suffer? In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 93–136). San Diego, CA, US: Academic Press, Inc..
- Higgins, E. T. (1996). The “self digest”: self-knowledge serving self-regulatory functions. *Journal of Personality and Social Psychology*, 71(6), 1062–1083.
- Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1–46). New York: Academic Press.
- Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: strength of regulatory focus as moderator. *Journal of Personality and Social Psychology*, 72(3), 515–525.
- Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: the appeal of alcohol and the role

- of underachievement. *Personality and Social Psychology Bulletin*, 4(2), 200–206.
- Maracek, J., & Mettee, D. R. (1972). Avoidance of continued success as a function of self-esteem, level of esteem certainty, and responsibility for success. *Journal of Personality and Social Psychology*, 22, 90–107.
- Moretti, M. M., & Higgins, E. T. (1990). Relating self-discrepancy to self-esteem: the contribution of discrepancy beyond actual-self ratings. *Journal of Experimental Social Psychology*, 26(2), 108–123.
- Oleson, K. C., Poehlmann, K. M., Yost, J. H., Lynch, M. E., & Arkin, R. M. (2000). Subjective overachievement: individual differences in self-doubt and concern with performance. *Journal of Personality*, 68(3), 491–524.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sedikides, C. (1993). Assessment, enhancement, and verification determinants of the self-evaluation process. *Journal of Personality and Social Psychology*, 65(2), 317–338.
- Sedikides, C., & Strube, M. J. (1995). The multiply motivated self. *Personality and Social Psychology Bulletin*, 21(12), 1330–1335.
- Sedikides, C., & Strube, M. J. (1997). Self evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 209–269). San Diego, CA, US: Academic Press.
- Semin, G. n. R., Higgins, T., de Montes, L. G., Estourget, Y., & Valencia, J. F. (2005). Linguistic signatures of regulatory focus: how abstraction fits promotion more than prevention. *Journal of Personality and Social Psychology*, 89(1), 36–45.
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261–302). San Diego, CA, US: Academic Press.
- Swann, W. B. Jr., (1990). To be adored or to be known? The interplay of self-enhancement and self-verification. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 408–448). New York, NY, US: Guilford Press.
- Swann, W. B., Jr., & Ely, R. J. (1984). A battle of wills: self-verification versus behavioral confirmation. *Journal of Personality and Social Psychology*, 46(6), 1287–1302.
- Swann, W. B., Jr., Pelham, B. W., & Krull, D. S. (1989). Agreeable fancy or disagreeable truth? Reconciling self-enhancement and self-verification. *Journal of Personality and Social Psychology*, 57(5), 782–791.
- Swann, W. B., Jr., Rentfrow, P. J., & Guinn, J. S. (2003). Self-verification: The search for coherence. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 367–383). New York, NY, US: Guilford Press.
- Tafarodi, R. W., & Swann, W. B. Jr., (1995). Self-liking and self-competence as dimensions of global self-esteem: initial validation of a measure. *Journal of Personality Assessment*, 65(2), 322–342.
- Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: downward evaluation and upward contacts. *Psychological Review*, 96(4), 569–575.
- Taylor, S. E., Neter, E., & Wayment, H. A. (1995). Self-evaluation processes. *Personality and Social Psychology Bulletin*, 21(12), 1278–1287.
- Tice, D. M. (1991). Esteem protection or enhancement? Self-handicapping motives and attributions differ by trait self-esteem. *Journal of Personality and Social Psychology*, 60(5), 711–725.
- Trope, Y. (1980). Self-assessment, self-enhancement, and task preference. *Journal of Experimental Social Psychology*, 16(2), 116–129.
- Trope, Y. (1982). Self-assessment and task performance. *Journal of Experimental Social Psychology*, 18(2), 201–215.
- Trope, Y., & Brickman, P. (1975). Difficulty and diagnosticity as determinants of choice among tasks. *Journal of Personality and Social Psychology*, 31(5), 918–925.