

Promotion and Prevention:
Regulatory Focus as a Motivational Principle

E. Tory Higgins
Columbia University

Running Head: Promotion and Prevention

Mailing Address:

Department of Psychology
Schermerhorn Hall
Columbia University
New York, NY10027

Chapter in:

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), Advances in experimental social psychology (Vol. 30, pp. 1-46). New York: Academic Press.

Promotion and Prevention:

Regulatory Focus as a Motivational Principle

The hedonic principle that people approach pleasure and avoid pain has been the basic motivational principle throughout the history of psychology, with ancient roots that can be traced at least to Plato's "Protagoras." This principle underlies motivational models across all levels of analysis in psychology, from the biological to the social. Biological models have distinguished between the appetitive system involving approach and the defensive or aversive system involving avoidance (e.g., Gray, 1982; Konorski, 1967; Lang, 1995). Models in personality and social psychology have distinguished between the motive to move toward desired end-states and the motive to move away from undesired end-states (e.g., Atkinson, 1964; Bandura, 1986; Carver & Scheier, 1981, 1990; Lewin, 1935, 1951; McClelland, Atkinson, Clark, & Lowell, 1953; Roseman, 1984; Roseman, Spindel, & Jose, 1990). It is clear from all these models and the empirical support for them that people are motivated to approach pleasure and avoid pain. But is the hedonic principle sufficient to understand human strategic behavior? Indeed, is the hedonic principle sufficient to understand approach and avoidance?

It is my belief that it is precisely because the hedonic principle is so basic that it is limited as an explanatory variable. Almost any area of motivation can be discussed in terms of the hedonic principle. People avoid the pain of hunger and avoid the pain of thirst, but this does not tell us much about how hunger and thirst differ from one another. More germane to the present paper, people can approach the pleasure of serenity or approach the pleasure of accomplishment. Does this mean that these two motivations are the same?

I am not suggesting that the hedonic principle is not important. In fact, I am suggesting precisely the opposite. It is so important that there must be alternative ways in which it operates. Indeed, I propose that how the hedonic principle operates might be as important in motivation as the fact that it does operate. Specifically, I describe in this paper two different ways in which the hedonic principle operates-- with a promotion focus versus a prevention focus. Evidence is presented that these different ways of regulating pleasure and pain, called regulatory focus, have a major impact on people's feelings, thoughts, and actions that is independent of the hedonic principle per se. Before describing regulatory focus as a motivational principle, however, some background information about another regulatory variable, regulatory reference, must first be considered.

Regulatory Reference and Approaching Desired End-States

Inspired by earlier work on cybernetics and control processes (e.g., Miller, Galanter, & Pribram, 1960; Powers, 1973; Wiener, 1948), Carver and Scheier (1981; 1990) distinguish between self-regulatory systems that have positive versus negative reference values. A self-regulatory system with a positive reference value has a desired end-state as the reference point. The system is discrepancy-reducing and involves attempts to move the currently perceived actual-self state as close as possible to the desired reference point. In contrast, a self-regulatory system with a negative reference value has an undesired end-state as the reference point. This system is discrepancy-amplifying and involves attempts to move the currently perceived actual-self state as far away as possible from the undesired reference point.

Carver and Scheier (1981; 1990) suggest that self-regulation with a negative reference value is inherently unstable and relatively rare. Their research, therefore, emphasized self-regulation with a positive reference value. Miller et al.'s (1960) famous TOTE model also emphasized positive reference values involving the execution of operations to reduce existing incongruities or discrepancies. This emphasis is evident throughout the self-regulatory literature because most theories and research concern movement toward goals, which are positive reference values (see, for example, Gollwitzer & Bargh, 1996; Pervin, 1989). Another reason that self-regulation with a negative reference value has received less attention is that several models describe it in terms of behavioral inhibition rather than behavioral production (e.g., Atkinson, 1964; Gray, 1982). In the classic learning literature as well, behavioral production associated with positive end-states received greater emphasis than behavioral suppression associated with negative end-states (e.g., Estes, 1944; Skinner, 1953; Thorndike, 1935).

Consistent with this emphasis in the previous literature, this paper begins by considering self-regulation with positive reference values; i.e., motivated movement in reference to desired end-states. The critical characteristic of such motivation according to the literature is the direction of its movement-- approach. Consistent with the basic hedonic principle, animal learning/biological models (e.g., Gray, 1982; Hull, 1952; Konorski, 1967; Lang, 1995; Miller, 1944; Mowrer, 1960), cybernetic-control models (e.g., Carver & Scheier, 1990; Powers, 1973), and dynamic models (e.g., Atkinson, 1964; Lewin, 1935; McClelland, Atkinson, Clark, & Lowell, 1953) all highlight the distinction between approaching desired end-states versus avoiding undesired end-states. In contrast to these models, self-discrepancy theory (Higgins, 1987; 1989a) also distinguishes between different types of approaching desired end-states. This distinction is considered next.

Self-Regulation in Relation to Ideal and Ought Desired End-States

It is the common property of desired end-states to motivate general approach processes that has been stressed in the psychological literature. Little attention, however, has been paid to identifying basic types of desired end-states that might

themselves be motivationally distinct and influence how approach occurs. Indeed, the same behavioral prediction has been made for desired end-states even when different types of desired end-states have been considered, such as Gray's (1982) approach system for both "reward" and "non-punishment." In contrast, self-discrepancy theory (Higgins, 1987, 1989a) distinguishes between two types of desired end-states and describes two distinct ways to regulate pleasure and pain.

The desired end-states in self-discrepancy theory are referred to as "self-guides." Two types of self-guides are distinguished: (a) ideal self-guides, which are individuals' representations of the attributes that someone (themselves or another person) would like them ideally to possess, someone's hopes, wishes, or aspirations for them; and (b) ought self-guides, which are individuals' representations of the attributes that someone believes they should or ought to possess, someone's beliefs about their duties, obligations, or responsibilities.

Like control theories, self-discrepancy theory conceptualizes people's motivation to approach ideal and ought self-guides in terms of reducing discrepancies between their current state, i.e., their represented actual self or self-concept, and these desired end-states (see Higgins, 1987, 1989a). Self-discrepancy theory shares the common assumption that people are motivated to attain both ideal and ought self-guides as desired end-states. But beyond this commonality, self-discrepancy theory proposes that self-regulation in relation to ideals as one type of desired end-state is motivationally distinct from self-regulation in relation to oughts as another type of desired end-state. Indeed, the theory predicts that self-regulation in relation to ideal and ought self-guides, despite both involving attempts to attain desired end-states, involves different predilections for approach and avoidance strategies of discrepancy reduction.

The next section of the paper presents evidence to support the proposal that regulation in relation to ideals versus oughts as desired end-states is motivationally distinct. Then, the principle of regulatory focus is introduced more fully and ideal versus ought self-regulation is related to promotion focus versus prevention focus, respectively. The subsequent section reviews how situational variability in regulatory focus can also influence people's thoughts, feelings, and actions independent of self-guide discrepancies or congruencies per se. The final section considers more fully the strategic differences between a prevention focus and a promotion focus and the implications of these differences for decision-making and problem-solving.

Ideals and Oughts as Motivationally Distinct Desired End-States

This section reviews evidence that regulation in relation to ideals versus oughts as desired end-states is motivationally distinct. The distinct motivational nature of ideal self-regulation and ought self-regulation will be described for: (a) sensitivity for events reflecting different psychological situations; (b) strategic inclinations and tactical preferences; and (c) emotional vulnerabilities and emotional memories.

Sensitivity For Events Reflecting Different Psychological Situations

The distinction between ideal and ought self-regulation in self-discrepancy theory was initially described in terms of differences in the psychological situations represented by discrepancies and congruencies involving ideal versus ought self-guides (see Higgins, 1989a, 1989b). Actual self congruencies to hopes, wishes, or aspirations represent the presence of positive outcomes whereas discrepancies represent the absence of positive outcomes. Thus, the psychological situations involved in ideal self-regulation are the presence and absence of positive outcomes.

The hopes, wishes, and aspirations represented in ideal self-guides function like maximal goals. In contrast, the duties, obligations, and responsibilities represented in ought self-guides function more like minimal goals (see Brendl & Higgins, 1996). These are goals that a person must attain or standards that must be met. When strong enough, such as biblical commandments, oughts can even function like necessities. Discrepancies to such minimal goals represent the presence of negative outcomes whereas congruencies represent the absence of negative outcomes (see Gould, 1939; Rotter, 1982). Thus, the psychological situations involved in ought self-regulation are the absence and presence of negative outcomes.

This distinction between ideal and ought self-regulation suggests that sensitivity to events involving the presence and absence of positive outcomes should be greater when ideal concerns predominate, whereas sensitivity to events involving the absence and presence of negative outcomes should be greater when ought concerns predominate. Like Kelly's (1955) personal construct systems that individuals use as a scanning pattern that sweeps back and forth across the perceptual field and "picks up blips of meaning" (p.145), such chronic sensitivities should influence how stimulus information is processed and remembered. Higgins and Tykocinski (1992) tested this prediction at the chronic level of ideal versus ought concerns.

Undergraduate participants were selected on the basis of their self-discrepancy scores. Self-discrepancies are measured using the Selves Questionnaire (see Higgins, Bond, Klein, & Strauman, 1986). The Selves Questionnaire asks respondents to list up to 8 or 10 attributes for each of a number of different self-states, including their actual self and their self-guides. It is a spontaneous, idiographic measure (see Moretti & Higgins, 1990). On the first page of the questionnaire the actual, ideal, and ought self-states are defined (as described earlier). On each subsequent page there is a question about a

different self-state, such as "Please list the attributes of the type of person you think you actually are" or "Please list the attributes of the type of person you would ideally like to be, i.e., your hopes, wishes, and aspirations for yourself." The respondents are also asked to rate for each listed attribute the extent to which they actually possessed that attribute, ought to possess that attribute, or ideally wanted to possess that attribute. The procedure for calculating the magnitude of an actual/ideal or actual/ought self-discrepancy involves comparing the actual self attributes to the attributes listed in either an ideal self-guide or an ought self-guide to determine which attributes in the actual self match or mismatch the attributes that particular self-guide. The self-discrepancy score is basically the number of mismatches minus the number of matches (see Higgins et al., 1986).

Using participants' responses to the Selves Questionnaire, median splits were performed on the actual/ideal discrepancy scores and on the actual/ought discrepancy scores. Participants were then selected who either were predominant actual/ideal discrepancy persons (i.e., possessed high actual/ideal discrepancies and low actual/ought discrepancies) or were predominant actual/ought discrepancy persons (i.e., possessed high actual/ought discrepancies and low actual/ideal discrepancies).

A few weeks after the selection procedure, all participants read the same essay about the life of a target person in which events reflecting the four different types of psychological situations occurred, such as: (a) "I found a 20 dollar bill on the pavement of Canal street near the paint store." (the presence of positive outcomes); (b) "I've been wanting to see this movie at the 8th street theatre for some time, so this evening I went there straight after school to find out that it's not showing anymore." (the absence of positive outcomes); (c) "I was stuck in the subway for 35 minutes with at least 15 sweating passengers breathing down my neck." (the presence of negative outcomes); and (d) "This is usually my worst school day. Awful schedule, class after class with no break. But today is election day-- no school!" (the absence of negative outcomes).

Ten minutes after reading the essay the participants were asked to reproduce the essay word-for-word. The study found, as predicted, that predominant actual/ideal discrepancy subjects tended to remember target events representing the presence and absence of positive outcomes better than did predominant actual/ought discrepancy subjects, whereas predominant actual/ought discrepancy subjects tended to remember target events representing the absence and presence of negative outcomes better than did predominant actual/ideal discrepancy subjects. No other interactions were significant and the obtained interaction was independent of participants' pre-mood, post-mood, or change in mood.

The results of the Higgins and Tykocinski (1992) study support the proposal that self-regulation in relation to an ideal as a desired end-state is motivationally distinct from self-regulation to an ought as a desired end-state. The results of

studies by Higgins, Roney, Crowe, and Hymes (1994) also support this general proposal, and, in addition, indicate that ideal and ought self-regulation differ in their predilection for approach versus avoidance strategies and tactics. This evidence is considered next.

Strategic Inclinations and Tactical Preferences

From a control theory viewpoint, as mentioned earlier, self-regulation in relation to ideals and oughts involves approaching desired end-states at the system level by reducing discrepancies between current states and desired end-states. But within such approach at the system level, there can still be either approach or avoidance inclinations at the strategic level. Specifically, individuals can increase the likelihood that they will attain (or maintain) a desired end-state, i.e., reduce discrepancies, by either approaching matches to that end-state or by avoiding mismatches to that end-state (see Higgins et al., 1994). For example, a person who wants to get a good grade on a quiz (a desired end-state) could either study hard at the library the day before the quiz (approaching a match to the desired end-state) or turn down an invitation to go out drinking with friends the night before the quiz (avoiding a mismatch to the desired end-state).

As discussed earlier, self-regulation in relation to ideal self-guides is concerned with positive outcomes (their presence and absence). This would naturally engender an inclination to approach matches to hopes and aspirations as a strategy for ideal self-regulation. In contrast, self-regulation in relation to ought self-guides is concerned with negative outcomes (their absence and presence), and this would naturally engender an inclination to avoid mismatches to duties and obligations as a strategy for ought self-regulation. These predictions were tested in a series of studies by Higgins et al. (1994).

One study asked undergraduate participants to report either on how their hopes and goals have changed over time (activating ideal self-guides) or on how their sense of duty and obligation has changed over time (activating ought self-guides). To reveal strategic predilections, this study used a free recall technique similar to that used in the Higgins and Tykocinski (1992) study. The participants read about several episodes that occurred over a few days in the life of another student. In each of the episodes where the target was trying to experience a desired end-state, the target used either the strategy of approaching a match to the desired end-state or the strategy of avoiding a mismatch to the desired end-state, as in the following examples: (a) "Because I wanted to be at school for the beginning of my 8:30 psychology class which is usually excellent, I woke up early this morning." [approaching a match to a desired end-state]; and (b) "I wanted to take a class in photography at the community center, so I didn't register for a class in Spanish that was scheduled at the same time." [avoiding a mismatch to a desired end-state]

It was predicted that activating ideal or ought self-regulation by priming ideal or ought self-guides, respectively, would increase participants' predilection for particular regulatory strategies, and this in turn would increase recall for those episodes that exemplified those particular strategies. The results were consistent with this prediction. As shown in Table 1, the participants remembered episodes that exemplified approaching a match to a desired end-state significantly better when ideal self-regulation was activated than when ought self-regulation was activated, whereas they remembered episodes that exemplified avoiding a mismatch to a desired end-state significantly better when ought self-regulation was activated than when ideal self-regulation was activated.

Insert Table 1 about here

Another study by Higgins et al. (1994) examined the possibility that individuals varying chronically in their predominant self-regulatory concerns would prefer different tactics reflecting strategies of either approaching matches to desired end-states or avoiding mismatches to desired end-states. As in the Higgins and Tykocinski (1992) study, predominant ideal concerns was operationalized by predominant actual/ideal discrepancies, and predominant ought concerns was operationalized by predominant actual/ought discrepancies. An initial phase of the study elicited undergraduates' spontaneous strategies for friendship by either asking them what their strategy would be if they wanted to be a good friend in their close relationships, which was intended to elicit tactics reflecting a strategy of approaching matches, or asking them what their strategy would be if they believed they should try not to be a poor friend in their close relationships, which was intended to elicit tactics reflecting a strategy of avoiding mismatches.

The initial phase of the study was successful at identifying three tactics that reflected a strategy of approaching matches and were uniquely and commonly given in response to the first question, as follows: (a) "Be generous and willing to give of yourself"; (b) "Be supportive to your friends. Be emotionally supportive"; and (c) "Be loving and attentive." Three tactics that reflected a strategy of avoiding mismatches and were uniquely and commonly given in response to the second question were also identified, as follows: (a) "Stay in touch. Don't lose contact with friends"; (b) "Try to make time for your friends and not neglect them"; and (c) "Keep the secrets friends have told you and don't gossip about friends." A second phase of the study confirmed that undergraduates were more likely to select the former set of tactics than the latter (and vice-versa)

when the strategic goal of friendship was experimentally framed in terms of approaching matches ("When you think about strategies for being a good friend in your close relationships, which THREE of the following would you choose?") versus avoiding mismatches ("When you think about strategies for not being a poor friend in your close relationship, which THREE of the following would you choose?"). Thus, the former set of tactics clearly reflected a strategy of approaching matches whereas the latter reflected a strategy of avoiding mismatches.

The main phase of the study used responses to the Selves Questionnaire to select participants who were either predominant actual/ideal discrepancy persons or predominant actual/ought discrepancy persons. The study took place weeks later. During the study, each participant was asked the same general question about friendship, as follows: "When you think about strategies for friendship, which THREE of the following strategies would you choose?" This question was followed by the same 6 choices of strategies used in the experimental framing study. It was predicted that friendship tactics reflecting a strategy of approaching matches would be spontaneously selected more by individuals with chronic ideal self-regulatory concerns than individuals with chronic ought self-regulatory concerns, whereas friendship tactics reflecting a strategy of avoiding mismatches would be selected more by individuals with chronic ought self-regulatory concerns than individuals with chronic ideal self-regulatory concerns. This prediction was confirmed.

The results of the Higgins and Tykocinski (1992) study indicate that ideal and ought self-regulation are associated with differential sensitivity to events reflecting the presence and absence of positive outcomes versus the absence and presence of negative outcomes, respectively. In addition, the results of the studies by Higgins et al. (1994) indicate that ideal self-regulation is associated with a predilection for strategies involving approaching matches to desired end-states whereas ought self-regulation is associated with a predilection for strategies involving avoiding mismatches to desired end-states.

Together, these studies clearly support the proposal that ideal and ought self-regulation are motivationally distinct even though they both involve attempts to attain desired end-states. Indeed, although both of these types of self-regulation involve hedonic approach at the system level they differ in their inclination for approach or avoidance at the strategic level. This highlights a limitation of the hedonic principle in predicting whether people will have an approach or an avoidance inclination.

The studies reviewed here and elsewhere (see Higgins, 1987, 1989a) provide substantial evidence that ideal and ought self-regulation are motivationally distinct. Given this, one would expect that the emotional consequences of self-regulatory failures, i.e., actual self discrepancies to ideal versus ought self-guides, would also be distinct. Evidence supporting this prediction is considered next.

Emotional Vulnerabilities and Emotional Memories

Historically, the literature on self-regulation has generally not considered whether different emotions are produced by discrepancies to different types of desired end-states. Different specific emotions have typically been explained in terms of attributional processes that occur after feedback that there is a discrepancy or failure (e.g., Carver & Scheier, 1981; Hoffman, 1986; Srull & Wyer, 1986; Weiner, 1982, 1986). When the emotional consequences of just the discrepancy per se are described, usually only general terms have been used, such as negative affect or negative self-evaluation (e.g., Bandura, 1986; Duval & Wicklund, 1972; Carver & Scheier, 1981; Mandler, 1975). The literature has been mostly silent on whether different specific emotions are produced by discrepancies to different types of desired end-states. Despite this, a review of the literature reveals that discrepancies to different types of desired end-states have been described by various observers and the discrepancies to these different types of desired end-states appear to be associated with different kinds of emotional distress.

Two basic types of desired selves have been mentioned in the literature. The literature describes an ideal self representing one's own or a significant other's hopes, wishes, and aspirations for oneself (e.g., Colby, 1968; Cooley, 1902/1964; Festinger, 1942; Lewin, Dembo, Festinger, & Sears, 1944; Rogers, 1961; Rotter, 1942; Schafer, 1967; Piers & Singer, 1971). The literature also describes an ought self representing one's own or a significant other's beliefs about one's moral responsibilities and who one should or ought to be (Colby, 1968; James, 1890/1948; Freud, 1923/1961; Rogers, 1961; Schafer, 1967; Piers & Singer, 1971).

Observations have also been made that individuals possessing a discrepancy from their hopes or ideals, or the absence of positive outcomes, tend to experience dejection-related emotions, such as disappointment, dissatisfaction, or sadness (e.g., Durkheim, 1951; Duval & Wicklund, 1972; Horney, 1950; James, 1890/1948; Kemper, 1978; Lazarus, 1968; Rogers, 1961; Roseman, 1984; Roseman et al., 1990; Stein & Jewett, 1982; Wierzbicka, 1972). Other observations have been made that individuals possessing a discrepancy from their moral standards, norms, or oughts tend to experience agitation-related emotions, such as feeling uneasy, threatened, or afraid (e.g., Ausubel, 1955; Erikson, 1950/1963; Freud, 1923/1961; Horney, 1939; James, 1890/1948; Kemper, 1978; Lewis, 1979; Piers & Singer, 1971; Sullivan, 1953).

These general observations in the literature, then, suggest that the emotional consequences of self-regulatory failures to ideals versus oughts are distinct. If so, this would support the proposal that self-regulation in relation to ideals as one type of desired end-state is motivationally distinct from self-regulation in relation to oughts as another type of desired end-state. But these observations are not sufficient because the relations among individuals' actual/ideal and actual/ought discrepancies

and their dejection-related and agitation-related emotions were not examined in the same study, nor were any experimental tests of the proposed distinct relations performed. To fill this void, my colleagues and I have conducted a series of studies to test whether self-regulation in relation to ideals versus oughts as desired end-states produces distinct emotions. Some illustrative studies will be reviewed here.

If self-regulation in relation to ideal selves is motivationally distinct from self-regulation in relation to ought selves as desired end-states, then it should be possible to activate one or the other of these types of desired end-states and produce the distinct emotions associated with actual self discrepancies from them. Moreover, this should be possible even for individuals who possess both actual/ideal discrepancies and actual/ought discrepancies. This hypothesis was first tested in a study by Higgins, Bond, Klein, and Strauman (1986, Study 2). Undergraduate participants completed the Selves Questionnaire weeks before the experiment. Individuals who had both actual/ideal and actual/ought discrepancies were recruited for the study, as well as individuals who had neither type of self-discrepancy.

The supposed purpose of the study was to obtain the self-reflections of a youth sample for a life-span developmental study. Half of the participants were randomly assigned to an Ideal priming condition in which they were asked to describe the kind of person that they and their parents would ideally like them to be and to discuss whether there had been any change over the years in these hopes and aspirations for them. The other half of the participants were assigned to an Ought priming condition in which they were asked to describe the kind of person that they and their parents believed they ought to be and whether there had been any change over the years in these beliefs about their duties and obligations.

Before and after the priming manipulation, the participants filled out a mood questionnaire that included both dejection-related and agitation-related emotions. As predicted, individuals with both actual/ideal and actual/ought discrepancies, but not individuals with neither discrepancy, experienced distinct kinds of discomfort depending on which type of self-discrepancy had been primed--an increase in dejection-related emotions with Ideal priming and an increase in agitation-related emotions with Ought priming.

A study by Strauman and Higgins (1987) replicated and extended this study by testing whether priming just a single desirable attribute contained in either an ideal or ought self-guide would activate these distinct desired end-states and produce the specific emotions associated with discrepancies to them. This study also measured other characteristics of the distinct emotional syndromes associated with actual/ideal versus actual/ought discrepancies.

As in the Higgins and Tykocinski (1992) study, two groups of undergraduate participants were selected on the basis of their responses to the Selves questionnaire obtained weeks earlier-- individuals with predominant actual/ideal discrepancies and individuals with predominant actual/ought discrepancies. A covert, idiographic priming technique was used to activate self-attributes in a task supposedly investigating the "physiological effects of thinking about other people." The participants were given phrases of the form, "An X person _____" (where X was a trait adjective such as "friendly" or "intelligent"), and were asked to complete each sentence as quickly as possible. For each sentence, each subject's total verbalization time and skin conductance amplitude were recorded. The participants also reported their dejection-related and agitation-related emotions at the beginning and at the end of the session.

There were three priming conditions: (a) "nonmatching" priming, where the trait adjectives were attributes that appeared in an individual's self-guide but not in his or her actual self; (b) "mismatching" priming, where the trait adjectives were attributes that appeared in an individual's self-guide and his or her actual self was discrepant from them; and (c) "yoked (mismatching)" priming, where the trait adjectives were attributes that did not appear in either an individual's self-guide or actual self but were the same attributes that were used for some other participant in the "mismatching" priming condition.

As predicted, the study found that in the "mismatching" priming condition only, individuals with predominant actual/ideal discrepancies experienced a dejection-related syndrome (i.e., increased dejected mood, lowered standardized skin conductance amplitude, decreased total verbalization time) whereas individuals with predominant actual/ought discrepancies experienced an agitation-related syndrome (i.e., increased agitated mood, raised standardized skin conductance amplitude, increased total verbalization time).

Strauman (1990) extended this research by investigating whether presenting self-guide attributes as retrieval cues would elicit autobiographical memories that varied in their emotional content when the self-guide was an ideal versus an ought. As in Strauman and Higgins (1987), both "mismatching" priming and "yoked (mismatching)" priming were used. Thus, the attribute cues were always desired end-states but varied in whether they were actual self-discrepant or "mismatching" attributes contained in the participants' own self-guides or were actual self-discrepant attributes contained in the self-guides of other persons. The self-guide cues also varied in whether they were contained in ideal or ought self-guides as desired end-states.

As shown in Table 2, Strauman (1990) found that childhood memories with dejection-related content were more likely to be retrieved spontaneously when the "mismatching" attributes were taken from participants' own ideal self-guides than when they were taken from their ought self-guides. Similarly, childhood memories with agitation-related content were more

likely to be retrieved when the "mismatching" cues were taken from participants' own ought self-guides than when they were taken from their ideal self-guides. The "yoked" ideal and ought attribute cues generally yielded memories with little dejection-related or agitation-related content (less than 5% overall).

Insert Table 2 about here

In sum, there is substantial evidence that regulation in relation to ideals versus oughts as desired end-states is motivationally distinct. The distinct motivational nature of ideal self-regulation and ought self-regulation has been found regarding: (a) differential sensitivity for events reflecting different psychological situations; (b) different strategic inclinations and tactical preferences; and (c) different emotional vulnerabilities and emotional memories. The next section introduces the principle of regulatory focus and ideal versus ought self-regulation is related to strength of promotion focus versus prevention focus, respectively.

Regulatory Focus and its Relation to Ideal and Ought Self-Regulation

It was stated earlier that the hedonic principle of approaching pleasure and avoiding pain is basic to motivation. But for this very reason one might expect that there would be more than one way in which this principle operates. One might expect that the principle would operate differently when it serves fundamentally different needs. Two such different fundamental needs are the survival needs of nurturance and security.

Human survival requires adaptation to the surrounding environment, especially the surrounding social environment (see Buss, 1996). Caretakers provide children with the nurturance and security they need by supporting and encouraging them and by protecting and defending them. To obtain the nurturance and security they need to survive, children must establish and maintain relationships with caretakers who fulfill these needs (see Bowlby, 1969, 1973). And in order to establish and maintain relationships with their caretakers, children must learn how their appearance and behaviors influence caretakers' responses to them as an object in the world (see Bowlby, 1969; Cooley, 1902; Mead, 1934; Sullivan, 1953).

Sometimes caretakers respond to children in ways that are pleasurable to the child and other times they respond in

ways that are painful to the child. As the hedonic principle suggests, children must learn how to behave in order to approach pleasure and avoid pain. But what is learned about regulating pleasure and pain can be different for nurturance and security needs. I propose that nurturance-related regulation and security-related regulation differ in regulatory focus. Nurturance-related regulation involves a promotion focus whereas security-related regulation involves a prevention focus. To convey the difference between these two types of regulatory focus, let us consider how children's experiences of pleasure and pain and what they learn about self-regulation varies when their interactions with caretakers involve a promotion versus a prevention focus.

Promotion and Prevention Focus in Caretaker-Child Interactions

Let us consider first caretaker-child interactions about a desired state of the child in which the child experiences pleasure. The pleasure a child experiences in these interactions can be either the presence of positive outcomes or the absence of negative outcomes. The child experiences the presence of positive outcomes when caretakers, for example, hug and kiss the child for behaving in a desired manner, encourage the child to overcome difficulties, or set up opportunities for the child to engage in rewarding activities. This is the "bolstering" mode of child-caretaker interaction (see Higgins, 1989b). The caretaker's message to the child in the bolstering mode is that what matters is attaining accomplishments or fulfilling hopes and aspirations-- "This is what I would ideally like you to do." The regulatory focus of caretaker-child interactions in the bolstering mode is one of promotion, i.e., a concern with advancement, growth, accomplishment.

The child experiences the absence of negative outcomes when caretakers, for example, "child-proof" the house, train the child to be alert to potential dangers, or teach the child to "mind your manners." This is the "prudent" mode of child-caretaker interaction. The caretaker's message to the child in the prudent mode is that what matters is insuring safety, being responsible, and meeting obligations-- "This is what I believe you ought to do." The regulatory focus of caretaker-child interactions in the prudent mode is one of prevention, i.e., a concern with protection, safety, responsibility.

Let us now consider caretaker-child interactions about an undesired state of the child in which the child experiences pain. The pain a child experiences in these interactions can be either the absence of positive outcomes or the presence of negative outcomes. A child experiences the absence of positive outcomes when caretakers, for example, end a meal when the child throws some food, take away a toy when the child refuses to share it, or stop a story when the child is not paying attention. Children also experience the absence of positive outcomes when caretakers act disappointed in them for failing to fulfill their hopes for them. This is the "love withdrawal" mode of child-caretaker interaction (Higgins, 1989b). This mode is

well illustrated in the following message Thomas Jefferson wrote to his 11 year-old daughter Martha: "I have placed my happiness on seeing you good and accomplished, and no distress which this world can now bring on me could equal that of your disappointing my hopes. If you love me, then strive to be good under every situation."

Like the bolstering mode, the caretaker's message to the child in the love withdrawal mode is that what matters is attaining accomplishments or fulfilling hopes and aspirations, but it is communicated in reference to an undesired state of the child-- "This is not what I would ideally like you to do." Thus, the regulatory focus of the love withdrawal mode is also promotion, i.e., a concern that advancement, growth, accomplishment is not happening.

The child experiences the presence of negative outcomes when caretakers, for example, behave roughly with the child to get his or her attention, yell at the child when he or she doesn't listen, or criticize the child when he or she makes a mistake. Children also experience the presence of negative outcomes when caretakers punish them for being irresponsible. This is the "critical/punitive" mode of caretaker-child interaction (see Higgins, 1989b). This mode is well illustrated in the following message Abigail Adams wrote to her son, John Quincy Adams, when he was an 11- year-old: "I would rather see you find a grave in the ocean you have crossed than see you an immoral profligate or graceless child."

Like the prudent mode, the caretaker's message to the child in the critical/punitive mode is that what matters is insuring safety, being responsible, and meeting obligations, but it is communicated in reference to an undesired state of the child-- "This is not what I believe you ought to do." Thus, the regulatory focus of the critical/punitive mode is also prevention, i.e., a concern with protection, safety, responsibility that is not happening.

Modes of caretaker-child interactions, therefore, can involve either a promotion focus or a prevention focus. Each of these types of regulatory focus involves both pleasure and pain but each involves a different type of pleasure and pain. A combination of bolstering and love withdrawal modes of caretaker-child interaction involves a promotion focus in which the child learns that to obtain nurturance in the world one needs to attain accomplishments and to fulfill hopes and aspirations (i.e., ideals). The child learns to approach the pleasure of the presence of positive outcomes and avoid the pain of the absence of positive outcomes. In contrast, a combination of prudent and punitive/critical modes of caretaker-child interaction involves a prevention focus in which the child learns that to obtain security in the world one needs to insure safety, be responsible, and meet obligations (i.e., oughts). The child learns to approach the pleasure of the absence of negative outcomes and avoid the pain of the presence of negative outcomes.

It should be noted that a single individual can be socialized with both types of regulatory focus. Sometimes an individual's interactions with different significant others involve different types of regulatory focus. Sometimes the same significant other will use different types of regulatory focus at different times. For a single individual, therefore, either a strong promotion focus or a strong prevention focus or both can be acquired. But whether individuals have only one or both types of strong regulatory focus, the essential proposal here is that each regulatory focus concerns a distinct type of desired end-state and a distinct type of pleasure and pain. The promotion focus is concerned with accomplishments, hopes, and aspirations. It regulates the presence and absence of positive outcomes. Ideal self-guides, therefore, have a promotion focus. The prevention focus is concerned with safety, responsibilities, and obligations. It regulates the absence and presence of negative outcomes. Ought self-guides, therefore, have a prevention focus.

Figure 1 summarizes the different psychological variables discussed thus far that have distinct relations to promotion focus and prevention focus (as well as some variables to be discussed later). The next section considers the implications of people possessing a strong promotion focus or a strong prevention focus for their emotional experiences.

Insert Figure 1 about here

Strength of Regulatory Focus as Moderator of Emotional Effects of Ideal and Ought Self-Regulation

The psychological literature suggests that goal strength, especially when conceptualized as goal accessibility (e.g., Clore, 1994), might moderate the relation between goal attainment and emotional responses (see Clore, 1994; Frijda, 1996; Frijda, Ortony, Sonnemans, & Clore, 1992). Although there is little direct evidence for this, there is evidence that attitude strength conceptualized as attitude accessibility moderates the relation between attitudes and behavior (Fazio, 1986, 1995). Inspired by this earlier work, Higgins, Shah, and Friedman (in press) tested the possibility that strength of regulatory focus might moderate the relation between chronic goal attainment and emotional experiences.

Self-discrepancy theory has been concerned with self-guides as chronic goals and actual self matches and mismatches to self-guides as chronic goal attainments, i.e., chronic successes and failures, respectively. Given that a promotion focus is concerned with aspirations and the presence and absence of positive outcomes, ideal self-guides involve a promotion focus. And given that a prevention focus is concerned with responsibilities and the absence and presence of negative outcomes,

ought self-guides involve a prevention focus. Thus, strength of promotion focus increases as strength of ideal self-guides increases, and strength of prevention focus increases as strength of ought self-guides increases.

Consistent with previous work on attitude accessibility (see Bassili, 1996, in press; Fazio, 1986, 1995), self-guide strength was conceptualized and operationalized in terms of self-guide accessibility, and self-guide accessibility was measured via individuals' response times to inquiries about their self-guide attributes. Accessibility is activation potential and knowledge units with higher activation potentials should produce faster responses to knowledge-related inputs (see Higgins, 1996a). A computer measure of actual self and self-guide attributes was developed that was similar to the original Selves Questionnaire. Self-guide strength was measured by response latencies in listing attributes and giving extent ratings, with stronger self-guides being operationalized by shorter response latencies. Actual/ideal and actual/ought discrepancies were measured by comparing the extent rating of each self-guide attribute with the extent rating of the actual self for that attribute (see Higgins et al., in press).

Higgins et al. (in press) conducted three correlational studies. Two studies tested the relations among self-guide strength, self-discrepancies (or congruencies), and the frequency that the undergraduate participants experienced different kinds of emotions during the previous week. A third study tested the relations among self-guide strength, self-discrepancies (or congruencies) and the intensity of different kinds of emotions that undergraduate participants experienced before beginning a performance task. The emotion questionnaires included dejection/cheerfulness-related items, such as "disappointed", "discouraged", "low", "sad", "happy", and "satisfied", and agitation/quiescence-related items, such as "agitated", "on edge", "uneasy", "tense", "calm", and "relaxed."

All three studies found support for the following predicted interactions: (a) an interaction of ideal self-guide strength and actual/ideal discrepancy, such that the correlation between actual/ideal discrepancy and feeling dejected (or actual/ideal congruency and feeling cheerful) increased as ideal self-guide strength increased; and (b) an interaction of ought self-guide strength and actual/ought discrepancy, such that the correlation between actual/ought discrepancy and feeling agitated (or actual/ought congruency and feeling quiescent) increased as ought self-guide strength increased.

These results are novel because they provide evidence that self-guide strength, as measured by self-guide accessibility, is independent of magnitude of self-discrepancy as measured by actual self mismatches and matches to self-guides. It is this independence that underlies the interactions that were predicted and obtained. It should also be noted that, for

all three studies, each correlation between the strength of a self-guide and the magnitude of the actual self discrepancy to that self-guide was non-significant.

These studies support the proposal that strength of regulatory focus, as a motivational variable independent of magnitude of self-discrepancy, moderates the relation between chronic goal attainment and emotional experiences. But more generally, they also demonstrate how self-regulation in relation to ideal and ought self-guides as desired end-states is distinct. Ideal self-regulation involves a promotion focus, and the stronger this focus the stronger are the cheerfulness-related emotions experienced when promotion is working and the stronger are the dejection-related emotions experienced when promotion is not working. In contrast, ought self-regulation involves a prevention focus, and the stronger this focus the stronger are the quiescence-related emotions experienced when prevention is working and the stronger are the agitation-related emotions experienced when prevention is not working.

Thus far, regulatory focus has been considered only with respect to its role in individual differences in ideal and ought self-regulation. Evidence has been presented that ideal and ought self-regulation are distinct in a variety of ways and it has been proposed that the difference between promotion focus and prevention focus, respectively, underlies this difference. The next section extends our consideration of regulatory focus by examining how situational variability in regulatory focus can also influence people's thoughts, feelings, and actions independent of self-guide discrepancies or congruencies per se.

Situational Variability in Regulatory Focus

The difference between a promotion focus and a prevention focus is reflected in the difference between ideal and ought self-regulation, but it is not restricted to this difference. Indeed, regulatory focus is not an individual difference variable per se. Regulatory focus can vary across momentary situations as well as across individuals. The strength or accessibility of a regulatory focus, like any other kind of procedural knowledge, can vary chronically or momentarily (see Higgins, 1996a). In addition, regulatory focus is a motivational condition that is independent of individuals' self-guides per se. Thus, it should be possible to experimentally induce a promotion focus or a prevention focus by temporarily increasing their accessibility through situational activation. Let us now consider how such situational variability in regulatory focus influences event sensitivity, emotions, and strategic inclinations.

Event Sensitivity Effects of Situational Variability in Regulatory Focus

The results of the Higgins and Tykocinski (1992) study reviewed earlier indicated that ideal and ought self-regulation are associated with differential sensitivity to events reflecting the presence and absence of positive outcomes versus the absence and presence of negative outcomes, respectively. Given that ideal self-regulation involves a promotion focus whereas ought self-regulation involves a prevention focus, situational variability in regulatory focus should reveal comparable effects on event sensitivity. This hypothesis was tested in a study by Stepper, Strack, and Higgins (1996).

Undergraduate participants arrived for a study supposedly testing physiological responses to different kinds of exercise, "physical" and "mental." They were told their physiological responses to different kinds of exercise would be measured by analyzing the saliva they excreted on cotton balls kept in their mouth during each type of exercise. The first exercise task was riding a stationary bicycle at a relatively easy pace. During this exercise the participants had a cotton ball in their mouth that was either bitter from a pure tea solution or sweet from a sugar solution. After completing this exercise, the cotton ball was removed ostensibly to analyse the saliva.

The second "mental" exercise task was reading the same kind of story used by Higgins and Tykocinski (1992) that contained events reflecting the presence of positives, the absence of positives, the presence of negatives, or the absence of negatives. Half of the participants performed this task with a cotton ball in their mouth that had the same solution as the first task and the other half now had a cotton ball with a neutral water solution. Therefore, when the participants were reading the story events, they were in one of four experimental conditions that induced a specific state of regulatory focus for this second task: (a) $\text{sweet}_1, \text{sweet}_2$ [promotion working]; (b) $\text{sweet}_1, \text{neutral}_2$ [promotion not working]; (c) $\text{bitter}_1, \text{bitter}_2$ [prevention not working]; and (d) $\text{bitter}_1, \text{neutral}_2$ [prevention working].

The regulatory focus state that was situationally activated by the cotton balls in the second task was predicted to make the participants more sensitive to story events reflecting that regulatory state. The results of the study supported this prediction. Table 3 illustrates the findings controlling for the positivity or negativity of both participants' state of regulatory focus and the story events. The top half, with positive states and events, shows that the percentage of participants who remembered more "presence of positive" story events than "absence of negative" story events was greater for participants in the "promotion/working" state ($\text{sweet}_1, \text{sweet}_2$) than participants in the "prevention/working" state ($\text{bitter}_1, \text{neutral}_2$), whereas the reverse was true for those remembering better "absence of negative" story events than "presence of positive" story events. The bottom half, with negative states and events, shows that the percentage of participants who remembered more "absence of positive" story events than "presence of negative" story events was greater for participants in the "promotion/not working" state

(sweet₁, neutral₂) than participants in the "prevention/not working" state (bitter₁, bitter₂), whereas the reverse was true for those remembering better "presence of negative" story events than "absence of positive" story events. These results parallel and extend the Higgins and Tykocinski (1992) findings to regulatory focus states that have been situationally activated.

Insert Table 3 about here

Emotional Effects of Situational Variability in Regulatory Focus

The studies by Higgins, Shah, and Friedman (in press) reviewed earlier demonstrated that stronger chronic promotion or prevention focus influences the relation between chronic goal attainment and emotional experiences. Higgins et al. (in press) hypothesized that the effects of regulatory focus found in those studies should also be found for momentary goal attainments and situationally activated regulatory focus. In a fourth study they used a framing technique to manipulate regulatory focus experimentally. The framing kept constant the actual consequences of attaining or not attaining the goal, as well as the criterion of success and failure, but varied the focus of the instructions.

The task involved memorizing trigrams. For the promotion focus, the participants began with 5 dollars and the instructions were about gains and non-gains: "If you score above the 70th percentile, that is, if you remember a lot of letter strings, then you will gain a dollar. However, if you don't score above the the 70th percentile, that is, if you don't remember a lot of letter strings, then you will not gain a dollar." For the prevention focus, the participants began with six dollars and the instructions were about losses and non-losses: "If you score above the 70th percentile, that is, if you don't forget a lot of letter strings, then you won't lose a dollar. However, if you don't score above the the 70th percentile, that is, if you do forget a lot of letter strings, then you will lose a dollar." Following performance of the task, the participants were given false feedback that they had either succeeded or failed on the task.

It was predicted that feedback-consistent emotional change, i.e., increasing positive and decreasing negative emotions following success and decreasing positive and increasing negative emotions following failure, would be different in the promotion framing versus prevention framing conditions. Feedback-consistent change on the cheerfulness/dejection dimension should be greater for participants in the promotion than the prevention framing condition, whereas feedback-consistent change on the quiescence/agitation dimension should be greater for participants in the prevention than the promotion framing condition. This predicted two-way interaction was obtained, as shown in Table 4.

Insert Table 4 about here

Roney, Higgins, and Shah (1995) also found evidence that situational variability in regulatory focus can influence emotional experiences. Undergraduate participants in the first study were told that they would perform two tasks. For everyone the first task was an anagrams task that included both easy anagrams pretested to be solvable by everyone and unsolvable anagrams. The number of easy anagrams included in the task ensured that the participants would ultimately attain the assigned overall goal. All of the participants were told that the second task would be either a computer simulation of the popular "Wheel of Fortune" game or a task called "unvaried repetition" described so as to appear very boring.

Although the performance contingency for playing the fun game rather than the boring game as the second task was the same for everyone, the framing of the contingency was experimentally varied. Half of the participants were given a promotion focus in which they were told that if they solved 22 (or more) out of the 25 anagrams they would get to play the "Wheel of Fortune" game, otherwise they would do the "unvaried repetition" task. The other half of the participants were given a prevention focus in which they were told that if they got four (or more) out of the 25 anagrams wrong, they would do the "unvaried repetition" task, otherwise they would play the "Wheel of Fortune" game. As mentioned earlier, all participants succeeded on the task. The study found that participants with a promotion focus felt more cheerful after attaining the goal compared to participants with a prevention focus, whereas the latter felt more quiescent.

Undergraduate participants in the second study worked on a set of anagrams that included both solvable anagrams and unsolvable anagrams. Success or failure feedback was given on each trial. Half of the participants received promotion focus feedback, such as "Right, you got that one" when they solved an anagram or "You didn't get that one right" when they did not solve an anagram. The other half of the participants received prevention focus feedback, such as "You didn't miss that one" when they solved an anagram and "No, you missed that one" when they did not solve an anagram. The number of unsolvable anagrams included in the task ensured that all participants ultimately failed to attain the assigned overall goal. The study found that participants with a promotion focus felt more dejected after failing the goal compared to participants with a prevention focus, whereas the latter felt more agitated.

These studies demonstrate that regulatory focus can influence the types of emotions that people experience when they succeed or fail on a task. Brendl, Higgins, and Lemm (1995) hypothesized that regulatory focus might also influence

people's affective sensitivity to varying amounts of monetary gains and losses. The participants were trained to use sound intensity to indicate the intensity of their emotional response to these varying amounts, thereby obtaining a psychophysical measure of discrimination among different sizes of gains or losses. There were four experimental conditions varying regulatory focus and the pain versus pleasure of their ultimate experience. In one of the story conditions, the participants were asked to imagine buying a plane ticket to return home from school on the first day after finals. Their travel agent tells them that the cost of the airplane ticket varies depending on when they fly. They know that when they can fly depends on when their finals are over.

Participants in the promotion framing condition were asked to imagine that they felt hopeful they would be able to take the cheaper flight and receive a \$50 savings. Upon checking their finals schedule, they discover either that they will be able to take the cheaper flight and feel pleased that they will save \$50 (the Promotion/Pleasure condition) or that they will not be able to take that flight and feel disappointed that they will not save \$50 (the Promotion/Pain condition). In the prevention framing condition, participants were asked to imagine that they felt fearful that they would be forced to take the more expensive flight and be unable to avoid the additional \$50 expense. Upon checking their finals schedule, they discover either that they will not have to take the more expensive flight and feel relieved that they will not have to spend an extra \$50 (the Prevention/Pleasure condition) or that they will have to take the more expensive flight and feel annoyed that they will have to spend an extra \$50 (the Prevention/Pain condition).

Participants expressed their feelings for the \$50 they saved or had to spend extra by matching the tone intensity to the intensity of their feeling. They then imagined different monetary outcomes varying from \$17 to \$150 and matched the tone intensity to each feeling intensity. The relation between the different monetary outcomes and sound intensities produced a regression line and (positive) slope coefficient for each participant that reflected his or her affective discrimination for increasing gains or increasing losses. Brendl et al. (1995) found that, controlling for the pleasure or pain of the scenario outcome, affective discrimination was reduced (i.e., less positive slope) when there was a mismatch between individuals' chronic regulatory focus (ideal versus ought self-regulation) and the regulatory focus of their framing condition (promotion versus prevention). Brendl et al. (1995) explained this reduction in affective discrimination in terms of promotion focus and prevention focus inhibiting one another when they are simultaneously active. Such mutual inhibition is consistent with the proposal that promotion focus and prevention focus are distinct self-regulatory systems, with one or the other focus tending to dominate at any given time.

Motivational Effects of Situational Variability in Regulatory Focus

The two studies by Roney et al. (1995) described earlier also examined motivational effects of situationally induced regulatory focus. The first study, in which the contingency for playing the second task was varied, measured the time participants spent working on the unsolvable anagrams. Participants with a promotion focus persisted over one-third longer on the unsolvable anagrams than participants with a prevention focus. This result for persistence was replicated in the second study in which the regulatory focus of feedback was varied. In this study the participants were given 45 seconds to solve each anagram but they could quit before the time was up. Whereas participants with a prevention focus quit before the time was up on 19% of the unsolvables, participants with a promotion focus quit on only 4% of the unsolvables. The second study also examined performance on the solvable anagrams and found that participants' performance was better with a promotion focus than a prevention focus.

The results of these two studies should not be taken as evidence that a promotion focus generally yields higher motivation or better performance than a prevention focus. Unsolvable anagrams appeared among the first few problems in both of these studies and thus the participants in both studies experienced failure early on in the task. A recent study by Crowe and Higgins (1997) directly examined whether anagram performance was better only after participants had experienced a failure.

As part of a large survey held weeks before the experiment, undergraduate participants filled out a questionnaire where they expressed their liking for different kinds of activities. Using each participant's idiographic responses, one activity was selected for the experiment that a participant clearly liked (e.g., playing a computer version of the popular television game show, "Jeopardy") and another was selected that the participant clearly disliked (e.g., proofreading typing errors in a written text). When the participants arrived for the study, they were told that they would first perform a set of initial exercises, one of which was the anagram task, and they would then be assigned a final task. Each participant's liked and disliked activities were described as the two alternative final tasks that they would perform.

Four of the experimental framing conditions were contingency conditions in which participants were told that which of the alternative final tasks they would work on at the end of the session depended on their performance on the set of initial exercises. The relation between the initial set of exercises and the final task was described as contingent for everyone, but the framing varied in different conditions as a function of both regulatory focus and valence, as follows:

(a) Promotion Working-- "If you do well on the exercises I'm about to give you, you will get to do the [participant's liked task] instead of the other task."

(b) Promotion Not Working-- "If you don't do well on the exercises I'm about to give you, you won't get to do the [participant's liked task] but will do the other task instead."

(c) Prevention Working-- "As long as you don't do poorly on the exercises I'm about to give you, you won't have to do the [participant's disliked task] but will do the other task instead."

(d) Prevention Not Working-- "If you do poorly on the exercises I'm about to give you, you will have to do the [participant's disliked task] instead of the other task."

In addition to these four contingent framing conditions, there was also one experimental non-contingent framing condition. Here the relation between the initial set of exercises and the final task was described as non-contingent. The two alternative final tasks were described and the participants were told that one of these tasks would be randomly assigned to them. By including a non-contingent framing condition, it was possible to examine how the variable of contingency per se influenced strategic inclinations.

On the anagram task, the participants received two solvable anagrams followed by an unsolvable anagram and then another solvable anagram. There were no differences among the conditions on the initial two solvable anagrams. But following failure on the unsolvable anagram, participants given the promotion focus performed significantly better on the next anagram than participants given the prevention focus.

What might account for individuals with a promotion focus, compared to those with a prevention focus, generally persisting more on unsolvable anagrams (as in the Roney et al. studies) and performing better on solvable anagrams following a failure experience (as in the Crowe and Higgins study)? To answer this question and consider additional motivational issues, the final section of the paper considers more fully the strategic differences between a prevention focus and a promotion focus that influence problem-solving and decision-making.

Promotion and Prevention Strategic Differences

As discussed earlier, a promotion focus is concerned with advancement, growth, accomplishment. Goals are hopes and aspirations. The strategic inclination is to make progress by approaching matches to the desired end-state. In contrast, a prevention focus is concerned with security, safety, responsibility. Goals are duties and obligations or even necessities. The strategic inclination is to be prudent, precautionary, and avoid mismatches to the desired end-state. Given these differences, one

would expect that people's self-regulatory states would be different when their focus is promotion versus prevention. With a promotion focus, the state should be eagerness to attain advancement and gains. With a prevention focus, the state should be vigilance to assure safety and non-losses. How might a state of eagerness versus a state of vigilance impact strategic inclinations? This question is considered next in terms of basic strategic inclinations when making choices and decisions in task performance.

Regulatory Focus and Strategic Inclinations

In signal detection terms (e.g., Tanner & Swets, 1954; see also Trope & Liberman, 1996), individuals in a state of eagerness from a promotion focus should want, especially, to accomplish "hits" and to avoid errors of omission or "misses" (i.e., a loss of accomplishment). In contrast, individuals in a state of vigilance from a prevention focus should want, especially, to attain "correct rejections" and avoid errors of commission or "false alarms" (i.e., making a mistake). Bruner, Goodnow, and Austin (1956) described a strategy as a pattern of decisions in the acquisition, retention, and utilization of information that serves to insure certain forms of outcome and to insure against certain others. In their terms, then, promotion focus regulation involves a strategic inclination to insure hits and insure against errors of omission, whereas prevention focus regulation involves a strategic inclination to insure correct rejections and insure against errors of commission. This analysis is consistent with the evidence described earlier that promotion focus regulation (including self-regulation in relation to ideals) involves a strategic preference for approaching matches, i.e., insuring hits, whereas prevention focus regulation (including self-regulation in relation to oughts) involves a strategic preference for avoiding mismatches, i.e., insuring correct rejections.

Returning now to the earlier question, how should these different strategic inclinations influence performance on an anagram task? An anagram task requires participants to find one or more words hidden in a letter string. Success at finding a word would be a correct acceptance or "hit" whereas failure to find a word would be an error of omission. On this task, then, the promotion focus individuals should be eager to ensure finding words ("hits") and insure against omitting any possible words, which would yield high persistence and a strong desire to find words following a failure to find any. In contrast, the prevention focus individuals should be vigilant against non-words and want to avoid committing the error of producing them. This orientation might inhibit finding many words and motivate quitting rather than explicitly committing an error when failure appears likely.

If this analysis is correct, then this difference in strategic inclinations should produce a performance advantage for the promotion focus only when participants are experiencing difficulty. Crowe and Higgins (1997) tested this hypothesis by

including two additional tasks among the set of initial exercises. One task was an "embedded figures" task in which participants were shown a figure and were asked to find it embedded in a more complex figure (see Ruebush, 1960). The measure of persistence was whether a participant quit looking for an especially difficult hidden figure before the time limit was up. It was predicted that individuals in a prevention focus would be more likely to quit before the time limit was up in order to avoid committing a mistake, whereas individuals in a promotion focus would persist longer to prolong the opportunity for a "hit." Another task was a counting backwards task in which an easy sequence was followed by a difficult sequence. It was expected that a performance advantage of the promotion focus would only emerge during the difficult sequence. The results supported these predictions.

One would expect that the proposed difference between individuals in an eager state from a promotion focus versus those in a vigilant state from a prevention focus would have effects beyond performance. One such additional effect might be strategic motivation to generate alternatives. Some tasks allow people to produce either few or many alternatives without penalty. On a sorting task, for example, individuals could use the same criterion, such as color, to sort a set of fruits and to sort a set of vegetables or they could use different criteria, such as color for the fruits and shape for the vegetables. Either strategy is considered correct. The requirement is only that within each category the sorting criterion be consistent across all members of that category. Thus, individuals can reduce the likelihood of making a mistake and still be correct by simplifying the task, such as sticking to one criterion for both categories. Individuals in a vigilant state from a prevention focus want to avoid errors of commission and thus should be inclined to be repetitive. On the other hand, sticking to one category means that alternative dimensions or criteria will be omitted during the sorting task. Individuals in an eager state from a promotion focus want to accomplish "hits" and thus should not be inclined to use this strategy. Indeed, in a task where many different alternatives could be produced, one might expect these individuals to be inclined to generate many different alternatives.

This hypothesized difference in strategic inclinations for considering alternatives was tested by Crowe and Higgins (1997) by including two additional tasks among the set of initial exercises, both based on tasks used by Mikulincer, Kedem, and Paz (1990). One of these tasks was a sorting task like the one just described. The other task was a characteristic listing task. Participants were presented with the names of furniture objects, such as desk, couch, or bed, and are asked to write down all of the characteristics they could think of for each object.

It was predicted that individuals with a promotion focus, compared to individuals with a prevention focus, would be more fluent in sorting into more subgroups or in listing unique characteristics for different category members because of

their stronger strategic inclination to generate many different alternatives when possible. In contrast, individuals with a prevention focus, who are inclined to avoid errors of commission, should be more repetitive in employing sorting criterion across categories or in using specific descriptive terms or words across category members (controlling for fluency) than individuals with a promotion focus. The results supported both of these predictions. It should be noted that the results for these tasks, as for all the tasks used by Crowe and Higgins (1997), were independent of the subjects' pre-task mood and change in mood (post-task mood minus pre-task mood) during the experimental session.

The results of this first study by Crowe and Higgins (1997) support the proposal that individuals with a promotion focus want to accomplish "hits" and to avoid errors of omission, whereas individuals with a prevention focus want to attain correct rejections and avoid errors of commission. To obtain more direct support for this proposal, Crowe and Higgins (1997) conducted a second study that used a recognition memory task to examine directly signal detection response biases. This study involved the same basic paradigm as the first study. Participant's previous responses to a questionnaire were used idiographically to select one activity that the participant clearly liked and another he or she clearly disliked. When the participants arrived for the study, they were told that they would first perform a recognition memory task and then would be assigned a second task. The liked and the disliked activity previously selected were each described as an alternative second task.

The recognition memory task is a signal detection task that requires participants to make decisions. The participants are shown first a list of target items and then, following a delay, are given test items that include both old target items from the original list and new distractor items not from the original list. The participants are asked to respond "yes" if they believe the test item is an old target item, and to respond "no" if they believe the test item is a new distractor item. In signal detection tasks more generally, a signal is either presented or not presented, and a respondent says either "yes" (they detected a signal) or "no" (no signal was detected). There are, therefore, four possible outcomes for a signal detection trial: (a) a "Hit"-- saying "yes" when a signal was presented (e.g., saying "yes" to an old target item); (b) a "Miss"-- saying "no" when a signal was presented (e.g., saying "no" to an old target item); (c) a "False Alarm"-- saying "yes" when there was no signal (e.g., saying "yes" to a new distractor); and (d) a "Correct Rejection"-- saying "no" when there was no signal (e.g., saying "no" to a new distractor). Signal detection theory per se is silent on motivational determinants of a person's payoff matrix. The principle of regulatory focus, however, does make predictions.

Participants with a promotion focus are in a state of eagerness. This state should induce advancement tactics, an inclination to approach accomplishments. They want to insure hits and insure against errors of omission. These participants,

then, should want "Hits" (successfully recognizing a true target) and should not want "Misses" (omitting a true target), producing an inclination to say "Yes" (i.e., a "risky" bias). In contrast, participants with a prevention focus are in a state of vigilance. This state should induce precautionary tactics, an inclination to avoid mistakes. They want to attain correct rejections and avoid errors of commission. These participants, then, should want "Correct Rejections" (i.e., successfully avoiding a false distractor) and not want "False Alarms" (failing to avoid a false distractor), producing an inclination to say "No" (i.e., a "conservative" bias). In addition, because these individuals are vigilant against errors of commission, they should take more time to respond. Thus, we also predicted that the response latencies would be longer for participants in the prevention focus condition than the promotion focus condition. Each of these predictions was supported by the results of the study. And once again, these results were independent of the subjects' pre-task mood and change in mood (post-task mood minus pre-task mood) during the experimental session (see Crowe & Higgins, 1997).

The response bias results are illustrated in Figure 2. A beta value of 1 indicates no bias, a beta value higher than 1 indicates a bias towards saying "no", and a beta value lower than 1 indicates a bias toward saying "yes". As predicted, participants in the promotion focus condition had a risky bias as indicated by beta scores lower than 1, and participants in the prevention focus condition had a conservative bias as indicated by beta scores higher than 1.

Insert Figure 2 about here

In sum, there is considerable evidence that the strategic differences between promotion focus regulation and prevention focus regulation influence people's choices and decisions while performing a task. Might these strategic differences also influence which kinds of performance incentives and means are most effective? And might these differences even influence how the classic motivational variables of expectancy and value interact? These two possibilities are considered next.

Regulatory Focus and Performance Incentives and Means

The literature reports inconsistent effects of incentives on performance (for a review, see Locke & Latham, 1990). One determinant of the perceived value of an incentive is its relevance to goal attainment, which can vary (Brendl & Higgins, 1996). Thus, individuals with a strong promotion focus should be more motivated by incentives that are relevant to goals of accomplishment whereas those with a strong prevention focus should be more motivated by incentives that are relevant to goals of safety. The perceived relevance of different incentives to different kinds of goals, in turn, could vary as a function of the

content of the incentive, such as food versus shock in animal research. But even for the same incentive, it is possible that its perceived relevance might vary depending on the congruence or compatibility between the regulatory focus of a person's goal and the regulatory focus of the incentive.

As discussed earlier, individuals with strong promotion goals are strategically inclined to approach matches to the goals. An incentive that is congruent with this strategic inclination should be perceived as more goal relevant than one that is not. For individuals with strong prevention goals on the other hand, an incentive that is congruent with the strategic inclination to avoid mismatches to the goals should be perceived as more goal relevant than one that is not.

In a study by Shah, Higgins, and Friedman (1997), all participants performed an anagrams task and were given the same goal of identifying 90% of the possible words. The monetary incentive for reaching this goal was also the same. All participants received \$5 if they succeeded and \$4 if they failed. This incentive, however, was framed to be congruent either with a promotion strategic inclination or a prevention strategic inclination. The promotion framed condition emphasized the strategy of "approaching a match" to the goal by telling participants that they would earn an extra dollar by finding 90% or more of all the possible words. In contrast, the prevention framed condition emphasized the strategy of "avoiding a mismatch" to the goal by telling participants that they would avoid losing a dollar they already possessed by not missing more than 10% of all the possible words.

The participants in the experiment varied in promotion focus strength and prevention focus strength as measured by ideal and ought strength, respectively. As in our previous studies, self-guide strength was measured by response latencies in listing attributes and giving extent ratings, with stronger self-guides being operationalized by shorter response latencies. It was predicted that the participants with a strong regulatory focus would perform better on the anagrams task when the strategic framing of the incentive was congruent with their chronic focus. This prediction was confirmed. Individuals with high ideal strength (i.e., strong promotion focus) performed better with the promotion than the prevention framed incentive, whereas individuals with high ought strength (i.e., strong prevention focus) performed better with the prevention than the promotion framed incentive.

The results of this study suggests that strategic congruence or compatibility between a person's goal and an incentive increases motivation and performance. What about strategic congruence or compatibility between a person's goal, an incentive, and the means by which the goal is attained? Shah et. al. (1997) examined this issue in a second study. As in the study just described, participants varying in promotion and prevention strength performed an anagrams task for a monetary

incentive that was framed with either a promotion focus or a prevention focus. Although the anagrams were the same as those used in the first study, they were divided into two types in the second study. One half of them appeared in green and the other half in red.

The participants were told that when they found all the possible solutions for an anagram they would gain a point if it was "green" and would not lose a point if it was "red." Thus, solving "green" anagrams as a means to reach the 90% criterion and earn \$5 involves the strategy of "approaching a match" (i.e., gaining a point), whereas solving "red" anagrams involves the strategy of "avoiding a mismatch" (i.e., not losing a point). Solving "green" anagrams, then, is compatible with a promotion focus (i.e., reflected in high ideal strength and promotion framing) and solving "red" anagrams is compatible with a prevention focus (i.e., reflected in high ought strength and prevention framing). It should be noted that after the framing manipulation and before beginning the anagrams task the participants were asked to rate the likelihood that they would finish with four or more points (the criterion of success for all participants). The framing manipulation had no effect on participants' expectancies. In addition, the effects of the experimental variables were independent of participants' expectancies.

Self-guide strength was again measured by response latencies in listing attributes and giving extent ratings, with stronger self-guides being operationalized by shorter response latencies. A single variable representing the difference between participants' standardized ideal strength and standardized ought strength was created. A median split was performed on this difference variable, thus identifying a predominant ideal strength group and a predominant ought strength group. It was predicted that predominant ideal strength participants would perform better than predominant ought strength participants when working on "green" anagrams in the promotion framing condition, whereas predominant ought strength participants would perform better than predominant ideal strength participants when working on "red" anagrams in the prevention framing condition. As shown in Figure 3, this prediction was confirmed. These results suggest that task motivation and performance are enhanced when the strategic nature of the means for attaining the goal is compatible with performers' regulatory focus while working on the task. Together, the results of both studies suggest that differences in strategic inclinations as a function of regulatory focus influence the impact of other motivational variables (i.e., incentives and means). Might this influence extend even to classic expectancy X value effects? This question is considered next.

Insert Figure 3 about here

Regulatory Focus and Expectancy X Value Effects

A basic assumption of expectancy-value models of motivation has been that both expectancy and value impact on goal commitment and that, in addition to their main effects, they combine multiplicatively (Lewin, Dembo, Festinger, and Sears, 1944; Tolman, 1955; Vroom, 1964; for a review, see Feather, 1982). The multiplicative assumption is that as either expectancy or value increases, the impact of the other variable on commitment increases. For example, it is assumed that the effect on goal commitment of a high versus a low likelihood of attaining the goal is greater when the goal is highly valued than when the goal has little value. This assumption reflects the notion that the goal commitment involves a motivation to maximize the product of value and expectancy.

Not all studies, however, have found the predicted positive interactive effect of value and expectancy. Shah and Higgins (in press) proposed that the inconsistencies in the literature might be due to differences in the regulatory focus of decision makers. They suggested that making a decision with a promotion focus is more likely to involve the motivation to maximize the product of value and expectancy. A promotion focus on goals as accomplishments might induce an "approach matches" strategic inclination to pursue highly valued goals with the highest expected utility, which maximizes value X expectancy. Thus, Shah and Higgins (in press) predicted that the positive interactive effect of value and expectancy assumed by classic expectancy-value models would increase as promotion focus increased.

But what about a prevention focus? A prevention focus on goals as security or safety might induce an "avoid mismatches" strategic inclination to avoid all unnecessary risks by striving to meet only responsibilities that are either clearly necessary (i.e., high value prevention goals) or safely attainable (i.e., high expectancy of attainment). This strategic inclination creates a different interactive relation between value and expectancy. As the value of a prevention goal increases, the goal becomes a necessity like the Ten Commandments or the safety of one's child. When a goal becomes a necessity, one must do whatever one can to attain it regardless of the ease or likelihood of goal attainment. That is, expectancy information becomes less relevant as a prevention goal becomes more like a necessity. With prevention goals, motivation would still generally increase when the likelihood of goal attainment is higher, but this increase would be smaller for high value, necessity goals than low value goals. Thus, the second prediction is that the positive interactive effect of value and expectancy assumed by classic expectancy-value models would not be found as prevention focus increased. Specifically, as prevention focus increased, the interactive effect of value and expectancy would be negative!

Shah and Higgins (in press) tested these predictions in studies of both performance and decision-making. The performance study involved solving anagrams. The participants varied in ideal strength and in ought strength. Self-guide strength was measured as in previous studies by response latencies in listing attributes and giving extent ratings, with stronger self-guides being operationalized by shorter response latencies. Measures were obtained of their subjective estimate of the value of getting an extra dollar for succeeding at the task and their subjective estimate of the likelihood that they would succeed. Both predictions were confirmed. As participants' ideal strength (i.e., promotion focus) increased, the interactive effect of value and expectancy on performance was more positive. In contrast, as participants' ought strength (i.e., prevention focus) increased, the interactive effect of value and expectancy on performance was more negative!

Shah and Higgins (in press) also tested these predictions in three additional studies on making decisions to take a class in one's major or to take an entrance exam for graduate school. One study obtained measures of the participants' subjective estimates of value and expectancy, and the other two studies experimentally manipulated high and low levels of value and expectancy. One study involved comparing individuals who differed chronically in regulatory focus, and the other two studies experimentally manipulated regulatory focus using a framing procedure that emphasized "approaching matches" for the promotion focus and "avoiding mismatches" for the prevention focus. Together these studies found, as predicted, that the interactive effect of value and expectancy was more positive when promotion focus was stronger but was more negative when prevention focus was stronger.

As an example, one study asked participants to evaluate the likelihood that they would take a course in their major for which the value of doing well and the expectancy of doing well in the course were experimentally manipulated and participants' chronic regulatory focus was measured. High versus low value was established in terms of 95% versus 51% of previous majors being accepted into their honor society when they received a grade of "B" or higher in the course. High versus low expectancy was established in terms of 75% versus 25% of previous majors receiving a grade of "B" or higher in the course. As shown in Figure 4, the contrast representing the expectancy X value effect on the decision to take the course was positive for individuals with a promotion focus (i.e., high ideal strength) but was negative for individuals with a prevention focus (i.e., high ought strength).

Insert Figure 4 about here

General Conclusions

I began this paper by proposing that how the hedonic principle operates might be as important in motivation as the fact that it does operate. Two different ways in which the hedonic principle operates were described: (a) self-regulation with a promotion focus that is concerned with advancement, growth, and accomplishment; and (b) self-regulation with a prevention focus that is concerned with protection, safety, and responsibility. Evidence was presented that these different ways of regulating pleasure and pain have a major impact on people's feelings, thoughts, and actions that is independent of the hedonic principle per se.

Regulatory focus was shown to be related to different kinds of strategic inclinations. Specifically, individuals in a promotion focus, whether chronically or situationally, have a predilection to attain desired end-states by approaching matches to them and are strategically inclined to insure hits and insure against errors of omission. In contrast, individuals in a prevention focus, whether chronically or situationally, have a predilection to attain desired end-states by avoiding mismatches to them and are strategically inclined to insure correct rejections and insure against errors of commission. The results of several studies indicate that these strategic differences can determine how people go about solving problems and making decisions in their lives.

The implications of regulatory focus as a motivational variable have only begun to be examined. One implication is that people's experience of the world might be different depending on their regulatory focus. For example, the traditional social psychological literature describes people as experiencing the world in terms of likes and dislikes. It is possible, however, that a strong regulatory focus produces positive and negative experiences that are more specific. Shah and Higgins (1997) proposed that the cheerfulness-dejection evaluative dimension should be especially significant for individuals with a strong promotion focus; e.g., "How happy or sad does this object make me feel?" In contrast, the quiescence-agitation evaluative dimension should be especially significant for individuals with a strong prevention focus; e.g., "How relaxed or tense does this object make me feel?"

If one considers a dimension like cheerfulness-dejection as a bipolar construct, then this dimension is one way to construe the world of objects and events. The quiescence-agitation dimension would be another way to construe the world. Kelly (1955) proposed that those ways of construing the world that were significant for a person increased that person's

sensitivity to evaluating objects and events in relation to the construct. Thus, the more a particular emotional dimension is significant for a person, the more sensitive that person should be to evaluating objects along that dimension. Such sensitivity would be revealed in faster reaction times when reporting emotional experiences along that dimension. Thus, as ideal strength increases (i.e., stronger promotion focus), emotional evaluations related to both cheerfulness and dejection should be faster. As ought strength increases (i.e., stronger prevention focus), emotional evaluations related to both quiescence and agitation should be faster.

These predictions were tested in a series of studies by Shah and Higgins (1997). Self-guide strength was again measured by response latencies in listing attributes and giving extent ratings, with stronger self-guides being operationalized by shorter response latencies. In one of the studies, the participants appraised positive or negative attitude objects like those previously used by Fazio, Sanbonmatsu, Powell, & Kardes (1986) and by Bargh, Chaiken, Gendler, & Pratto (1992) in studying automatic attitude activation. They rated how each word describing a positive object (e.g., "music") or a negative object (e.g., "guns") made them feel. The object words were rated in relation to both the cheerfulness-dejection dimension and the quiescence-agitation dimension. Half of the positive object words were rated in relation to "happy" (or "satisfying") and the other half in relation to "relaxed". Half of the negative object words were rated in relation to "sad" (or "depressing") and the other half in relation to "tense" (or "agitating"). [Across the participants, each object word was rated on each emotional dimension an equal number of times.]

Reaction times for each type of emotional appraisal of each attitude object were measured. Because strength of regulatory focus also influences the frequency and intensity of experiencing different kinds of emotions, as discussed earlier, the analyses of reaction times statistically controlled for participants' extent ratings of each emotional experience. The study found that ideal strength was significantly positively related to speed of appraising the object words in relation to the cheerfulness-dejection dimension, and was, if anything, slightly negatively related to speed of appraising these words in relation to the quiescence-agitation dimension. In contrast, ought strength was significantly positively related to speed of appraising the object words in relation to the quiescence-agitation dimension, and was, if anything, slightly negatively related to speed of appraising these words in relation to the cheerfulness-dejection dimension.

The results of these recent studies suggest that people might experience the world in very different ways. Some people experience a world of objects and events that make them happy or sad whereas others experience a world of objects and events that make them relaxed or nervous. This difference in experiencing the world could also produce different strategic

responses. For example, although people generally would be motivated to attain or possess liked objects, individuals with a promotion focus should approach matches to attainment, such as earning extra money to buy something, whereas individuals with a prevention focus should avoid mismatches to attainment, such as saving money to buy something by not spending it on other things.

Regulatory focus as a motivational variable might also influence which dimensions of evaluation determine people's preferences and choices in life. Objects and events can be compared along multiple dimensions. Some dimensions are more relevant to promotion focus concerns whereas others are more relevant to prevention focus concerns. When buying or renting an apartment for example, 12-foot high ceilings would be a luxury or promotion attribute whereas reliable smoke detectors would be a security or prevention attribute. Safer and Higgins (1997) tested whether regulatory focus moderates which dimensions of evaluation determine people's preferences and choices.

The participants' strength of promotion or prevention focus was measured in terms of ideal or ought self-guide strength, respectively, with self-guide strength being operationalized as in the previous studies. In the experimental session, participants were given information about either two cars or two apartments. For each pair, the participants were asked to form their impressions of each alternative and then make a choice between the two, without considering the cost of each alternative. The information consisted of attributes that, in pretesting, had received either high luxury ratings and neutral security/reliability ratings (e.g., plush, soft leather seats and a premium music sound system as car attributes; grand, 12 foot-high ceilings and elegant, intricate wall moldings as apartment attributes) or high security/reliability rating and neutral luxury ratings (e.g., reliable battery backup for cold days and anti-lock brakes as car attributes; and secure, solid-steel safety locks on the front door and reliable smoke detectors as apartment attributes).

For each pair of products, the overall desirability of the alternatives were equal, but one alternative was described primarily with luxury attributes (the promotion alternative) whereas the other alternative was described primarily with security/reliability attributes (the prevention alternative). The results of the study were the same for the two products (cars; apartments). As the strength of participants' promotion focus increased (i.e., higher ideal strength) the likelihood of choosing the luxurious alternative increased, and as the strength of participants' prevention focus increased (i.e., higher ought strength) the likelihood of choosing the secure/reliable alternative increased.

An additional analysis was conducted on participants' ratings of the luxuriousness and the security/reliability of each alternative product. As one would expect, the more that the luxurious alternative received a higher luxury rating than the secure/reliable alternative, the more likely it was to be chosen. But this effect was moderated by strength of regulatory focus, such that differences in luxury ratings had significantly more impact on participants with stronger promotion focus (i.e., higher ideal strength). As one would also expect, the more that the secure/reliable alternative received a higher security or reliability rating than the luxurious alternative, the more likely it was to be chosen. But again this effect was moderated by strength of regulatory focus, such that differences in security or reliability ratings had significantly more impact on participants with stronger prevention focus (i.e., higher ought strength). Thus, information about the luxuriousness of each alternative influenced choices more for individuals with a strong promotion focus, whereas information about security or reliability influenced choices more for individuals with a strong prevention focus.

This paper has shown that people's feelings, strategies, and choices can vary greatly. The hedonic principle provides limited understanding of such variability. It does account for basic differences between positive and negative motivational states, such as the general tendency for people to approach pleasure and to avoid pain, to feel good when self-regulation works and to feel bad when it doesn't, to prefer high value over low value, and so on. Within positive and within negative motivational states, however, the hedonic principle makes quantitative rather than qualitative distinctions. Thus, it does not account for our findings of important qualitative differences in people's feelings, strategies, and choices within positive and within negative motivational states, such as the differences found when all participants are approaching a desired end-state but some have a promotion focus and others have a prevention focus.

In contrast to the hedonic principle, regulatory focus can account for the variability across people and across situations that occurs within positive and within negative motivational states. Emotions, event sensitivity, problem-solving, decision-making, performance, and preferences all vary depending on whether self-regulation involves a promotion focus or a prevention focus. In exploring the nature of attitudes (approach like/avoid dislike), consistency (approach consistency/avoid inconsistency), achievement motivation (approach success/avoid failure) and other motivational variables, it is time for social-personality psychologists to move beyond the hedonic principle of motivation. Regulatory focus as a motivational principle represents one step in this direction.

References

- Atkinson, J.W. (1964). An introduction to motivation. Princeton, N. J.: D. Van Nostrand.
- Atkinson, J. W. (1974). The mainsprings of achievement-oriented activity. In J. W. Atkinson and J. O. Raynor (Eds.), Motivation and achievement (p. 13-41). New York: John Wiley.
- Atkinson, J. W. (1974). Strength of motivation and efficiency of performance. In J. W. Atkinson and J. O. Raynor (Eds.), Motivation and achievement (p. 193-218). New York: John Wiley.
- Ausubel, D.P. (1955). Relationships between shame and guilt in the socializing process. Psychological Review, 62, 378-390.
- Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, N.J.: Prentice-Hall.
- Bargh, J. A., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. Journal of Personality and Social Psychology, 62, 893-912.
- Bassili, J. N. (1995). Response latency and the accessibility of voting intentions: What contributes to accessibility and how it affects vote choice. Personality and Social Psychology Bulletin, 21, 686-695.
- Bassili, J. N. (in press). Meta-judgmental versus operative indices of psychological attributes: The case of measures of attitude strength. Journal of Personality and Social Psychology.
- Bowlby, J. (1969). Attachment (Attachment and loss, Volume 1). New York: Basic Books.
- Bowlby, J. (1973). Separation: Anxiety and anger (Attachment and loss, Volume 2). New York: Basic Books.
- Brendl, C. M., & Higgins, E. T., & Lemm, K. M. (1995). Sensitivity to varying gains and losses: The role of self-discrepancies and event framing. Journal of Personality and Social Psychology, 69, 1028-1051.
- Brendl, C. M., & Higgins, E. T. (1996). Principles of judging valence: What makes events positive or negative? In M. P. Zanna (Ed.), Advances in experimental social psychology (Vol. 28, pp. 95-160). New York: Academic Press.
- Buss, D. (1996). The evolutionary psychology of human social strategies. In E. T. Higgins and A. W. Kruglanski (Eds.), Social psychology: Handbook of basic principles (pp. 3-38). New York: Guilford.
- Carver, C. S., & Scheier, M. F. (1981). Attention and self-regulation: A control-theory approach to human behavior. New York: Springer-Verlag.

- Carver, C. S., & Scheier, M. F. (1990). Principles of self-regulation: Action and emotion. In E. T. Higgins and R. M. Sorrentino (Eds.), Handbook of motivation and cognition: Foundations of social behavior, Volume 2 (pp. 3-52). New York: Guilford.
- Clore, G. L. (1994). Why emotions vary in intensity. ???pp. 386-393.
- Colby, K. M., (1968). A programmable theory of cognition and affect in individual personal belief systems. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.) Theories of cognitive consistency: A source book (pp. 520-525). Chicago: Rand McNally.
- Cooley, C. H. (1964). Human nature and the social order. New York: Schocken Books. (Original work published 1902)
- Crowe, E., & Higgins, E. T. (In press). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. Organizational Behavior and Human Decision Processes.
- Durkheim, E. (1951). Suicide: A study in sociology. New York: The Free Press.
- Duval, S., & Wicklund, R. A. (1972). A theory of objective self-awareness. New York: Academic Press.
- Erikson, E. H. (1963). Childhood and society (Revised edition. Original edition, 1950). New York: W. W. Norton & Co.
- Estes, W. K. (1944). An experimental study of punishment. Psychological Monographs, 57, No. 263.
- Fazio, R. H. (1986). How do attitudes guide behavior? In R. M. Sorrentino and E. T. Higgins (Eds.), Handbook of motivation and cognition: Foundations of social behavior (pp. 204-243). New York: Guilford.
- Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. Petty and J. A. Krosnick (Eds.), Attitude strength: Antecedents and consequences (pp. 247-282). Mahwah, N. J.: Erlbaum.
- Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes, F. R. (1986). On the automatic activation of attitudes. Journal of Personality and Social Psychology, 50, 229-238.
- Feather, N. T. (1982). Actions in relation to expected consequences: An overview of a research program. In N. T. Feather (Ed.), Expectations and actions: Expectancy-value models in psychology (pp. 53-95). Hillsdale, N. J.: Erlbaum.
- Festinger, L. (1942). A theoretical interpretation of shifts in level of aspiration. Psychological Review, 49, 235-250.
- Freud, S. (1961). The ego and the id. In J. Strachey (Ed. and Trans.), Standard edition of the complete psychological works of Sigmund Freud (Vol. 19, pp. 3-66). London: Hogarth Press. (Original work published 1923.)
- Frijda, N. H. (1996). Passions: Emotion and socially consequential behavior. In R. D. Kavanaugh, B. Zimmerberg, and S. Fein (Eds.), Emotion: Interdisciplinary perspectives (pp. 1- 27). Mahwah, NJ: Erlbaum.

- Frijda, N. H., Ortony, A., Sonnemans, J., & Clore, G. (1992). The complexity of intensity. In M. Clark (Ed.), Emotion: Review of personality and social psychology (Vol. 13, pp. 60-89). Beverly Hills, CA: Sage.
- Gollwitzer, P. M., and Bargh, J. A. (Eds.) (1996). The psychology of action: Linking cognition and motivation to behavior. New York: Guilford.
- Gould, R. (1939). An experimental analysis of "level of aspiration". Genetic Psychology Monographs, 21, 3-115.
- Gray, J. A. (1982). The neuropsychology of anxiety: An enquiry into the functions of the septo-hippocampal system. New York: Oxford University Press.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. Psychological Review, 94, 319-340.
- Higgins, E. T. (1989a). Self-discrepancy theory: What patterns of self-beliefs cause people to suffer? In L. Berkowitz (Ed.), Advances in experimental social psychology, Volume 22 (pp. 93-136). New York: Academic Press.
- Higgins, E. T. (1989b). Continuities and discontinuities in self-regulatory and self-evaluative processes: A developmental theory relating self and affect. Journal of Personality, 57, 407-444.
- Higgins, E. T. (1996a). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins and A. W. Kruglanski (Eds.), Social psychology: Handbook of basic principles (pp. 133-168). New York: Guilford.
- Higgins, E. T., Bond, R. N., Klein, R., & Strauman, T. (1986). Self-discrepancies and emotional vulnerability: How magnitude, accessibility, and type of discrepancy influence affect. Journal of Personality and Social Psychology, 51, 5-15.
- Higgins, E. T., Roney, C., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance: Distinct self-regulatory systems. Journal of Personality and Social Psychology, 66, 276-286.
- Higgins, E. T., Shah, J., & Friedman, R. (in press). Emotional responses to goal attainment: Strength of regulatory focus as moderator. Journal of Personality and Social Psychology.
- Higgins, E. T., & Tykocinski, O. (1992). Self-discrepancies and biographical memory: Personality and cognition at the level of psychological situation. Personality and Social Psychology Bulletin, 18, 527-535.
- Hoffman, M. L. (1986). Affect, cognition, and motivation. In R. M. Sorrentino and E. T. Higgins (Eds.), Handbook of motivation and cognition: Foundations of social behavior (Vol. 1, pp. 244-280). New York: Guilford Press.
- Horney, K. (1939). New ways in psychoanalysis. New York: W. W. Norton & Co.
- Horney, K. (1950). Neurosis and human growth. New York: W. W. Norton & Co.

- Houston, D. A. (1990). Empathy and the self: Cognitive and emotional influences on the evaluation of negative affect in others. Journal of Personality and Social Psychology, 59, 859-868.
- Hull, C. L. (1952). A behavior system: An introduction to behavior theory concerning the individual organism. New Haven: Yale University Press.
- James, W. (1948). Psychology. New York: The World Publishing Company. (Original publication, 1890).
- Kemper, T.D. (1978). A social interactional theory of emotions. New York: John Wiley & Sons.
- Konorski, J. (1967). Integrative activity of the brain: An interdisciplinary approach. Chicago: University of Chicago Press.
- Lang, P. J. (1995). The emotion probe: Studies of motivation and attention. American Psychologist, 50, 372-385.
- Lang, P. J., Bradley, M. M., Cuthbert, B. N. (1990). Emotion, attention, and the startle reflex. Psychological Review, 97, 377-395.
- Lazarus, A.A. (1968). Learning theory and the treatment of depression. Behavior Research and Therapy, 6, 83-89.
- Lewin, K. (1935). A dynamic theory of personality. New York: McGraw-Hill.
- Lewin, K. (1951). Field theory in social science. New York: Harper.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. McHunt (Ed.), Personality and the behavior disorders (Vol. 1, pp. 333-378). New York: Ronald Press.
- Lewis, H. B. (1979). Shame in depression and hysteria. In C.E. Izard (Ed.), Emotions in personality and psychopathology (pp. 371-396). New York: Plenum Press.
- Mandler, G. (1975). Mind and emotion. New York: Wiley.
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). The achievement motive. New York: Appleton-Century-Crofts.
- Mead, G. H. (1934). Mind, self, and society. Chicago: University of Chicago Press.
- Mikulincer, M., Kedem, P., & Paz, D. (1990). The impact of trait anxiety and situational stress on the categorization of natural objects. Anxiety Research, 2, 85-101.
- Miller, G. A., Galanter, E., & Pribram, K. H. (1960). Plans and the structure of behavior. New York: Holt, Rinehart, & Winston.
- Miller, N. E. (1944). Experimental studies of conflict. In J. McV. Hunt (Ed.), Personality and the behavior disorders (Vol. 1, pp. 431-465). New York: Ronald Press.

- Moretti, M. M., & Higgins, E. T. (1990). Relating self-discrepancy to self-esteem: The contribution of discrepancy beyond actual-self ratings. Journal of Experimental Social Psychology.
- Mowrer, O.H. (1960). Learning theory and behavior. New York: John Wiley.
- Piers, G., & Singer, M. B. (1971). Shame and guilt. New York: W. W. Norton.
- Pervin, L. A. (Ed.) (1989). Goal concepts in personality and social psychology. Hillsdale, N. J. : Erlbaum.
- Powers, W. T. (1973) Behavior: The control of perception. Chicago: Aldine.
- Roseman, I. J. (1984). Cognitive determinants of emotion: A structural theory. Review of Personality and Social Psychology, 5, 11-36.
- Roney, C. J. R., Higgins, E. T., & Shah, J. (1995). Goals and framing: How outcome focus influences motivation and emotion. Personality and Social Psychology Bulletin, 21, 1151-1160.
- Roseman, I. J., Spindel, M. S., & Jose, P. E. (1990). Appraisals of emotion-eliciting events: Testing a theory of discrete emotions. Journal of Personality and Social Psychology, 59, 899-915.
- Rotter, J. B. (1942). Level of aspiration as a method of studying personality: 1. A critical review of methodology. Psychological Review, 49, 463-474.
- Rotter, J. B. (1982). Some implications of a social learning theory for the practice of psychotherapy. In J. B. Rotter (Ed.), The development and applications of social learning theory (pp. 237-262). New York: CBS Educational and Professional Publishing.
- Ruebush, B. K. (1960). Interfering and facilitating effects of test anxiety. Journal of Abnormal and Social Psychology, 60, 205-212.
- Safer, D., & Higgins, E. T. (1997). Preferences for luxurious or reliable products: Promotion and prevention focus as moderator. Unpublished manuscript.
- Schafer, R. (1967). Ideals, the ego ideal, and the ideal self. In R.R. Holt (Ed.), Motives and thought: Psychoanalytic essays in honor of David Rapaport. Psychological Issues, 5 (2-3), 131-174.
- Shah, J., & Higgins, E. T. (In press). Expectancy X value effects: Regulatory focus as determinant of magnitude and direction. Journal of Personality and Social Psychology.
- Shah, J., & Higgins, E. T. (1997). Emotional evaluations of self and other attitude objects: Dinstinct sensitivities from regulatory focus. Unpublished manuscript.

- Shah, J., Higgins, E. T., & Friedman, R. (1997). Performance incentives and means: How regulatory focus influences goal attainment. Journal of Personality and Social Psychology.
- Skinner, B. F. (1953). Science and human behavior. New York: Macmillan.
- Strull, T.K., & Wyer, R.S. (1986). The role of chronic and temporary goals in social information processing. In R. M. Sorrentino and E. T. Higgins (Eds.), Handbook of motivation and cognition: Foundations of social behavior (Vol. 1, pp 503-549). New York: Guilford Press.
- Stein, N. L., & Jewett, J. L. (1982). A conceptual analysis of the meaning of negative emotions: Implications for a theory of development. In C. E. Izard (Ed.), Measuring emotions in infants and children (pp. 401-443). New York: Cambridge University Press.
- Strauman, T. J. (1989). Self-discrepancies in clinical depression and social phobia: Cognitive structures that underlie emotional disorders? Journal of Abnormal Psychology, 98, 14-22.
- Strauman, T. J. (1990). Self-guides and emotionally significant childhood memories: A study of retrieval efficiency and incidental negative emotional content. Journal of Personality and Social Psychology, 59, 869-880.
- Strauman, T. J., & Higgins, E. T. (1987). Automatic activation of self-discrepancies and emotional syndromes: When cognitive structures influence affect. Journal of Personality and Social Psychology, 53, 1004-1014.
- Strauman, T. J., & Higgins, E. T. (1988). Self-discrepancies as predictors of vulnerability to distinct syndromes of chronic emotional distress. Journal of Personality, 56, 685-707.
- Sullivan, H. S. (1953). The collected works of Harry Stack Sullivan (Vol. 1): The interpersonal theory of psychiatry. Edited by H. S. Perry and M. L. Gawel. New York: W. W. Norton & Co.
- Tanner, W. P. Jr., & Swets, J. A. (1954). A decision-making theory of visual detection. Psychological Review, 61, 401-409.
- Thorndike, E. L. (1935). The psychology of wants, interests, and attitudes. New York: Appleton-Century-Crofts.
- Tolman, E. C. (1955). Principles of performance. Psychological Review, 62, 315-326.
- Trope, Y., & Liberman, A. (1996). Social hypothesis testing: Cognitive and motivational mechanisms. In E. T. Higgins and A. W. Kruglanski (Eds.), Social psychology: Handbook of basic principles (pp. 239-270). New York: Guilford.
- Vroom, V. H. (1964). Work and motivation. New York: Wiley.
- Weiner, B. (1982). The emotional consequences of causal attributions. In M. S. Clark and S. T. Fiske (Eds.), Affect and cognition (pp. 185-209). Hillsdale, N.J.: Erlbaum.

Weiner, B. (1986). Attribution, emotion, and action. In R. M. Sorrentino and E. T. Higgins (Eds.), Handbook of motivation and cognition: Foundations of social behavior (Vol. 1, pp. 281-312). New York: Guilford Press.

Wiener, N. (1948). Cybernetics: Control and communication in the animal and the machine. Cambridge, MA: M.I.T. Press.

Wierzbicka, A. (1972). Semantic primitives. Frankfurt: Athenaum.

Table 1

Mean Number of Episodes Recalled as a Function of Type of Strategy Exemplified and Type of Self-Guide Primed

<u>of Strategy Exemplified</u>		<u>Type</u>	
		Approaching match to desired end-state	Avoiding mismatch to desired end-state
<u>Type of Self-Guide Primed</u>			
Ideal self-guide		1.75	1.37
Ought self-guide		1.19	1.96

Table 2

Mean Percentage of Dejection-related and Agitation-related Content in Memories For "Mismatching"

Ideal and Ought Cues

	<u>Type of Emotional Content in Memories</u>	
	Dejection-related	Agitation-related
<u>Type of Self-Guide Cue</u>		
Ideal	12.2	8.7
Ought	4.0	22.4

Table 3

Memory Advantage as a Function of Regulatory Focus of Taste Experience and Story Event

<u>Positive Regulatory States and Story Events</u>		
<u>Story Event Memory Advantage</u>		
	PP > AN	AN > PP
<u>Regulatory Focus Working</u>		
Promotion/Sweet ₁ Sweet ₂	31%	31%
Prevention/Bitter ₁ Neutral ₂	16%	54%
<u>Negative Regulatory States and Story Events</u>		
<u>Story Event Memory Advantage</u>		
	AP > PN	PN > AP
<u>Regulatory Focus Not Working</u>		
Promotion/Sweet ₁ Neutral ₂	54%	30%
Prevention/Bitter ₁ Bitter ₂	22%	62%

Presence of Positive story events (PP); Absence of Positive story events (AP)

Absence of Negative story events (AN); Presence of Negative story events (PN)

Table 4

Mean Feedback-Consistent Emotional Change as a Function of Regulatory Focus Framing and Type of Emotional Dimension

	<u>Type of Emotional Dimension</u>	
	Cheerfulness/Dejection	Quiescence/Agitation

<u>Regulatory Focus Framing</u>		
Promotion	1.07	-.52
Prevention	.78	.68

Note. Feedback-consistent emotional change refers to increasing positive and decreasing negative emotions following success, and decreasing positive and increasing negative emotions following failure

Figures

Figure 1. Psychological Variables with Distinct Relations to Promotion Focus and Prevention Focus

Figure 2. Mean Bias to Say Yes/No (Beta) as a Function of Regulatory Focus Framing

Figure 3. Anagrams Performance as a Function of Predominant Regulatory Focus, Regulatory Focus Framing, and Type of Anagrams

Figure 4. Contrast Representing Expectancy X Value Effect as a Function of Predominant Regulatory Focus

Additional References

- Bassili, J. N. (1995). Response latency and the accessibility of voting intentions: What contributes to accessibility and how it affects vote choice. Personality and Social Psychology Bulletin, 21, 686-695.
- Bassili, J. N. (in press). Meta-judgmental versus operative indices of psychological attributes: The case of measures of attitude strength. Journal of Personality and Social Psychology.
- Bruner, J. S., Goodnow, J. J., & Austin, G. A. (1956). A study of thinking. New York: Wiley.
- Kelly, G. A. (1955). The psychology of personal constructs. New York: W. W. Norton.
- Locke, E. A., & Latham, G. P. (1990). A theory of goal setting and task performance. Englewood Cliffs, N. J.: Prentice-Hall.
- Rogers, C. R. (1961). On becoming a person. Boston: Houghton Mifflin Company.
- Stepper, S., Strack, F., & Higgins, E. T. (1997). The memory system: A self-regulatory perspective. Unpublished manuscript, Wurzburg University.

