

Strategic Evaluations of Goal Pursuit: The Power of Positive and Negative Thinking

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Abstract

The current work is an investigation of the use of strategic self-regulatory mechanisms designed to maintain and/or enhance motivation while engaging in an academic task. Specifically, three studies examined the use of strategic positivity (i.e., positive thoughts about the self, the current task or goal, the current task or goal environment, and the current task or goal progress used strategically in goal pursuit) and strategic negativity (i.e., negative thoughts about the self, the current task or goal, the current task or goal environment, and the current task or goal progress used strategically in goal pursuit) to expand the conception of strategic self-regulation and to explore how performance and situational variables are associated with affective experiences that differ across people who employ one or the other varieties of strategic self-regulation. In Study 1, a new individual difference measure of strategic self-regulation, designed to capture a number of ways in which people could employ strategic positivity and strategic negativity beyond the use of expectations made at the outset of a task, was developed. Using individual difference measures of strategic self-regulation, Studies 2 and 3 demonstrated that regardless of actual performance, strategically positive and strategically negative participants evaluated their performance differently. In addition, the results of Studies 2 and 3 indicated that strategic self-regulation interacted with individual performance to produce unique affective experiences among strategically positive and strategically negative participants. Discussion focuses on the ultimate utility of strategic self-regulation for goal pursuit and the potential long-term consequences of chronically engaging in strategic positivity or strategic negativity.

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Chapter 1

Introduction

Health and happiness often rest in our ability to set and successfully pursue goals. To attain our goals, we must effectively evaluate our progress toward them. Evaluation of goal-related progress not only maintains our motivation for pursuing goals, but also results in fruitful decision-making at crucial junctures along the way, and is thus critical to goal pursuit. But how should people evaluate their progress in order to stay motivated and to achieve maximum success? For example, if your goal is to lose 30 pounds, but you have lost only two pounds after a month of dieting, how should you evaluate your progress to date? Should you be hopeful, or should you berate yourself? What evaluation would be most effective in helping you to ultimately achieve your goal? Suppose that you reach your weight loss goal. How should you evaluate your progress at this stage? Should you feel elated, or might enthusiasm lead to carelessness, lapse, and regression? A critical challenge lies in determining the most profitable ways to evaluate goal-related progress and to make goal-relevant decisions based on those evaluations. Moreover, an important issue in this domain of inquiry regards the extent to which ongoing evaluations of progress differ from expectations made at the outset of goal pursuit, and how these differences might affect subsequent performance. The current work is an examination of the impact of expectations on outcomes, particularly goal-related outcomes, and how expectations can be used strategically in the service of maximizing both experience and performance.

Much research has been conducted examining the relations between people's expectations and their experienced outcomes (e.g., Cantor & Norem, 1989; Greitemeyer, 2009; Reinhard & Dickhauser, 2009). A great portion of this work falls under the general area of research on optimism and pessimism. Broadly defined, optimism is the tendency to expect good things to happen, and pessimism is the tendency to expect bad things to happen. Although optimism and pessimism have been conceptualized as opposite poles of a continuum (Scheier & Carver, 1985; Scheier, Carver, & Bridges, 1994) there is evidence demonstrating that despite a positive relation between them, optimism and pessimism form separate factors, each having unique predictive utility (Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992).

In most research studies on optimism and pessimism, an individual difference measure designed to assess dispositional levels of optimism, such as the Life Orientation Test (LOT; Scheier et al., 1994), is used to predict various outcomes. Higher levels of optimism and/or lower levels of pessimism are typically associated with positive outcomes (Norem, 2001a; Norem & Chang, 2002; Scheier & Carver, 1987, 1992). For example, optimism is positively related to several aspects of subjective well-being (Diener, Oishi, & Lucas, 2003; Makikangas & Kinnunen, 2003), positively related to psychological adjustment to aging (Chang & Sanna, 2001; but see Isaacowitz & Seligman, 2002), and negatively related to depressive symptomology (Karademas, 2006; Vickers & Vogeltanz, 2000). In the health domain, an optimistic orientation positively predicts physical recovery rate after coronary bypass surgery (Scheier, Matthews, Owens, Magovern, Lefebvre, Abbot, & Carver, 1989) and adaptation to chronic illness (Fournier, de Ridder, & Bensing 2002), whereas a pessimistic orientation has been associated with cancer complications (Antoni & Goodkin, 1988) and shorter survival time among gay men with AIDS (Reed, Kemeny, Taylor, Wang, & Visscher, 1994).

However, studies also indicate that optimism is not always good and that pessimism is not always bad. People can be unrealistically optimistic (Weinstein, 1980), overestimating the extent to which they have control over events, and failing to resign when doing so might be the most adaptive course of action (Gibson & Sonbanmatsu, 2004; Wortman, 1976; Wortman & Brehm, 1975). Moreover, focusing on negative possibilities (Goodhart, 1986; Sherman, Skov, Hervitz, & Stock, 1981; Showers, 1992), having lower expectations (Norem & Cantor, 1986; Thompson & le Fevre, 1999), and experiencing failure (Brickman, Linsenmeier, & McCareins, 1976; Förster, Grant, Idson, & Higgins, 2001; Idson & Higgins, 2000) can actually be helpful for some individuals. The emerging account from the psychological literature on optimism and pessimism reveals that optimism does not necessarily lead to positive outcomes and that pessimism does not necessarily lead to negative outcomes.

So when and in what situations do optimism and pessimism lead to positive and negative outcomes? In order to address this question, two important gaps in the research literature examining the effects of optimism and pessimism on outcomes should be highlighted. First, a distinction can be made

between dispositional levels of optimism and pessimism on the one hand, and strategically employed varieties of optimism and pessimism on the other. Whereas dispositional optimism and pessimism are regarded as stable individual differences that influence a number of aspects of people's lives and reflect a general perception of experience and expectation, the strategic varieties are more circumscribed and serve particular functions. Specifically, strategic optimism can be conceptualized as a functional, domain-specific expectation that is in the service of pursuing specific goals, and that reflects the conviction that good things will happen. In contrast, strategic pessimism can be conceptualized as a functional, domain-specific expectation that is also in the service of goal pursuit, and that reflects the belief that bad things will happen. For example, a person might be highly optimistic at an overall, dispositional level. However, when it comes to preparing for an exam, she might find that being strategically pessimistic about how well she knows the material affords her sufficient motivation to study adequately. As we will see, strategic optimism and strategic pessimism can indeed operate as motivational forces that aid in goal pursuit. Although some research programs have focused on strategic uses of optimism and pessimism (e.g., defensive pessimism), there is a relative dearth of studies considering these more circumscribed varieties of expectation.

A second gap in the literature on optimism and pessimism (both dispositional and strategic forms) lies in how they are related to the ongoing self-regulation of task performance and goal pursuit. The standard research paradigm involves measuring optimism/pessimism (global levels of optimism/pessimism and/or specific expectations with regard to an upcoming event or outcome) at a particular point in time and then determining their relations to various kinds of outcomes. Despite attempts to ascertain the mediational mechanisms by which optimism and pessimism lead to certain outcomes (e.g., Kamen-Siegel, Rodin, Seligman, & Dwyer, 1991), relatively little attention has been devoted to illuminating how optimism and pessimism function as ongoing self-regulatory mechanisms. Often, optimism and pessimism are viewed simply as expectations made *prior* to the pursuit of a goal with little thought or effort dedicated to investigating their roles *while* people pursue a goal. Although some research programs have addressed the specific functions that optimistic and pessimistic expectations serve (e.g., Norem, 2001a, Norem & Cantor,

1986; Norem & Illingworth, 1993), next to nothing is known about the dynamics of feeling optimistic or pessimistic while engaged in goal pursuit. For example, do one's optimistic/pessimistic expectations, be they borne of dispositional or situationally-induced origins, change as function of progress during goal pursuit? If changes occur, how might they be related to perceived success or failure? Given that many individuals' initial expectations are not necessarily flush with their levels of ability and preparation, do their perceptions of success and failure along the way deviate from reality? To what extent is it beneficial or harmful for perceptions to be discrepant from reality? Are deviations between people's less than accurate perceptions and reality more pernicious to the extent that they vary in a specifically optimistic or pessimistic direction? Do the potential good and bad consequences of being strategically positive or strategically negative depend on individual differences? We know relatively little about roles of optimism and pessimism concurrent with goal pursuit.

Goals of the Current Work

The purpose of the current work is to address these two gaps, and to broaden the conceptualization of optimism and pessimism as strategic self-regulatory mechanisms. First, the definitions of strategic optimism and strategic pessimism are more clearly delineated and then broadened to encompass a wider variety of strategic self-regulatory tactics. Second, prior work on strategic uses of optimism and pessimism is reviewed. In particular, research on defensive pessimism and strategic optimism (Norem, 2001; Norem & Chang, 2002) is emphasized, and their relations with regulatory focus theory (Higgins, 1997, 1998) are explored. Third, some qualifications about the efficacy of strategic optimism and strategic pessimism for task performance and goal pursuit are made. Although it is argued that strategic forms of optimism and pessimism can be beneficial forms of self-regulation, there are no doubt boundary conditions proscribing their utility. I argue in this paper that for certain people and/or in certain situations, being strategically optimistic or strategically pessimistic when pursuing goals is a viable approach to goal pursuit with the potential to enhance motivation and performance.

Prior Research on Strategic Optimism (Positivity) and Strategic Pessimism (Negativity)

Strategic optimism was defined above as a functional, domain-specific positive expectation that is in the service of pursuing specific goals. Likewise, strategic pessimism was defined as a functional, domain-specific negative expectation that is in the service of pursuing specific goals. Examination of scales designed to measure strategic optimism and strategic pessimism (e.g., the Revised Defensive Pessimism Questionnaire; Norem, 2001b) and of scales designed to measure levels of dispositional optimism and dispositional pessimism (e.g., LOT; Scheier et al., 1994) naturally reveal this focus on expectations about future events. This conceptualization of optimism and pessimism as future-oriented expectations curtails their utility in studying ongoing aspects of self-regulation. In order to account for optimistic and pessimistic beliefs that are concurrent (or co-occur) with goal pursuit, it is necessary to develop a broader conceptualization of how people report optimism and pessimism, one that moves beyond expectations for the future and that encompasses a wider variety of ways in which people can be optimistic and pessimistic as they pursue goals. In the current work, the terms “strategic positivity” and “strategic negativity” refer to this broader conceptualization of strategically optimistic and strategically pessimistic beliefs. Both strategic positivity and strategic negativity include not only expectations about the future, but also evaluations of how well/poorly one is doing in the moment. Included are positive and negative thoughts about the self, the current task or goal, the current task or goal environment, and the current task or goal progress. For example, in addition to an optimistic expectation about the ultimate outcome of a current task, an individual could also maintain thoughts of high self-efficacy and beliefs that the current task is being accomplished easily. In this paper, optimism and pessimism refer to expectations only, whereas strategic positivity and strategic negativity include strategically managed expectations as well as more general, functionally-deployed positivity and negativity related to goal pursuit.

Although no studies in the literature have explicitly referred to strategic positivity and strategic negativity, there is research that points to the utility of strategically altering expectations and interpretations of situations as actors pursue the two general goals of self-regulation (Taylor, Pham, Rivkin, & Armor, 1998): 1) improving decisions and performance and 2) regulating affective responses to success and failure.

Improving Decisions and Performance

Taylor and Brown (1988) assert that the mentally healthy individual maintains positive illusions about the self, personal control, and future outcomes. However, other research demonstrates that being overly optimistic can lead to poor behavioral decisions (Becker, 1974; Gibson & Sonbanmatsu, 2004; Haefner & Kirscht, 1970; Wortman, 1976; Wortman & Brehm, 1975) and may stymie people's ability to take appropriate preventative action in the face of risk (Janoff-Bulman & Frieze, 1983; Perloff, 1983; Schwarzer, 1994; Tennen & Affleck, 1987; but see Aspinwall & Brunhart, 1996; Taylor, Kemeny, Aspinwall, Schneider, Rodriguez, & Herbert, 1992). Given these seemingly incongruous findings, how does the mentally healthy person effectively make decisions, successfully achieve goals, and avoid peril? According to Taylor and Gollwitzer (1995), although people are generally quite optimistic when implementing a plan of action, deliberating about what sort of action to take elicits a more negative frame of mind that includes worsened mood, greater perceived risk to a variety of problems, and poorer self-perceptions. The authors argue that deliberation is a time in which people temporarily disavow their positive illusions and take stock of their shortcomings, available resources, and environmental surroundings in order to reach a profitable decision about whether to take a course of action. In contrast, during the implementation phase of a particular choice of action, people marshal positive illusions as motivational forces that guide action and facilitate goal attainment. Thus, it appears that people strategically become less positive about themselves and their capabilities in order to make judicious decisions.

Task Performance. But once a decision is made to engage in a particular course of action, negativity does not necessarily forfeit its utility. On the contrary, under some circumstances, negativity and the contemplation of potential failure can actually improve the implementation of intended actions and enhance performance. For example, Sherman et al. (1981) had participants either imagine and explain why they might fail or to imagine and explain why they might succeed on an upcoming anagram task. In addition, after imagining success or failure, half of the participants were asked to generate explicit expectations for the upcoming task, whereas the other half of the participants were not asked to generate explicit expectations for the upcoming task. Among participants who generated explicit expectations about their performance after imagining success or failure, those who had imagined success performed better than

did those who imagined failure. Conversely, among participants who were not asked to generate explicit expectations after imagining success or failure, those who had imagined failure performed better than did those who imagined success. In fact, participants who were not asked to generate explicit expectations and who imagined failure performed the *best* of all of the experimental groups combined. Sherman et al. explain the results in terms of the activation of cognitive schemata representing success and failure that are drawn upon when generating expectations. These generated expectations then provide a cognitive mindset for approaching the task (e.g., imagining failure subsequently leads one to expect failure) and result in behavior that confirms the expectations. In the absence of generated expectations, however, contemplating failure serves to boost performance by motivating participants to avoid failure.

Similarly, Goodhart (1986) found that among participants who generated explicit expectations, anagram performance was poorer when they read negative self-referent statements pertaining to an exam-achievement domain than when they read positive self-referent statements pertaining to an exam-achievement domain. Interestingly, when participants generated explicit expectations but read negative self-statements pertaining to a social relations domain, anagram performance was better than when participants generated explicit expectations and read positive self-statements pertaining to a social relations domain. That is, when participants' negative thoughts pertained to a domain irrelevant to the task, generating explicit expectations benefited performance. The author speculates that negative thoughts about previous failure in an irrelevant domain spurred people to avoid further failure and to reestablish a sense of self-esteem by doing well on the anagram task. Because their thoughts about failure in a social relations domain would not have caused them to doubt their ability to perform on an anagram task, these participants secured the dual benefits of being motivated to avoid failure on the task and committing themselves to realistic expectations in order to avoid failure. However, when thoughts about previous failure pertained to a domain relevant to the anagram task, participants may have found it difficult to generate high expectations and to follow up on those expectations, despite being motivated to avoid failure. These findings are consistent with other work demonstrating that failure on a task that is irrelevant to a subsequent task improves performance on the subsequent task by motivating people to avoid further failure, without

leading them to doubt their future performance prospects (Brickman et al., 1976). Beyond performance benefits, contemplating failure and potential negative results can also be handy in regulating affective reactions to behavioral outcomes.

Affect Regulation

Focusing on negative possibilities can augment the affective experience of success and failure in auspicious ways. For example, research by Feather (1967, 1968) demonstrates that people's responses to success and failure are a function of their expectations (see also Diener, Colvin, Pavot, & Allman, 1991; Pyszczynski, 1982). Specifically, to the extent that success is unexpected, people experience it as more pleasant. To the extent that failure is expected, people are better able to abide the experience. These findings suggest that people may sometimes generate more negative expectations so that any successes achieved are perceived as more pleasant than otherwise, and that any failures experienced are less troublesome than otherwise. Although the strategy of setting negative expectations appears similar to self-handicapping (Berglas & Jones, 1978; Rhodewalt & Davison, 1986), it is different in that self-handicapping is a behavioral strategy that involves over-commitment and/or setting obstacles to impede progress, rather than merely using cognitive gymnastics in the service of enhancing the feelings of success and softening the blow of failure.

Shepperd, Fernandez, and Ouellete (1996) tested the hypothesis that people will lower expectations over time to regulate affect. According to Shepperd et al. (see also Carroll, Sweeny, & Shepperd, 2006), whether people make unduly positive, accurate, or unduly negative predictions is a function of three factors. First, when self-relevant feedback is expected, people tend to generate more negative expectations (Thompson & Le Fevre, 1999), whereas when self-relevant feedback is not expected, people generate more positive expectations. Second, as the time to engage in behavior that will culminate in self-relevant feedback approaches, people's expectations become more negative. For example, Gilovich, Kerr, and Medvec (1993) demonstrated in a classroom setting that as the time to take an exam approached, participants lowered their expectations for success. Lab studies revealed that this effect is independent of the amount of knowledge acquired between initial expectation ratings and expectation ratings made

imminently prior to the task. Finally, even when self-relevant feedback is anticipated, to the extent that receipt of the feedback is temporally distal, people are relatively positive in their expectations. Across three studies, the authors demonstrated that as the time to receive self-relevant feedback approached, participants, particularly those low in self-esteem, became more negative in their forecasts of success. Moreover, the drop in expectations was inversely related to reported anxiety. The results imply that participants lowered their performance expectations in order to regulate their affective response to potentially negative self-relevant feedback, with participants with low self-esteem especially disposed to mitigate the sting of potential negative feedback.

It is important to note that performance enhancement and affect regulation are not necessarily independent. Indeed, performance may be improved simply because a person has effectively regulated her affect. For example, strategic negativity related to an upcoming task could reduce pre-performance anxiety among those prone to experience it. For these people, reducing anxiety could afford them the opportunity to do well irrespective of the potential benefits that strategic negativity may have for performance enhancement per se, such as greater levels of preparation. Alternatively, effective affect regulation may be required before any performance benefits are reaped. For example, some people may find it extremely difficult to prepare or plan given their initial levels of anxiety. Once their anxiety is sufficiently assuaged, they feel free to prepare. A third possibility is that by thinking about potential negative outcomes and devising ways to circumvent failure, which would improve performance directly, one's affect can be successfully regulated. Although it is not entirely clear which of these three potential mechanisms is the primary route to their success, defensive pessimists comprise one group of identified individuals who are strategically negative in the service of regulating affect to perform well (Norem & Cantor, 1986).

Defensive Pessimism and Strategic Optimism

Defensive pessimists are individuals who, despite a history of success in a particular domain, set unrealistically low expectations for themselves, principally in situations in which failure is diagnostic of low ability (Thompson & le Fevre, 1999). Their strategy involves playing through or reflecting on possible negative outcomes (Spencer & Norem, 1996) in an effort to effectively turn anxiety into a motivational

force (Norem & Chang, 2002). Because people who subscribe to defensive pessimism as a self-regulatory strategy are typically high in anxiety, particularly with regard to the domain in question, their negativity and reflection on possible negative outcomes are central in managing anxiety and in accomplishing goals. According to Norem and her colleagues, defensive pessimism is a useful strategy when employed by anxious people, because it affords them the opportunity to think through potential negative outcomes and to consider how they might be confronted. Although it is not entirely clear whether defensive pessimists actually base their subsequent behavior on ways by which to avoid negative outcomes, it is assumed that the contemplation of potential outcomes at the very least quells the anxiety associated with unknown variables that could hamper performance.

Defensive pessimists are usually compared with strategic optimists, individuals who have also been successful in a particular domain but who set high expectations for their performance. In contrast to defensive pessimists, strategic optimists prefer not to reflect extensively on possible outcomes prior to action, and when forced to do so, they perform worse than both defensive pessimists and strategic optimists who are distracted or left alone (Norem & Illingworth, 1993; Sanna, 1996). Research demonstrates that strategic optimists, who are typically less anxious than are defensive pessimists, actually become anxious when they reflect on the possible outcomes of a performance, and that their anxiety can lead to performance decrements (Norem, 2001a; Norem & Illingworth, 1993). Although strategic optimists prefer not to reflect on possible outcomes before action, they often reflect on a task after it has been completed (Sanna, 1996, 1998).

Whereas defensive pessimists use anticipatory strategies, strategic optimists are adept at cognitively restructuring the meaning of performance after the outcome is already known (Norem & Cantor, 1986; Norem & Illingworth, 1993). Strategic optimists are prone to downward counterfactual thinking (e.g., “If I hadn’t studied so much, my grade could have been much worse”) to enhance their satisfaction with a performance (Sanna, 1996; 1998). In contrast, defensive pessimists prefer to engage in upward prefactual thinking before performance (e.g., “If only I had studied more, I could do better on the upcoming exam”), which enhances preparation for future performance at the expense of immediate

satisfaction (Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Crocker & Major, 1989; Markman, Gavanski, Sherman, & McMullen, 1993; Sanna, 1996, 1998).

Mood is interpreted and functions differently across the two orientations. Naturally occurring positive mood has no effect on the performance of strategic optimists, but impairs the performance of defensive pessimists; in fact, induced negative mood actually improves the performance of defensive pessimists (Norem & Illingworth, 2003). According to Norem and her colleagues, defensive pessimists interpret negative mood as evidence that they need to persist given that they have yet to complete a task or to work through a problem; positive mood is construed as a signal that the task ahead does not need attention, and effort is consequently decreased (cf., Carver & Scheier, 1990, 2008; Martin, Ward, Achee, & Wyer, 1993). In contrast, strategic optimists prefer to avoid thinking about an upcoming task altogether, and as long as mood is perceived to be unrelated to the task at hand, it has no effect (Norem & Illingworth, 2003). Despite these considerable differences between defensive pessimists and strategic optimists, when left free to use their respective strategies, both groups perform equally well (Cantor & Norem, 1989; Norem & Cantor, 1986; Sanna, 1996; 1998; Spencer & Norem, 1996) and illustrate how both strategic negativity and positivity can enhance goal advancement.

It is apparent that negativity can be used strategically in the service of making clearer decisions, improving performance, and regulating affect. Likewise, being strategically positive can be helpful for improving performance and regulating affective responses to outcomes. Although work and theory on defensive pessimism and strategic optimism are useful in identifying people who engage in these various strategies, other perspectives on self-regulation may be helpful in ascertaining not only who uses these strategies, but also in what situations they are adopted, and why the strategies are effective.

Regulatory Focus Theory and Strategic Self-Regulation

According to regulatory focus theory (Higgins, 1997, 1998), people can work toward goal attainment in two motivational states, promotion focus and prevention focus. These motivational states can be conceptualized as chronic motivational penchants (e.g., Förster & Higgins, 2005; Higgins, Friedman, Harlow, Idson, Ayduck, & Taylor, 2001; Higgins, Shah, & Friedman, 1997; Shah, Higgins, & Friedman,

1998) or situationally-induced motivational states (e.g., Crowe & Higgins, 1997; Idson, Liberman, & Higgins, 2000; Liberman, Idson, Camacho, & Higgins, 1999; Roney, Higgins, & Shah, 1995). Promotion-focused individuals are sensitive to the presence or absence of gains and work to achieve positive outcomes; they are primarily concerned with growth, accomplishment, and meeting nurturance needs, and are strategically eager in self-regulation, willing to take risks to ensure that they do not miss opportunity. In contrast, prevention-focused individuals are sensitive to the presence or absence of losses and work to avoid negative outcomes; they are primarily concerned with safety, obligations, and meeting security needs, and are strategically vigilant in self-regulation, conservative to ensure that they do not fail in their responsibilities. Although promotion focus and prevention focus are associated with different motivational strategies, both modes of self-regulation are ultimately ways of successfully pursuing and achieving goals.

Of particular relevance to the current work is research detailing how individuals employing a promotion focus versus a prevention focus react differently to feedback information. Although feedback information can have somewhat mercurial effects on subsequent motivation and performance (Kluger & DeNisi, 1996; 1998), people focused on either promotion or prevention appear to react in predictable and consistent ways to feedback indicating success or failure. Higgins and his colleagues (Förster et al., 2001; Idson & Higgins, 2000; Idson et al., 2000; Higgins & Spiegel, 2004) argue that because promotion-focused individuals are strategically eager to attain “hits,” they find success feedback to be motivating; it indicates that they have attained a hit, and their eagerness is maintained or enhanced to pursue more hits. Conversely, failure feedback conveys information that they have failed to attain a hit, indicating that their motivational strategy of eagerness is not sufficient. Thus, a reduction in eagerness and performance result. In contrast, because prevention-focused individuals are strategically vigilant to avoid losses, they find failure feedback to be motivating; it indicates that they have failed to avoid a loss, and their vigilance is maintained or enhanced to avoid further losses. However, success feedback conveys information that they have successfully avoided a loss, indicating that their vigilance strategy is no longer necessary. Thus, a reduction in both vigilance and performance results. Although the possibility is not explicitly addressed in the literature on regulatory focus theory, promotion-focused individuals may not be motivated by failure (in

addition to being motivated by success), and prevention-focused individuals may not be motivated by success (in addition to being motivated by failure).

A number of empirical investigations support the argument that prevention-focused individuals are motivated by the prospect of failure, whereas promotion-focused individuals are motivated by the prospect of success. Van-Dijk and Kluger (2004) induced prevention focus among participants by having them imagine that they were working at a job that they had to keep in order to maintain a source of income (i.e., the job fulfills a security need) or induced promotion focus among participants by having them imagine that they were working at a job that they had always desired to have (i.e., the job fulfills a nurturance need). Participants were then instructed either to imagine that their boss had just told them that they had failed in a particular job task or to imagine that their boss had just told them that they had excelled in a particular job task. Among prevention-focused participants, imagining failure produced greater intentions to invest effort than did imagining success. However, among promotion-focused participants, imagining success produced greater intentions to invest effort than did imagining failure. These results complement work by Idson et al. (2000), in which it was found that the pain of a loss (failure of prevention) is experienced as more aversive than is the pain of a non-gain (failure of promotion), and is thus more motivating, whereas the pleasure of a gain (success of promotion) is experienced as more delightful than the pleasure of a non-loss (success of prevention), and is thus more motivating.

Beyond hypothetical scenarios and thought experiments, similar effects from the actual experience of success and failure feedback on performance have also been observed. For example, Idson and Higgins (2000) measured participants' prior history of success in promotion self-regulation (i.e., how successful they had been in achieving their ideals) and their prior history of success in prevention self-regulation (i.e., how successful they had been in meeting their responsibilities and obligations). The authors found that to the extent participants were ideal-congruent (i.e., successful in promotion-focused self-regulation), their performance on an anagram task improved over time following feedback that signaled success. In contrast, to the extent that participants were ought-congruent (i.e., successful in prevention-focused self-regulation), their performance on the anagram task improved over time following feedback that signaled failure.

Additional support for these conclusions comes from work by Förster et al. (2001), in which success and failure feedback had similar effects on anagram persistence after a situational manipulation of regulatory focus.

Defensive Pessimism and Regulatory Focus. When considering the research on defensive pessimism, strategic optimism, and regulatory focus theory together, some parallels can be discerned. Although defensive pessimists typically think about both success and failure possibilities, their focus is centered on things that could go wrong while working to accomplish a goal. By contemplating negative possibilities and devising ways in which those negative possibilities might be circumvented or managed, defensive pessimists assuage their anxiety. In a sense, defensive pessimists are focused on avoiding negative outcomes. Indeed, Elliot and Church (2003) found that defensive pessimism is related to fear of failure (Houston & Kelly, 1987), the behavioral inhibition system (BIS; Gray, 1990), and avoidance goal pursuit (see also Yamawaki, Tschanz, & Feick, 2004). Similarly, prevention-focused individuals can be conceptualized as being careful to avoid mistakes, sensitive to the presence and absence of negative outcomes, and using avoidance as a strategic means to goal pursuit. Although the concordance between strategic optimists and promotion-focused individuals is less clear, it does seem that both types of people are focused on success and achievement, both are approach oriented, and both are relatively optimistic about their future prospects (Grant & Higgins, 2003).

Despite these parallels between defensive pessimism and prevention focus on the one hand, and strategic optimism and promotion focus on the other hand, an important distinction can be made between the two research programs with respect to the role of anxiety. Much of the research on defensive pessimism and strategic optimism has focused on the utility of defensive pessimism as a method to effectively mitigate anxiety. Strategic optimists are typically low in anxiety and do not require an anxiety-reducing strategy (e.g., defensive pessimism) in order to perform well on a given task. If strategic optimists think about the possible outcomes of a performance, their anxiety levels increase and performance levels suffer. Among defensive pessimists, however, initial levels of anxiety are relatively high. Once they put their strategy into operation, anxiety levels are reduced to a manageable level, and defensive pessimists can

perform adequately. Thus, in research on defensive pessimism and strategic optimism, anxiety is considered something to be avoided or reduced in order to perform successfully.

According to regulatory focus theory, however, anxiety is not conceptualized so much as an antecedent of performance but instead, as a consequence of poor performance. Specifically, when prevention-focused individuals fail a task, they experience agitation- and anxiety-related emotions. Given the research demonstrating that failure leads to increased motivation and performance among prevention-focused individuals (Förster et al., 2001; Idson & Higgins, 2000; Idson et al., 2000; Van-Dijk & Kluger, 2004), it might be that anxiety is interpreted as a signal to increase effort on a given task. Furthermore, it is possible that prevention-focused individuals can actively increase their task-related motivation by anticipating and creating optimal levels of anxiety through the use of strategic negativity about their own performance and/or about the task on which they are working. This created arousal would be enough to enhance motivation but not so much as to depress performance. Such strategic negativity could take the form of purposefully under-reporting one's performance, overplaying the difficulty of a task, or telling oneself that there is still a great deal yet to be accomplished in the pursuit of a goal. Strategic negativity fits well with prevention focus qualities, such as caution, obligation, and the motivation to avoid making mistakes. Thus, for prevention-focused people, a bit of anxiety may be strategically sought out, instead of actively avoided or reduced.

In a similar fashion, promotion-focused individuals may strategically pursue what they find motivating, viz., success. Because promotion-focused individuals are motivated by success and accomplishment (Förster et al., 2001; Idson & Higgins, 2000; Idson et al., 2000; Van-Dijk & Kluger, 2004), they may be inclined to be strategically positive about their performance and/or the task on which they are currently working; this would serve to increase feelings of eagerness and excitement. Such strategic positivity could take the form of over-reporting one's performance, downplaying the difficulty of a task, or telling oneself that a great deal has been accomplished. Strategic positivity fits with promotion focus qualities, such as enthusiasm, eagerness, and a willingness to take risks.

Indeed, research on regulatory focus theory has identified a variety of strategies by which both promotion focus and prevention focus can lead to successful goal pursuit. Higgins has argued that when pursuing goals using strategic methods that match their state of regulatory focus (be it chronic or situational), people experience a sense of “regulatory fit,” which increases the value of their effort (Cesario, Grant, & Higgins, 2004; Higgins, 2000, 2006; Lee & Aaker, 2004). This increased value has number of concomitant benefits, including enhanced motivation for the current task, which in turn, can increase task performance and persistence (Förster et al., 2001; Idson & Higgins, 2000; Idson et al., 2000; Shah et al., 1998). One method that individuals might employ to maintain or to increase their motivation for a task is to be strategically positive or strategically negative as a function of their current or chronic regulatory state.

Strategic Self-Regulation vs. Monitoring Processes

An important distinction should be made at this point between the affective and behavioral consequences of strategic positivity or strategic negativity on the one hand, and the affective and behavioral consequences of the routine monitoring of one’s progress, on the other hand. According to Carver and Scheier’s control-process view of affect (Carver & Scheier, 1990, 2008) positive affect is experienced when the rate of progress toward goal achievement exceeds some salient reference point, and negative affect is experienced when the rate of progress toward goal achievement falls short of some salient reference point. Affective experiences are interpreted as signals either to reduce effort (in the case of positive affect) or to intensify effort (in the case of negative affect) (Carver & Scheier, 2008). According to this framework, monitoring and evaluating one’s progress is a relatively passive activity that is informative for deciding when to increase effort, when to decrease effort, and when to withdraw effort. In the current conceptualization, however, it is proposed that people do not simply passively monitor progress, awaiting affective fluctuations to signal effort modifications. Rather, people may be disposed to artificially concoct evaluations of their progress in order to create affective experiences (e.g., anxiety or excitement) that lead to increases in motivation and effort.

If people can either attempt to accurately monitor their progress or strategically manipulate self-evaluations of their progress, what conditions lead people to take one or the other self-regulatory tack?

First, to the extent that people are highly motivated to succeed in pursuing a goal, they may be more likely to deploy strategic positivity or strategic negativity in order to maintain or increase motivation, and to increase effort from the outset. Second, to the extent that people, particularly those disposed to strategic negativity, anticipate that a particular goal will be difficult to achieve, strategic self-regulation may dominate over simple monitoring processes. Note that even though people who are strategically positive are quite optimistic about their chances and positive about their performance during goal pursuit, they are still capable of acknowledging challenges associated with goal attainment and of engaging their strategy in order to perform at an optimum level.

In sum, it seems reasonable to propose that for some people and/or in some situations, strategic positivity is a viable method to enhance motivation and improve performance. Likewise, strategic negativity also appears to be a useful self-regulatory mechanism in particular circumstances. But what conditions proscribe the efficacy of these strategies? At first blush, the possibility that lowering expectations, imagining failure, and increasing negative feelings about task or goal pursuit can potentially have beneficial effects appears counterintuitive. In a similar fashion, it is not difficult to imagine that being naively Panglossian in some instances might result in nothing but failure and hopes dashed upon the shores of reality. Furthermore, there are no doubt both people and situations for whom or for which strategic positivity and strategic negativity may be exercised, but with little profit, or perhaps even deficit. In order to clarify hypotheses about how, when, and by whom strategic negativity and strategic positivity are likely to be fruitfully employed, it is necessary to explore the individual differences, situational catalysts, and contextual constraints that potentially affect their adoption.

Qualifications on Strategic Positivity and Strategic Negativity

When are strategic positivity and strategic negativity likely to be used? First, the use of strategic positivity and strategic negativity is likely contingent on certain individual differences. As we have seen, particular personality characteristics pull for particular strategies. People higher in anxiety, defensive pessimism, prevention focus, or lower in self-esteem may be more likely to be strategically negative,

whereas people higher in self-esteem, strategic optimism, promotion focus, or lower in anxiety may be more likely to be strategically positive.

Second, strategic positivity and strategic negativity may be more likely when appropriately matched with characteristics of the task or situation. Just as the strategic use of positivity or negativity may covary with differences among individuals, different varieties of tasks may serve as strong situations that can temporarily evoke particular self-regulation strategies. For example, in the realm of regulatory focus theory, thinking about or engaging in some types of behavior (e.g., exercise) can evoke a promotion-focused mindset, whereas thinking about or engaging in other types of behavior (e.g., cholesterol screening) can evoke a prevention-focused mindset (Wlaschin, Rothman, Bartels, & Bachnick, 2006; Wlaschin, Bartels, & Rothman, 2007). Comparably, Van-Dijk and Kluger (2004) have argued that some tasks produce eagerness, whereas other tasks require vigilance (cf. Higgins, 1997, 1998, 2000). For example, tasks that involve an open search or a creative production may produce an eagerness motivation that encourages strategic positivity. Conversely, tasks that involve attentiveness or surveillance may produce a vigilance motivation that encourages strategic negativity.

When are strategic positivity and strategic negativity likely to be effective? Although strategic positivity and strategic negativity are likely to be used by particular types of people or in response to certain situational demands, it remains an open question as to when the strategies are likely to be effective in enhancing motivation and performance. Among individual difference factors that might moderate the efficacy of strategic positivity and strategic negativity are the implicit theories people hold about the meaning of success and failure. Dweck and her colleagues (Dweck, Chiu, & Hong, 1995; Dweck & Legget, 1988) have argued that ascribing failures to stable and global factors (e.g., inherent lack of ability) mediates maladaptive responses, whereas ascribing failures to mutable and manageable factors (e.g., lack of effort) mediates adaptive responses. To the extent people subscribe to an entity theory of ability, they endorse a more stable and more global conception of a particular ability in which success and failure are mostly due to innate factors. To the extent people subscribe to an incremental theory of ability, they endorse a less stable and less global conception of a particular ability in which effort, motivation, and

persistence play roles integral to success and failure. Because the implications of failure are less inimical to conceptions of self-worth among incremental theorists (Hong, Chiu, Dweck, Lin, & Wan, 1999), they may be in a better position to take advantage of strategic negativity. Indeed, Sherman et al. (1981) found that among participants who deliberated on why they might fail on an upcoming task, those who had referenced personal effort felt that they had done better, and actually performed somewhat better than did those who referenced ability. Such a strategy may be too self-destructive for entity theorists to use properly.

The efficacy of strategic negativity and strategic positivity is further qualified by the abstraction level at which people identify their negativity or positivity, which varies on a continuum ranging from the broad, abstract goal level to the more concrete and defined elements that exist in the service of overall goal accomplishment (e.g., Vallacher & Wegener, 1985; Pham & Taylor, 1999; Taylor et al., 1998). For example, one could be strategically negative about achieving an overall “A” for a course (goal), or one could be strategically negative about completing a specific assignment (sub-goal). The focus of the strategic negativity varies from the overall goal level of earning an “A” to the more delineated and concrete level of a specific assignment, the completion of which is in the service of achieving the “A.” Just as interpreting failure in a stable and global fashion may produce maladaptive reactions (Hong et al., 1999), strategic negativity at the abstract goal level might undermine motivation. Moreover, if people who are strategically negative are similar to defensive pessimists in that reflecting on negative possibilities affords ways to preempt potential problems, then focusing on the abstract goal level might not clarify how to circumvent latent barriers to progress. In support of this proposition, Sullivan (2005) found that participants’ plans for meeting their avoidance goals were less concrete than were their plans for meeting their approach goals, which may account for negative outcomes typically associated with pursuing avoidance goals (e.g., Elliot & Harackiewicz, 1996; Elliot & McGregor, 1999; Elliot, McGregor, & Gable, 1999; Elliot & Sheldon, 1997). In addition, focusing on the concrete elements of failure facilitates the interpretation of negative events as unstable and controllable (Showers, 1988) and improves task performance (Showers, 1992). Among people who are strategically positive, the level of strategy focus is

unlikely to be important. However, strategic negativity may be most (or only) beneficial when engaged at a concrete level.

A third condition qualifying the efficacy of strategic positivity and strategic negativity is one's personal history of success in a domain (Norem & Cantor, 1986). It may be the case that for any form of strategic negativity to improve or maintain performance, at some level (even unconsciously) the person must realize that she or he has been successful in the past and that results for the task ahead should be no different. Idson and Higgins (2000) acknowledge that despite the finding that prevention-focused people perform better after receiving failure feedback, those who suffer chronic failure are unlikely to be motivated by further experiences with failure. For people who have typically been unsuccessful in a task domain, negativity of any form could only serve to undermine motivation and to promote maladaptive responses to the stress of a task. In fact, among people who have not succeeded, setting low expectations and imagining failure are more likely to reflect a form of dispositional pessimism, which is accompanied by a host of pernicious features hostile to successful task completion. In a similar fashion, being unrealistically positive may serve as nothing more than a wishful smokescreen for people who are not typically successful in a domain. Although strategic positivity and strategic negativity may be beneficial self-regulation strategies, they are probably only effective for people who have the skills and abilities requisite for doing well (Norem & Cantor, 1986).

Finally, the characteristics of the task or goal in particular may not only affect the likelihood that one of the strategies is temporarily evoked, but also the extent to which chronic uses of the particularly strategies are effective. In behavioral domains in which strategic positivity may be a liability, those who are chronically strategically positive may suffer insofar as they are motivated by their self-regulatory strategy. For instance, people who are strategically positive may perform poorly in tasks that call for a vigilance and caution. In a similar fashion, behavioral domains in which strategic positivity is useful may put people who are chronically strategically negative at a disadvantage.

Contribution of the Current Work

The current work addresses several gaps in the research literature. First, in comparison with the research literature regarding the effects of dispositional optimism and dispositional pessimism on a wide variety of outcomes, relatively few studies have precisely examined strategic versions of optimistic and pessimistic expectations. The current studies specifically address this gap by focusing on strategic positivity and strategic negativity. Second, although some prior research has examined the utility of strategically managed optimistic and pessimistic expectations, no studies have conceptualized and measured strategic positivity and strategic negativity as ongoing self-regulatory mechanisms. The current studies conceptualize strategic self-regulation as more than simple expectations, and include affect, judgments about the self and task, and perceptions of task difficulty. In addition, the current studies are designed to move beyond expectations and to examine the continuous process of strategically managing positivity and negativity.

The current work also has implications for research related to both areas of defensive pessimism and regulatory focus theory. First, no efforts have brought these two research programs together to determine their relations and how they might inform one another. Second, the current studies may reveal that people who are strategically negative may not necessarily be anxious. For example, prevention-focused individuals, who find anxiety motivating but are not necessarily anxious, may be apt to engage in strategic negativity. Such findings would have major implications for theory behind the use of defensive pessimism as a self-regulatory strategy. Finally, only one study has examined the interactions of optimism and regulatory focus (Grant & Higgins, 2003), and no study has focused on pessimism (strategic or dispositional) and regulatory focus.

Overview

The focus of Study 1 was on the development of an instrument to determine individual differences associated with the use of strategic positivity and strategic negativity. This new measure, the Academic Strategies Questionnaire (ASQ) was designed to capture a number of ways in which participants could employ strategic positivity and strategic negativity beyond the use of expectations made at the outset of a task. Several individual difference measures used in previous studies examining self-regulation, defensive

pessimism, and goal-directed behavior within an academic setting were included to establish the validity of the ASQ. In addition, the participants in Study 1 also provided some of their academic history, which was also used in validating the ASQ.

Study 2 was a lab study designed to determine how individual differences in strategic positivity and strategic negativity are manifested. It was predicted that despite their actual levels of performance, strategically negative individuals would evaluate their performance more negatively, demonstrate more negative affect, and produce more negative thoughts and fewer positive thoughts than would strategically positive individuals.

Study 3 compliments Study 2 as an exploration of the manifestation of strategic positivity and strategic negativity. In addition to employing measured individual differences in strategic self-regulation as an independent variable, Study 3 examined the effects of a situational manipulation of task characteristics to induce strategic self-regulation. It was predicted that a gain-framed task focused on acquiring points would generate a strategically positive self-regulatory strategy and that a loss-framed task focused on not losing points would generate a strategically negative self-regulatory strategy. These situational manipulations of self-regulatory strategies were predicted to result in outcomes similar to those exhibited by participants with chronic self-regulatory strategies

Chapter 2

Study 1

The primary objective of Study 1 was to develop a measure of strategic positivity and strategic negativity. The second objective of Study 1 was to determine how strategic positivity and strategic negativity are related to other conceptualizations of self-regulation, and in particular, the strategic variety of self-regulation known as defensive pessimism. Before laying out the predictions for Study 1, some clarification of terminology is in order. As explained in the introduction, the terms “strategic positivity” and “strategic negativity” are conceptualized as including not only expectations about the future, but also current positive and negative thoughts about the self, the current task or goal, the current task or goal environment, and the current task or goal progress. For example, one might be strategically negative by indicating that a task is more difficult than it actually is or by believing that one has progressed toward a goal at a slower pace than one actually has. Such tactics could serve as self-regulatory mechanisms to maintain and/or enhance motivation. The current study was an attempt to develop and validate a measure of strategic positivity and strategic negativity, the Academic Strategies Questionnaire (ASQ), which specifically assesses these ways of employing each of the strategies. Although the Revised Defensive Pessimism Questionnaire (Norem, 2001b) captures some elements of the way in which strategic positivity and strategic negativity are conceptualized in the current work (e.g., expectations), it does not assess many of the possible ways in which people can be strategic beyond simply having relatively positive or relatively negative expectations at the outset of a task or test. However, both the ASQ and the Revised Defensive Pessimism Questionnaire are designed to capture ways in which individuals strategically self-regulate in response to academic situations, and both measures are referred to as varieties of *strategic self-regulation*.

The first set of predictions involved relations among strategic self-regulation as measured by the Academic Strategies Questionnaire (ASQ) and the other measures that participants completed. The ASQ consists of forced-choice items designed to measure individuals’ use of positive and negative self-regulatory strategies in the academic domain. Positive scores indicate strategic positivity, whereas negative scores indicate strategic negativity. Scores close to zero indicate no strategy preference. The Academic

Strategies Questionnaire should be positively related to promotion focus (Regulatory Focus Questionnaire; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001), self-esteem (Rosenberg Self-esteem Scale; Rosenberg, 1989), and dispositional optimism (Revised Life Orientation Test; Scheier et al., 1994), and should be negatively related to prevention focus (Regulatory Focus Questionnaire; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001), defensive pessimism (Revised Defensive Pessimism Questionnaire; Norem, 2001), and dispositional pessimism (Revised Life Orientation Test; Scheier et al., 1994). In prior research, Gray's (1990) BAS (behavioral activation system) and BIS (behavioral inhibition system) constructs have been used to indicate approach and avoidance temperaments (Elliot & Church, 2003; Elliot & Thrash, 2002), respectively, and have been shown to be related to defensive pessimism (e.g., Elliot & Church, 2003). In the current study, BAS, which represents a sensitivity to signals of reward and a propensity to experience positive feelings, was predicted to be positively related to the ASQ. Conversely, BIS, which represents a sensitivity to negative stimuli and a propensity to experience negative emotions such as anxiety, was predicted to be negatively related to the ASQ.

The second set of predictions involved the relations among the ASQ, defensive pessimism, and measures of academic success and ability. Several measures were used to determine academic success and ability. Participants provided subjective ratings of academic success and academic ability as well as more objective measures of ability, their college entrance exam scores (ACT) and their current GPAs. Because people prone to strategic positivity should inflate their perceptions of success and ability and people prone to strategic negativity should deflate their perceptions of success and ability, it was predicted that the ASQ would be positively related to self-rated measures of success and ability. However, objective measures of success and ability should not demonstrate differences between people who are strategically positive and people who are strategically negative. Hence, the ASQ was predicted to be unrelated to ACT and GPA. Similarly, it was predicted that defensive pessimism would be negatively related to self-rated measures of success and ability, but would be unrelated to objective measures of success and ability. If these hypotheses are confirmed, it would indicate that although the measures of strategic self-regulation (i.e., ASQ and defensive pessimism) are not related to actual success and ability, strategically negative

individuals report less success and ability than do strategically positive individuals. Such findings would demonstrate the gap between the reality individuals experience and the evaluative strategies they employ, and would set the groundwork for Studies 2 and 3.

Method

Participants

Undergraduates at the University of Minnesota (N = 116; 44 men, 72 women) participated in the study in exchange for extra course credit. The majority of the participants were female (62%), the mean age was 23.2 years (range = 18 to 54 years), and most were Caucasian (69%).

Procedure

Participants were told that the researchers were interested in determining how certain personality characteristics are related to types of studying and academic performance, and that participation would require completing a number of questionnaires designed to assess personality and academic history. Groups of participants (ranging in size from 5 to 30 participants) completed a questionnaire packet containing the primary measures.

Individual Difference Measures

Academic Strategies Questionnaire. The Academic Strategies Questionnaire (ASQ) was designed to measure individuals' use of positive and negative self-regulatory strategies in the academic domain. The 18 items of the scale were created based on research and theory primarily from work on regulatory focus theory (e.g., Higgins, 1997) and defensive pessimism (e.g., Norem & Cantor, 1986). The creation of the items focused on strategies and techniques that individuals find the most motivating and fruitful in achieving academic goals. The strategies clustered around three basic dichotomies: (1) focusing on how well one is currently doing vs. focusing on how poorly one is currently doing, (2) focusing on possible success vs. focusing on possible failure, and (3) focusing on being confident and presumptuous vs. focusing on being cautious and careful. For each item, participants selected which single statement of a pair of statements best described them. In an example of an item from the "well/poor" cluster, participants chose between "I find it motivating to think about how well I am doing" and "I find it motivating to think about

how much better I should be doing.” In an example of an item from the “success/failure” cluster, participants chose between “While I am working on a task, thinking about the possibility of success motivates me to work hard” and “While working on a task, thinking about the possibility of failure motivates me to work hard.” Finally, in an example from the “confident/cautious” cluster, participants chose between “When I am successful, it is because I am careful not to make mistakes” and “When I am successful, it is because I am confident in my abilities.” Because individuals were conceptualized to engage in one or the other strategies, but not both (e.g., it is impossible for someone to both overestimate *and* underestimate their progress on a given task), within the circumscribed domain of academics, a forced-choice response format was used. Responses ranged from -18 to 18 and were averaged to form an ASQ score ($\alpha = .80$), with positive scores indicating strategic positivity and negative scores indicating strategic negativity.

Regulatory Focus. Participants completed the Regulatory Focus Questionnaire (Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001) that contains questions such as, “How often have you gotten into trouble because you were not being careful enough?” and “How often has succeeding at things inspired you to work even harder?” Participants responded to the items using a 0 (never) to 6 (very often) scale. Responses were averaged to form a promotion score ($\alpha = .65$) and to form a prevention score ($\alpha = .77$).

Self-Esteem. Participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1989) that contains statements such as, “I feel that I’m a person of worth, at least on an equal plane with others” and “I take a positive attitude toward myself.” Participants responded to the items using a -4 (completely disagree) to 4 (completely agree) scale. Responses were averaged to form a self-esteem score ($\alpha = .87$), with higher scores indicating a greater levels of self-esteem.

Defensive Pessimism. Participants completed the Revised Defensive Pessimism Questionnaire (Norem, 2001b). The instructions told participants to think specifically about academic situations when responding to the items. The Revised Defensive Pessimism Questionnaire includes items such as, “I go into these situations expecting the worst, even though I know I will probably do OK” and “I often think

about how I will feel if I do very poorly in these situations.” Participants responded to the items using a -4 (completely disagree) to 4 (completely agree) scale. Responses were averaged to form a defensive pessimism score ($\alpha = .70$), with higher scores indicating greater levels of defensive pessimism and lower scores indicating greater levels of strategic optimism.

Approach/Avoidance Orientation. Participants completed the Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS) scales (Carver & White, 1994). The BIS is designed to measure avoidance orientation and contains statements such as, “I worry about making mistakes” and “I feel worried when I think I have done poorly at something.” The BAS is designed to measure approach orientation and contains statements such as, “When I get something I want, I feel excited and energized” and “When I want something, I usually go all-out to get it.” Participants responded to the items using a -4 (completely disagree) to 4 (completely agree) scale. Responses were averaged to form a BIS score ($\alpha = .73$) and a BAS score ($\alpha = .86$).

Dispositional Optimism and Dispositional Pessimism. The Revised Life Orientation Test (Scheier et al., 1994) was used to measure dispositional optimism and dispositional pessimism. The Revised Life Orientation Test contains statements such as, “In uncertain times, I usually expect the best” and “I’m always optimistic about my future.” Participants responded to the items using a -4 (completely disagree) to 4 (completely agree) scale. Responses were averaged to form a dispositional optimism score ($\alpha = .80$) and a dispositional pessimism score ($\alpha = .80$).

Academic Measures

Participants were asked, “How would you describe your academic success in college?” and “How would you describe your academic skills?” Participants responded to these items on 0 (poor) to 8 (exceptional) scales. In addition, participants were asked to indicate their college entrance exam scores (i.e., ACT) and their current GPA.

Demographics

Participants provided demographic information about themselves, including gender, age, and ethnicity.

Results

Table 1 presents the overall correlation matrix of the individual difference measures used in the study. The first set of predictions concerned the ASQ and its relations to other individual difference measures included in the study. As predicted, the ASQ was positively related to promotion focus, BAS, and dispositional optimism, and was negatively related to defensive pessimism and BIS. The ASQ was also positively related to self-esteem, although the correlation was marginally significant. Among the unconfirmed predictions was a failure to find a negative association

Table 1 *Correlations Among Individual Difference Measures in Study 1 (N = 116)*

Variable	Mean (SD)	ASQ	Pro	Pre	BAS	BIS	DPess	DisO	DisP	SE
ASQ	3.21 (8.00)	-								
Promotion Focus	4.14 (.62)	.22*	-							
Prevention Focus	3.14 (.92)	.06	-.05	-						
BAS	2.07 (1.04)	.35***	.46***	-.18*	-					
BIS	1.29 (1.27)	-.28**	-.19*	.06	-.18	-				
Defensive Pessimism	-.19 (1.51)	-.31**	-.44***	-.09	-.31**	.50***	-			
Dispositional Optimism	1.43 (1.70)	.28**	.53***	.02	.49***	-.34***	-.53***	-		
Dispositional Pessimism	-.75 (1.79)	-.05	-.49***	-.15	-.14	.17†	.35***	-.46***	-	
Self-Esteem	1.93 (1.32)	.17†	.62***	.04	.29**	-.41***	-.49***	.66***	-.54***	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Note: ASQ = Academic Strategies Questionnaire, Pro = Promotion Focus, Pre = Prevention Focus, BAS = Behavioral Activation System, BIS = Behavioral Inhibition System, DPess= Defensive Pessimism, DisO = Dispositional Optimism, DisP = Dispositional Pessimism, SE = Self-Esteem

between the ASQ and prevention focus and a failure to find a negative association between the ASQ and dispositional pessimism.

The second set of predictions concerned the relations among the ASQ, defensive pessimism and the academic measures included in the study. Table 2 presents the correlation matrix for these measures. As predicted, both the ASQ and defensive pessimism were unrelated to actual levels of success and ability, as measured by ACT scores and GPA. Moreover, despite being unrelated to these objective measures of success and ability, defensive pessimism was negatively related to the subjective measures of success and ability. Contrary to predictions, the ASQ was unrelated to subjective measures of success and ability.

Table 2

Variable	Mean (SD)	ASQ	DPess	ASucc	ASkill	ACT	GPA
ASQ	3.21 (8.00)	-					
Defensive Pessimism	-.19 (1.51)	-.31**	-				
Self-Rated Academic Success	5.09 (1.49)	-.10	-.19*	-			
Self-Rated Academic Skills	5.41 (1.37)	-.03	-.15†	.42***	-		
ACT	24.43 (4.15)	-.10	.08	.28**	.28**	-	
GPA	3.13 (.54)	-.11	-.04	.66***	.32**	.52***	-

Correlations Among Academic Measures in Study 1 (N = 116)

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Note: ASQ = Academic Strategies Questionnaire, DPess= Defensive Pessimism, ASucc = self-rated academic success, ASkill = self-rated academic skills

Discussion

The primary purpose of Study 1 was the development and partial validation of a measure of strategic positivity and strategic negativity used in the academic domain, the Academic Strategies Questionnaire. On average, participants scored on the positive side of the scale ($M = 3.21$), indicating a greater tendency to engage in strategic positivity than strategic negativity. However, the standard deviation of scores on the scale was substantial ($SD = 8.00$), indicating that there were significant numbers of people who would be labeled strategically negative.

A number of correlations were predicted between the ASQ and the other individual difference measures included in the study. For the most part, the predicted correlations emerged. Of note were the positive correlations between the ASQ and BAS, and between the ASQ and promotion focus. As predicted, the ASQ demonstrated some overlap with the approach orientation of BAS and with the focus on gains, accomplishment, and eagerness associated with promotion focus. Also confirming predictions were the negative correlations between the ASQ and BIS, and between the ASQ and defensive pessimism. It is reasonable that strategically negative individuals (i.e., those scoring on the negative end of the ASQ) would be more sensitive to the sting of losses that typifies avoidance orientation (BIS). The negative association between the ASQ and defensive pessimism is important in establishing the convergent validity of the ASQ. However, the correlation between the two was not so strong to consider the two instruments redundant. Somewhat surprisingly, the ASQ demonstrated no significant relation to prevention focus. Although this null finding was unexpected, in the present study, prevention focus did not correlate with most of the individual difference measures with which it was predicted to be related. The one exception was its significant negative, albeit small, correlation with BAS.

In sum, the results of the current study suggest that the ASQ might prove to be a fruitful measure in assessing the degree to which individuals engage in strategic negativity and strategic positivity in the academic domain. Although the Revised Defensive Pessimism Questionnaire is a well-established measure of people's use of strategic expectations in preparation for an academic task or test, it fails to assess the dimensions of strategic positivity and strategic negativity laid out in the current work. Because these dimensions may be very important in how people strategically self-regulate in academic situations, particularly while engaged in an academic task, the ASQ was created to capture elements of strategic positivity and strategic negativity not assessed by the Revised Defensive Pessimism Questionnaire.

The following studies served as further validation of the ASQ and were designed to demonstrate the unique predictive utility of the ASQ for dimensions of strategic positivity and strategic negativity as they are currently conceptualized. Additionally, Studies 2 and 3 were designed to determine how strategic negativity and strategic positivity manifest in an academic environment and to demonstrate that strategic

self-regulation influences behavioral and affective outcomes, particularly while individuals are engaged in an academic task.

Chapter 3

Study 2

The primary objectives of Study 2 were to determine how strategic positivity and strategic negativity are manifested, and to demonstrate that despite their actual performance, strategically negative participants would report doing more poorly and have less confidence than would strategically positive participants. The secondary objectives of Study 2 were to examine how performance on an academic task elicits negative and positive affect and thoughts from strategically positive and strategically negative participants. Because strategically negative individuals were predicted to be more comfortable with negative affect and thoughts (and may even find them motivating), the performance of strategically negative participants was not predicted to have any effect on their experience of negative affect and thoughts. However, it is not entirely clear how performance might elicit positive affect and thoughts among strategically negative individuals. On the one hand, positive affect and thoughts might simply reflect success among strategically negative individuals. On the other hand, research demonstrates that when defensive pessimists are encouraged before a task (Norem & Cantor, 1986) or come into a task with naturally-occurring positive mood (Norem & Illingworth, 2004), their performance suffers. Based on these findings, one might expect positive affect and thoughts to be an obstacle among strategically negative individuals, and would therefore be relatively absent. In contrast to strategically negative individuals, strategically positive individuals should exhibit negative affect and thoughts when their performance is relatively poor, more accurately reflecting their progress; positive affect and thoughts should represent success.

Overall, it was predicted that to the extent that participants are strategically positive, relatively poor performance would elicit negative affect and thoughts, whereas relatively successful performance would elicit positive affect and thoughts. Conversely, it was predicted that to the extent that participants are strategically negative, differences in performance would not elicit a differential level of negative affect and thoughts. No prediction was made as to the relation between positive affect and thoughts and performance among strategically negative participants.

To test these predictions, participants performed a test of pattern matching problems on a computer. The pattern matching problems were adapted from Raven's Advanced Progressive Matrices (Raven, Raven, & Court, 1998). Although an anagram task is the standard exercise participants complete in this area of research (e.g., Goodhart, 1986; Idson & Higgins, 2000; Sanna, 1998), there is a potential problem with using them in the present case. College students are typically well aware of whether they have correctly constructed words out of scrambled sets of letters, leaving little room for them to strategically adjust perceptions of current progress and task difficulty. Because participants should be relatively unfamiliar with these types of pattern matching problems, the task facilitated participants' imposition of their own standards of progress and self-regulatory strategies (either positive or negative) when asked to evaluate their performance and progress. After completing a number of problems, the test was interrupted in order to get feedback from participants about their progress. Once participants finished the test, they completed an online questionnaire set, which included several of the individual difference instruments used in Study 1 and demographics questions.

Method

Participants

Undergraduates at the University of Minnesota (N = 124; 38 men, 86 women) participated in the study in exchange for extra course credit. The mean age of the participants was 19.1 years (range = 16 to 27 years), and most were Caucasian (79%).

Procedure

During recruitment sessions, participants were told that the researchers were interested in examining the relations among certain personality characteristics, study habits and strategies, and academic performance. Participants were told that the study would involve taking a mental ability test called the Academic Aptitude Test, completing personality measures, and answering questions about their study strategies and past academic performance. Participants then signed up for the experimental sessions that were held at a computer lab.

Scheduled experimental sessions consisted of groups that ranged in size from 5 to 30. Once all scheduled participants had arrived at the lab and had been assigned to individual computer carrels, the researcher read aloud the general instructions for the study. The researcher went over a sample problem to ensure that all participants understood how to answer the problems on the test. The researcher gave participants sealed questionnaire packets and told participants not to open them until informed by onscreen instructions to do so. After going over the instructions and answering participants' questions, the researcher told the participants to begin.

E-Prime (Psychology Software Tools, 2007) was used to present the individual matrix problems to participants. Each problem consisted of eight figures situated in a 3x3 matrix with the lower right figure removed. Participants were instructed to select the missing figure needed to complete the pattern correctly both along rows and down the columns of the matrix. Participants made their selection by pressing a number key associated with one of eight potential options. Once participants had entered their selection, the program moved on to the next matrix problem.

After participants completed the 20th matrix problem, they received onscreen instructions to open their questionnaire packet. The questionnaire packet instructions stated that although participants were not finished working on the test, the researchers wanted to get participants' perceptions about the test at that point. The questionnaire packet contained the primary dependent measures, assessing participants' thoughts about their own progress and the difficulty of the test. The last page of the questionnaire packet instructed participants to turn back to their computers and complete the rest of the test.

After completing two more matrix problems, participants received onscreen text informing them of the end of the test and instructing them to follow a link to complete a series of online questionnaires. These online questionnaires consisted of the individual difference measures used in Study 1 as well as demographic questions. Upon completion of the online series of questionnaires, participants were thanked and fully debriefed.

Dependent Measures

Thought-Listing. After completing the 20th matrix problem, participants were instructed to list any thoughts and feelings they had while taking the test. Ten spaces were provided for participants to respond. The thoughts and feelings were coded by the author according to their valence: negative, positive, or neutral/no discernible valence. Any thought or feeling that contained a preponderance of negative wording (e.g., “I’m not smart enough” or “I do not like this test at all”) was labeled “negative,” whereas any thought or feeling that contained a preponderance of positive wording (e.g., “I think I’m doing really well” or “This test is fun”) was labeled “positive”.¹

Current Evaluations. Participants were asked to evaluate their current progress on and the difficulty of the test up to that point in time (i.e., immediately after completing the 20th matrix problem). Specifically, participants were asked, “So far, how well are you doing on the Academic Aptitude Test?” They responded to the question using a 0 (poor) to 8 (exceptional) scale. Participants were also asked, “How would you rate the difficulty of the Academic Aptitude Test?” They responded to the question using a 0 (not at all difficult) to 8 (extremely difficult) scale.

Future Projections. Participants were asked to indicate how difficult they thought the rest of the test would be and to indicate how confident they were in their performance on the rest of the test. Specifically, participants were asked, “How difficult do you think the rest of the Academic Aptitude Test will be?” They responded to the question using a 0 (not at all difficult) to 8 (extremely difficult) scale. Participants were also asked, “How confident are you about your performance on the rest of the Academic Aptitude Test?” They responded to the question using a 0 (not at all confident) to 8 (extremely confident) scale.

Affect. Participants indicated the extent to which they were experiencing various affective states after being asked evaluations of their progress. Specifically, participants were instructed to “Indicate the extent [they] feel this way right now, that is, at the present moment” to the following adjectives: anxious, cautious, excited, enthusiastic. Responses were made on a 1 to 5 scale.

¹ Although the author has experience in coding thought listings, there is no objective assessment of the coding.

Response Time. The time participants took to complete each of the Raven's Advanced Progressive Matrices was logged for analysis. This variable was interpreted as a measure of persistence.

Individual Difference Measures

The same individual difference measures used in Study 1 were also used in Study 2. Specifically, Study 2 included the Academic Strategies Questionnaire (ASQ; $\alpha = .75$), the Regulatory Focus Questionnaire (promotion $\alpha = .62$; prevention $\alpha = .82$), the Rosenberg Self-Esteem Scale ($\alpha = .87$), the Revised Defensive Pessimism Questionnaire ($\alpha = .73$), the BIS scale ($\alpha = .80$), the BAS scale ($\alpha = .82$), and the Revised Life Orientation Test (dispositional optimism $\alpha = .68$; dispositional pessimism $\alpha = .84$).

Data Analysis Plan

In most of the analyses, I used a two-step regression model to examine the effects of self-regulation variables, including strategic self-regulation variables such as the ASQ and defensive pessimism, on the study's dependent variables. In step 1 of the analyses, the predictors are the number of problems solved correctly, dispositional optimism, and dispositional pessimism. The purpose of step 1 was to examine the effects of dispositional (global) levels of optimism and pessimism on the dependent variables over and above participants' actual levels of success on the test. In step 2 of these analyses, the number of problems solved correctly, dispositional optimism, and dispositional pessimism remain in the model, and the self-regulation variables are added. Specifically, the ASQ, Promotion, Prevention, BIS, BAS, and defensive pessimism are added to the model. This second step demonstrates the effect of the self-regulation variables over and above the effects of dispositional optimism, dispositional pessimism, and actual performance, an issue rarely addressed in this literature.

The order of the presented results is outlined here. First, the correlations among the individual difference measures used in Study 2 are presented. Second, regression analyses were used to determine how individual differences in self-regulation would significantly predict participants' assessments of their progress on the test and confidence about the rest of the test, controlling for actual progress and global levels of optimism and pessimism. Third, regression analyses were used to determine whether individual differences in self-regulation would significantly predict participants' assessments of the test's difficulty

and estimates of the difficulty of the rest of the test, controlling for actual progress and global levels of optimism and pessimism. Fourth, regression analyses were used to determine whether individual differences in self-regulation and performance differences would significantly predict participants' affective experiences. Finally, regression analyses were used to determine whether individual differences in self-regulation would predict persistence on the test.

Results

Correlations

Results from correlational analysis largely confirmed the expected relations among individual difference measures employed in the study, and were similar to the findings of Study 1. The full correlation matrix of the individual difference measures is displayed in Table 3. The ASQ was positively related to promotion focus, dispositional optimism, BAS, and self-esteem. The ASQ was negatively related to defensive pessimism. However, there were some notable deviations between the two studies. In Study 1, the ASQ and BIS were negatively correlated, whereas Study 2 findings revealed no significant correlation between the two scales. Also, in Study 1 there was no significant correlation between the ASQ and dispositional pessimism, whereas Study 2 findings revealed a negative, albeit marginally significant, association between the two scales.

Table 3

Correlations Among Individual Difference Measures in Study 2 (N = 124)

Variable	Mean (SD)	ASQ	Pro	Pre	BAS	BIS	DPess	DisO	DisP	SE
ASQ	3.81 (7.22)	-								
Promotion Focus	4.13 (.63)	.16†	-							
Prevention Focus	3.15 (1.12)	.05	.27**	-						
BAS	1.96 (.79)	.40***	.32***	-.01	-					
BIS	1.39 (1.34)	-.07	-.09	.05	-.07	-				
Defensive Pessimism	-.25 (1.37)	-.31**	-.22*	-.07	-.27**	.31**	-			
Dispositional Optimism	1.46 (1.36)	.17†	.43***	-.01	.38***	-.26**	-.34***	-		
Dispositional Pessimism	-.53 (1.71)	-.17†	-.49***	-.02	-.13	.13	.20*	-.55***	-	
Self-Esteem	2.08 (1.30)	.18*	.67***	.14	.31**	-.35***	-.47***	.62***	-.53***	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Note: ASQ = Academic Strategies Questionnaire, Pro = Promotion, Pre = Prevention, BAS = Behavioral Activation System, BIS = Behavioral Inhibition System, DPess = Defensive Pessimism, DisO = Dispositional Optimism, DisP = Dispositional Pessimism, SE = Self-Esteem

Current Evaluations

Participants were interrupted after the 20th problem in order to obtain assessments of their progress on the test up to that point in time. Assessments of current progress were obtained by asking participants to indicate how well they were doing on the test, and how difficult the test was up to that point. Assessments of anticipated progress were obtained by asking participants to indicate how difficult they expected the rest of the test to be, and how confident they were in their performance for the remainder of the test. In the following analyses, I examine each of these variables individually. Correlations among the four assessment variables are presented in Table 4.

Table 4

Correlations Among Progress Assessment Variables in Study 2 (N = 124)

Variable	Mean (SD)	Well	Diff	RDiff	Conf
Current Progress Evaluation	5.02 (1.17)	-			
Current Difficulty Rating	4.84 (1.35)	-.39***	-		
Future Difficulty Rating	5.17 (1.30)	-.14†	.54***	-	
Future Confidence	4.84 (1.33)	.70***	-.26**	-.23**	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Note: Well = Current Progress Evaluation, Diff = Current Difficulty Rating, RDiff= Future Difficulty Rating, Conf = Future Confidence

Current Progress Evaluation. It was predicted that to the extent that participants were strategically positive, they would report doing well on the test and that to the extent that participants were strategically negative, they would report doing less well on the test. In order to test these predictions, I conducted a series of regressions with how well the participants reported doing on the test up to that point as the dependent variable. In the first step of the analysis, I entered the number of problems that participants had correctly solved, dispositional optimism scores, and dispositional pessimism scores. By entering dispositional optimism and dispositional pessimism scores in the first step of the analysis, it was possible to determine the effects of global levels of optimism and pessimism on progress assessments, controlling for how well participants were actually doing on the test. In the second step of the analysis, I entered the ASQ, Promotion, Prevention, BIS, BAS, and defensive pessimism variables. This second step

demonstrates the effects of self-regulation and strategic self-regulation over and above how well participants are actually doing and over and above dispositional levels of optimism and pessimism. The results of this regression analysis are presented in Table 5 below.

Table 5

Standardized Regression Weights from Analysis for Current Progress Evaluation in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	.37***	.39***
Dispositional Optimism	.26*	.18
Dispositional Pessimism	.10	.14
ASQ		.06
Promotion Focus		.07
Prevention Focus		-.04
BIS		.08
BAS		.01
Defensive Pessimism		-.23*
Multiple R	.45	.51
R ²	.20	.26
Change in R ²		.06

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

As expected, the first step of the analysis revealed that the number of correctly solved problems was positively related to how well participants reported that they were doing. Although the Raven's Advanced Progressive Matrices may not be a typical of measure of academic ability, this finding indicates that participants were able to objectively evaluate their progress with some degree of accuracy. In addition, the first step of the analysis indicated that dispositional optimism was positively related to how well participants reported doing.

In the second step of the analysis, the number of correctly solved problems was still a significant predictor. However, the effect of dispositional optimism dropped to nonsignificance. Of the individual difference measures in the model, only defensive pessimism was a significant predictor. Specifically, higher levels of defensive pessimism were associated with reports of doing less well.

One of the primary predictions of Study 2 was that participants' scores on the ASQ would be related to their perceptions of performance, assessments of test difficulty, and confidence in future test performance. As evidenced in the current analysis, the ASQ failed to predict significantly how well

participants reported doing on the test up to that point in time. This pattern of null findings for the ASQ persists in all of the performance measures and is addressed more thoroughly in the discussion section.

Current Difficulty Rating. It was predicted that to the extent that participants were strategically positive, they would report that the test was relatively less difficult and that to the extent that participants were strategically negative, they would report that the test was relatively more difficult. Again, the two-step regression procedure used above was employed (see Table 6).

Table 6

Standardized Regression Weights from Analysis for Current Difficulty Rating in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	-.23*	-.23*
Dispositional Optimism	-.03	-.10
Dispositional Pessimism	-.14	-.07
ASQ		-.08
Promotion Focus		.30*
Prevention Focus		-.09
BIS		.17†
BAS		.12
Defensive Pessimism		.10
Multiple R	.27	.44
R ²	.08	.19
Change in R ²		.11

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

In the first step of the analysis, the number of correctly solved problems was negatively related to how difficult participants thought the test to be up to that point. This effect was also present in the second step of the analysis. Interestingly, promotion focus was a significant predictor of perceived difficulty, such that high levels of promotion focus were associated with greater levels of perceived difficulty. Although the effect was marginal, BIS was a predictor of perceived difficulty, such that high levels of BIS were associated with greater perceived difficulty. No other predicted relations were significant.

One dimension of strategic positivity and strategic negativity outlined in the current work was the potential for people to strategically perceive the difficulty of the current task as greater than it actually is (strategic negativity) or to perceive the difficulty of the task as less than it actually is (strategic positivity) in order to enhance or increase motivation and effort. However, neither ASQ nor defensive pessimism,

both measures of strategic self-regulation, was a significant predictor of how difficult participants perceived the test to be.

Future Projections

After evaluating their progress up to that point in time and indicating how difficult they found the test, participants were asked to predict how difficult the rest of the test would be and to indicate how confident they were about their performance on the rest of the test.

Future Difficulty Rating. It was predicted that to the extent that participants were strategically positive, they would report that the remainder of the test would be relatively less difficult and that to the extent that participants were strategically negative, they would report that the remainder of the test would be relatively more difficult. Again, the two-step regression procedure was used with one addition. Participants' evaluations of how difficult the test was up to that point were entered into the first step of the analysis. The results are presented in Table 7 below.

Table 7

Standardized Regression Weights from Analysis for Future Difficulty Rating in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	-.01	-.04
Current Difficulty Rating	.50***	.43***
Dispositional Optimism	.12	.03
Dispositional Pessimism	.06	.11
ASQ		.00
Promotion Focus		.21 †
Prevention Focus		-.11
BIS		.02
BAS		.10
Defensive Pessimism		.05
Multiple R	.50	.54
R ²	.25	.30
Change in R ²		.05

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The first step of the model revealed prior perceptions of difficulty as the only significant predictor of how difficult participants thought the remainder of the test would be. In the second step, prior perceptions of difficulty remained a significant predictor. In addition, promotion focus emerged as a

marginally significant predictor future difficulty. In contrast to predictions, participants high in promotion focus thought that the rest of the test would be more difficult than participants low in promotion focus. The ASQ and defensive pessimism failed to significantly predict perceptions of future difficulty.

Confidence. It was predicted that to the extent that participants were strategically positive, they would report being relatively more confident about the remainder of the test and that to the extent that participants were strategically negative, they would report being relatively less confident about the remainder of the test. Again, the two-step regression procedure was used. As in the analysis of participants' test difficulty ratings, participants' prior evaluations of how well they were doing on the test up to that point in time was entered into the first step of the analysis. The results are presented in Table 8 below.

Table 8

Standardized Regression Weights from Analysis for Future Confidence in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	-.04	.00
Current Progress Evaluation	.64***	.59***
Dispositional Optimism	.10	.04
Dispositional Pessimism	-.07	-.03
ASQ		-.06
Promotion Focus		.10
Prevention Focus		.06
BIS		.07
BAS		.04
Defensive Pessimism		-.18*
Multiple R	.67	.71
R ²	.45	.50
Change in R ²		.05

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

How well participants perceived they were doing on the test up to that point in time was positively related to confidence in the first step of the analysis. In the second step of the analysis, participants' perceptions of success remained a significant predictor. In addition, the second step revealed that defensive pessimism was a significant predictor of confidence, such that higher levels of defensive pessimism were associated with lower levels of confidence. The ASQ failed to predict confidence.

Thought Listing

Upon completing the 20th matrix problem, participants were instructed to list any thoughts and feelings they had while taking the test. It was predicted that strategically positive participants would generate a greater proportion of positive thoughts, whereas strategically negative participants would generate a greater proportion of negative thoughts.

Positive Thoughts. The two-step regression model used in the prior analysis was used in examining participants listed thoughts. The results of the analysis of the proportion of positive thoughts are presented in Table 9 below.

Table 9

Standardized Regression Weights from Analysis for Proportion of Positive Thoughts in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	.06	.05
Dispositional Optimism	.12	.14
Dispositional Pessimism	.11	.07
ASQ		.06
Promotion Focus		.05
Prevention Focus		-.03
BIS		-.08
BAS		.01
Defensive Pessimism		-.06
Multiple R	.13	.20
R ²	.02	.04
Change in R ²		.02

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed no significant predictors of the proportion of positive thoughts.

Negative Thoughts. The two-step regression model used in the prior analysis was used in examining participants listed thoughts. The results of the analysis of the proportion of negative thoughts are presented in Table 10 below.

Table 10

Standardized Regression Weights from Analysis for Proportion of Negative Thoughts in Study 2

	Step1 β	Step 2 β
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Number of Solved Problems	-.14	-.10
Dispositional Optimism	.01	.07
Dispositional Pessimism	.07	.10
ASQ		.00
Promotion		.08
Prevention		.19†
BIS		-.03
BAS		-.06
Defensive Pessimism		.15
Multiple R	.15	.30
R ²	.02	.09
Change in R ²		.07

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

No predictors were significant in the first step of the analysis. In the second step of the analysis, prevention focus emerged as a marginally significant predictor, such that higher levels of prevention focus were associated with greater proportion of negative thoughts.

Affect

After indicating how well they were doing and how difficult they thought the test to be up to that point, participants indicated how anxious, cautious, excited, and enthusiastic they were feeling at that particular moment.

Anxiety. It was predicted that to the extent participants were strategically positive, they would report being relatively less anxious and that to the extent participants were strategically negative, they would report being relatively more anxious. In order to test these predictions, I conducted a series of regressions using the same two-step regression model as in the previous analyses. The results of the analyses are presented in Table 11 below.

Table 11

Standardized Regression Weights from Analysis for Anxiety in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	-.17†	-.12
Dispositional Optimism	.06	.05
Dispositional Pessimism	.11	.11
ASQ		-.14
Promotion Focus		.10
Prevention Focus		.16†
BIS		.29**

BAS		.13
Defensive Pessimism		-.05
Multiple R	.18	.43
R ²	.03	.18
Change in R ²		.15

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

In the first step of the analysis, the number of problems solved correctly was a marginally significant predictor of anxiety, such that the fewer the number of problems that participants solved correctly, the more anxiety they reported feeling. In the second step of the analysis, the effect of the number of correctly solved problems was not significant. However, BIS emerged as a significant predictor of anxiety, such that higher levels of BIS were associated with higher levels of reported anxiety. Additionally, prevention focus was positively related to anxiety, although the effect was only marginally significant.

Among the major predictions of Study 2 were that the ASQ would be negatively related to participants' reports of negative affect, such as anxiety, and would be positively related to participants' reports of positive affect, such as excitement. However, in none of these analyses were scores on the ASQ a significant predictor of the negative and positive affect items. This pattern of null findings is more fully addressed in the discussion section.

Reports of Caution. It was predicted that to the extent that participants were strategically positive, they would report being relatively less cautious and that to the extent that participants were strategically negative, they would report being relatively more cautious. Again, the two-step regression procedure was used. The results are presented in Table 12 below.

Table 12

Standardized Regression Weights from Analysis for Reports of Caution in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	.01	.04
Dispositional Optimism	.01	.03
Dispositional Pessimism	.08	.10
ASQ		-.01
Promotion Focus		.14
Prevention Focus		.04

BIS		.13
BAS		-.10
Defensive Pessimism		-.05
Multiple R	.08	.19
R ²	.01	.04
Change in R ²		.03

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed no significant predictors of caution.

Excitement. It was predicted that to the extent participants were strategically positive, they would report being relatively more excited and that to the extent participants were strategically negative, they would report being relatively less excited. The results are presented in Table 13 below.

Table 13

Standardized Regression Weights from Analysis for Reports of Excitement in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	.04	.07
Dispositional Optimism	.32**	.21†
Dispositional Pessimism	.25*	.33**
ASQ		-.07
Promotion Focus		.27*
Prevention Focus		.06
BIS		.08
BAS		.09
Defensive Pessimism		-.13
Multiple R	.28	.42
R ²	.08	.18
Change in R ²		.10

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The first step of the analysis revealed that both dispositional optimism and dispositional pessimism were significant predictors of how excited participants reported feeling. Surprisingly, dispositional pessimism was positively related to feeling excited.² In the second step, the effect of dispositional pessimism remained significant, whereas the effect of dispositional optimism dropped to

² Further analyses revealed three cases that were extreme outliers on both reported excitement and dispositional pessimism. Once these three outliers were removed from the analysis, the effect of dispositional pessimism dropped to nonsignificance in both steps of the model (step 1: $\beta = .06$, $p > .05$; step 2: $\beta = .10$, $p > .05$).

marginal significance, likely because of shared variance with promotion focus ($r = .43$). Additionally, promotion focus emerged as a significant predictor of how excited participants reported feeling, such that higher levels of promotion focus were associated with higher levels of reported excitement.

Enthusiasm. It was predicted that to the extent that participants were strategically positive, they would report being relatively more enthusiastic and that to the extent that participants were strategically negative, they would report relatively less enthusiasm. Again, the two-step regression procedure was used. The results are presented in Table 14 below.

Table 14

Standardized Regression Weights from Analysis for Reports of Enthusiasm in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	.11	.12
Dispositional Optimism	.35**	.28*
Dispositional Pessimism	.25*	.30*
ASQ		-.02
Promotion Focus		.14
Prevention Focus		.03
BIS		.01
BAS		.04
Defensive Pessimism		-.09
Multiple R	.32	.37
R ²	.10	.14
Change in R ²		.04

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

In both the first and second steps of the analysis, dispositional optimism and dispositional pessimism were the only significant predictors of self-reported enthusiasm. Once again, dispositional pessimism was curiously a positive predictor of reported enthusiasm.³

Performance and Affect

A secondary objective of the study was to examine how participants' positive and negative strategies interacted with their performance to produce affective states. However, because the ASQ failed

³ Further analyses revealed three cases that were extreme outliers on both reported enthusiasm and dispositional pessimism. Once these three outliers were removed from the analysis, the effect of dispositional pessimism dropped to nonsignificance in both steps of the model (step 1: $\beta = .08$, $p > .05$; step 2: $\beta = .11$, $p > .05$).

to significantly predict many of the dependent variables that it was anticipated to predict, defensive pessimism was used in the following analyses to distinguish the extent to which participants engaged in one or the other strategy.

Anxiety. It was predicted that among defensive pessimists, performance would not be related to anxiety, whereas among strategic optimists, poor performance would be related to higher levels of anxiety. To test these predictions, both defensive pessimism and performance (i.e., the number of correctly solved problems) were first centered, then entered into a regression analysis along with their interaction term. The results of this analysis are presented in Table 15 below.

Table 15

Standardized Regression Weights from Analysis for Performance X Strategy Effect on Anxiety in Study 2

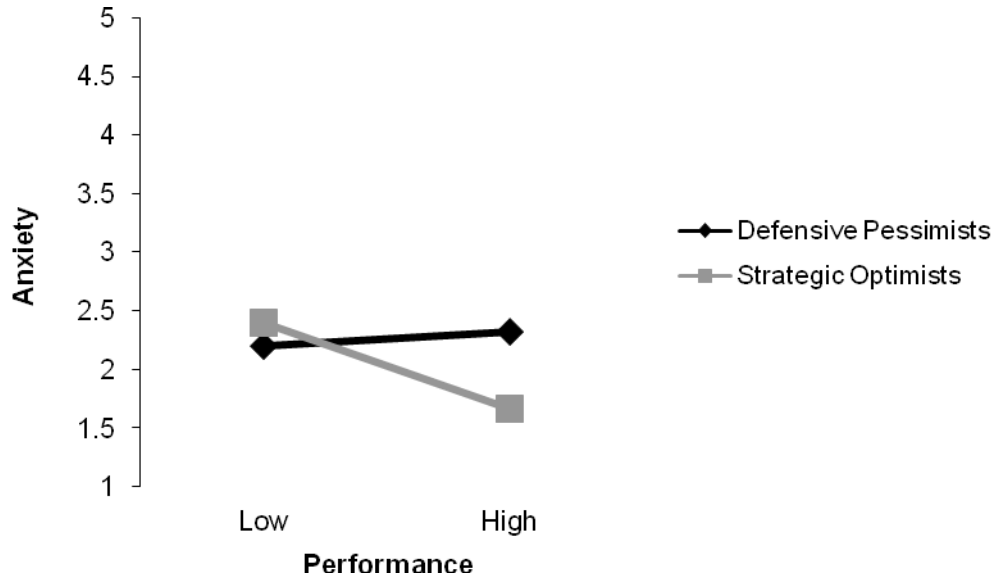
	Step1 β	Step 2 β
Performance	-.10	-.13
Defensive Pessimism	.08	.09
Performance X Defensive Pessimism		.18*
Multiple R	.13	.22
R ²	.02	.05
Change in R ²		.03

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed a significant performance X defensive pessimism interaction effect. To better understand the nature of the effect, I graphed the interaction using values of defensive pessimism that were one standard deviation above (i.e., defensive pessimists) and below (i.e., strategic optimists) the mean at values of performance that were one standard deviation above and below the mean (See Figure 1 below).

Figure 1

Performance X Strategy Interaction Effect on Anxiety in Study 2



Simple slopes analysis indicated that, as predicted, among strategic optimists, there was a significant difference in anxiety between participants who were performing relatively poorly and participants who were performing relatively well ($\beta = -.30, p < .05$). However, among defensive pessimists, performance did not impact the reported levels of anxiety ($\beta = .05, p > .05$).

Reports of Caution. Strategically negative individuals (i.e., defensive pessimists) who are doing well should report being cautious in order to maintain their motivation and performance. Strategically negative individuals who are doing relatively poorly might report less caution because they either have not effectively engaged their strategy or feel that they have little performance to maintain. In contrast, for strategically positive individuals (i.e., strategic optimists), performance should not affect reported levels of caution. To test these predictions, both defensive pessimism and performance (i.e., the number of correctly solved problems) were first centered, then entered into a regression analysis along with their interaction term. The results of this analysis are presented in Table 16 below.

Table 16

Standardized Regression Weights from Analysis for Performance X Strategy Effect on Caution in Study 2

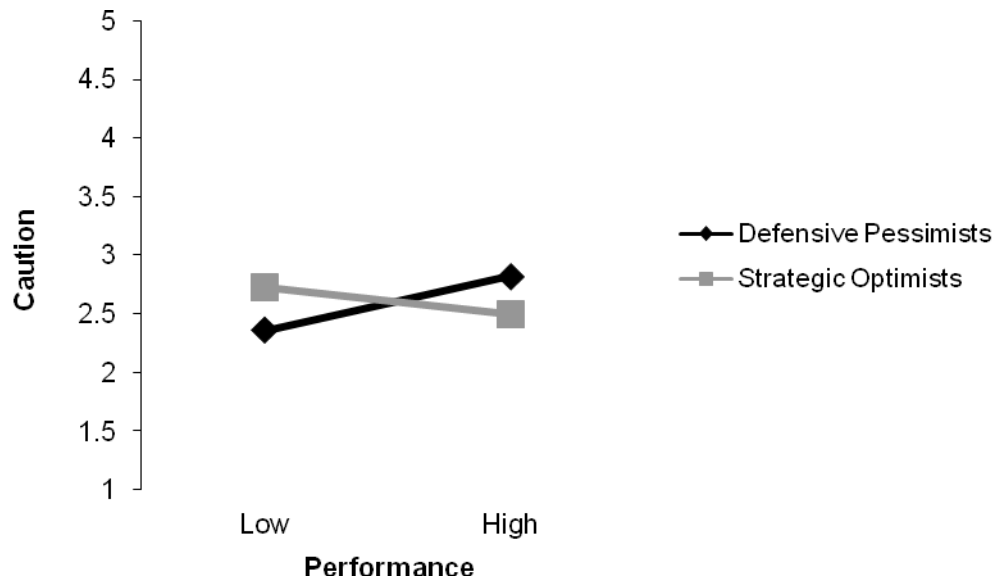
	Step1 β	Step 2 β
Performance	.08	.05
Defensive Pessimism	-.02	-.01
Performance X Defensive Pessimism		.16 [†]
Multiple R	.08	.17
R ²	.01	.03
Change in R ²		.02

* $p < .05$, ** $p < .01$, *** $p < .001$, [†] $p < .10$

The analysis revealed a marginally significant performance X defensive pessimism interaction effect. To better understand the nature of the effect, I graphed the interaction using values of defensive pessimism that were one standard deviation above (i.e., defensive pessimists) and below (i.e., strategic optimists) the mean at values of performance that were one standard deviation above and below the mean (See Figure 2 below).

Figure 2

Performance X Strategy Interaction Effect on Caution in Study 2



Simple slopes analysis indicated that among defensive pessimists, there was a marginally significant difference in caution between participants who were performing relatively poorly and participants who were performing relatively well ($\beta = .20, p < .09$). However, among strategic optimists, performance did not impact the reported levels of caution ($\beta = -.10, p > .05$).

Excitement. Strategically positive individuals (i.e., strategic optimists) who are doing well should report more excitement, as a result of success and/or in order to maintain their motivation and performance. Strategically positive individuals who are doing relatively poorly might report less excitement because they either have not effectively engaged their strategy or are unhappy about their performance. In contrast, for strategically negative individuals (i.e., defensive pessimists), performance should not affect reported levels of enthusiasm. To test these predictions, both defensive pessimism and performance (i.e., the number of correctly solved problems) were first centered, then entered into a regression analysis along with their interaction term. The results of this analysis are presented in Table 17 below.

Table 17

Standardized Regression Weights from Analysis for Performance X Strategy Effect on Excitement in Study

2

	Step1 β	Step 2 β
Performance	.09	.10
Defensive Pessimism	-.18*	-.19*
Performance X Defensive Pessimism		-.05
Multiple R	.20	.21
R ²	.04	.04
Change in R ²		.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed a main effect of defensive pessimism in both the first and second steps. Specifically, strategic optimists reported higher levels of excitement than did defensive pessimists, regardless of performance differences. No other effects were significant.

Enthusiasm. Strategically positive individuals (i.e., strategic optimists) who are doing well should report more enthusiasm, as a result of success and/or in order to maintain their motivation and performance. Strategically positive individuals who are doing relatively poorly might report less enthusiasm because they either have not effectively engaged their strategy or are unhappy about their performance. In contrast, for strategically negative individuals (i.e., defensive pessimists), performance should not affect reported levels of enthusiasm. To test these predictions, both defensive pessimism and performance (i.e., the number of correctly solved problems) were first centered, then entered into a regression analysis along with their interaction term. The results of this analysis are presented in Table 18 below.

Table 18

Standardized Regression Weights from Analysis for Performance X Strategy Effect on Enthusiasm in Study

2

	Step 1	Step 2
Performance	.14	.15†
Defensive Pessimism	-.16†	-.16†
Performance X Defensive Pessimism		-.10
Multiple R	.20	.23
R ²	.04	.05
Change in R ²		.01

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The first step of the analysis revealed that defensive pessimism was negatively related to enthusiasm, although the effect was marginally significant. In step 2 of the analysis, defensive pessimism remained a marginally significant (and negative) predictor of enthusiasm. In addition, the positive effect of performance on enthusiasm became marginally significant.

Persistence

The time participants took to complete each of the Raven's Advanced Progressive Matrices was assessed. Given that people who employ a negative strategy should be less confident and more cautious about their answers, I predicted that their response time for each problem should be, on average, longer than that of participants who employ a more positive strategy. Because the first four problems were designated as practice problems to allow participants to acclimate to the testing procedure, only response

times subsequent to those first four practice problems and ending with the last problem before participants evaluated their progress comprised the mean response time (i.e., problems 5-20). In order to test the prediction that strategic negativity would be related to greater response times, I conducted a series of regressions with the mean response time as the dependent variable. In the first step of the analysis, I entered the number of problems that participants had correctly solved, dispositional optimism, and dispositional pessimism. In the second step of the analysis, I entered the ASQ, Promotion Focus, Prevention Focus, BIS, BAS, and defensive pessimism. The results of the analyses are presented in Table 19 below.

Table 19

Standardized Regression Weights from Analysis for Persistence in Study 2

	Step1 β	Step 2 β
Number of Solved Problems	.35***	.31**
Dispositional Optimism	.08	.09
Dispositional Pessimism	.14	.09
ASQ		-.32**
Promotion Focus		.01
Prevention Focus		-.09
BIS		.02
BAS		.04
Defensive Pessimism		.01
Multiple R	.38	.49
R ²	.14	.24
Change in R ²		.10

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The number of correctly solved problems was the only significant predictor of mean response time in the first step of the analysis. In the second step of the analysis, the number of correctly solved problems remained a significant predictor. In addition, the ASQ was a significant predictor of mean response time, indicating that strategic negativity was associated with longer mean response times and that strategic positivity was associated with shorter mean response times. This effect was significant even after accounting for the number of problems participants correctly solved.

Discussion

Evaluations of Progress

The primary goal of this study was to determine how strategic positivity and strategic negativity manifested in a novel, academic performance situation. I first examined assessments of progress in order to capture the effects of the individual strategies. It was predicted that overall, despite their actual performance, strategically negative individuals would perceive their performance as relatively poor and that strategically positive individuals would perceive their performance as relatively good. By and large, this hypothesis was confirmed. Although the ASQ did not predict assessments of how well participants were doing, the defensive pessimism measure did. Defensive pessimism even predicted future confidence after actual performance *and* perceptions of current performance were statistically controlled. These assessment effects, occurring during the process of an academic task, are original findings in the defensive pessimism literature. Prior studies had shown that defensive pessimists have lower expectations before engaging in a task, but the current study demonstrates that they also feel that they are doing relatively poorly *while* engaged in that task. Moreover, in a conceptual replication of previous findings (e.g., Norem & Cantor, 1986), defensive pessimism was negatively related to confidence about how well participants thought that they would do on the remainder of the task. The new and interesting aspect of this finding is that it obtained even after controlling for dispositional levels of optimism and pessimism as well as prior success on that same task.

Strategic positivity and strategic negativity were also predicted to impact participants' ratings of test difficulty. Specifically, strategically positive participants were predicted to rate the test as relatively less difficult, whereas strategically negative participants were predicted to rate the test as relatively more difficult. The results were unexpected and curious. Compared to participants lower in promotion focus, participants higher in promotion focus perceived the test to be relatively difficult and also felt that the remainder of the test would be relatively difficult. A possible interpretation of this finding is that participants higher in promotion focus indicated that the test was difficult in an effort to embellish any success that they may achieve on the task. To the extent that the test was seen as difficult, doing well

would have felt that that much more rewarding among these participants. However, there is no way to adequately test this assumption with the current data, and the interpretation remains speculative.

Thoughts and Affect

Strategically negative and strategically positive participants were expected to produce different patterns of thoughts. Specifically, strategically positive participants were expected to generate a greater proportion of positive thoughts and strategically negative participants were expected to generate a greater proportion of negative thoughts. The only noteworthy finding to emerge from these analyses was a marginally significant effect of prevention focus on the proportion of negative thoughts generated by participants, such that higher levels of prevention focus were associated with a greater proportion of negative thoughts. People high in prevention focus are typically concerned with avoiding losses and ensuring that they do not fail. To the extent that prevention-focused participants were concerned with their performance on the challenging test, their concern likely manifested in negatively-valenced thoughts.

Affect was expected to vary across people who employ strategic positivity and people who employ strategic negativity. Although the ASQ and defensive pessimism did not predict how much anxiety participants were experiencing, prevention focus was a marginally significant predictor and BIS was a significant predictor. Prevention-focused individuals experience anxiety to the extent that they feel that they are not avoiding losses and failing to meet their responsibilities (Higgins, 1997, 1998). However, a number of studies have demonstrated that failure is motivating among people who are prevention-focused (e.g., Förster et al., 2001; Idson & Higgins, 2000; Idson et al., 2000; Higgins & Spiegel, 2004). In the current work, I have argued that strategically negative individuals, including people who are prevention-focused, may find anxiety motivating to the extent that it represents a feeling of failure on the current task. Given this argument, prevention-focused participants in Study 2 may have reported higher levels of anxiety in order to maintain or increase their effort. This explanation has some merit because in a follow-up analysis, controlling for participants' perceptions of how well they reported doing on the test, prevention focus remained a marginally significant predictor of anxiety. In other words, regardless of how well they perceived themselves to be doing on the test, prevention-focused participants reported higher levels of anxiety. Although the causal link between prevention focus and strategic reports of anxiety cannot be made

in the current analysis, it should be noted that according to regulatory focus theory, anxiety should only be present among prevention-focused participants to the extent that they feel that they are genuinely failing (Higgins, 1997; 1998).

With regard to the significant effect of BIS, individuals high in BIS sensitivity are prone to experiencing anxiety, particularly in stress-inducing situations (Carver & White, 1994). Presumably, high BIS individuals found the testing situation somewhat stressful, leading to reports of higher experienced anxiety. The absence of a defensive pessimism effect may be attributable to the fact that although defensive pessimists tend to experience considerable anxiety before a task, their particular strategy serves to reduce anxiety and bring it under control as to not impede performance (Norem & Cantor, 1986). To the extent that defensive pessimists' strategy was operating effectively, their levels of anxiety might be expected to be no different than that of strategic optimists.

Performance and Affect

Among the secondary goals of the current study was to determine how performance interacted with participants' strategic self-regulation to produce differences in affective experiences. As predicted, defensive pessimists indicated the same amount of anxiety regardless of how well they were doing on the test. This finding was expected given that among defensive pessimists, anxiety is a common experience not reflective of performance. In contrast, strategic optimists were less anxious when they were doing well than when they were doing poorly. In fact, the least anxious of all participants were strategic optimists who were doing well. In other words, strategic optimists' reports of anxiety accurately reflected their performance on the test.

One particular tactic of individuals who employ versions of strategic negativity is to be cautious, especially when performing well. The idea is that strategically negative individuals should be particularly concerned with the maintenance of any achieved success and with ensuring against potential loss. The current study demonstrated this effect, although the result was only marginally significant. Among defensive pessimists, those who were the most successful on the test reported more caution than did those who were doing relatively poorly. Successful defensive pessimists could have reported more caution as a maintenance mechanism and/or as a motivational strategy for the remainder of the test. Although

nonsignificant, the pattern was reversed among strategic optimists. More caution was reported among those doing relatively poorly than those doing relatively well.

Analyses of the interactions between performance and strategy on positive affect were a bit less revealing. Two main effects emerged. There was an overall pattern for strategic optimists to report more excitement and enthusiasm than did defensive pessimists. There was a marginally significant effect for people who were doing relatively well on the test to report being more enthusiastic than people who were doing relatively poorly. No interaction effects between strategy and performance approached significance. It is possible that strategic optimists remained positive about their efforts, even as they were doing relatively poorly. On the one hand, this would make sense given that strategic optimists prefer not to reflect on task outcomes, leaving little room for evaluations of poor progress to reduce their positive affect. On the other hand, strategic optimists in the current study evinced anxiety when they were doing poorly. In the end, it may be that although strategic optimists are aware of their poor performance and this fact is reflected in greater levels of anxiety, simultaneously maintaining positive affect combines a relatively accurate acknowledgement of performance with the luxury of implementing their preferred style of strategic self-regulation.

Persistence

The current study demonstrated that participants who scored low on the ASQ (i.e., strategically negative participants) spent significantly more time solving the matrix problems than did participants who scored high on the ASQ (i.e., strategically positive participants). This effect obtained even after controlling for the number of problems participants solved correctly. Why did the ASQ predict persistence, whereas the Defensive Pessimism Questionnaire, the most fruitful measure in Study 2, did not? Items on the ASQ explicitly address specific strategies such as being careful, less confident, and downplaying success, all techniques that would manifest in spending more time on the matrix problems. Although I surmised that defensive pessimists might use similar techniques, the Defensive Pessimism Questionnaire does not contain items that specifically inquire about such tactics. Hence, the ASQ could have proved a better predictor of persistence because of the specificity of the individual items in relation to the persistence outcome measure. However, it is curious that prevention focus did not predict persistence, given that an inherent quality of

prevention focus is being careful and avoiding risk (e.g., moving through problems slowly and carefully would be avoiding risk). Again, perhaps the specificity of the ASQ with regard to academics explains the lack of an observed effect of prevention focus.

The ASQ

One of the primary aims of Study 2 was to build on the results obtained in Study 1 to further validate the ASQ, a measure crafted specifically for the current research. Although the ASQ, by and large, correlated with the other measures of the study in predictable fashions in both Studies 1 and 2, it was a significant predictor in only one analysis of Study 2, the measure of persistence on the matrix problems. In place of the ASQ, defensive pessimism emerged as the dominant and most useful measure of strategic self-regulation in predicting responses to the study's major dependent variables.

Why did the ASQ fail to predict the dependent variables as hypothesized? One possibility is the shared variance between the ASQ and defensive pessimism. In both Studies 1 and 2, the correlation between the ASQ and defensive pessimism was consistent but relatively modest ($r = -.31$ in both studies). However, that relatively modest amount of shared variance between the two individual difference measures could have been pivotal in significantly predicting many of the study's dependent variables. For example, the beta weight for the ASQ in predicting how well participants reported doing on the test was relatively small and nonsignificant ($\beta = .06, p > .05$). However, removing defensive pessimism from the model yielded a marginally significant beta weight ($\beta = .14, p < .10$) for the ASQ that more than doubled in magnitude. Additionally, at the very end of the study, participants were asked how many problems that they think they solved correctly on the test. Without defensive pessimism in the model, the ASQ was a marginally significant predictor of this assessment, even after controlling for actual performance, dispositional optimism, and dispositional pessimism. But once defensive pessimism was introduced into the model, defensive pessimism became a significant predictor of how many problems participants thought that they solved correctly, whereas the beta weight for the ASQ dropped to nonsignificance.

Ultimately, it may be that although the construct measured by the ASQ bears a family resemblance to other individual differences like defensive pessimism, prevention focus, and promotion focus, it shares

too much variance with them and fails to predict enough unique variance to make it any more useful than the instruments currently used in this research domain.

Chapter 4

Study 3

The purpose of Study 3 was to conceptually replicate the findings of Study 2 using an experimental manipulation of strategic self-regulation. Situational factors might moderate when particular forms of strategic self-regulation are likely to be employed and when these forms are likely to be successful. Specifically, when performing tasks that focus on an approach toward reward as a self-regulatory mechanism, people should be apt to adopt strategic positivity to facilitate goal attainment. In contrast, when performing tasks that focus on avoidance of punishment or failure as a self-regulatory mechanism, people should be apt to adopt strategic negativity to facilitate goal attainment.

In Study 3, participants again performed the pattern matching test on a computer. For half of the participants, the task instructions were “gain-framed,” emphasizing the acquisition of points by correctly solving problems. Participants were told that they would begin the task with 0 points and that they would *gain* 1 point for each problem they correctly solved. The gain-framed task was predicted to elicit a strategically positive self-regulatory task (For a similar framing paradigm, see Liberman, et al., 1999). For the other half of the participants, the task instructions were “loss-framed,” emphasizing the maintenance of an already established point total. Participants were told that they would begin the task with 30 points and that they would *lose* 1 point for each problem that they did not solve correctly. The loss-framed task was predicted to elicit a strategically negative self-regulatory task. These situational inductions of both strategic positivity and strategic negativity were predicted to produce responses similar to those revealed by dispositional propensities toward one or the other self-regulatory strategies as examined in Study 2.

Method

Participants

Undergraduates at the University of Minnesota (N = 199; 71 men, 128 women) participated in the study in exchange for extra course credit. The mean age of the participants was 19.7 years (range = 17 to 29 years), and most were Caucasian (77%).

Procedure

The procedure for Study 3 largely mirrored that of Study 2. The one exception was the inclusion of a framing manipulation in order to evoke positive and negative self-regulatory strategies in participants. Before beginning the task, participants in the gain-framed task condition read the following instructions:

For the academic aptitude test, you will start with 0 points. You will gain 1 point for each problem that you solve correctly. Your goal is to increase your score by gaining as many points as you can.

Participants in the loss-framed task condition read the following instructions:

For the academic aptitude test, you will start with 30 points. You will lose 1 point for each problem that you do not solve correctly. Your goal is to maintain your score by keeping as many points as you can.

Dependent Measures

Thought-Listing. After completing the 20th matrix problem, participants were instructed to list any thoughts and feelings they had while taking the test. Ten spaces were provided for participants to respond. The coding scheme followed that used in Study 2.

Current Evaluations. Participants were asked to evaluate their current progress on and difficulty of the test up to that point in time (i.e., right after completing the 20th matrix problem). These measures were identical to those used in Study 2.

Future Projections. Participants were asked to indicate how difficult they thought the rest of the test would be and to indicate how confident they were in their performance on the rest of the test. These measures were identical to those used in Study 2.

Affect. Participants indicated the extent to which they were experiencing various affective states after being asked evaluations of their progress. Specifically, participants were instructed to “Indicate the extent [they] feel this way right now, that is, at the present moment” to the following adjectives: anxious, cautious, excited, enthusiastic. Again, these measures were identical to those used in Study 2.

Individual Difference Measures

The same individual difference measures used in Study 1 were also used in Study 2. Specifically, Study 2 included the Academic Strategies Questionnaire (ASQ; $\alpha = .78$), the Regulatory Focus

Questionnaire (promotion $\alpha = .67$; prevention $\alpha = .83$), the Rosenberg Self-Esteem Scale ($\alpha = .86$), the Revised Defensive Pessimism Questionnaire ($\alpha = .76$), the BIS scale ($\alpha = .78$), the BAS scale ($\alpha = .83$), and the Revised Life Orientation Test (dispositional optimism $\alpha = .74$; dispositional pessimism $\alpha = .78$).

Data Analysis Plan

In most of the analyses of Study 3, I used a four-step regression model to examine the effects of the framing manipulation and self-regulation variables on Study 3's dependent variables. In step 1 of the analyses, the control variables, the number of problems solved correctly, dispositional optimism, and dispositional pessimism, were entered. In step 2 of these analyses, the framing variable was entered. Step 3 included the self-regulation variables, the ASQ, promotion focus, prevention focus, BIS, BAS, and defensive pessimism. Finally, in step 4 two interaction terms were entered, a frame x ASQ interaction and a frame x defensive pessimism interaction. These two interaction terms were chosen because the ASQ and defensive pessimism are the purest measures of strategic self-regulation in the current work.

The order of the presented results is outlined here. First, the correlations among the individual difference measures used in Study 3 are presented. Second, regression analyses were used to determine whether the framing manipulation and individual differences in self-regulation would significantly predict participants' assessments of their progress on the test and confidence about the rest of the test, controlling for actual progress and global levels of optimism and pessimism. Third, regression analyses were used to determine whether the framing manipulation and individual differences in self-regulation would significantly predict participants' assessments of the test's difficulty and estimates of the difficulty of the rest of the test, controlling for actual progress and global levels of optimism and pessimism. Fourth, regression analyses were used to determine whether the framing manipulation, individual differences in self-regulation, and performance differences would significantly predict participants' affective experiences. Finally, regression analyses were used to determine whether the framing manipulation and individual differences in self-regulation would predict persistence on the test.

Results

Correlations

Results from the correlational analysis were similar to those of Studies 1 and 2. The full correlation matrix of the individual difference measures is displayed in Table 20. The ASQ was positively related to dispositional optimism and negatively related to defensive pessimism and dispositional pessimism. Notable deviations from Studies 1 and 2 are the nonsignificant correlations between the ASQ and promotion focus and between the ASQ and BAS. These correlations were present in the prior two studies.

Table 20

Correlations Among Individual Difference Measures in Study 3 (N = 199)

Variable	Mean (SD)	ASQ	Pro	Pre	BAS	BIS	DPess	DisO	DisP	SE
ASQ	3.67 (7.68)	-								
Promotion Focus	4.24 (.62)	.08	-							
Prevention Focus	2.94 (1.20)	.03	-.04	-						
BAS	2.05 (.93)	.08	.34***	-.17*	-					
BIS	1.41 (1.31)	-.05	-.23**	.08	-.01	-				
Defensive Pessimism	-.18 (1.41)	-.33**	-.40***	.01	-.16*	.31***	-			
Dispositional Optimism	1.38 (1.48)	.16*	.43***	.08	.42***	-.30***	-.29***	-		
Dispositional Pessimism	-.64 (1.68)	-.23**	-.46***	-.10	-.05	.24**	.42***	-.37***	-	
Self-Esteem	2.04 (1.26)	.08	.53***	.12	.26**	-.28***	-.45***	.49***	-.54***	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Note: ASQ = Academic Strategies Questionnaire, Pro = Promotion, Pre = Prevention, BAS = Behavioral Activation System, BIS = Behavioral Inhibition System, DPess= Defensive Pessimism, DisO = Dispositional Optimism, DisP = Dispositional Pessimism, SE = Self-Esteem

Current Evaluations

As in Study 2, participants were interrupted after the 20th problem in order to obtain assessments of their progress on the test up to that point in time. Assessments of current progress was obtained by asking participants to indicate how well they were doing on the test and how difficult the test was up to that point. Assessments of anticipated progress were obtained by asking participants to indicate how difficult they expected the rest of the test to be and how confident they were in their performance for the remainder of the test. In the following analyses, I examine each of these variables individually. Correlations among the four assessment variables are presented in Table 21.

Table 21

Correlations Among Progress Assessment Variables in Study 3 (N = 221)

Variable	Mean (SD)	Well	Diff	RDiff	Conf
Current Progress Evaluation	4.90 (1.25)	-			
Current Difficulty Rating	4.80 (1.43)	-.34***	-		
Future Difficulty Rating	5.30 (1.34)	-.06	.44***	-	
Future Confidence	4.81 (1.44)	.60***	-.26**	-.20**	-

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

Note: Well = Current Progress Evaluation, Diff = Current Difficulty Rating, RDiff = Future Difficulty Rating, Conf = Future Confidence

Current Progress Evaluation. The primary predictions of Study 3 were generated based on the framing manipulation, which was designed to induce the self-regulatory strategies. Specifically, participants who received gain-framed instructions were predicted to report doing relatively better on the test than were participants who received loss-framed instructions. Additionally, in accord with Study 2, it was predicted that to the extent that participants were strategically positive, they would report doing well on the test and that to the extent participants were strategically negative, they would report doing less well on the test. In order to test these predictions, I conducted a series of regressions with how well the participants reported doing on the test up to that point as the dependent variable. The same analytic strategy used in Study 2 was used for Study 3. Additionally, although no interactions were predicted, the interaction terms of the framing manipulation of strategy and the dispositional measures of strategy (i.e.,

the ASQ and defensive pessimism) were entered in the fourth and final step. The results of this regression analysis are presented in Table 22 below.

Table 22

Standardized Regression Weights from Analysis for Current Progress Evaluation in Study 3

	Step1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.47***	.47***	.42***	.43***
Dispositional Optimism	.07	.07	-.01	-.01
Dispositional Pessimism	-.02	-.02	.05	.05
Frame		.10	.10	.10
ASQ			-.01	-.01
Promotion Focus			.01	.01
Prevention Focus			-.06	-.06
BIS			-.13†	-.12†
BAS			.01	.01
Defensive Pessimism			-.18*	-.18*
Frame x ASQ				.01
Frame x Defensive Pessimism				.09
Multiple R	.47	.48	.53	.54
R ²	.22	.23	.29	.29
Change in R ²		.01	.06	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

As expected, the first step of the analysis revealed that the number of correctly solved problems was positively related to how well participants reported that they were doing. In the second step of the analysis, the number of correctly solved problems was still a significant predictor. However, frame was not a significant predictor. Of the individual difference measures entered in the third step, BIS was a marginally significant predictor of current progress evaluation, such that higher levels of BIS were associated with lower evaluations of progress. In addition, defensive pessimism was a significant predictor. Specifically, higher levels of defensive pessimism were associated with lower evaluations of progress, replicating the effect observed in Study 2. Neither of the interaction terms was significant in the fourth step.

One of the major predictions of Study 3 was that the framing instructions variable would be related to participants' responses about their perceptions of performance, assessments of test difficulty, and

confidence in future test performance. As evidenced in the current analysis, the framing instructions variable failed to predict significantly how well participants reported doing on the test up to that point in time. In addition, as in Study 2, the ASQ failed to significantly predict participants' current progress evaluations.

Current Difficulty Rating. It was predicted that participants who received gain-framed instructions would report that the test was less difficult than would participants who received loss-framed instructions. Further, it was predicted that to the extent participants were strategically positive, they would report that the test was relatively less difficult and that to the extent participants were strategically negative, they would report that the test was relatively more difficult. Again, the four-step regression procedure used above was employed here. The results are presented in Table 23 below.

Table 23

Standardized Regression Weights from Analysis for Current Difficulty Rating in Study 3

	Step1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	-.32***	-.31***	-.30***	-.30***
Dispositional Optimism	.07	.07	.13	.13
Dispositional Pessimism	.06	.06	.06	.06
Frame		-.04	-.04	-.04
ASQ			-.02	-.02
Promotion Focus			.06	.06
Prevention Focus			-.06	-.06
BIS			.07	.07
BAS			-.11	-.11
Defensive Pessimism			.02	.02
Frame x ASQ				-.02
Frame x Defensive Pessimism				-.02
Multiple R	.34	.34	.36	.36
R ²	.11	.11	.13	.13
Change in R ²		.00	.02	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

In the first step of the analysis, the number of correctly solved problems was positively related to how difficult participants thought the test to be up to that point. This effect persisted throughout the remaining steps of the analysis. No other predictors were significant.

One dimension of strategic positivity and strategic negativity outlined in the current work was the potential for people to strategically perceive the difficulty of the current task as greater than it actually is (strategic negativity) or to perceive the difficulty of the task as less than it actually is (strategic positivity) in order to enhance or increase motivation and effort. However, the framing manipulation, the ASQ, and defensive pessimism were all nonsignificant predictors of how difficult participants perceived the test to be.

Future Projections

After evaluating their progress up to that point in time and indicating how difficult they thought the test to be, participants were asked to predict how difficult the rest of the test would be and to indicate how confident they were about their performance on the rest of the test.

Future Difficulty Rating. It was predicted that participants who received gain-framed instructions would report that the remainder of the test would be less difficult than would participants who received loss-framed instructions. Furthermore, it was predicted that to the extent that participants were strategically positive, they would report that the remainder of the test would be relatively less difficult and that to the extent that participants were strategically negative, they would report that the remainder of the test would be relatively more difficult. Again, the four-step regression procedure was used, with one addition. Participants' evaluation of how difficult the test was up to that point was entered into the first step of the analysis as another control variable. The results are presented in Table 24 below.

Table 24

Standardized Regression Weights from Analysis for Future Difficulty Rating in Study 3

	Step1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.03	.03	.00	-.01
Current Difficulty Rating	.41***	.40***	.42***	.42***
Dispositional Optimism	-.02	-.02	-.14	-.14
Dispositional Pessimism	-.02	-.02	.02	.02
Frame		-.07	-.07	-.07
ASQ			-.11	-.11
Promotion Focus			-.01	.01
Prevention Focus			-.12	.11
BIS			.09	.09
BAS			.08	.07
Defensive Pessimism			-.29**	-.29**
Frame x ASQ				.01
Frame x Defensive Pessimism				-.10

Multiple R	.40	.40	.51	.52
R ²	.16	.16	.26	.27
Change in R ²		.00	.10	.01

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The first step of the model revealed prior perceptions of difficulty as the only significant predictor of how difficult participants thought the remainder of the test would be. This effect persisted through all steps of the analysis. In steps 3 and 4, defensive pessimism emerged as a significant predictor of how difficult participants thought the rest of the test would be. Specifically, higher levels of defensive pessimism were associated with greater perceptions of difficulty. No other predictors were significant.

Confidence. It was predicted that participants who received gain-framed instructions would report being relatively more confident about the remainder of the test than would participants who received loss-framed instructions. Furthermore, it was predicted that to the extent that participants were strategically positive, they would report being relatively more confident about the remainder of the test and that to the extent that participants were strategically negative, they would report relatively less confidence about their performance on the remainder of the test. Again, the four-step regression procedure was used. As in the analysis of participants' test difficulty ratings, participants' prior evaluations of how well they were doing on the test was up to that point in time was entered into the first step of the analysis as an additional control variable. The results are presented in Table 25 below.

Table 25

Standardized Regression Weights from Analysis for Future Confidence in Study 3

	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.04	.04	.04	.02
Current Progress Evaluation	.56***	.55***	.52***	.52***
Dispositional Optimism	.12†	.12†	.10	.10
Dispositional Pessimism	-.02	-.02	-.01	-.01
Frame			.06	.06
ASQ			-.06	-.06
Promotion Focus			.01	.02
Prevention Focus			-.08	-.08
BIS			-.12†	-.12
BAS			-.04	-.03

Defensive Pessimism			-0.02	-0.02
Frame x ASQ				.04
Frame x Defensive Pessimism				-.04
Multiple R	.60	.60	.62	.62
R ²	.36	.36	.38	.38
Change in R ²		.00	.02	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

How well participants perceived that they were doing on the test up to that point in time was positively related to confidence in the first and subsequent steps of the analysis. In addition, there was a marginal effect of dispositional optimism, such that greater levels of dispositional optimism were correlated with greater levels of confidence. This effect persisted only through the first two steps. In the third step, BIS emerged as a marginally significant predictor of confidence, such that higher levels of BIS were associated with lower levels of confidence. The framing manipulation, the ASQ, and defensive pessimism failed to predict confidence.

Thought Listing

As in Study 2, upon completing the 20th matrix problem, participants were instructed to list any thoughts and feelings they had while taking the test. It was predicted that participants who received gain-framed instructions would generate a greater proportion of positive thoughts, whereas participants who received loss-framed instructions would generate a greater proportion of negative thoughts.

Positive Thoughts. The four-step regression model used in the prior analysis was used in examining participants' listed positive thoughts. The results of the analysis of the proportion of positive thoughts are presented in Table 26 below.

Table 26

Standardized Regression Weights from Analysis for Proportion of Positive Thoughts in Study 3

	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.20*	.20*	.19*	.18*
Dispositional Optimism	.01	.01	.01	-.01
Dispositional Pessimism	.01	.01	.08	.09
Frame		.01	.01	.02
ASQ			.10	.11

Promotion Focus			.10	.10
Prevention Focus			.01	.01
BIS			.02	.01
BAS			-.06	-.05
Defensive Pessimism			-.06	-.07
Frame x ASQ				.12
Frame x Defensive Pessimism				.11
Multiple R	.20	.20	.25	.28
R ²	.04	.04	.06	.08
Change in R ²		.00	.00	.02

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed that the number of problems participants correctly solved was a significant predictor of the proportion of positive thoughts generated. No other predictors were significant.

Negative Thoughts. The two-step regression model used in the prior analysis was used in examining participants' listed negative thoughts. The results of the analysis of the proportion of negative thoughts are presented in Table 27 below.

Table 27

Standardized Regression Weights from Analysis for Proportion of Negative Thoughts in Study 3

	Step1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	-.16*	-.16*	-.15†	-.13†
Dispositional Optimism	.07	.08	.15	.16
Dispositional Pessimism	.19*	.19*	.15	.14
Frame		.21**	.21**	.21**
ASQ			-.10	-.11
Promotion Focus			-.08	-.09
Prevention Focus			.06	.06
BIS			-.02	-.02
BAS			-.08	-.09
Defensive Pessimism			.03	.03
Frame x ASQ				-.08
Frame x Defensive Pessimism				-.02
Multiple R	.25	.32	.37	.38
R ²	.06	.11	.14	.14
Change in R ²		.05	.03	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

In the first step of the analysis, the number of correctly solved problems was a significant predictor of the proportion of negative thoughts generated by participants, such that the fewer the number of correctly solved problems, the greater the proportion of negative thoughts. Additionally, dispositional pessimism was a significant predictor, such that higher levels of dispositional pessimism were associated with a greater proportion of negative thoughts. In the second step of the analysis, frame emerged as a significant predictor of the proportion of negative thoughts. Specifically, as predicted, participants who received loss-framed instructions listed a greater proportion of negative thoughts. This effect persisted through the subsequent steps of the analysis.

Additional analysis was conducted to ensure that the negative thoughts that participants wrote down were not simply about the framing manipulation per se. The target of each thought was coded into one of four categories: the test, the points framing manipulation, the self, and irrelevant/everything else. The analysis revealed that although controlling for participants' proportion of negative thoughts about the test and the framing manipulation reduced the beta weight associated with frame somewhat ($\beta = .12, p < .05$), the effect remained significant. That is, the framing manipulation appears to have evoked negative thoughts that were relatively global and not specifically linked to the framing manipulation itself.

Affect

After indicating how well they were doing and how difficult they thought the test to be up to that point, participants indicated how anxious, excited, and enthusiastic they were feeling at that particular moment.

Anxiety. It was predicted that participants who received gain-framed instructions would report feeling relatively less anxious than would participants who received loss-framed instructions. Furthermore, it was predicted that to the extent that participants were strategically positive, they would report feeling relatively less anxious and that to the extent that participants were strategically negative, they would report feeling relatively more anxious. In order to test these predictions, I conducted a series of regressions using the same four-step regression model used in the previous analyses. The results of the analyses are presented in Table 28 below.

Table 28

Standardized Regression Weights from Analysis for Anxiety in Study 3

	Step1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	-.12	-.12	-.08	-.10
Dispositional Optimism	-.11	-.11	.01	-.01
Dispositional Pessimism	.03	.03	.02	.02
Frame		-.01	-.01	-.01
ASQ			.01	.01
Promotion Focus			.02	.03
Prevention Focus			.07	.07
BIS			.10	.09
BAS			-.15	-.13
Defensive Pessimism			.10	.10
Frame x ASQ				.07
Frame x Defensive Pessimism				.09
Multiple R	.17	.17	.27	.31
R ²	.03	.03	.07	.10
Change in R ²		.00	.04	.03

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed no significant predictors of anxiety.

Reports of Caution. It was predicted that participants who received gain-framed instructions would report being relatively less cautious than would participants who received loss-framed instructions. It was also predicted that to the extent that participants were strategically positive, they would report being relatively less cautious and that to the extent participants were strategically negative, they would report being relatively more cautious. Again, the four-step regression procedure was used. The results are presented in Table 29 below.

Table 29

Standardized Regression Weights from Analysis for Reports of Caution in Study 3

	Step1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.09	.09	.10	.08
Dispositional Optimism	.02	.02	.02	.01
Dispositional Pessimism	.05	.05	-.01	-.01
Frame		.04	.04	.04
ASQ			-.14	-.13
Promotion Focus			-.12	-.12
Prevention Focus			.04	.04
BIS			.11	.10

BAS			.09	.10
Defensive Pessimism			-.11	-.11
Frame x ASQ				.05
Frame x Defensive Pessimism				.09
Multiple R	.10	.10	.22	.26
R ²	.01	.01	.05	.07
Change in R ²		.00	.04	.02

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed no significant predictors of caution.

Excitement. It was predicted that participants who received gain-framed instructions would report relatively more excitement than would participants who received loss-framed instructions. Furthermore, it was predicted that to the extent that participants were strategically positive, they would report being relatively more excited and that to the extent that participants were strategically negative, they would report being relatively less excited. Results are presented in Table 30 below.

Table 30

Standardized Regression Weights from Analysis for Reports of Excitement in Study 3

	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.08	.08	.06	.04
Dispositional Optimism	.08	.08	.07	.05
Dispositional Pessimism	-.02	-.02	.03	.04
Frame		-.03	-.02	-.02
ASQ			-.02	-.01
Promotion Focus			.08	.09
Prevention Focus			-.11	-.11
BIS			.07	.06
BAS			-.04	-.02
Defensive Pessimism			-.13	-.14
Frame x ASQ				.08
Frame x Defensive Pessimism				.10
Multiple R	.12	.12	.21	.27
R ²	.01	.01	.04	.07
Change in R ²		.00	.03	.03

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed no significant predictors of excitement.

Enthusiasm. It was predicted that participants who received gain-framed instructions would report relatively more enthusiasm than would participants who received loss-framed instructions. It was also predicted that to the extent that participants were strategically positive, they would report being relatively more enthusiastic and that to the extent that participants were strategically negative, they would report being relatively less enthusiastic. Again, the four-step regression procedure was used. Results are presented in Table 31 below.

Table 31

Standardized Regression Weights from Analysis for Reports of Enthusiasm in Study 3

	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.16*	.17*	.11	.09
Dispositional Optimism	.10	.10	-.02	-.03
Dispositional Pessimism	.01	.01	.09	.10
Frame		-.06	-.04	-.04
ASQ			-.09	-.09
Promotion Focus			.16*	.16†
Prevention Focus			-.10	-.10
BIS			-.01	-.02
BAS			.06	.07
Defensive Pessimism			-.20*	-.21*
Frame x ASQ				.08
Frame x Defensive Pessimism				.04
Multiple R	.18	.19	.34	.35
R ²	.03	.04	.12	.12
Change in R ²		.01	.08	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

In the first step of the analysis, the only significant predictor of enthusiasm was the number of correctly solved problems. This effect dropped to nonsignificance in the third and fourth steps of the analysis. In the third step, promotion focus emerged as a significant predictor of enthusiasm, such that higher levels of promotion focus were associated with higher levels of reported enthusiasm. Although this effect persisted in the fourth step, it dropped to marginal significance. The third step also revealed a significant effect of defensive pessimism that remained significant in the fourth step. Specifically, higher levels of defensive pessimism were associated with lower levels of enthusiasm.

Performance and Affect

A secondary objective of the Study 3 was to examine how the framing instructions, participants' positive and negative strategies, and participants' performance interacted to influence affective states. However, because the ASQ again failed to significantly predict many of the dependent variables that it was anticipated to predict, defensive pessimism was used in the following analyses to distinguish the extent to which participants engaged in one or the other strategy.

Anxiety. It was predicted that among participants who received gain-framed instructions, poor performance would be related to higher levels of anxiety, particularly among strategic optimists. In contrast, it was predicted that among participants who received loss-framed instructions, performance would not be related to anxiety, particularly among defensive pessimists. To test these predictions, the framing instructions variable, defensive pessimism, and performance (i.e., the number of correctly solved problems) were entered into a regression analysis along with their interaction terms. The results of this analysis are presented in Table 32 below.

Table 32

Standardized Regression Weights from Analysis for Frame X Performance X Strategy Effect on Anxiety in Study 3

	Step1 β	Step 2 β	Step 3 β
Frame	.02	.03	.01
Defensive Pessimism	.14 [†]	.10	.12
Performance	-.10	-.10	-.08
Frame X Performance		-.04	-.04
Frame X Defensive Pessimism		-.03	-.01
Performance X Defensive Pessimism		.14 [†]	.13 [†]
Frame X Performance X Defensive Pessimism			-.10
Multiple R	.18	.23	.25
R ²	.03	.05	.06
Change in R ²		.02	.01

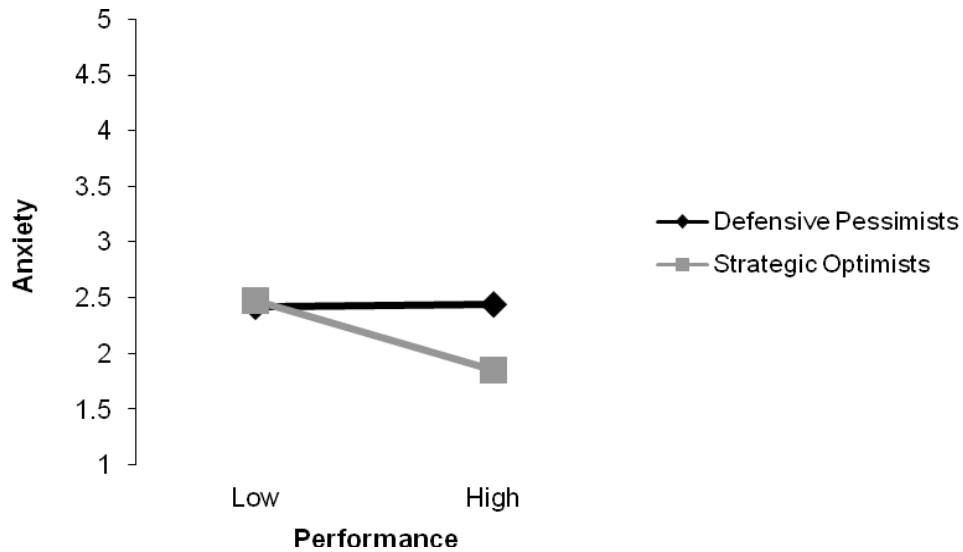
* $p < .05$, ** $p < .01$, *** $p < .001$, [†] $p < .10$

The analysis revealed a marginally significant performance X defensive pessimism interaction effect. To better understand the nature of the effect, I graphed the interaction using values of defensive pessimism that were one standard deviation above (i.e., defensive pessimists) and below (i.e., strategic

optimists) the mean at values of performance that were one standard deviation above and below the mean (See Figure 3 below).

Figure 3

Performance X Strategy Interaction Effect on Anxiety in Study 3



Simple slopes analysis indicated that, as predicted, among strategic optimists, there was a significant difference in anxiety between participants who performed relatively poorly and participants who performed relatively well ($\beta = -.26, p < .05$). However, among defensive pessimists, performance did not impact the reported levels of anxiety ($\beta = .01, p > .05$). These effects replicate those observed in Study 2.

Reports of Caution. Participants who received loss-framed instructions should report being cautious in order to maintain their motivation and performance. This effect should be particularly pronounced among strategically negative individuals (i.e., defensive pessimists) who are doing well. In contrast, for participants who received gain-framed instructions, particularly those who are strategically positive (i.e., strategic optimists), performance should not affect reported levels of caution. To test these predictions, the framing instructions variable, defensive pessimism, and performance (i.e., the number of

correctly solved problems) were entered into a regression analysis along with their interaction terms.

Results of this analysis are presented in Table 33 below.

Table 33

Standardized Regression Weights from Analysis for Frame X Performance X Strategy Effect on Caution in Study 3

	Step1 β	Step 2 β	Step 3 β
Frame	.06	.06	.04
Defensive Pessimism	.01	-.01	.01
Performance	.07	.07	.09
Frame X Performance		.03	.03
Frame X Defensive Pessimism		.02	.05
Performance X Defensive Pessimism		.05	.03
Frame X Performance X Defensive Pessimism			-.11
Multiple R	.09	.11	.16
R ²	.01	.01	.02
Change in R ²		.00	.01

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed no significant effects.

Excitement. Participants who received gain-framed instructions should report more excitement, as a result of success and/or in order to maintain their motivation and performance. This effect should be particularly pronounced among strategically positive individuals (i.e., strategic optimists). In contrast, among participants who received loss-framed instructions, performance should not affect reported levels of enthusiasm. To test these predictions, the framing instructions variable, defensive pessimism, and performance (i.e., the number of correctly solved problems) were entered into a regression analysis along with their interaction terms. The results of this analysis are presented in Table 34 below.

Table 34

Standardized Regression Weights from Analysis for Frame X Performance X Strategy Effect on Excitement in Study 3

	Step1 β	Step 2 β	Step 3 β
Frame	-.04	-.04	-.04
Defensive Pessimism	-.13†	-.11	-.12

Performance	.06	.06	.06
Frame X Performance		.04	.04
Frame X Defensive Pessimism		.06	.05
Performance X Defensive Pessimism		-.07	-.06
Frame X Performance X Defensive Pessimism			.04
Multiple R	.16	.18	.18
R ²	.03	.03	.03
Change in R ²		.00	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The analysis revealed a marginally significant main effect of defensive pessimism in the first step. Specifically, strategic optimists reported higher levels of excitement than did defensive pessimists. However, this marginal effect diminished when other predictors were added to the model in subsequent steps. No other effects were significant.

Enthusiasm. The predictions for participants' reports of enthusiasm are identical to those for participants' reports of excitement. Specifically, participants who received gain-framed instructions should report more excitement, as a result of success and/or in order to maintain their motivation and performance. This effect should be particularly pronounced among strategically positive individuals (i.e., strategic optimists). In contrast, among participants who received loss-framed instructions, performance should not affect reported levels of enthusiasm. To test these predictions, the framing instructions variable, defensive pessimism, and performance (i.e., the number of correctly solved problems) were entered into a regression analysis along with their interaction terms. Results of this analysis are presented in Table 35 below.

Table 35

Standardized Regression Weights from Analysis for Frame X Performance X Strategy Effect on Enthusiasm in Study 3

	Step1 β	Step 2 β	Step 3 β
Frame	-.07	-.07	-.07
Defensive Pessimism	-.19**	-.18*	-.18*
Performance	.13†	.11	.11
Frame X Performance		.19*	.19*
Frame X Defensive Pessimism		.06	.06
Performance X Defensive Pessimism		-.01	-.02
Frame X Performance X Defensive Pessimism			-.01
Multiple R	.26	.32	.32

R ²	.07	.10	.10
Change in R ²		.03	.00

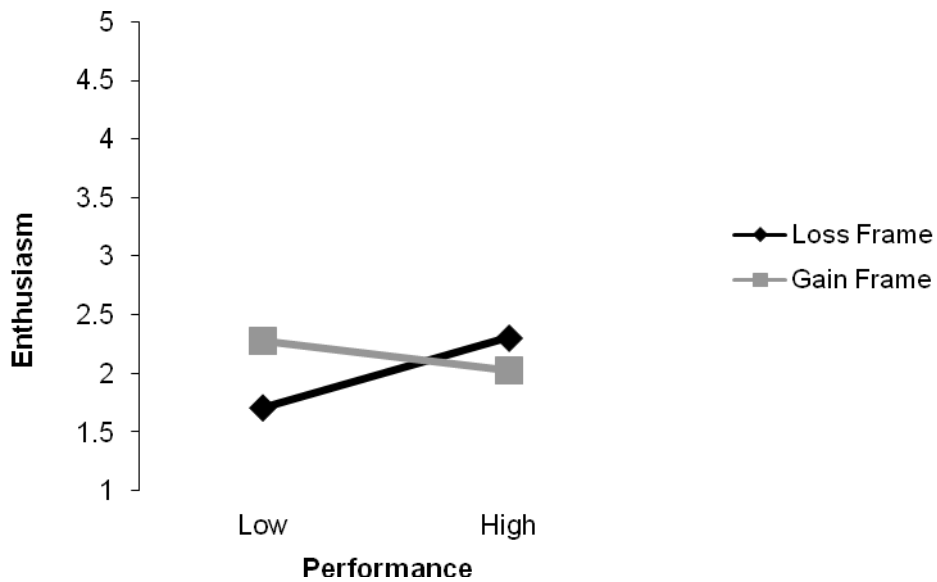
* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

The first step of the analysis revealed a significant effect of defensive pessimism, such that higher levels of defensive pessimism were associated with lower levels of enthusiasm. Also in the first step, performance was found to be positively correlated with enthusiasm, although the effect was marginally significant and diminished in subsequent steps. The effect of defensive pessimism remained significant in the second step of the analysis. In addition, there was a significant frame X performance interaction. The significant effects of the second step persisted in the final step of the analysis.

To better understand the nature of the frame X performance effect, I graphed the interaction for both the gain- and loss-frame conditions at values of performance that were one standard deviation above and below the mean (See Figure 4 below).

Figure 4

Frame X Performance Interaction Effect on Enthusiasm in Study 3



Simple slopes analysis indicated that among participants who received loss-framed instructions, there was a significant difference in enthusiasm between participants who performed relatively poorly and participants who performed relatively well ($\beta = .29, p < .01$). However, among participants who received gain-framed instructions, performance did not impact the reported levels of enthusiasm ($\beta = -.12, p > .05$).

Persistence

As in Study 2, the time participants took to complete each of the Raven’s Advanced Progressive Matrices during Study 3 was assessed. Following the predictions from Study 2, it was predicted that response times would be longer for participants who received loss-framed instructions than for participants who received gain-framed instructions. In the first step of the analysis, I entered the number of problems that participants had solved, dispositional optimism, and dispositional pessimism. In the second step of the analysis, I entered the framing instructions variable, the ASQ, Promotion Focus, Prevention Focus, BIS, BAS, and defensive pessimism. The results of the analyses are presented in Table 36 below.

Table 36

Standardized Regression Weights for Persistence in Study 3

	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Number of Solved Problems	.48***	.48***	.48***	.48***
Dispositional Optimism	.02	.02	.07	.07
Dispositional Pessimism	.16*	.16*	.16†	.16†
Frame		-.04	-.03	-.03
ASQ			-.08	-.07
Promotion Focus			-.02	-.02
Prevention Focus			-.09	-.09
BIS			.05	.05
BAS			-.11	-.11
Defensive Pessimism			-.10	-.10
Frame x ASQ				.02
Frame x Defensive Pessimism				-.03
Multiple R	.48	.49	.51	.51
R ²	.24	.24	.26	.26
Change in R ²		.00	.02	.00

* $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .10$

As expected, the number of correctly solved problems was a significant predictor of mean response time in the first step of the analysis. In addition, dispositional pessimism was a significant

predictor of mean response time, such that higher levels of dispositional pessimism were associated with greater mean response times. In the second step of the analysis, the number of correctly solved problems remained a significant predictor. However, the effect of dispositional pessimism dropped to marginal significance.

Discussion

Evaluations of Progress

The primary goal of Study 3 was to replicate findings observed in Study 2 using an experimental manipulation of strategic self-regulation. It was predicted that framing instructions provided at the beginning of the test would evoke self-regulatory strategies among participants. Specifically, gain-framed instructions were predicted to evoke a strategically positive self-regulatory tack, whereas loss-framed instructions were predicted to evoke a strategically negative self-regulatory tack. Although correlational analysis revealed that most of the individual difference measures of Study 3 were related to one another in a pattern very similar to that demonstrated in the previous two studies, the framing manipulation itself had little effect in determining the outcomes of the primary dependent measures. In fact, only defensive pessimism proved to be a significant predictor of interest among the evaluation measures, predicting assessments of current progress and future difficulty. It is worth noting that the effect of defensive pessimism on assessments of future difficulty was not observed in Study 2. Additionally, unlike in Study 2, in Study 3 defensive pessimism failed to predict how confident participants were in their ability to perform on the remainder of the test. Although the effect of defensive pessimism on both assessments of future difficulty and confidence was in the predicted direction in Study 3, the findings were nonsignificant.

Thoughts and Affect

Participants who received gain-framed instructions were expected to generate a greater proportion of positive thoughts than were participants who received loss-framed instructions. Conversely, participants who received loss-framed instructions were expected to generate a greater proportion of negative thoughts than were participants who received gain-framed instructions. Although neither the framing variable nor the individual difference measures significantly predicted the proportion of positive thoughts, the framing variable was a significant predictor of the proportion of negative thoughts. Specifically, participants who

were told that they would be beginning the test with a point total of 30 and that they would lose a point for every problem that they failed to answer correctly (loss-framed instructions) generated a greater proportion of negative thoughts than did participants who were told that they would be beginning the test with 0 points and that they would receive a point for every problem that they answered correctly (gain-framed instructions). Presumably, participants who received loss-framed instructions were feeling worse about their progress during the test than were participants who received gain-framed instructions, although it is not clear that these thoughts were in any way strategically generated or managed.

Affect was expected to vary across the two framing conditions. Participants who received gain-framed instructions were expected to report feeling more excited and enthusiastic, whereas participants who received loss-framed instructions were expected to report feeling more anxious and cautious. Unfortunately, the framing manipulation had no significant main effects on participants' reports of affect. However, some interesting interactions emerged. There was a marginally significant interaction between participants' performance and defensive pessimism on reports of anxiety. Follow-up analysis revealed that among defensive pessimists, performance had no effect on anxiety; defensive pessimists were consistently anxious. In contrast, strategic optimists were anxious only to the extent that they were performing relatively poorly on the test. This phenomenon was demonstrated in Study 2 and was replicated in the current study.

Another interesting interaction emerged between performance and frame on participants' reports of enthusiasm. Specifically, among participants who received gain-framed instructions, performance did not impact their reports of enthusiasm. Among participants who received loss-framed instructions, however, participants who were performing relative well reported more enthusiasm than did participants who were performing relatively poorly. In the introduction of the current work, I made the argument that negativity can be a viable strategy for enhancing and/or maintaining performance insofar as its adopters have achieved some success. Negativity is unlikely to be a successful strategy in the face of consistent failure. If enthusiasm is taken as a proxy for motivation in the current study, this finding provides some support for the argument.

Persistence

As in Study 2, the response times of Study 3 participants were recorded in order to acquire a measure of persistence and caution while solving the matrix problems. In the current analysis, above and beyond the number of correctly solved problems, only dispositional pessimism emerged as a significant predictor of mean response time, such that participants with higher levels of dispositional pessimism took more time to complete the matrix problems. Contrary to the results of Study 2, the ASQ was not a significant predictor of mean response time in the current analysis. However, given that the correlation between dispositional pessimism and the ASQ was significant in Study 3 but nonsignificant in Studies 1 and 2, it is possible that shared variance between the two individual difference measures accounts for the lack of a consistent ASQ finding.

Framing Manipulation

The framing manipulation was relatively unsuccessful in producing the predicted responses to the primary dependent measures of the study. Despite the effectiveness of this particular manipulation in prior research (e.g., Liberman et al., 1999), there are some potential complications that could have hamstrung its effectiveness in the current work. First, participants were offered no real incentive for finishing the test with the most points possible. Although, anecdotally, many participants took the test seriously and were interested in their final results, the framing manipulation itself might have had little impact on how participants specifically went about completing the test. Second, it is possible that in some cases the framing manipulation produced the opposite of its intended effect. Examination of the beta weights for the framing variable in predicting the progress evaluation measures reveals some curious results. Although the findings were not significant, the beta weights of the framing variable in predicting the progress evaluation measures are in the *opposite* of the predicted direction. Compared to participants who received gain-framed instructions, participants who received loss-framed instructions thought that they were doing relatively better on the test up to the evaluation point, thought that the test was relatively less difficult and would continue to be relatively less difficult, and had relatively more confidence about their performance on the remainder of the test. It is possible that participants who were told that they were beginning the test with 30 points and would be losing 1 point for each incorrect response (i.e., participants in the loss-frame condition) felt that they had “money in the bank” and could afford to answer a few problems incorrectly.

Conversely, participants who were told that they were beginning the test with 0 points and would be gaining 1 point for each correct response (i.e., participants in the gain-frame condition) might have felt that they had quite a bit of ground to cover and were less optimistic about their chances. However, given that the beta weights for these effects are nonsignificant, this explanation remains speculative.

Chapter 5

General Discussion

There is much research demonstrating that when people go about pursuing goals, there are different self-regulatory mechanisms that lead to successful goal accomplishment. For example, both promotion- and prevention-focused people can be successful in goal pursuit (Higgins, 1997, 1998) and both defensive pessimists and strategic optimists can accomplish their goals (Norem & Cantor, 1986). There is less known, however, about how strategic varieties of optimism and pessimism operate as ongoing self-regulatory mechanisms. The current work fills this gap by specifically investigating strategic positivity and strategic negativity employed in the service of pursuing an academic goal. The objectives of the current studies were 1) to expand the conception of strategic self-regulation to encompass more than simple strategically managed optimistic and pessimistic expectations made prior to engaging in goal-oriented activity; 2) to test the hypothesis that even after performance and other individual differences are controlled for, strategically negative people would report doing more poorly and have less confidence than would strategically positive people; and 3) to explore how performance and situational variables are associated with affective experiences that differ across people who employ one or the other varieties of strategic self-regulation.

Study 1 addressed the first objective of the current work and was designed with two primary purposes in mind. First, Study 1 involved the development of a new measure of strategic self-regulation, the Academic Strategies Questionnaire (ASQ), designed to capture a number of ways in which people could employ strategic positivity and strategic negativity beyond the use of expectations made at the outset of a task. The ASQ was designed to include not only expectations about the future, but also current positive and negative thoughts about the self, the current task or goal, the current task or goal environment, and current task or goal progress. Second, Study 1 (and Studies 2 and 3) provided an opportunity to assess a number of individual difference measures used in prior studies of self-regulation in academic settings that had not previously been examined in a single study. The results of Study 1 were encouraging and suggested that the ASQ could be a useful measure in assessing the degree to which individuals engage in strategic negativity and strategic positivity in the academic domain.

Both Studies 2 and 3 addressed the first objective of the current work by demonstrating that the effects of strategic negativity and strategic positivity are evinced in more than the expectations made *prior* to goal pursuit. When evaluating their current work, defensive pessimists thought that they were doing more poorly than did strategic optimists. When defensive pessimists were asked to predict how the rest of the test would go, they had poorer projections than did strategic optimists. Importantly, not only do these results show that negativity and positivity persist throughout goal pursuit, but they are also the first to show that these effects are present even after controlling for actual performance differences (objective 2 of the current work) as well as other individual differences that might be responsible for global negativity/positivity but are not necessarily strategically employed.

The third objective of the current studies was an exploration of how performance and situational variables are related to different affective experiences among people who employ one or the other varieties of strategic self-regulation. In both Studies 2 and 3, different levels of performance were associated with different levels of anxiety among defensive pessimists and strategic optimists. Specifically, defensive pessimists indicated the same amount of anxiety regardless of their performance. In contrast, strategic optimists were less anxious when they were doing well than when they were doing poorly. In Study 2, different levels of performance were associated with different levels of caution among defensive pessimists and strategic optimists. The most successful defensive pessimists were those who reported more caution, whereas the most successful strategic optimists were those who reported less caution. Finally, Study 3 demonstrated that situational variables designed to evoke strategic self-regulation can also interact with performance to produce affective experiences. Specifically in Study 3, participants who received gain-framed instructions, designed to induce a strategically positive tack, were enthused about the test regardless of their performance. However, participants who received loss-framed instructions, designed to induce a strategically negative tack, reported enthusiasm about the test only when they were performing well. Again, strategic negativity is unlikely to be a successful strategy in the face of consistent failure. If enthusiasm is taken as a proxy for motivation in the current study, this finding provides some support for the notion that strategic negativity is viable only to the extent that one can or has achieved some real success.

Taken as a whole, the findings of the current work add to the research literature on self-regulation, strategic self-regulation, and goal pursuit. First, the current work expands the scope of what it means to strategically self-regulate through unrealistic optimism or unrealistic pessimism. Prior research has stopped at the level of expectations made prior to task engagement, whereas the current studies were designed to capture manifestations of the strategies evinced beyond the initial phases of goal pursuit and to include ongoing thoughts and evaluations about the task as well as the self and task environment. Second, to my knowledge, the current work is the first to demonstrate the affective experiences of strategic self-regulation after statistically controlling for actual task performance and after taking into account other individual difference measures also known to be associated with reports of affect. These findings are important in demonstrating the independence of strategic self-regulation from the effects of global optimistic and pessimistic self-regulatory processes. Finally, the current work is among a few studies in the literature designed to experimentally induce strategic self-regulation (cf. Liberman et al., 1999) and the only study to examine how interactions between performance and strategic self-regulation (both dispositional and situationally-induced) are associated with affective experiences. Given that the realities of the workplace and the demands of genuine goal pursuit can often shape and constrain the way in which we approach tasks, future research in this direction will prove fruitful.

The Academic Strategies Questionnaire

One of the primary objectives of the current work was to expand the conception of strategic self-regulation to encompass more than simple strategic optimistic and pessimistic expectations made prior to engaging in goal-oriented activity. Part of this objective was to be fulfilled through the development of a new individual difference measure of strategic positivity and strategic negativity. In the current work, “strategic positivity” and “strategic negativity” are conceptualized as including not only expectations about the future, but also current positive and negative thoughts about the self, the current task or goal, the current task or goal environment, and the current task or goal progress. The ASQ was designed to assess these ways in which people can typically employ strategic self-regulation.

Although the findings from Study 1 were encouraging, the ASQ failed to predict most of the important dependent variables of Studies 2 and 3. In fact, the ASQ was only a significant predictor of task

persistence in Study 2. Why did the ASQ fail to predict the dependent variables as hypothesized? Study 1 demonstrated that the ASQ was significantly related to just about every individual difference measure with which it was predicted to be related. However, it is possible that despite the apparent validity of the measure, the ASQ overlaps too much with the other self-regulation variables included in the models and did not account for enough unique variance to emerge as a significant predictor in most of the analyses. Indeed, supplemental analyses indicated that when important self-regulation variables (e.g., defensive pessimism) were removed from the models, the ASQ became a significant predictor of some of the dependent variables. Ultimately, the more established Defensive Pessimism Questionnaire (Norem, 2001b) proved to be the most useful assessment of strategic self-regulation in Studies 2 and 3. Thus, although the ASQ may be a valid individual difference measure of strategic positivity and strategic negativity, it may not provide more explanatory power than those self-regulatory measures already available.

Future Research Directions and the Long-term Effects of Strategic Positivity and Strategic Negativity

The use of strategic positivity and negativity has the potential for enhancing and maintaining motivation for accomplishing goals. However, are there certain long-term costs associated with each strategy that should be examined in future research? Although both strategies are advantageous in task performance, at a broader, more long-term level, they may differentially affect important outcomes such as judgment, goal choice, and well-being. Research on defensive pessimism and strategic optimism provides some clues in contrasting the longer-term effects of each strategy.

Defensive pessimism and strategic negativity. Cantor, Norem, and their colleagues (Cantor & Norem, 1989; Cantor, Norem, Niedenthal, Langston, & Brower, 1987) collected longitudinal data tracking students making the transition from high school to college. They classified a sample of college honors students as either strategic optimists or defensive pessimists in the domain of academics, and followed them for three and a half years. Experience sampling methodology during their freshman year revealed that although GPA and the amount of time in achievement situations did not differ between the two groups, defensive pessimists felt less in control, and evinced less enjoyment and more stress while studying than did strategic optimists. While in class, defensive pessimists felt lonelier and less in control than did strategic optimists. Perhaps more pernicious, by the second semester of their junior year, defensive

pessimists had lower overall GPAs, perceived greater life stress, and exhibited more psychological symptoms of worry, sleeplessness, and hopelessness than did strategic optimists. The authors argue that the devolution of defensive pessimists' academic achievement and psychological well-being was due to the vicissitudes inherent in their self-regulatory strategy. The frequent lows of contemplating failure followed by the highs of subsequent achievement may have taken an unmanageable toll. Moreover, intrinsic motivation among defensive pessimists may have languished from all of their over-preparing to thwart potential failure and the discouragement associated with knowing one has worked more arduously than necessary.

There is significant support for this account. Defensive pessimism is associated with a tendency to endorse performance-based avoidance goals (Elliot & Church, 2003; Yamawaki, Tschanz, & Feick, 2004), and a number of studies have documented the potential harm in setting and pursuing avoidance goals, including disorganization (Elliot, McGregor, & Gable, 1999), poorer retention of learned material (Elliot & McGregor, 1999), poorer well-being (Elliot & Sheldon, 1997), and lower intrinsic motivation (Elliot & Harackiewicz, 1996; Elliot & Sheldon, 1997). Although defensive pessimism is an anxiety-reduction strategy that facilitates task performance and may actually countervail some of the difficulties associated with pursuing performance-avoidance goals (e.g., disorganization), it is nonetheless possible that exercising the strategy could degrade intrinsic motivation and the enjoyment of a task, particularly over many applications.

Another debilitating aspect of defensive pessimism is its potential to foster an unstable sense of self-esteem among its practitioners (Yamawaki et al., 2004). Because defensive pessimists frequently activate negative self-thoughts in contemplating latent possibilities of failure, these thoughts should become more automatically accessible as ways of efficiently processing information about the self (Bargh, 1982; Bargh & Tota, 1988). Given that the self-thoughts of defensive pessimists often fluctuate from relatively negative (before a task) to relatively positive (after accomplishment; Sanna, 1996) and then back to negative (before the next task), their self-esteem is rendered somewhat volatile (e.g., Kernis, Cornell, Sun, Berry, & Harlow, 1993). Self-esteem volatility is related to a host of adverse outcomes such as more anger and hostility (Kernis, Granneman, & Barclay, 1992), higher levels of neuroticism and self-deprecation

(Kernis & Waschull, 1995), and a greater vulnerability to depression (Kernis et al., 1998; but see Kernis, Granneman, & Mathis, 1991). It is possible that any one or a combination of these potentially devastating outcomes could be responsible for the ill effects defensive pessimists may endure in the long-term.

Among people who are strategically negative about their progress and prospects, a decrease in intrinsic motivation could result in such unfortunate choices as opting out of difficult classes or majors, less satisfaction from goal pursuit, and eventual burnout. Additionally, given that they may deal with negative thoughts on a more consistent basis throughout goal pursuit than do people who are strategically positive, people who engage in strategic negativity may be more susceptible to problems in self-esteem stability. It is important to note that defensive pessimists, in particular, are typically very anxious individuals. Despite the use of defensive pessimism to temporarily quell anxiety so that tasks can be successfully completed, the overall anxiety that defensive pessimists consistently experience could be an important contributor to suffering over the long-term. It is not entirely clear to what extent anxiety or other negative personality constructs rather than strategic negativity per se is responsible for the ill effects experienced by defensive pessimists in the work by Cantor and her colleagues (Cantor et al., 1987; Cantor & Norem, 1989). Future research should focus on determining the specific factors associated with strategic negativity that contribute to the problems that emerge from long-term use of the strategy.

Strategic optimism and strategic positivity. Although people who are strategically positive may appear to have rosier long-term prospects, they may also be subject to their own collection of potential complications. Dispositional optimists have been shown to overestimate their past successes (Gibson & Sonbanmatsu, 2004; Norem & Chang, 2002), which may lead them to take on tasks and pursue goals beyond their capacity to complete well. For example, Gibson and Sonbanmatsu (2004) found that despite losing a series of gambles in a laboratory game, optimists failed to reduce their subsequent betting and expectations for winning. Moreover, optimists were more likely than pessimists to overestimate their previous success and to recall more near wins whenever they had previously lost. To the extent that optimistic beliefs are borne out of these kinds of self-deception processes (Norem, 2002), people who engage in optimistic self-regulatory strategies (e.g., strategic positivity) may fail to acknowledge both their own limitations and situationally-imposed constraints on success.

It is also worth noting that focusing on positive outcomes can be hostile to long-term goal attainment, particularly to goals that require substantial planning and adherence to a regimen. For example, Fishbach and Dhar (2005) found that people who believed that they were making positive progress toward a weight-loss goal were more likely to choose a chocolate bar snack than were people who felt that they were not making as much progress. Additionally, in a number of studies (e.g., Zhang, Fishbach, & Dhar, 2007), Fishbach and her colleagues have demonstrated that to the extent that people focus on the progress they expect to achieve, they are more likely to engage in goal-incongruent behavior (e.g., choosing a chocolate bar snack when one is dieting).

Planning for long-term goals can be stymied by focusing on future progress. According to Oettingen (1996; Oettingen & Wadden, 1991), focusing on positive outcomes and achievement may hamper effective planning and action because it allows people to enjoy immediate feelings of success at the expense of careful deliberation about the means to actual achievement (see also Gonzales, Burgess, & Mobilio, 2001; Pham & Taylor, 1999). Indeed, poor planning may serve affect regulation and motivational functions for people who are strategically positive. Gonzales, Burgess, and Mobilio (2001) found that affect was more positive among participants who had generated vague and unstructured plans for self-improvement and that poor planning led to feelings of energization. Given the hypothesis of the current work that people who are strategically positive are motivated by feelings of energization and eagerness, strategic positivists may be more likely than strategic negativists to generate poor plans for achieving long-term goals. Although initially motivating, such poor plans could have detrimental effects on the long-term success of people who are strategically positive. Future research should address the potential long-term perils of engaging in strategic self-regulation that is centered around unrealistic positivity, and compare these perils to those of engaging in strategic self-regulation that is centered around unrealistic negativity.

Conclusion

The introduction of this dissertation began with questions about the most profitable ways by which one could strategically evaluate goal progress in order to maximize motivation, improve performance, and ultimately, obtain greater success in achieving goals. However, answering such questions is not possible

until the diversity of ways in which people can be strategically positive and strategically negative is clearly delineated. To date, research has focused on *expectations* of how one will perform, but expectations about performance are only one way in which strategic self-regulation affects performance. Variations in expectations, confidence, ongoing thoughts and feelings, evaluations of goal-relevant elements collateral to the self (e.g., goal difficulty, working environment), individual dispositions, and situational pressures all may contribute not only to whether positivity or negativity are used strategically, but also to whether they are used effectively. The current work demonstrates that the operation of strategic positivity and negativity in effective goal pursuit entails more than simple expectations about performance. Successful goal pursuit is a function of processes that include individual differences, situational pressures, and dynamic self-evaluations of performance.

In the research and practice of goal pursuit, it is important to move beyond the distinction between those perceptions that are positive and negative. Increased focus is needed on both perceptions and evaluations, as well as how these perceptions and evaluations are employed in a strategic sense. First, to the extent that we can be made cognizant of the impact of our own strategically positive or negative proclivities on goal pursuit, we will be in prime position to capitalize on our innate behavioral talents. Second, strategic positivity and strategic negativity that arise as a function of the situation are, by definition, learned. Interventions designed to train people to recognize situations in which either strategic positivity or strategic negativity is more beneficial would help people pursue goals more successfully. In addition, knowledge of how, when, and why people's perceptions of goal-related progress deviate from reality in a strategic sense can help practitioners and interventionists anticipate discrepancies in reported satisfaction with programs, in prime position to harvest the strengths of different types of strategic self-regulation. Because we incessantly pursue goals to improve our well-being, life satisfaction, and emotional and physical health, insight bearing directly on how to increase success is indispensable.

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