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Depression, regulatory focus, and motivation

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Abstract

The present study examined relationships between chronic regulatory focus and motivation to improve upon academic outcomes in a sample of individuals varying in degree of hopelessness depression (HD) symptoms. Participants recalled a recent negative academic outcome, completed a measure of regulatory focus, reported their subsequent motivation to improve upon future academic outcomes, and then indicated whether their grades on examinations, assignments, and their GPAs had improved or worsened since the described outcome. Results indicate that degree of HD symptoms positively relates to prevention focus and negatively relates to promotion focus, and the negative relationships between HD symptoms and both motivation and performance outcomes are mediated by (lack of) promotion focus.

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1. Introduction

Hope carries risk of rising expectations that will lead to disappointment. For many depressives it is disappointment, loss...that is feared more than the absence of rewards. Losing something is far more aversive than never having it in the first place. (Leahy, 2002, p. 184)

Hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989) focuses on the experiences of individuals with negative cognitive styles when they encounter negative life events. The theory posits that these individuals make three types of inferences following negative events: (1) stable, global attributions, (2) expectations of negative future consequences, and (3) inferences of self-unworthiness or deficiency (Abramson et al., 2002). Based on the experiential sense that aversive events are the result of unalterable forces and are related to negative features of the self, and because of the expectation that negative events are likely to indicate negative future outcomes, individuals are said to become hopeless. According to the model, it is this experience of hopelessness that lends itself to the development of hopelessness depression (HD) symptoms.

Carver and Scheier (1999) proposed, “helpless people develop the idea they can’t obtain good outcomes because the outcomes are unrelated to their actions” (p. 44). Central to this conceptualization is that individuals who experience doubt about their abilities to obtain goals express a “giving-up response” yet do not (because of their importance) actually abandon goals. According to Carver and Scheier, this dual dilemma – negative expectancies about goal attainment accompanied by retention of the goal itself – results in an absence of goal-directed effort and emotional distress. Expanding on Bandura’s (1977) concept of self-efficacy, Carver and Scheier suggested that our expectancies of goal achievement are derived from assessment of both personal capabilities and external causal factors.

Viewing hopelessness from a self-regulatory vantage raises the possibility that individuals experiencing HD chronically may be engaged in what Carver and Scheier (1999) referred to as a “positive, or discrepancy enlarging” feedback loop. A positive feedback loop occurs when an individual is motivated to avoid an “anti-goal.” Specifically, a comparison is made between present conditions (related to internal and external information) and the reference point (the possible self). For the hopeless person, who views that possible self in negative terms, value exists in enlarging the discrepancy between the two. For example, consider the cognitive and behavioral response process of a depressed individual who is prompted to consider a test failure. First, the individual considers the discrepancy between the outcome (poor test performance) and the goal (performing well). Second, the individual is likely to make internal, stable, and global attributions about the negative outcome (e.g., “I failed because I lack intelligence”) and, moreover, expects that the negative outcome foreshadows future negative outcomes (e.g., “because I lack intelligence, I will perform poorly on future tests”). In the language of self-regulatory theory, that individual may be motivated to prevent the “anti-goal” of presumed future failures. In contrast, a person engaged in a “negative, discrepancy reducing” feedback loop similarly attends to the discrepancy between situation (failure) and goal (success) but instead is motivated to eliminate the discrepancy between self and reference point by approaching the goal (Carver & Scheier, 1999).

Higgins (1998) has suggested that regulatory focus is “the basic motivating principle” (p. 1) and has described two strategies by which individuals attain a unitary hedonic end. Promotion focus, wherein individuals strive to attain “ideal” selves, reflects a motivation to approach gains or successes; visually, this approach orientation might be imagined as a vector pointing from self toward

goal in the direction of desired movement. In contrast, prevention focus, wherein individuals strive to attain “ought” selves, reflects a motivation to avoid losses; this avoidance orientation might be visualized as a vector pointing from self away from a feared goal or failure. Importantly, although regulatory focus can be situation-induced (e.g., Higgins, Roney, Crowe, & Hymes, 1994), dispositions toward promotion focus, prevention focus, or both are thought to be socially acquired and to vary chronically as an individual difference.

Shah, Higgins, and Friedman (1998) found that task motivation and performance were enhanced when the means to attaining a goal were framed compatibly with participants’ prominent self-regulatory orientation. That is, promotion-oriented individuals demonstrated high motivation and persistence on tasks framed in promotion terms, whereas prevention-oriented individuals demonstrated high motivation and persistence on tasks framed in prevention terms. Research also has suggested that *subjective* histories of success employing one or the other of these two strategies (i.e., promotion pride or prevention pride) orient individuals toward using the same strategy to attain new goals (Higgins et al., 2001). Thus, with the same goal in mind, individuals’ “strategic orientations toward success can differ – success through eagerness approach means (promotion) or success through vigilance avoidance means (prevention)” (Higgins et al., 2001, p. 5). Specifically, individuals with chronic subjective histories of promotion success were more likely to make task errors of omission (reflecting eagerness to advance goal attainment), whereas individuals with chronic subjective histories of prevention success were more likely to make errors of commission (reflecting vigilance to reduce errors). *Subjectivity* is important insofar as individuals’ experiential sense of means to past successes, rather than objective measures of promotion versus prevention successes, determined the modality by which new goals were sought (Higgins et al., 2001). Similarly, Lockwood, Jordan, and Kunda (2002, Study 3) found that role models made greater motivational impact when they “fit” individual differences in chronic regulatory focus. Specifically, participants with stronger promotion goals were able to recall relatively more positive role models – reference targets of success toward which to aspire – whereas participants with stronger prevention goals were able to recall more negative role models – reference targets of failures to avoid.

To date, attempts to integrate the self-regulation and depression literatures have been rare (cf., Abramson et al., 2002; Pyszczynski & Greenberg, 1987; Strauman, 2001). However, Pyszczynski and Greenberg’s (1987) “self-awareness theory of reactive depression” provides groundwork for the present study by suggesting that, following loss, the depressed individual “becomes stuck in a self-regulatory cycle in which no responses to reduce the discrepancy between actual and desired states are available” (p. 122). In our view, Pyszczynski and Greenberg’s depressed individual very much resembles an individual low in promotion focus – a person unlikely to strive for an “ideal” self or otherwise approach positive outcomes (Higgins, 1998). Pyszczynski and Greenberg also suggested that repeated failures may prompt the depressed individual to “give up aspirations for success and strive to be prepared for future negative outcomes by anticipating them before they occur. . . essentially [striving] to minimize disappointments and disillusionment by expecting the worst” (p. 128). In regulatory focus terms, this orientation seems analogous to prevention focus, the motivation to avoid losses (Higgins, 1998). According to Pyszczynski and Greenberg, following negative outcomes, depressed individuals engage in a pattern of constant self-focus, which prevents them from focusing on regaining what was lost. As a result of this disengagement, depressed persons experience increased negative affect, increased internal attributions of causality, decreased motivation, and performance deficits. Indeed, these authors cited numerous theories

and accounts of dysfunctional outcomes related to cognition, socialization, motivation, and behavior in depressed relative to nondepressed individuals.

Perhaps the most comprehensive extant conceptualization of depression as a disorder of self-regulation has been offered by [Strauman \(2001\)](#), who specifically posited dysfunction of the approach (promotional) motivation system in depressed persons. Emphasizing the notion of depression as a “self/brain/behavior” (i.e., organism-wide) system responding to loss or failure, Strauman characterized the two self-regulatory systems according to unique central nervous system substrates, motivational impetus, and strategic orientation. In particular, the promotion system is characterized by left prefrontal and frontal cortex activation, motivation toward maximizing positive outcomes, and an approaching strategic orientation; whereas, the prevention system is characterized by right prefrontal cortex activation, motivation toward minimizing negative outcomes, and an avoidant strategic posture. Strauman’s seminal paper urged, “Depression is . . . a system disorder which is manifested throughout all levels of the promotion system and beyond. To understand depression, it must be studied within the context of how the two regulatory systems operate” (p. 154).

1.1. Overview of the present study

The present study tests predictions related to chronic regulatory focus and motivation to improve future academic outcomes in a sample of individuals varying in degree of hopelessness depression (HD) symptoms ([Joiner et al., 2001](#)).¹ First, and consistent with [Strauman’s \(2001\)](#) conceptualization of depression as a disorder of self-regulation, we hypothesize that degree of HD symptoms relates positively to prevention focus and negatively to promotion focus. Secondly, and consistent with [Strauman’s](#) hypothesis regarding depression as a dysfunction of the promotion-motivation system and [Abramson et al.’s \(2002\)](#) proposal that “hopelessness . . . may be particularly powerful in signaling a shutdown of approach motivation” (p. 288), we predict that (lack of) promotion focus mediates negative relationships between HD symptoms and both academic motivation and short-term performance outcomes.

2. Method

2.1. Participants

The sample of introductory psychology students at Ohio University consisted of 83 primarily Caucasian undergraduates, including 19 men (23%) and 64 women (77%), whose mean age was 18.53 years. During a mass screening session, students completed the *Beck Depression Inventory-II* (BDI-II; [Beck, Steer, & Brown, 1996](#)), a self-report measure of depressive symptoms.

¹ HD symptoms identified by [Joiner et al. \(2001\)](#) include sadness, hopelessness, suicidality, indecision, energy deficit, sleep disturbance, and tiredness. Analogous BDI-II items comprised our HD measure.

The BDI-II contains 21 items, each rated on a 4-point scale ranging from 0 to 3. From this pool, participants who endorsed a broad range of BDI-II scores were selected to participate in the study. Those selected were contacted by telephone approximately 1.5 months post-screening and were invited to participate in a study entitled “Thinking about Past Events.”

The BDI-II was readministered during the experimental session so that analyses could be informed by assessment of recent depressive symptoms. Mean sample scores at the experimental session were 15.6 ($SD = 11.9$; range = 0–46) for all 21 BDI-II items and 5.2 ($SD = 3.7$; range = 0–15) for the seven HD items identified by Joiner et al. (2001). As demonstrated by test (screening)–retest (experimental session) reliability coefficients of .78 for BDI-II scores and .71 for HD scores, depressive symptoms remained consistent across time.

2.2. Procedure

Participants worked at private computer stations on the experimental task, programmed using MediaLab software (Jarvis, 2002). They first responded to the following instructions, prompting recall of a potentially repeatable negative academic event and engendering thinking about outcome improvement:

Try to recall a relatively recent event in which you experienced a negative academic outcome (i.e., an examination or a paper) – the event you recall should be one that could potentially HAPPEN AGAIN and should NOT be a FINAL examination or FINAL paper. On the screen that follows, describe the important details of the event.

Partial examples of described events included, “I had to take a test for psychology and didn’t really study for it like I should” and “I had a test in which I thought I knew the material fairly well...I didn’t not bomb it, but it just made me feel as if I was a bad student.”

Participants next completed Lockwood et al.’s (2002) Regulatory Focus Scale. This scale consists of 18 items measuring the degree to which individuals engage in promotion and prevention goal strategies and is well suited for studies that focus on academic achievement. Examples of items include, “I often focus on the success I would like to achieve in the future” and “I often think about how I will achieve academic success” (promotion focus) as well as “I often think about the person I am afraid I might become in the future” and “I often worry that I will fail to accomplish my academic goals” (prevention focus). Participants responded to each statement on a 9-point scale ranging from 1 = “not at all true of me” to 9 = “very true of me.” Mean sample scores were 6.93 ($SD = 1.07$) for promotion goal strength and 5.99 ($SD = 1.32$) for prevention goal strength.

Next, participants responded to Lockwood et al.’s (2002) Motivation Scale, consisting of 14 items measuring motivation to improve upon academic outcomes (e.g., “I plan to put more time into my schoolwork”). The scale was modified for this experiment so that instructions asked, “as a result of the negative academic outcome you described earlier, please rate the extent to which you were motivated to do the following things.” Individual items were reworded accordingly (e.g., “I put more time into my schoolwork”). Participants responded to items on an 11-point scale, ranging from 1 = “not at all true” to 11 = “very true.” The mean motivation score for the sample was 6.92 ($SD = 1.53$).

Finally, to assess post-event outcomes, participants were asked to recall on 9-point scales the extent to which their grades on examinations, assignments, and their GPAs had deteriorated or improved since the described negative academic outcome (1 = “got lower,” 4 = “stayed the same,” 9 = “got higher”). Because these measures were highly interrelated (all r s = .39–.62, all p s < .01), they were summed to provide a performance rating ($M = 17.78$, $SD = 3.54$). Participants then were readministered the BDI-II.

Following participation, individuals were debriefed and thanked for their participation. In addition, they were provided authors’ contact information as well as on- and off-campus counseling resources for interested persons to further process the recalled event.

3. Results

3.1. HD, motivation, and performance

Consistent with predictions based on previous literature regarding dysfunctional correlates of depression, degree of HD symptoms negatively relates to both academic motivation ($r = -.21$, $p < .05$, one-tailed) and performance ($r = -.29$, $p < .01$) measures.²

3.2. HD and regulatory focus

Individuals experiencing hopelessness depression (HD; Abramson et al., 2002) are theorized to anticipate negative future consequences and, as the construct highlights, feel hopeless about future positive outcomes. Similarly, prevention focus is an orientation toward avoiding (expected) future losses and failures (Higgins, 1998). Providing empirical support for the proposed overlap between these constructs, a strong positive relationship exists between degree of HD symptoms and chronic prevention focus, $r = .56$, $p < .01$. In contrast, and consistent with Carver and Scheier’s (1999) conceptualization of a positive feedback loop (i.e., continued goal pursuit despite negative expectancies about goal attainment), a strong negative relationship exists between degree of HD symptoms and chronic promotion focus, $r = -.50$, $p < .01$.³

3.3. Mediation analyses

Mediation analyses are conducted to test the prediction that (lack of) promotion focus mediates the negative relationship between degree of HD symptoms and motivation/performance outcomes. Employing procedures described by Baron and Kenny (1986), motivation first independently is regressed onto HD symptoms, revealing the expected negative relationship, $\beta = -.21$, $p < .05$ (one-tailed). Second, promotion focus independently is regressed onto HD

² A scatter plot reveals three outliers significantly weakening a strong, negative relationship between HD symptoms and motivation, $r = -.32$, $p < .01$ (outliers removed). Data for all cases are retained in reported analyses.

³ Relationships were replicated in an independent sample of 124 demographically similar participants. Degree of HD symptoms positively related to chronic prevention focus ($r = .47$, $p < .01$) and negatively related to chronic promotion focus, $r = -.34$, $p < .01$.

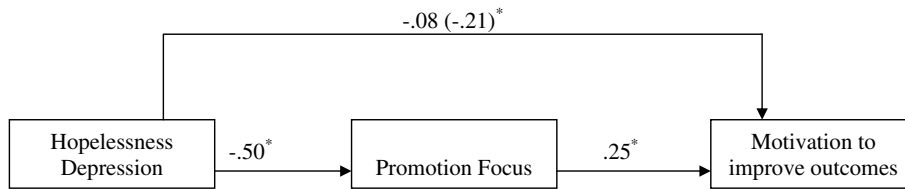


Fig. 1. (Lack of) promotion focus mediates the negative relationship between HD symptoms and motivation.

symptoms, revealing the expected negative relationship, $\beta = -.50$, $p < .01$. In turn and supporting the mediational prediction, when motivation simultaneously is regressed onto HD symptoms and promotion focus, the positive relationship between promotion focus and motivation remains, $\beta = .25$, $p < .05$, whereas there no longer is a significant relationship between HD symptoms and motivation, $\beta = -.08$, $p = .52$ (see Fig. 1). A Sobel test (1982) further substantiates the hypothesized indirect effect of degree of HD symptoms on motivation via (lack of) promotion focus, $Z = -1.90$, $p < .05$ (one-tailed).

Mediational analyses also are conducted to test the prediction that promotion focus mediates the negative relationship between degree of HD symptoms and grade/GPA improvement. First, the combined performance measure independently is regressed onto HD symptoms, revealing the expected negative relationship, $\beta = -.29$, $p < .01$. Second, promotion focus independently is regressed onto HD symptoms, revealing the expected negative relationship, $\beta = -.50$, $p < .01$. In turn and supporting the mediational prediction, when performance simultaneously is regressed onto HD symptoms and promotion focus, the positive relationship between promotion focus and performance remains, $\beta = .23$, $p < .05$ (one-tailed), whereas there no longer is a significant relationship between HD symptoms and performance, $\beta = -.17$, $p = .15$ (see Fig. 2). A Sobel test (1982) further substantiates the hypothesized indirect effect of degree of HD symptoms on performance outcomes via (lack of) promotion focus, $Z = -1.79$, $p < .05$ (one-tailed).

4. Discussion

The present study includes college student participants who vary in degree of hopelessness depression (HD) symptoms.⁴ Supporting the concurrent validity of hopelessness theory of depression (Abramson et al., 2002), HD symptoms negatively relate to motivation and reported academic improvement following negative outcomes. Moreover, our results are the first to empirically establish hypothesized interrelationships between HD (Abramson et al., 2002) and chronic regulatory focus strategies (Higgins, 1998; Lockwood et al., 2002).

The latter findings are consistent with theory and research regarding neural systems underlying self-regulatory mechanisms (e.g., Cloninger, 1987). In particular, Davidson (1992) proposed that the left frontal cortex is responsible for approach-oriented mechanisms, whereas the right frontal

⁴ Although hopelessness depression (HD) is our specific focus, predicted correlations also are obtained using general BDI-II score (e.g., with promotion focus, $r = -.52$, $p < .01$; with prevention focus, $r = .57$, $p < .01$). Therefore, our conclusions may apply not only to HD but also to depression generally.

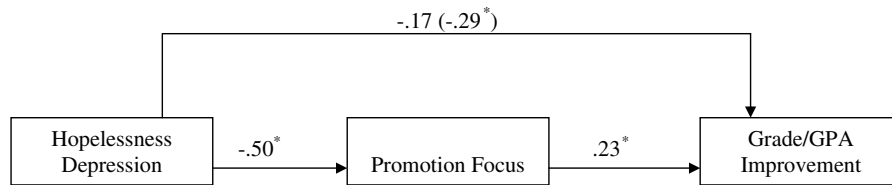


Fig. 2. (Lack of) promotion focus mediates the negative relationship between HD symptoms and performance.

cortex is responsible for withdrawal-oriented mechanisms. Depressed individuals exhibit less activation in left frontal areas than nondepressed individuals (Allen, Iacono, Depue, & Arbisi, 1993; Henriques & Davidson, 1991), and Fowles (1993) linked deficits in left frontal appetitive motivation with hopelessness. Overall, relative right frontal activity, the locale of prevention self-regulatory processes, may reflect a vulnerability to depression (Davidson, 1994). Thus, our results depicting depressive prevention focus and relative promotion-focus deficit are consistent with extant neurophysiological findings.

One of the more intriguing findings of the present study, consistent with Strauman's (2001) proposal that depression reflects a dysfunction of the approach (promotional) motivational system, is that promotion focus mediates the negative relationship between degree of HD symptoms and motivation/performance outcomes. Extending this finding, it is possible that the invocation of atypical regulatory focus strategies (e.g., promotion focus in the case of depressive persons and, given established comorbidity, perhaps anxious persons) might be a promising therapeutic intervention among clinical and nonclinical populations. Providing initial credence to this suggestion, Strauman et al. (2006) found self-system therapy (SST), based on regulatory focus theory, more efficacious than cognitive therapy for dysphoric and depressed persons whose self-reported socialization histories lacked effective pursuit of promotion goals. These findings indicate the therapeutic promise of helping persons exhibiting depression symptoms develop a promotion goal-pursuit repertoire.

Participants in the present study were asked to consider a negative academic outcome that already had occurred. Because of the cross-sectional nature of this study, causal conclusions (HD symptoms \Rightarrow promotion focus deficit \Rightarrow motivation/performance outcomes) remain speculative. Future studies could bolster the present findings by employing prospective designs to test the temporal directionality of effects. Also, we included a performance measure (i.e., a collapsed measure of academic outcomes related to grade/GPA improvement) to balance the possibility of retrospectively biased self-reports of motivation with relatively concrete outcome targets. Indeed, supporting the validity of participants' self-reported motivation was a positive relationship between motivation and the performance measure, $r = .37, p < .01$. Nevertheless, it is possible that the reports of both motivation and academic outcomes offered by our relatively depressed participants were biased by their world view. Future studies could employ pre-to-post grade and GPA improvement/deterioration measures to overcome this potential limitation.

Among the present study's key findings are those that establish a heretofore unexplored and powerful relationship between hopelessness depression and regulatory focus, replicated in an independent sample. To do so, we employed Lockwood et al.'s (2002) scale, specifically designed to assess chronic regulatory orientation rather than a situation-induced, temporary focus. This

enabled us to meet our general objective of understanding how global personality constructs related to depression, regulatory style, and motivation are interrelated. Overall, we believe that the present study highlights the importance of uniting constructs of mutual interest to clinical-personality and social-cognitive psychology.

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