

SELF-FOCUSED ATTENTION, SELF-ANALYSIS, AND RUMINATION
IN EVERYDAY LIFE: FRIEND OR FOE?

by

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Abstract

In the health psychology literature there has been a proliferation of research linking forms of self-attention to psychological distress, especially to depression. The broad conclusion that self-attention is harmful, however, challenges the central premise of self-regulation theory – a theory detailing the role of self-attention as the engine of an adaptive regulating system that enables people to achieve their goals. In an attempt to reconcile these perspectives, I conducted two studies to distinguish the forms and states of self-attention that serve an adaptive self-regulation function from those that create a vulnerability to depression.

Both studies included a pretest and a daily diary component. Participants were pretested on trait self-attention, trait negative affectivity (Study 1), depression (Study 2), and a goal inventory. Study 2 included a follow-up session where participants again completed the depression inventory. For the diary component, participants described and rated the most negative event they experienced during the rating period (twice daily for 2 weeks in Study 1; once daily for 4 weeks in Study 2). Diary self-report measures of self-attention included: level of rumination (Study 1), initial self-analysis (Study 2), and multi-day-protracted attention (Study 2). After the diaries were completed, participants' event descriptions were coded for goal-relevance and level of self-focused attention (SFA).

Consistent with self-regulation theory, participants' goal-related events elicited stronger self-attentional responses (higher levels of SFA, rumination, initial self-analysis, and protracted attention) than did their goal-unrelated events. These within-person effects were not moderated by the pretest measures, nor did they predict levels of emotional distress. Thus, in daily life it appears to be typical and not harmful for people to respond to goal-setbacks by engaging in elevated levels of introspection, self-analysis, and even negative, symptom-focused rumination. With respect to individual differences, people higher in pretest rumination and in chronic daily rumination, initial self-analysis and protracted attention experienced higher levels of emotional distress. Chronic daily levels of initial self-analysis and rumination predicted emotional distress after controlling for pretest levels of distress. Thus, self-attention appears to create a vulnerability to depression only when people have chronic difficulty containing initial levels of self-analysis and rumination in response to negative events.

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CHAPTER I

Overview

"The unexamined life is not worth living" (Socrates, Speech in defence of philosophy).

Self-awareness is one of humanity's most acclaimed evolutionary achievements. While the evolutionary development of the brain provided the biological equipment for self-awareness and self-reflection, cultural evolution encouraged its development and refinement. As a means to both discover important truths of human existence and to achieve greater social co-ordination and co-operation, the ancient Greek philosophers advocated self-reflection, as did later moral and political philosophers such as Kant and J. S. Mills. Similarly, many religions can be viewed as cultural promoters of self-examination. In Catholicism, for example, individuals' actions on earth directly influence their destiny in the afterlife. Because the violation of religious precepts influences one's destiny, followers of this faith must use self-attention to regulate their behaviour around these religious rules.

The Protestant Reformation, initiated by Martin Luther, nearly eliminated the spiritual demand for self-reflection in Christianity with the emphasis on *predestination*. After all, if each individual's destiny were pre-ordained by God, one's behaviour on earth could have no influence over that critical final decision. Almost as if that religious precept was too inconsistent with human nature, the French Protestant reformer, John Calvin, re-established the need for self-examination by later arguing that, while our destinies were pre-ordained, our status in the afterlife would be reflected in our earthly lives. It is from this theological position that historians attribute the emergence of the "Protestant work ethic" and a renewed preoccupation with examining the meaning of one's actions. Given this cultural context, it is not surprising that most ideas of mental health rest on the assumption that self-examination enhances self-insight and, through this expanded self-knowledge, generates psychological growth, adjustment, and well-being (e.g., Sanborn, Pyke, & Sanborn, 1975; Leventhal, 1980; see Gur & Sackeim, 1978). Indeed, most schools of psychotherapy (including cognitive, psychodynamic, Rogerian, existential, transactional analysis, encounter groups, and Buddhist meditation) assist clients through different forms of self-examination with the explicit goal of improving their mental health.

Self-Attention, Self-Regulation, and Health

In social psychology, self-directed attention has been linked to health through its crucial role in the regulation of mood and behaviour. Duval and Wicklund (1972) introduced the influential concept of self-attention to social psychology in their theory of objective self-awareness. Objective self-awareness is a state that occurs when people's attention is diverted away from the external environment toward their inner feelings, thoughts, and physical sensations. Carver and Scheier (1981, 1990) integrated objective self-awareness theory (Duval & Wickland, 1972, Wickland, 1975) and control theory (Powers, 1973) into a cybernetic model of self-regulation. According to Carver and Scheier, self-attention activates a self-regulatory comparator sequence that enables people to monitor, evaluate, and adjust progress toward goals, including goals of mental and physical health (Carver & Scheier, 1981).

Emotional intelligence, a psychological concept recently introduced by Salovey and Mayer and their colleagues (Salovey & Mayer, 1990; Salovey, Hsee & Mayer, 1993), and

elaborated in a popular book by Goleman (1995), explicitly links self-attention to mental health and success in life through its function in self-regulation processes. Salovey et al. (1993) defined emotional intelligence as "the ability to monitor one's own and other's feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (p. 189). Emotional intelligence has three components: the accurate appraisal and expression of emotion, the adaptive regulation of emotions, and the utilisation of emotions to plan, create and motivate action. Emotional awareness and regulation are thus the cornerstones of emotional intelligence. Salovey and Mayer (1990) argued that the ability to monitor and correctly identify feelings is crucial to psychological insight and self-understanding, and that an inability to correctly identify feelings leaves us at their mercy. Aristotle expressed a similar notion centuries ago: *"Anyone can become angry--that is easy. But to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way--this is not easy"* (Aristotle, *The Nicomachean Ethics*).

Although diverse sources herald the benefits of self-attention, an extensive empirical literature has demonstrated relations between state and trait self-attention and negative health indicators ranging from negative mood to psychopathology. Stemming from this research there has been a proliferation of theory linking self-attention to psychological distress, especially to depression (e.g., Hyland, 1987; Ingram, 1990; Nolen-Hoeksema, 1991; Pyszczynski & Greenberg, 1987). These findings and theories, however, contradict the central premise of self-regulation theory, which states that self-attention serves as the engine of a functionally adaptive homeostatic regulating system enabling people to achieve their goals, including goals of mental health. In an attempt to reconcile these perspectives, the present research poses the question: *does self-attention both serve a self-regulation function and create a vulnerability to depression?* To address this question I first review the theoretical and empirical literature on the relation between self-attention and health outcomes. Then I describe two studies I conducted to distinguish the forms and states of self-attention that serve an adaptive self-regulation function from those that create a vulnerability to depression.

Literature Review

In this literature review, I first describe self-regulation theory and then review the empirical research on self-attention and health. The empirical research is divided into studies investigating *state* changes in self-attention as a process variable affecting mood and chronic self-attention as a trait. I then review recent theories of self-attention and depression. In these theories, a variety of forms of self-attention (e.g., rumination or self-absorption) or failures in the self-regulation process (e.g., self-regulation perseveration) are identified as vulnerability factors to depression. From this review, I identify several methodological and theoretical weaknesses that challenge the categorical conclusion that all forms of self-attention are harmful to psychological well-being.

Self-Regulation Theory

The purpose of self-regulation processes is to assist individuals in monitoring, evaluating, and adjusting progress toward these personal goals (e.g., Bandura, 1989; Carver & Scheier, 1981; Pervin, 1989, 1991; Pyszczynski & Greenberg, 1987). People structure much of their

daily lives around a set of personal goals ("life tasks", "current concerns", "personal strivings", "personal projects") that represent what they are currently striving to achieve or aspiring to become (Cantor & Langston, 1989; Emmons, 1986, 1991, 1992; Emmons & Diener, 1986; Little, 1989; Markus & Ruvolo, 1989; Novacek & Lazarus, 1990; Zirkel & Cantor, 1990). Similar to a thermostat, self-regulation processes serve as a psychological homeostatic regulating mechanism instigating self-correcting behaviour in the pursuit of these personal goals (Carver & Scheier, 1981; Wicklund, 1975).

Self-regulation processes operate in the following manner. For any particular goal, individuals have internal standards of achievement (e.g., when taking a course a student may be striving for an "A" grade). These standards are made salient when the individual directs attention inward (i.e., becomes self-focused). When a standard is recalled, the individual evaluates whether a discrepancy exists between their current state of goal-achievement (e.g., the mark received on an exam, *perceptual input*) and the standard (an "A" in the course). If the standard is met or exceeded, the self-regulatory cycle ends and self-focused attention is terminated. If a negative self-discrepancy exists (e.g., receiving a mark less than an A), the individual become motivated to reduce the discrepancy and engages in behavioural attempts to do so (e.g., they decide to take better notes or to stop skipping classes). The matching-to-standard process continues until the goal discrepancy is eliminated. If people are unable to reduce the self-discrepancy, they will exit the self-regulation cycle by using one of the following methods: (1) dropping or altering the importance of the goal, (2) altering the standard, or (3) directing attention elsewhere (e.g., distraction strategies).

The role of affect distinguishes the self-regulation theory of Duval and Wicklund (1972) from that of Carver and Scheier (1981). Duval and Wicklund argued simply that self-attention produces negative affect *whenever a negative self-discrepancy is salient*. In their view, the aversive state created by attention to a negative self-discrepancy helps provide the motivation for discrepancy-reduction initiatives (also see Liebling & Shaver, 1973). In this theory, self-regulation is not particularly pleasant, but it serves longer-term goals. In control theory, Carver and Scheier (1981) argued that negative affect would occur only when people believed there was a low probability of successfully reducing a negative self-discrepancy. More recently, Carver and colleagues (Carver & Scheier, 1990; Carver, Lawrence, & Scheier, 1996) have suggested that negative affect may be a product of the rate of discrepancy reduction. In both cases, Carver and Scheier argue that the motivation to reduce negative self-discrepancies arises independently from the arousal of negative affect. Thus, Carver and Scheier identify self-attention as serving an adaptive self-regulation function, while Duval and Wicklund identify both self-attention and short-term negative affect as functional components in self-regulation.

State Level Self-Attention

Parallels between outcomes of heightened state self-attention and depression first led researchers to consider self-attention as a causal factor in the onset of depression. With respect to mood, early laboratory research on the relation between state self-awareness and mood demonstrated that increasing people's level of state self-awareness intensified their ratings of affective arousal: including negative affect (Wicklund, 1975), elation and depression (Scheier & Carver, 1977, study 3), and fear (Scheier, Carver, & Gibbons, 1981). More recently, the reverse has also been shown: intensifying people's mood states (both positive and negative) using mood

induction techniques elicits higher levels of self-attention (Salovey, 1992; Wood, Saltzberg, & Goldsamt, 1990a). Thus state self-attention and moods tend to be mutually reinforcing and create the potential for downward spirals in which self-focus intensifies negative mood and negative mood maintains self-attention. In a field study investigating the relation between self-attention and mood, Csikszentmihalyi and Figurski (1982) had Chicago-area adults, who carried electronic paging devices that beeped at random intervals for a week, report their thoughts, activities, and feelings after each beep. Using thoughts as the unit of analysis, they found that self-thoughts and thoughts about work were ranked as lowest in positive affect relative to all other types of thoughts. When the recorded thoughts were dichotomised into either self- or other-thoughts and then compared on associated levels of positive affect, self-thoughts were accompanied by significantly lower levels of positive affect than were other-thoughts. In daily life it thus appears that negative moods tend to accompany episodes of self-attention.

In addition to having an influence on mood, people whose state self-awareness has been elevated in the laboratory also report larger discrepancies between their current and their ideal selves (Ickes, Wicklund, & Ferris, 1973), a greater tendency to attribute negative events internally (Duval & Wicklund, 1973), and higher accuracy in their self-reports (Pryor, Gibbons, Wicklund, Fazio, & Hood, 1977). Larger self-discrepancies, more internal attributions for negative events, and higher accuracy in self-reports are also features of depression (e.g., Lewinsohn, Mischel, Chaplin, & Barton, 1980; Seligman, Abramson, Semmel & von Baeyer, 1979). Furthermore relative to non-depressed people, depressed people tend to display higher levels of state self-attention (Ingram & Smith, 1984; Ingram, Lumry, Cruet, & Sieber, 1987) and stay self-focused longer following negative feedback (Greenberg & Pyszczynski, 1986). Researchers reasoned that if state self-attention produces a cluster of outcomes consistent with depression, by extension people who engage in more self-directed attention might be more vulnerable to experiencing protracted depression.

Individual Differences in Self-Attention

The vast majority of research on the relation between individual differences in self-attention and health has used the Private Self-Consciousness subscale (PRSC) of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975). The Private Self-Consciousness Scale was designed to assess individual differences in the both the frequency with which people experienced self-aware states (become focused on their inner feelings, thoughts, and physical sensations) and the amount of self-attention in which they engaged once self-focused. Early research on trait PRSC found, for men, no association between PRSC and general emotionality, test anxiety, or social anxiety (Carver & Glass, 1976) and, for women, weak correlations between PRSC and emotionality (Buss & Plomin, 1975) and social anxiety (Fenigstein et al., 1975), but not test anxiety (Mandler & Sarason, 1952). Smith and Greenberg (1981) were the first to examine the association between depression and PRSC, and found a moderate positive association. Using a different measure of depression, Ingram and Smith (1984) replicated this moderate association in three different samples. The observed associations between trait self-attention and depression encouraged further research on PRSC and its relation to health outcomes.

A variety of theories, detailing the means by which chronic self-attention could influence health outcomes, emerged in the self-attention literature. These theories focused on levels of

self-attention in response to negative events as the causal agent influencing subsequent health outcomes. Two opposing theoretical camps emerged. Drawing on self-regulation theory, Suls and colleagues (Mullen & Suls, 1982; Suls & Fletcher, 1985) argued that people higher in PRSC would be more likely to attend to and thereby take ameliorative action in response to negative events and thus avert negative health outcomes. Other theorists (e.g., Hull & Young, 1983; Smith & Greenberg, 1981) took the opposite position arguing that people who engage in more self-directed attention following negative events would magnify the effects of these events and, as a result, would suffer increased stress and negative health consequences. The research described next focuses on the effect of trait self-attention on reactions to negative and positive feedback and as a moderator of the stress-illness relation.

Reactions-to-Feedback Research

The reactions-to-feedback experimental design provides a laboratory context for investigating the reactions of different types of people to an experimenter-constructed negative event. In reaction-to-feedback studies, participants complete a task (usually described as an indicator of intelligence) and are then given either success or failure feedback about their performance. The failure condition thus simulates a self-relevant negative event.

PRSC and Well-being. In a reactions to feedback study, Ingram et al. (Ingram, Johnson, Bernet and Dombek, 1992, study 1) tested for differences between people high and low in PRSC on the following dependent variables (1) negative affect states (anxiety, hostility, and depression), (2) automatic negative thoughts, and (3) self-deception. On depression and negative thoughts, an interaction between type of feedback (success, failure) and PRSC emerged. The moods and thoughts of people higher in PRSC were reactive to the feedback, while those of people lower in PRSC were not. Specifically, people high in PRSC who received failure feedback experienced the highest levels of depressed mood and negative thoughts, and people high in PRSC who received success feedback had the lowest levels of depressed mood and negative thoughts. People low in PRSC had intermediary-levels of depression and negative thoughts that did not vary as a function of type of feedback. No differences were observed on hostility or anxiety. With respect to self-deception, participants low in PRSC displayed a self-serving pattern that demonstrated that they were, in fact, influenced by the feedback manipulation. Participants low in PRSC engaged in significantly more self-deception under conditions of failure relative to conditions of success. High PRSC people demonstrated the reverse pattern: they became less self-deceptive following failure than they were following success feedback.

In a reaction-to-feedback study conducted prior to Ingram et al. (1992), however, Hull and Young (1983) demonstrated that the effect of PRSC on mood is moderated by self-esteem (SE). Examining the effects of success and failure feedback on mood and alcohol consumption in men varying in both PRSC and SE, they found that it was only the moods (anxious, hostile, and depressed) of people high in PRSC / low in SE that were reactive to success and failure feedback. The moods of people high in both PRSC and SE did not differ from people low in PRSC. SE did not, however, influence the relation between PRSC and alcohol consumption. People high in PRSC drank significantly more when they received failure feedback than when they received success feedback, and the consumption levels of people low in PRSC fell between these two extremes. Thus, although the moods of people high in both PRSC / SE were not

affected by failure feedback, they nevertheless used alcohol to escape self-attention following failure.

Performance. One of the questions that has not been well addressed in the research is whether self-attention after failure confers some advantages in terms of health, goal achievement, or performance, even though it may also cause temporary negative mood states. Brockner (1979) investigated the effect of PRSC and SE on performance in a reactions-to-feedback study. When examining performance in response to failure feedback, he found that participants high in both PRSC and SE performed best, followed by participants low in PRSC / high in SE. Participants low in SE, independent of PRSC, performed most poorly. The group whose performance was most reactive to success and failure feedback was people low in both PRSC and SE. Thus, although in research described previously people low in PRSC and SE did not show high emotional reactivity to feedback, they did show reactivity in their performance. These results suggest that people high in both PRSC and self-esteem may have a motivational advantage when faced with negative setbacks presumably because self-attention facilitated improved performance and high SE buffered against negative moods.

Summary of reactions-to-feedback studies. Taken together, the reaction-to-feedback research does not suggest a straightforward correspondence between well-being and levels of self-attention following negative feedback (as assessed by PRSC). It appears that people who are low in self-esteem who engage in more self-attention following failure feedback are vulnerable to negative mood and performance deficits. People high in self-esteem who engage in more self-attention, in contrast, appear to avoid emotional distress in response to failure feedback and demonstrate enhanced performance. Thus, when investigating the health outcomes of trait PRSC, it appears to be important to consider the person's level of SE.

Construct validity problems identified with the PRSC scale further complicate interpretations of research using this scale as a measure of trait self-attention. Two distinct sub-factors within the ten-item PRSC scale have been identified (Anderson & Bohon, 1996; Burnkrant & Page, 1984; Mittal & Balasubramanian, 1987; Piliavin & Charng, 1988; Trapnell & Campbell, 1999). Burnkrant and Page (1984) refer to these sub-types of private self-consciousness as "Self-Reflectiveness" (PRSC-SR: six items including "I'm always trying to figure myself out.") and "Internal State Awareness" (PRSC-ISA: four items including "I'm alert to changes in my mood"). The PRSC-SR and PRSC-ISA subscales are only weakly correlated with one another and more importantly tend to correlate in opposite directions with measures of negative affectivity (NA). PRSC-SR correlates negatively with SE (Piliavin & Charng, 1988) and self-concept clarity (Campbell, Trapnell, Heine, Katz, Lavalley & Lehman, 1996), and positively with anxiety and depression (Watson & Biderman, 1993; Watson, Morris, & Hood, 1988), whereas PRSC-ISA correlates in the opposite direction with these same measures. Thus people high in both PRSC and SE may be engaging in a different form of self-attention than people high in PRSC but low in SE.

PRSC as a Moderator of the Stress-Illness Relation

In addition to laboratory research, a number of field studies have investigated PRSC in interaction with negative life events as a predictor of health outcomes. Field studies are important in this research area because they provide an opportunity to investigate natural responses to real-life negative events and to assess more serious health outcomes. Conflicting

hypotheses have been advanced and supported: some researchers predicted and found that people low in PRSC would be more vulnerable to the negative effects of life events, others predicted and found the opposite. A number of weaknesses in this research limit the extent to which general conclusions can be drawn. None of the studies controlled for individual differences in SE or NA and thus the problems in the PRSC scale may account for the conflicting results. Also, the studies used very different designs and health outcome measures. The results from these studies are thus reviewed very briefly.

In two separate panel studies, Suls and colleagues (Mullen & Suls, 1982; Suls & Fletcher, 1985) found that people low in PRSC demonstrated a correspondence between their number of life events and subsequent physical illness, while people high in PRSC showed no correspondence. These results suggested that people low in PRSC were more vulnerable to life stress. In contrast, Hull and colleagues (Hull, Young & Jouriles, 1986), who examined relapse rates in alcoholics differing in PRSC, found that the relapse rates of people high in PRSC were associated with levels of reported stress, while the relapse rates of those low in PRSC were independent of life stress. Similarly, in a study of chronic work stress and illness, Frone and McFarlin (1989) found that at high levels of chronic work stress, people higher in PRSC experienced more physical illness than people lower in PRSC, but the groups did not differ in illness at low levels of stress. Finally, Smith, Ingram, and Roth (1985) found that number of life events and PRSC were independent predictors of levels of depression.

Recent Theories of Self-Attention and Depression

Despite the inconclusive findings in the PRSC and health literature, researchers remained interested in the influence of self-attention on well-being. In the late 1980s and early 1990s there was considerable theory development on the relation between self-attention and health (mostly depression). These theories came out of different research traditions, and drew on subsets of the empirical research described in this review. Three of the theories (Pyszczynski & Greenberg, 1987; Hyland, 1987; Martin & Tesser, 1989) are based on self-regulation theory and describe forms of self-attention as both processes and individual differences. The other three theories (Ingram, 1990; Trapnell & Campbell, 1999; Nolen-Hoeksema, 1991) describe forms of self-attention primarily as a trait or chronic tendency.

Self-Regulation Perseveration

In their theory of reactive depression, Pyszczynski and Greenberg (1987) describe the psychological processes they believe are involved in the onset and maintenance of depression. In agreement with Duval and Wicklund (1972), Pyszczynski and Greenberg view self-focused attention as an instigator of a self-evaluation process in which salient self-relevant dimensions are compared with standards. When a person falls short of the standard, they experience negative affect and are thus motivated to either reduce the negative self-discrepancy or to otherwise escape self-focused attention. From Carver and Scheier (1981), Pyszczynski and Greenberg incorporate the expectancy evaluation process into their model. After gaining awareness of a negative self-discrepancy, they argue that people assess the likelihood of successfully reducing the discrepancy: positive expectancies lead to behaviour aimed at reducing the self-discrepancy, negative expectancies lead to a withdrawal from such behaviour and

attempts to minimise self-focus and thereby exit the self-regulation process. Disengagement from the self-regulatory cycle under conditions of negative expectancies is adaptive because it shields the individual from the negative affect engendered by the negative discrepancy and prevents the fruitless pursuit of an unattainable goal.

Irreducible self-discrepancies are routinely encountered in life, and Pyszczynski and Greenberg argue that disengagement is usually accomplished without great difficulty either by derogating the importance of the goal or by pursuing substitute goals. Problems in self-regulation emerge when an unattainable goal is central to the individual's identity or sense of self-worth. Under these circumstances, people may be unable or unwilling to exit the self-regulatory cycle and may thus continue to focus on the irreducible discrepancy. They provided the following example to illustrate this point:

... consider a situation in which an individual perceives a threat to a romantic relationship that has previously functioned as an important source of security, identity, and self-esteem. It should be adaptive for him or her to initiate a self-regulatory cycle in which the current and desired states are compared, so that behaviour could be directed at reducing any discrepancy that may exist. However, once it has become clear that the relationship has ended and there is no chance of returning to the previous state, it becomes adaptive to give up the relationship and exit the self-regulatory cycle. Unfortunately, when important losses occur, people often have difficulty withdrawing from self-regulatory efforts to regain what was lost; thus, self-focus concerning the loss persists long after it would be adaptive to divert attention elsewhere (Pyszczynski & Greenberg, 1987, p. 127).

Self-regulation perseveration is when the individual continues to focus on and strive for an unattainable goal. This failure to exit self-regulation is believed to create a spiralling process in which self-focus intensifies negative affect, increases the internality of attributions for the event, and leads to a neglect of other concerns. The mounting self-criticism and negative affect may, in turn, undermine the stability and positivity of the self-schema, culminating in a state of depression. If the loss is not overcome, Pyszczynski and Greenberg argue that individuals become vulnerable to developing a depressive self-focusing style due to chronic negative expectancies. The frequently observed relations between actual-ideal discrepancies and depression (e.g., Higgins, Klein, & Strauman, 1985; Laxer, 1964; Nadich, Gargan, & Michael, 1975) support the notion that depression may be related to such failures to resolve self-discrepancies.

Control Mechanisms and Depression

In the same year that Pyszczynski and Greenberg (1987) published their self-regulatory theory of depression, Hyland (1987) also provided a review of the depression literature and developed a meta-theory of depression which relied heavily on Carver and Scheier's (1981, 1990) conception of hierarchically organised self-regulation loops. Recall the basic feedback loop in self-regulation theory: awareness of a negative self-discrepancy motivates the individual to engage in discrepancy reduction strategies. This negative feedback loop functions to reduce deviations between one's goals and one's current status with respect to those goals. A single

feedback loop, however, is inadequate to account for the elaboration, flexibility, and organisation of human behaviour. To better capture the complexity, Carver and Scheier (1981) described a system of self-regulatory loops hierarchically organised under super-ordinate goals (system concepts). Within any particular hierarchy, the self-regulation loops at the higher levels provide the goals for the loops at the subordinate levels. As one moves upward through the feedback loops in any particular hierarchy, the goals around which the loops are organised become increasingly abstract and psychologically important.

Carver and Scheier focus on three levels of goals in a self-regulation hierarchy: system concepts, principles, and programs. The top of the hierarchy is labelled *system concepts*, which consists of abstract values such as idealised images of the self, of relationships, or of society (e.g., high self-esteem). System concepts provide goals for the next lower level, termed *principles*. At the principle level, people act to be who they think they ought to be or want to be by using any of several guiding principles implied by the idealised self to which they aspire (e.g., become an accomplished researcher in social psychology, be honest, be compassionate). These *principles* contain general prescriptions for behaviour that can be manifested in different concrete acts. The level of concrete activities, termed *programs*, is what most people recognise clearly as daily "behaviour" (e.g., read current research articles, write papers). Carver and Scheier note that much of human behaviour is regulated at the program level, but that some disruptions or events will direct attention to those goals that reside in higher levels of the hierarchy.

Hyland (1987) focused on only two levels of self-regulation. At the higher level, he argued, there are two central goals: self-esteem and self-efficacy, with self-efficacy subordinate to self-esteem. Similar to Pyszczynski and Greenberg, Hyland argued that depression results from a prolonged negative self-discrepancy; especially, if the discrepancy occurs in the self-esteem or self-efficacy loops. Learned helplessness, for example, can be viewed as reflecting a chronic self-discrepancy between one's desired and one's actual experience of self-efficacy. Hyland argued that people differ in their sensitivity to self-discrepancies in a number of ways that may produce a vulnerability to depression. Error sensitivity can take three forms: First, after an unresolvable self-discrepancy people may differ in their ability to direct their attention away from the self-discrepancy. That is, some people have more difficulty than others in diverting attention away from irreducible self-discrepancies. While Pyszczynski and Greenberg (1987) argued that certain events such as the death of a loved one may cause this form of reactive protracted self-attention, Hyland argues that there are stable individual differences in people's ability to divert attention away from any unresolvable discrepancies. This individual difference would reflect a difference in the ability to cope with unresolved self-discrepancies rather than a difference in initial levels of self-attention or self-regulation.

Second, people may differ in how sensitive they are generally to self-discrepancies. Researchers in the stress moderation literature took this view of individual differences in PRSC; that is, they believed that people low in PRSC would tend to ignore negative events in their life, while people high in PRSC would be highly attentive to these events. This perspective suggests that people differ in their tendency to engage in self-regulation. Hyland argued that some people have low error sensitivity throughout their system and would not tend to notice self-discrepancies or to self-regulate.

Third, individuals may differ in their sensitivity to self-discrepancies at different levels of the self-regulation hierarchy. While some people may be more likely to perceive problems at the system levels (high system level error sensitivity), others are more likely to perceive them at the program level (low system level error sensitivity). For example, if one's romantic partner is devoting less time and attention to the relationship, a person high in error sensitivity in the system level self-esteem loop may immediately question his own self-worth and desirability. In contrast, someone low in system level error sensitivity may focus at the program level and decide that his partner's withdrawal is due to her workload and not take it personally. Because prolonged discrepancies at higher levels have more potential to generate psychological distress, the tendency to view most disruptions in daily life as having relevance to self-esteem may make one especially vulnerable to depression. This third hypothesis may explain the laboratory research that shows that people high in PRSC and low in SE are more vulnerable to negative feedback than other people. If every event in daily life calls into question the individual's self-worth, depression may be hard to avoid.

Goals and Rumination

Consistent with self-regulation theory, Martin and Tesser's (1989, 1996) theory of rumination adopts the assumption that people's thoughts and actions are directed by goals. They argued that rumination follows failure in a goal domain and assists the individual in either finding alternative means to reach the frustrated goal or reconciling themselves to not reaching those goals. They defined rumination broadly as "conscious thinking directed toward a given object for an extended period of time" (Martin & Tesser, 1989, p. 306). They describe the following sequence of ruminative responses to negative events impinging on goals: (1) repetition of the initial behaviour, (2) problem solving (attempts to find alternative routes to goals), (3) end-state thinking (repetitive, intrusive, aversive thoughts).

With respect to stage 2, Martin and Tesser argued that problem solving is facilitated by correctly identifying the goal that has been frustrated. To do this, self-examination is required. Stage 3, end-state thinking no longer involves thinking about different ways of attaining the goal, but about the goal objects themselves and the feelings associated with them. Once people reach stage three they either direct their attention toward abandoning the goal and selecting alternative goals or they continue to ruminate, which can result in learned helplessness and depression.

Martin, Tesser and McIntosh (1993) more recently argued that people's goals are hierarchically organised and that blockage of a lower-order goal will elicit rumination only to the extent that higher-order goals are threatened by that blockage. Although all people are expected to encounter setbacks to high-order goals, McIntosh, Harlow, and Martin, (1995) found that people differ in their generally tendency to link lower order goals (e.g., getting an A on a lab assignment) to higher-order goals (e.g., getting an education). This finding is consistent with Hyland's (1987) notion of high system-level error sensitivity.

Self-Absorption: Psychopathological Self-Attention

In an extensive review of the clinical literature, Ingram (1990) demonstrated that heightened levels of self-focused attention accompany a diverse array of clinical disorders. Ingram acknowledged that some forms of self-focused attention are appropriate and necessary for effective functioning; however, he argued that a maladaptive form of self-focus, self-absorption, underlies psychopathologies including depressed mood. Ingram's model distinguishes attentional processes on three dimensions: degree of internal/external focus, duration of internal focus, and flexibility of attention processes. He defines self-absorption as "... a dysfunctional shift in the combination of these parameters" (p. 169). Self-absorption is internally focused attention that is both persistent and inflexible. In other words, self-absorption is characterised by a rigid relapse into internal attention across many situations. In contrast, adaptive attentional processes are characterised by flexible internal and external attention that is appropriately responsive to the demands of the situation.

According to Ingram, the self-relevant content toward which the self-absorbed individual attends determines the type of psychopathology that will emerge: depression emerges from a focus on self-degrading content; anxiety from a preoccupation with fear or harm; schizophrenia from disorganised self-content; and mania from grandiosity. The idea of self-absorption can easily be incorporated into self-regulation theory. Flexibility in one's attentional processes could either enable the individual to select events upon which to self-regulate (e.g., important events or events amenable to resolution) or could facilitate disengagement after failed attempts to regulate. People who lack attentional flexibility, in contrast, may engage in self-regulation on all events or find it difficult to disengage.

Rumination and Reflection

The discovery of two psychologically distinct subfactors in the PRSC scale: "Self-Reflectiveness" (PRSC-SR) and "Internal State Awareness" (PRSC-ISA) spurred research into multiple forms of trait self-attention. PRSC was supposed to measure individual differences in the tendency to become self-focused and the amount of time people spent self-attending. Trapnell and Campbell (1999) argued that different motives underlie self-directed attention and that these motives are confounded in the PRSC measure. They identified and developed a measure of two motivationally-distinct forms of self-attention: rumination and reflection (the Reflection and Rumination Questionnaire -RRQ). RRQ-Rumination is a form of self-attention motivated by perceived threats, losses or injustices to the self. RRQ-Reflection is a form of self-attention motivated by curiosity or epistemic interest in the self. The two scales separately measure neurotic versus curiosity or intellect driven self-attention. With respect to subfactors of the PRSC scale, RRQ-Rumination is exclusively correlated with PRSC-SR, while RRQ-Reflection is correlated with both PRSC-ISA and PRSC-SR. Trapnell and Campbell (1999) demonstrated that latent RRQ-Rumination and RRQ-Reflection variance was separately responsible for the paradoxical correlations observed in the PRSC literature: RRQ-Rumination accounted for almost all of the association between PRSC and measures of psychological adjustment or distress (e.g., low SE, depression, anxiety), and RRQ-Reflection accounted for almost all of the association between PRSC and measures of intellectual dispositions (e.g., openness, need for cognition, need for self-knowledge).

Ruminative Response Style

Rumination has also been investigated as a chronic coping response to experiences of negative mood. In an extensive program of research, Nolen-Hoeksema (1987, 1991, 1996; Nolen-Hoeksema, McBride & Larsen, 1997; Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema, et al., 1994) has shown that individual differences in people's method of responding to their depressed moods influences the duration of their depression. Individuals with a Ruminative Response Style; that is people who, in response to depressed mood, focus attention on their symptoms (e.g., I have no energy) and the possible causes and consequences of those symptoms (e.g. if I don't overcome this insomnia I'll never finish this project), amplify and prolong their depressed moods. In contrast, individuals who generally engage in distracting responses to their depression; that is, thoughts and behaviours that direct their attention from the depression onto pleasant or neutral activities, experience relief from those moods (e.g., Nolen-Hoeksema et al., 1993). In a diary study in which coping responses to negative moods were tracked, Nolen-Hoeksema et al. (1993) found that 83 percent of participants showed either a consistent distraction or rumination response -- evidence of individual differences in response style.

Nolen-Hoeksema cites a number of cognitive explanations for the effect of ruminative responses on negative mood persistence: People in a depressed mood are more likely to draw negative conclusions about their circumstances because depressed moods bias thinking toward negative information (Blaney, 1986; Bower, 1981; Teasdale, 1985). Also, ruminative responses interfere with attention and concentration, which may in turn interfere with more complex problem solving. Laboratory studies have shown that depressed people made to ruminate, relative to those made to distract, generated fewer solutions to life problems (Morrow & Nolen-Hoeksema, 1990) and poorer quality solutions to interpersonal problems (Lyubomirsky & Nolen-Hoeksema, 1995). In contrast, people who use distraction to lift their depressed moods are more likely to engage later in active problem solving to overcome the problems that might have led to their depression (Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, et. al., 1994). Ruminative Response Style theory appears to directly contradict self-regulation theory. The argument that distraction is the best method to deal with negative moods challenges the assumption in self-regulation theory that self-attention is a useful problem-solving response to negative self-discrepancies.

Summary of Recent Theories

Although these theories were developed independently and emerged from different research literatures (e.g., depression, PRSC, self-regulation), they share common elements. The idea that rumination is a product of threat is shared by many theories: threat to the self (Trapnell & Campbell, 1999), threat to important higher-order goals (Martin et al., 1993; Pyszczynski & Greenberg, 1987), or threat to self-esteem or self-efficacy (Hyland, 1987). Nolen-Hoeksema's definition of rumination, as attention focused on one's depressed mood and the symptoms associated with that mood, is the narrowest definition. Most theorists have argued that individual differences exist in the tendency to ruminate or to become self-absorbed, and that people who chronically engage in higher levels of rumination are more vulnerable to developing protracted

depressed moods. It has also been argued that rumination is a typical and adaptive response to goal setbacks and thus can serve a self-regulatory function (Martin & Tesser, 1989, 1996).

Summary of the Literature Review

Basic questions about self-attention, both as a component of self-regulation and as a trait, remain unanswered. In self-regulation theory, self-attention is identified as the engine of an adaptive regulating system that enables people to achieve their goals, including goals of mental and physical health. Research on state self-attention has tended to identify negative outcomes associated with being in a self-aware state (e.g., increased negative mood, internal attributions for negative events, and larger self-ideal discrepancies). Many of these negative outcomes, however, are not inconsistent with self-regulation processes and, if relatively short-lived, may simply indicate that self-regulation is not particularly enjoyable. Indeed, laboratory research demonstrating that negative affect generally provokes state self-attention (e.g., Salovey, 1992; Wood et al., 1990a) supports the view that self-attention may serve as an initial self-regulatory response to emotionally evocative events. The relation between state self-attention as a self-regulatory variable and longer-term health outcomes has not been investigated in previous research.

It is difficult to draw conclusions about the effects of trait self-attention on well-being from the research using the PRSC scale. In the stress moderation literature, some researchers found that people higher in PRSC were more vulnerable to the effects of life event stress (Frone & McFarlin, 1989; Hull et al., 1986), while others found that people lower in PRSC were more affected by life stress (Mullen & Suls, 1982; Suls & Fletcher, 1985). Reactions-to-feedback studies that controlled for self-esteem demonstrated that PRSC predicted negative mood only for people low in self-esteem (Hull & Young, 1983). Research on the properties of the PRSC scale revealed two sub-factors (PRSC-ISA and PRSC-SR) that correlate in opposite directions with health indicators such as anxiety and depression. More recent research also suggests that there may be some forms of trait self-attention that are harmful to well-being (e.g., rumination) and others that are neutral or beneficial (e.g., reflection).

CHAPTER II

Overview of the Present Research

The present research employed diary methodology to investigate forms of state and trait self-attention in the service of self-regulation and as individual difference factors that may create a vulnerability to emotional distress. Four research questions guided this investigation: (1) Are there common self-attentional processes in the service of self-regulation in response to goal-setbacks in daily life? (2) Do people display stable individual differences in self-attention in response to negative daily events? (3) Are individual differences in daily self-attention related to the individual difference self-report measures of trait self-attention (PRSC, RRQ-Rumination and Reflection) and pre-existing NA or depression? And (4) do individual differences in self-attention predict levels of emotional distress after controlling for initial levels of emotional distress? This research extends the diary research of Wood, Saltzberg, Neale, Stone, and Rachmiel (1990b) described next.

Diary Methodology and Relations among Self-Attention, Rumination, and Negative Affect

Although many theorists argued that it is people's self-attentional response specifically to negative events that influences well-being, self-attentional responses to negative events were never directly measured until Wood et al. (1990b). Using diary methodology, Wood and colleagues (1990b) were able to assess people's levels of self-focused attention (SFA) and rumination specifically in response to daily negative events. The purpose of their study was to examine the associations between forms of self-attention and negative moods at both the within-person and between-person level of analyses. Wood et al. (1990b) asked participants to describe the most negative event of the day and to rate their daily moods and coping responses to the event (rumination, distraction, and problem-focused attention) for a 30-day period. The event descriptions were content analysed for SFA by first dividing the descriptions into units (simple sentences and independent clauses) and then coding these units as self-focused, externally focused or ambivalent. Units were coded as self-focused if they involved self-evaluations or if they made reference to performance, physical characteristics or states, personality traits, or emotions.

Their measure of rumination was based on Nolen-Hoeksema's (1991) definition of Ruminative Response Style. However, their methodology differed from Nolen-Hoeksema's in that they measured state rumination associated with daily events rather than rumination in response to depressed mood states. Daily rumination was assessed with a single self-report item: "Regarding the problem or situation you described, did you find yourself dwelling on it, focusing on how bad it was and even intensifying its negative aspects in your own mind?" (p. 1030). Individual difference measures of SFA, rumination, and coping were calculated by averaging each participant's daily scores on a particular variable across all of their recorded diary events. Reliability analyses assessed the extent to which the aggregate diary measures reflected stable responses to daily events. The aggregate measures of coping (including rumination) and mood all demonstrated high levels of reliability indicating stable individual differences in ways of responding to negative daily events. Aggregate SFA was less reliable ($ICC=.79$), but acceptable as an individual difference factor.

Within-person correlations examine the extent to which fluctuations in the diary variables covaried with one another over time, while holding individual differences constant. Negative mood in the within-person analyses simply represents initial emotional reactions to reported negative events. In contrast, aggregated mood used in between-person analyses served as an indicator of general well-being across the diary period. For example, people with higher levels of aggregate negative affect are demonstrating a tendency to experience stronger negative moods over the course of the diary period relative to people with lower levels of aggregate negative affect.

In Wood et al. (1990b) the average within-person association between SFA and negative affect was not significantly different from zero. Similarly, SFA was not associated with any of the coping measures (rumination, distraction, or problem-focused attention) at the within-person level. Thus, daily SFA was not reliably associated with daily mood or any particular coping response to negative events. The absence of a within-person association between SFA and NA is not consistent with previous research on state SFA (e.g., Csikszentmihalyi & Figurski, 1982; Salovey, 1992; Scheier & Carver, 1977; Wood et al., 1990a). This finding however is consistent with Carver and Scheier's (1981) contention that people engaged in self-regulation will experience negative affect only under certain moderating conditions. Daily fluctuations in rumination, on the other hand, were moderately correlated with fluctuations in negative mood ($r=.36$). Across the sample, people's daily negative mood fluctuated with their degree of rumination. This finding is consistent with Nolen-Hoeksema's contention that rumination contributes to negative moods.

With respect to the between-person correlations, recall the predictions of Suls and colleagues (Mullen & Suls, 1982; Suls & Fletcher, 1985) that people who generally respond to events with higher levels of SFA will engage in more effective coping and experience better health. Contrary to these predictions, people with higher average levels of SFA across the diary period had significantly higher average levels of sadness, anxiety, scepticism, and rumination, and lower levels of problem-focused coping. Thus, higher average levels of SFA following negative daily events interfered with, rather than facilitated, problem solving tendencies.

With respect to coping, Wood et al. (1990b) found that people who typically responded to negative events with higher levels of rumination also experienced higher average levels of negative affect across the diary period. This finding is consistent with Nolen-Hoeksema's (1991) Ruminative Response Style theory. Even in response to relatively trivial daily events, individuals demonstrated a consistent Ruminative Response Style, and this style was associated with higher overall levels of negative mood. In Wood et al., however, the moods of people with a distraction coping style were not buffered by their coping strategy (aggregate distraction was unrelated to aggregate mood). Instead, it was people who tended to respond to events with problem-focused coping (a measure that included both thinking about the problem and doing something to deal with it) who experienced significantly less sadness. Thus it appears that while distraction may be an adaptive coping response on occasions when an individual is struggling with intense negative affect; it is not universally helpful for dealing with daily negative events.

Study 1

Contrary to the assertions of self-regulation theories, there is a growing body of evidence that forms of self-attention, both SFA and rumination, contribute to rather than ameliorate emotional distress. Given the methods normally adopted in the research on self-attention and well-being, however, the adaptive role of fluctuations in state self-attention in the service of daily self-regulation processes may have been overlooked. According to self-regulation theories, temporary self-attention (Carver & Scheier, 1981), rumination (Martin & Tesser, 1989), and even negative moods (Wicklund & Duval, 1971) may be essential components in the self-regulation of daily events. Learning that self-attention and negative affect vary situationally or that people who are generally higher in self-attention also experience generally higher levels of negative mood, does not preclude the possibility that most people typically use self-attention to regulate goal setbacks in daily life. A central objective of the present research was to examine directly the role of self-attention in the service of self-regulation following daily negative events. To do this, I combined Wood et al.'s (1990b) diary methodology with an approach used in the research on goals and daily events (e.g., Cantor, Norem, Langston, Zirkel, Fleeson, & Cook-Flannagan, 1991; Emmons, 1991; see below).

With respect to individual differences in self-attention, Wood et al. (1990b) demonstrated that people's propensity to self-attend and ruminate following relatively minor daily events was associated with more severe negative moods across the course of the diary study. This finding adds to the body of research (e.g., Nolen-Hoeksema, 1991, 1996) that demonstrates that individual differences in forms of self-attention create a vulnerability to depressed mood states. Unlike previous research that relied on self-report measures of chronic self-attention (i.e., PRSC), Wood et al. directly assessed people's propensity to experience state SFA and rumination associated with naturally occurring daily negative events (i.e., the aggregated daily measures of SFA and rumination).

To further investigate the nature of individual differences in self-attention, the present research compared diary aggregates of SFA and rumination with established self-report measures of trait self-attention. To do this, participants completed a pretest battery that included the PRSC scale and the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999). Using daily diary methodology, participants' levels of state SFA and rumination associated with daily negative events were assessed and aggregated across time. Comparing the pretest measures of self-attention with the diary aggregates enabled me to test the assumption in the PRSC research that people higher in forms of trait self-attention in fact pay more attention to negative events than do people lower on these dimensions. Thus, these analyses serve as a means of assessing the validity of the self-report measures of chronic self-attention.

With respect to the relation between self-attention and emotional well-being, Wood et al. (1990b) demonstrated that both aggregate diary SFA and rumination correlated with aggregate diary negative affect. As with previous research on the association between PRSC and depression, however, the associations between attention and negative moods may be moderated by people's general tendency to experience negative mood states. To test for this possibility, in the present research individual differences in trait Negative Affectivity were also assessed in the

pretest battery and were controlled in the between-person analyses of self-attention and emotional well-being.

The Self-Regulation Process

Recall that the purpose of self-regulation processes is to assist individuals in monitoring, evaluating, and adjusting progress toward goals (e.g., Bandura, 1989; Carver & Scheier, 1981; Pervin, 1989, 1991; Pyszczynski & Greenberg, 1987). Daily negative event methodology captures a range of negative events in people's lives, some of which will reflect setbacks to important personal goals while others will not. For example, imagine two people, Collin and Michelle. Collin has the current personal goal of becoming established in a larger circle of friends, but he is not concerned with getting high marks in his classes. Michelle, in contrast, is content with the number of friends in her life, but is trying to get into medical school and is thus striving for very high marks. If both Collin and Michelle learn on Monday that they received 70 percent on an exam and then on Thursday learned that they have not been invited on a weekend ski trip by a group of 'potential' friends, the goal-relevance of each of these daily events would differ between the two.

Goal researchers have demonstrated that people's moods are especially sensitive to goal-relevant daily events (Cantor et al., 1991; Emmons, 1991). According to self-regulation theorists, the amount of self-attention needed to regulate the emotional impact of goal-related events relative to goal-unrelated events should also be higher. Thus, personal goals can serve to identify those daily negative events on which the individual should exhibit a stronger self-regulatory response. In the present study, participants first completed a goal inventory (embedded in a set of other questionnaires) in which they listed their current set of higher-order personal goals or "life tasks." Then they participated in a diary study in which, twice daily, they described the most bothersome event or problem that occurred in the rating period, appraised the severity and importance of the event, rated their moods during the rating period, and rated their degree of self-regulation in response to the event. During the diary phase of the study, participants' personal goals were never mentioned. After the diaries were completed and returned, independent raters read each described event, judged whether it was or was not related to one of the personal goals listed on the participant's goal inventory, and rated the seriousness of the event.

All self-regulation theories describe variables and processes that underlie the pursuit of goal-directed behaviour. Given the focus on goal pursuit, one can assume that people's self-regulatory reaction to events related to their higher-order personal goals (goal-related) should be more pronounced than their reaction to events not related to these listed goals (goal-unrelated). Therefore, one way to test self-regulation theories is to examine the extent to which the variables or processes described vary as a function of the goal-relatedness of the event. Three variables relevant to the self-regulatory process were assessed in Study 1: SFA, rumination, and Self-Concept Confusion. Replicating the method used by Wood et al. (1990b), state SFA associated with daily events was assessed using a content analysis of the event descriptions. The second self-regulation variable, rumination, was a self-report measure based on Wood et al.'s operationalization of Nolen-Hoeksema's (1991) Ruminative Response Style. Three self-report items tapped the extent to which people continued to think about the event after it has ended,

focused on its negative aspects, and focused on how badly it made them feel. The third self-regulation variable was a self-report measure of state Self-Concept Confusion¹ or decreased self-concept clarity (Campbell, 1990; Campbell & Lavalley, 1993). This measure assessed the extent to which participants experienced temporary uncertainty, doubt, or confusion in their self-concepts. Self-Concept Confusion thus serves as an indicator of the extent to which goals that reside in higher levels of the self-regulation hierarchy (i.e., self-concept-related goals) were disrupted.

Hypotheses

1. Consistent with self-regulation theories (Carver and Scheier, 1981, 1990; Duval & Wicklund, 1972; Pyszczynski & Greenberg, 1987), it was expected that goal-related negative events would elicit more self-focused attention, temporary disruption of the self-concept, and negative affect than goal-unrelated events. Following self-regulation theories of rumination (Martin & Tesser, 1989), it was also expected that goal-related events relative to goal-unrelated events would elicit more rumination.
2. According to Trapnell and Campbell (1999), PRSC-SR and RRQ-Rumination should be positively associated with higher levels of pretest NA, and aggregate diary rumination, Self-Concept Confusion, and NA; but PRSC-ISA and RRQ-Reflection should be unrelated or negatively correlated with these measures.
3. Based on past research, positive correlations were expected among diary SFA, rumination and NA at both the within- and between-person levels of analysis.

Method

Participants

Participants were 63 undergraduate students (40 women and 23 men), with an age range of 17 to 31 years ($M = 20.00$). Without reference to pretest scores, participants were selected from a larger sample of students ($N = 604$) in introductory psychology courses who had completed a pretest battery.

Pretest Measures

Participants were pretested on the PANAS (Watson et al., 1988), the Reflection and Rumination Questionnaire (Trapnell & Campbell, 1999), and the 10-item PRSC scale. Six items of the PRSC scale tap individual differences in the tendency to engage in self-analysis (PRSC-SR). A prototypic item from this subscale is "I'm always trying to figure myself out." The remaining four items, tapping PRSC-ISA, include items such as "I'm aware of the way my mind works when I work through a problem." Consistent with prior research (Burnkrant & Page, 1984; Mittal & Balasubramanian, 1987; Piliavin & Charng, 1988), a factor analysis of the PRSC scale in our own pretest sample yielded clear evidence for the two factors, and thus I calculated the Self-Reflectiveness (PRSC-SR) and Internal State Awareness (PRSC-ISA) subscales in addition to the total PRSC score.

¹ Self-concept confusion is the reverse of the concept now more commonly referred to as self-concept clarity (Campbell et al., 1996).

Procedure

One month after the pretest, participants were recruited to take part in a two-week diary study. During the introductory session, they completed a Personal Goal Inventory that was embedded in a set of other questionnaires unrelated to this study. The instructions, adapted from Cantor, Markus, Niedenthal and Nurius (1986), were as follows: "Please think about the areas in your life to which you have been and expect to be directing your energies. List all of these *life tasks* or goals that come to mind" (space was provided for up to 10 goals). The instructor also provided examples of two life tasks: one related to academics and the other an inter-personal goal. Using similar instructions on a student sample, Cantor et al. (Cantor, Norem, Brower, Niedenthal, & Langston, 1987) found that 81% of the free listed life tasks could be classified in the following list of six consensual tasks: doing well academically, establishing future goals, managing time, making friends, being on one's own, and establishing an identity.

Participants were then given a structured diary with instructions to complete it twice each day, once in the mid-afternoon (or approximately 8 hours after waking up) and once at bedtime, for the next 14 days. They returned 7 days of their completed diaries at the end of the first week, and again, at the end of the second week. Completing the diary twice each day yielded a possible 28 data points for each subject. Most participants (81%) had complete data. Of the remaining 12 participants, all had fewer than 4 missing entries except for one subject who omitted 10 entries. Each diary entry (or rating period) contained the following items.

Self-Report Diary Measures

Mood. Respondents first rated their overall mood since they awoke that morning (first daily rating) or since the previous rating period (second daily rating). Mood ratings were taken first to reduce the possibility that these ratings would be affected by completing the other measures. Mood was assessed via the 20 adjectives that comprise the PANAS (Watson et al., 1988). The adjectives, rated on 5-point scales anchored by "not at all" and "a lot", provided indices of state NA (e.g., upset, irritable) and state Positive Affectivity (PA; e.g., excited, attentive). Daily NA and PA scores were calculated for each participant by simply averaging the mood items belonging to each index.

Daily events and appraisals. Participants then described the most bothersome event or problem they had experienced during the rating period. They typically wrote several sentences and described events that ranged from minor hassles (e.g., transportation problems) to more major events (e.g., the serious illness of a family member). After describing the event, respondents rated the seriousness and personal importance of the event (5-point scales): "How serious was this for you?" and "To what extent is this situation or issue one that represents something that is personally important to you?"

Rumination. Three questions (5-point scales) were designed to measure the extent to which respondents ruminated about the event. The three items were derived from a single rumination item used by Wood et al. (1990b), which had the three components embedded in it. The three items were: "After the situation had ended, did you continue to think about it later on?"; "Did continuing to think about the situation afterward intensify how badly you felt about it or how negatively you perceived it?"; and "When thinking about the situation afterward, did your thoughts dwell on the negative aspects of it, or on how badly you felt about it." Responses to these items were intercorrelated and were therefore combined to form a rumination index ($\alpha = .89$).

Self-Concept Confusion. Three questions (5-point scales) assessed the extent to which the event elicited Self-Concept Confusion. The items were: "To what extent did this situation cause you to question or change your beliefs about yourself?"; "To what extent did you feel uncertain or torn in different directions regarding how you should act or respond to this situation"; and "To what extent would you say your beliefs about yourself conflicted with one another in this situation?" Responses to the items were highly intercorrelated, and were combined to form a Self-Concept Confusion index ($\alpha = .92$).

Event Coding: Goal-Relevance and Self-Focus

Goal-relevance. Each of the participants' 28 negative events was subsequently coded for its relation to the respondent's personal goals. Coders compared each event to the participant's list of personal goals and judged whether or not the event was related to a listed goal. Interrater agreement between two independent coders was assessed on 308 events (11 respondents selected at random). The number of events that both raters judged as related or unrelated to goals was divided by the total number of events examined, yielding an agreement rate of 87%.

Self-focus. The diary events were content analysed for SFA using procedures similar to those described by Wood et al. (1990b). The event descriptions were first divided into units, which consisted of simple sentences, independent clauses, and clearly separate fragments or phrases. Each unit was then coded into a self-focus or external focus category. Self-focus units were those that involved references to the respondent's personality characteristics, emotions, or performance in academic, work or social situations, and any self-evaluations. Unlike Wood et al. (1990b), in this study units that made reference to physical characteristics or states (e.g., had a headache) were not classified as self-focus units. This restricted the self-focus measure to psychological self-attention. Units that included both self-focus and external focus were coded as ambivalent, but there were too few units in this category to consider further. Interrater agreement between two independent coders was assessed on 269 events (10 respondents selected at random). The number of agreements for units assigned to the self-focus, external-focus, or ambivalent categories by both coders was divided by the total number of units yielding an agreement rate of 83%. For each event description, the self-focus score was the ratio of the number of self-focus units to the total number of units.

Results

The within-person analyses examining the self-regulatory response to goal-related and goal-unrelated events and the within-person correlations among the diary variables are described first, followed by the analyses of individual differences. The individual difference section includes how individual differences moderated the within-person effects, reliability analyses of the aggregated diary variables, comparisons of the pretest and diary self-attention variables, and analyses of the effects of self-attention on well-being. Because the analyses yielded few reliable gender effects, the results presented are collapsed across gender and exceptions are noted in footnotes.

The Self-Regulation Process: Analyses Comparing Goal-Related and Goal-Unrelated Events.

On the goal inventories, participants listed on average 7.62 ($SD = 2.10$) goals. Participants' diaries contained on average 14.65 goal-related events ($SD = 5.19$) and 12.89 goal-unrelated events ($SD = 5.12$). Paired sample t-tests were used to compare participants' level of response to their goal-related events relative to their goal-unrelated events. To conduct these within-person analyses, each participants' diary measures (event appraisals, SFA, rumination, Self-Concept Confusion, and mood) were averaged across their events related to goals and events unrelated to goals. Table 1.1 gives the averages of the dependent measures as a function of goal-relevance.

Table 1.1

Paired Sample T-tests and Means for Diary Measures as a Function of Goal-Relatedness

	Goal-Related	Goal-Unrelated	t(62)
Perceived importance	3.63	2.84	10.68***
Perceived seriousness	3.47	3.07	6.14***
Negative affect	1.66	1.57	2.91**
Positive affect	2.44	2.48	0.85
Self-focused Attention	0.77	0.50	10.01***
Rumination	2.78	2.35	7.39***
Self-concept Confusion	2.19	1.84	5.48***

** $p < .01$ *** $p < .001$ (two-tailed)

Event appraisals. In support of the assumption that personal goals mark areas of importance in people's lives, negative daily events that occurred in goal domains were viewed as more personally important than events unrelated to goals. Goal-related events were also perceived as as more serious than events unrelated to goals.

Mood. Participants characterised their moods during the rating period on the 20 PANAS adjectives. Consistent with previous research on goals and negative mood (Cantor et al., 1991; Emmons, 1991) and with self-regulation theories (Duval & Wicklund, 1972; Carver & Scheier, 1991), NA yielded a significant effect for goal-relatedness. Participants exhibited higher levels of NA during rating periods in which they had experienced a goal-related negative event than during rating periods in which the negative event was unrelated to their goals. Levels of positive affect (PA) did not differ as a function of goal relevance. The divergence between NA and PA is consistent with the results of other daily event studies (Stone, 1981, 1987; Wood et al., 1990b), which have demonstrated that negative events or problems are more strongly associated with negative affect than with positive affect.

Self-regulation variables. As predicted by self-regulation theories, daily levels of SFA were significantly higher for goal-related events than goal-unrelated events. In addition, participants ruminated more following goal-related negative events than goal-unrelated negative events, a finding consistent with Martin and Tesser's (1989) self-regulation theory of rumination. Self-Concept Confusion scores also varied as a function of goal-relevance, indicating that goal-

related negative events were more likely to temporarily disrupt self-related concepts higher in the self-regulation hierarchy.²

Two of the three items in the rumination index made explicit reference to negative feelings associated with ruminating. Given the overlapping NA content, it is possible that the goal-related rumination result was a product NA variance. To test whether the goal-related difference in rumination was simply a function of goal-related differences in NA, I conducted a repeated measures analysis of covariance (ANCOVA). Although the goal-related difference in NA was significant as a covariate, the goal-related difference in rumination remained highly significant after controlling for NA (see Table 1.2).

Table 1.2

Repeated Measures Analysis of Covariance for Rumination as a Function of Goal-Relevance Controlling for Negative Affect

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
W/I effect					
Within+Residual	4.94	58	.09		
Regression	1.55	1	1.55	18.15	.000
Goal relevance	3.17	1	3.17	37.55	.000
	B	Beta	Std. Err	t	Sig of t
Covariate (Negative affect)	.91	.49	.22	4.3	.000

Within-Person Relations Among the Diary Variables

Within-person correlations among the self-regulation and mood variables were calculated to assess the extent to which daily levels of SFA, rumination, Self-Concept Confusion and negative affect covaried over time. The within-person correlations control for individual differences and highlight the situational covariation among the self-regulation and mood variables. For each participant, correlations were computed between two of the diary variables (e.g., daily SFA and NA) across the 28-day rating periods. The correlations were then transformed to a Fisher's Z to normalize the typically skewed distribution (Cohen & Cohen, 1975). The Zs were averaged across all participants and these means were tested for their difference from 0 using a one-sample *t* test (Michela, 1990).³ The values for the within-person correlations in Table 1.3 represent the average Zs transformed back to *rs*.

² Gender interacted with goal relevance on both personal importance, $F(1,60) = 3.98$, $p = .05$, and Self-Concept Confusion, $F(1,61) = 9.42$, $p < .01$, such that men demonstrated a stronger goal-relevance effect than did women. Simple effects, however, demonstrate that the effect of goal relevance was highly significant for both genders (all $ps < .01$).

³ Because this significance test simply assesses whether the correlation is reliably different from 0, even correlations of small magnitudes can be highly significant.

Table 1.3
Average Within-Persons Correlations among the Diary Variables

	Rumination	Self-Concept Confusion	Negative Mood
SFA	.13*** (.21)	.19*** (.22)	.09** (.23)
Rumination	--	.52*** (.24)	.41*** (.22)
SCC	--	--	.28*** (.26)

Note. The average within-participants correlations are based on 58 - 62 participants. Standard deviations are provided in parentheses. SFA = self-focused attention; SCC = Self-Concept Confusion.

** $p < .01$; *** $p < .001$

In the present research, small, but reliable, within-person correlations were obtained between the levels of state SFA and levels of NA, Self-Concept Confusion, and rumination. Negative events that provoked increased SFA also tended to elicit more NA, Self-Concept Confusion, and rumination. Self-Concept Confusion, rumination and NA also covaried quite substantially with one another over time, indicating that those events or occasions that elicited elevations in any one of these variables also elicited elevations in the others. Wood et al. (1990b) also obtained a significant positive within-person association between rumination and NA, but they did not obtain any reliably associations with SFA.

Individual Differences: Moderation of the Within-person Effects

Next I tested whether the within-person processes were moderated by individual differences in the pretest variables collected several months before the diary study. To test for moderators of the goal-related differences in SFA, rumination, Self-Concept Confusion, and NA, difference scores were calculated by subtracting the goal-unrelated value from the goal-related value. These difference measures were then correlated with each of the pretest measures and subscales (NA, PRSC-SR, PRSC-ISA, RRQ-Rumination, RRQ-Reflection). Table 1.4 shows that none of the pretest variables moderated the goal-related differences. Thus, the self-regulation effects for SFA, Self-Concept Confusion, NA and rumination did not vary for people differing in trait NA or self-attention.

Table 1.4
Correlations between Pretest Variables and Diary Difference Scores

Pretest	Diary Difference Scores			
	D-SFA	D-RUM	D-SCC	D-NA
PRSC	-.15	.08	.25	.02
PRSC-SR	.00	.10	.22	.07
PRSC-ISA	-.21	-.00	.09	-.06
RRQ-Rum	.01	-.13	-.09	-.08
RRQ-Refl	-.10	.12	.07	.05
NA	-.06	.03	.13	-.22

Note. SFA=self-focused attention; RUM = rumination; NA = negative mood; SCC = Self-Concept Confusion; PRSC = Private Self-Consciousness; PRSC-SR = Private Self-Consciousness Self-Reflectiveness Subscale; PRSC-ISA = Private Self-Consciousness Internal State Awareness Subscale; RRQ-Rum = Rumination; RRQ-Refl = Reflection.

* $p < .05$; ** $p < .01$ (two-tailed).

The within-person correlations were also correlated with the pretest measures to test for moderation effects (see Table 1.5). These moderation analyses tested whether people who differ in trait NA, PRSC, RRQ-Rumination or RRQ-Reflection experienced different levels of associations among the diary variables. Given the number of correlations calculated (36), a significance level of $p < .01$ is adopted to reduce the familywise error rate. At this significance level, none of the correlations reached statistical significance. The only correlations that even approached significance were obtained with RRQ-Reflection: a form of self-attention motivated by intellectual curiosity. People higher in RRQ-Reflection demonstrated stronger correspondence between daily rumination and NA, and between daily Self-Concept Confusion and NA.

Table 1.5
Correlations between Pretest Variables and Within-Person Correlations

Pretest	Within-Person Correlations					
	SFA/NA	RUM/NA	SCC/NA	SFA/RUM	SFA/SCC	RUM/SCC
PRSC	.08	.10	.07	-.07	-.03	.06
PRSC-SR	.25	.03	.04	.11	.08	.12
PRSC-ISA	-.18	.11	.06	-.23	-.14	-.06
RRQ-Rum	.20	-.15	-.10	-.06	.07	-.15
RRQ-Refl	.09	.26*	.31*	.07	-.08	.10
NA	.08	.03	.09	.11	.10	.01

Note. SFA = self-focused attention; Rum = rumination; NA = negative affectivity; SCC = Self-Concept Confusion; PRSC = Private Self-Consciousness; PRSC-SR = Self-Reflectiveness Subscale; PRSC-ISA = Internal State Awareness Subscale; RRQ-Rum = Rumination Scale; RRQ-Refl = Reflection Scale.

* $p < .05$ (two-tailed).

Individual Differences among the Pretest and Diary Variables

Next, I examine the between-person relations among the diary and pretest variables, and test the self-attention variables as predictors of aggregate diary negative affect controlling for pretest NA. Before describing the zero-order correlations, I first describe how the averaged diary measures were calculated and the extent to which they represented reliable individual differences.

Reliabilities of diary measures as individual differences. For each participant, diary scores on state NA, SFA, Self-Concept Confusion, and rumination were averaged across all of the 28 rating periods. The reliability of the averages was assessed by treating each rating period as an item in a 28-item scale and computing the Cronbach alpha reliability coefficient, an indicator of the extent to which participants' ratings on these variables were stable across rating periods or events⁴. Table 1.6 presents the reliabilities and the descriptive statistics of the aggregate measures.

Table 1.6
Reliabilities and Summary Statistics for the Aggregate Diary Variables.

	Combined Sample (N=63)			Females (N=40)		Males (N=23)	
	Alpha	M	SD	M	SD	M	SD
Negative Affect	.94	1.60	.36	1.59	.36	1.63	.36
Self-focused attention	.62	0.61	.13	0.61	.14	0.60	.12
Self-concept confusion	.89	2.04	.54	2.10	.53	1.94	.55
Rumination	.92	2.60	.54	2.64	.54	2.53	.54

The reliabilities were high for NA, Self-Concept Confusion, and rumination, indicating that individuals' daily or state levels of NA, Self-Concept Confusion and rumination were highly consistent across the diary events. Thus, although diary rumination, Self-Concept Confusion and NA varied within-people as a function of goal-relatedness, the reliability analyses demonstrated that these variables are also stable individual difference factors indicating that participants were relatively consistent in the ways of responding to negative events. Average SFA, however, exhibited only moderate reliability. The reliabilities of the diary variables in this study are generally comparable to those obtained in Wood et al.(1990b), but in their study SFA demonstrated higher temporal stability (ICC=.79). Independent sample t-tests tested for gender differences on the diary aggregates, but levels of rumination, NA, Self-Concept Confusion and SFA did not differ significantly as a function of gender (all t s<1.12).

Zero-order correlations among the diary and pretest variables. The between-person correlations among the diary and pretest variables are presented in Table 1.7. Aggregate diary SFA was marginally associated with pretest NA scores, but it was not correlated with any of the trait measures of self-attention (PRSC, PRSC-ISA, PRSC-SR, RRQ-Rumination, or RRQ-

⁴ Although it may appear odd to use Cronbach's alpha to assess reliability in terms of temporal stability, the logic is straightforward (variance across time is substituted for variance across scale items). This reliability measure is easy to compute and yields values that are nearly identical to the interclass correlation coefficient, ICC(1,k) (see Shrout & Fleiss, 1979; Campbell, 1991).

Reflection). This result suggests that daily levels of SFA were more likely a manifestation of chronic negative affectivity than of dispositional self-attention, per se. The second interesting feature of the correlations in Table 1.6 is the fact that the total PRSC score was not correlated with any of the diary aggregates. A partial explanation for this outcome is apparent from examining the two PRSC subscales. The PRSC-SR and PRSC-ISA correlated in opposite direction with each of the diary variables. The PRSC-ISA subscale was negatively correlated with average rumination, Self-Concept Confusion, and NA indicating that people who were more aware of their internal states exhibited less rumination, Self-Concept Confusion and NA in responses to daily negative events. The PRSC-SR subscale in contrast was positively, but not significantly, correlated with average rumination, Self-Concept Confusion and NA. The disparate findings between PRSC-SR and PRSC-ISA add to the evidence of structural problems with the PRSC scale (e.g., Anderson & Bohon, 1996; Piliavin & Charng, 1988).

Table 1.7

Between-Persons Correlations among the Individual Difference Variables

	Pretest						Aggregate Diary		
	PRSC	PRSC-SR	PRSC-ISA	RRQ-RUM	RRQ-REFL	NA	SFA	RUM	SCC
Pretest									
PRSC									
PRSC-SR	.72***								
PRSC-ISA	.56***	-.17							
RRQ-Rum	.19	.39**	-.19						
RRQ-Refl	.32*	.23	.18	.24					
NA	.03	.23	-.23	.33*	.04				
Aggregate Diary									
SFA	.07	.03	.07	.04	.02	.30*			
RUM	.03	.26*	-.26*	.44***	-.05	.39**	.39**		
SCC	-.01	.21	-.25*	.43***	.12	.28*	.27*	.73***	
NA	-.03	.21	-.30*	.37**	.07	.27*	.19	.64***	.59***

Note. The correlations are based on between 58 - 63 participants. SFA = self-focused attention; Rum = rumination; NA = negative affectivity; SCC = Self-Concept Confusion; PRSC = Private Self-Consciousness; PRSC-SR = Private Self-Consciousness Self-Reflectiveness Subscale; PRSC-ISA = Private Self-Consciousness Internal State Awareness Subscale; RRQ-Rum = Reflection Rumination Questionnaire Rumination Scale; RRQ-Refl = Reflection Rumination Questionnaire Reflection Scale.

* $p < .05$ (two-tailed), ** $p < .01$ (two-tailed), *** $p < .001$ (two-tailed).

Consistent with the findings of Trapnell and Campbell (1999), RRQ-Rumination (a measure of neurotic self-attention) produced a similar pattern of correlations as PRSC-SR. RRQ-Rumination was significantly associated with pretest NA and average diary rumination, Self-Concept Confusion and NA. In contrast, RRQ-Reflection (curiosity-driven self-attention) was unrelated to pretest NA and the aggregate diary measures. Thus, people higher in trait reflection did not engage in more rumination following daily events, nor did they experience higher levels of Self-Concept Confusion or NA. The divergent correlations between RRQ-Rumination and RRQ-Reflection, together with the substantial correlation between RRQ-

Rumination and aggregate diary rumination, further validates the RRQ and the theoretical distinction between rumination and reflection.

The correlations also revealed, not surprisingly, that pretest trait NA was positively associated with aggregate diary rumination, Self-Concept Confusion and NA. People higher in trait NA displayed higher average levels of rumination, Self-Concept Confusion, and negative affect across the diary phase of the study.

Zero-order correlations between the within-person effects and NA. To examine whether any of the within-person effects were associated with higher levels of emotional distress during the diary period, the goal-related differences in SFA, rumination, and Self-Concept Confusion and the within-person correlations were also correlated with aggregate diary NA (see Table 1.8). The only correlation with aggregate NA that approached significance was the within-person correlation between SFA and NA. People who demonstrated a stronger correspondence between daily levels of SFA and NA were generally more vulnerable to negative affect.⁵

Table 1.8
Correlations with Aggregate Diary Negative Affectivity (NA)

	Aggregate Diary NA
Diary Difference Scores	
D-SFA	-.11
D-RUM	.05
D-SCC	-.16
D-NA	.09
Within-Person Correlations	
SFA / NA	.27*
RUM / NA	-.06
SCC / NA	-.03
SFA / RUM	-.09
SFA / SCC	.12
RUM / SCC	.03

Note. SFA=self-focused attention; Rum = rumination; SCC = Self-Concept Confusion.

* $p < .05$ (two-tailed).

Predicting aggregate diary NA controlling for pretest NA. In this section, I investigated which of the individual difference factors that reliably predicted aggregate diary NA (RRQ-Rumination, aggregate diary rumination, and Self-Concept Confusion) served as the best predictor of individual differences in emotional distress. First I calculated partial correlations to examine the effects of pretest NA on the associations between each of the individual difference factors and diary NA (see Table 1.9). While aggregate diary rumination and Self-Concept Confusion remained highly significant predictors of aggregate NA, RRQ-Rumination dropped to marginal significance when controlling pretest NA.

⁵ This finding was not replicated in Study 2.

Table 1.9

Partial Correlations with Aggregate Diary Negative Affect (NA) Controlling for Pretest NA

	<u>pr</u>
Pretest RRQ-Rum	.31*
Diary Rumination	.61***
Diary SCC	.54***

Note. RRQ-Rum = Reflection Rumination Questionnaire Rumination Scale; SCC=Self-Concept Confusion.

* $p < .05$; ** $p < .01$, *** $p < .001$ (two-tailed).

To competitively test the individual difference factors as predictors of aggregate diary NA, I used a hierarchical regression. Pretest NA was entered on the first step, and the three individual difference factors were simultaneously entered on the second step. Table 2.0 presents the beta weights and t-values from the regression analyses. Pretest NA accounted for 7.4% of the variance of aggregate diary NA, $F(1,54)=4.34$, $p < .04$. The remaining variables together explained another 38% of the variance, $F(1,49)=11.37$, $p < .000$. As can be seen from Table 1.8 aggregate diary rumination remained as the only significant predictor of aggregate diary NA.

Table 2.0

Summary of Hierarchical Regression Analyses for Variables Predicting Aggregate Diary Negative Affectivity

<u>Variable</u>	<u>β</u>	<u>t</u>
Step 1		
Pretest NA	-.01	-.08
Step 2		
Pretest RRQ-Rum	.09	.76
Diary Rumination	.52	3.27**
Diary SCC	.15	.95

Note. Beta weights are taken from the final equation. RRQ-Rum = Reflection Rumination Questionnaire Rumination Scale; NA=negative affectivity, SCC=Self-Concept Confusion.

* $p < .05$; ** $p < .01$, *** $p < .001$ (two-tailed).

DiscussionWithin-Person Effects

Goals and self-regulation processes. The first objective of this research was to examine self-regulation processes in daily life. The results from Study 1 indicated that, relative to goal-unrelated events, goal-related negative events (a) were associated with higher levels of psychological distress (NA) during the period in which the event occurred, (b) were appraised as being more serious and more personally important, and (c) elicited more pronounced self-regulatory responses. Goal-related differences were obtained on all three variables relevant to self-regulation: self-focused attention, which self-regulation theorists argue initiates the self-regulatory process; Self-Concept Confusion, an indicator of the extent to which the event disrupted higher-level self-related concepts in the self-regulatory hierarchy; and rumination, an

indicator of prolonged self-regulation. Goal-related differences in rumination remained significant even when goal-related differences in NA were partialled out. While original self-regulation theories would predict increases in SFA to deal with the negative self-discrepancies created by goal-related negative events, the present findings also demonstrated that people engaged in higher levels of rumination following goal-setbacks, a finding consistent with Martin and Tesser's (1989) self-regulation theory of rumination.

Personality and goal relevance. Participants were pretested on measures of PRSC, RRQ, and NA, personality traits that have been implicated in the stress and coping process. Past research has demonstrated that neuroticism-related variables such as NA and RRQ-Rumination tend to be associated with elevated perceptions of event negativity and emotional reactivity (e.g., Campbell et al., 1996; DeLongis, Folkman, & Lazarus, 1988; McIntosh et al., 1995; Nolen-Hoeksema, 1991; Tennen & Herzberger, 1987), whereas PRSC has been shown to both exacerbate (Frone & McFarlin, 1989) and ameliorate (Mullen & Suls, 1982; Suls & Fletcher, 1985) the effects of daily event stress on well-being. In the present research, however, none of these traits moderated the goal-relatedness effects; that is, none moderated the tendency for people to experience elevated self-attention in response to their daily goal-related events relative to their goal-unrelated events. This finding suggests that increased self-attention, in the service of self-regulation, is not unique to people high in trait NA or trait forms of self-attention.

Within-person correlations with SFA. Laboratory research and one diary study (Csikszentmihalyi & Figurski, 1982) have demonstrated that SFA and NA covary situationally. Contrary to those findings, Wood et al. (1990b) did not obtain an average within-person association between SFA and NA. In the present research, a small but reliable correlation was obtained. How can these discrepancies be reconciled? Citing Greenberg and Pyszczynski (1986), Wood et al. surmised that the inconsistency between their study and previous research was a function of the time lag between the occurrence of the event and the measurement of mood and SFA. Greenberg and Pyszczynski (1986) demonstrated that all people generally experience elevated levels of state SFA immediately after a failure, but that SFA dissipates relatively quickly for nondepressed participants, but persists for depressed people. A time delay between the occurrence of the event and the measurement of SFA and mood may miss the short period of general correspondence between SFA and NA. The results from the present research suggest that a shorter diary timeframe captures more situational covariation; I sampled the diary variables twice a day, whereas Wood et al. sampled them once a day.

Another explanation for the weak association between SFA and NA derives from self-regulation theories, which predict that SFA would occur more frequently than NA when regulating daily events. For example, Duval and Wicklund (1972) would predict the following sequence: a daily event would provoke SFA, SFA would initiate self-discrepancy evaluation, NA would occur only for those events that cause negative self-discrepancies. While significant daily events are likely to create negative self-discrepancies, hassles such as forgetting an umbrella and getting soaked may not. Carver and Scheier's (1981, 1990) self-regulation theory would predict an even more distant relation between SFA and NA. After discrepancy evaluation, people would carry out an evaluation of the likelihood of resolving the self-discrepancy (expectancy evaluation): positive expectancies would avert NA, negative expectancies would produce NA. These theories suggest that many people will become self-focused in response to daily events,

but often they are able to deal with the problems without experiencing negative affect. It is only on a subset of events that people both become self-focused and experience NA.

While Greenberg and Pyszczynski (1986) demonstrated that some people stay self-focused longer than others do, the present results also showed that some people experienced a stronger correspondence between SFA and NA. When the within-person correlation between SFA and NA was correlated with aggregate diary NA (the measure of emotional well-being) a positive association was obtained. People who experienced a stronger correspondence between daily levels of SFA and NA also tended to experience higher emotional distress across the diary period. This findings suggests that a subset of people are more prone to experiencing NA whenever they become self-focused, and these people may be more vulnerable to protracted NA.

Within-person correlations with rumination. Rumination demonstrated a much stronger within-person association with both NA and Self-Concept Confusion, than did SFA. The average within-person correlations indicate that the co-occurrence of rumination and NA in daily life is relatively common. Although these findings are consistent with Wood et al. (1990b), with self-regulation theories of rumination (Martin & Tesser, 1989), and with laboratory studies (e.g., Salovey, 1992; Salovey et al., 1993; Wood et al., 1990a), they are also somewhat surprising. The diary measure of rumination was not capturing problem-solving ruminations; it assessed a form of rumination that involved dwelling on negative feelings and aspects of the events, and experiencing stronger negative feelings and perceptions as a result of the continued ruminations. Thus, shortly after a negative event occurred, people generally appeared to experience both negative affect and negative rumination. Further, this association was not predictive of aggregate NA; that is, people who exhibited a closer correspondence between their tendency to rumination when in a negative mood state were not more vulnerable to NA across the diary session.

This pattern of results also raises questions about Nolen-Hoeksema's definition of Ruminative Response Style. Nolen-Hoeksema (1996) argues that there are qualitative differences in the manner in which people respond to depressed moods -- some people ruminate, others distract. People who ruminate when depressed, she argues, are vulnerable to developing depression. In the present research, the average within-person association between rumination and NA was substantial, unmoderated by individual differences in RRQ or trait NA, and did not predict higher overall levels of NA. These results add to the laboratory research that has demonstrated that manipulated negative moods generally provoke self-attention not distraction in people (e.g., Salovey, 1992; Salovey et al., 1993; Wood et al., 1990a). Because Nolen-Hoeksema has focused her research at the between-person level of analysis, she has never reconciled her theory with the findings that suggest that self-focused attention and rumination may be natural responses to negative mood states.

Individual Differences in Self-focused Attention

With respect to individual differences in self-attention, the present research examined both PRSC, a trait measure of SFA, and aggregate diary SFA as indicators of stable individual differences in SFA. Problems associated with both measures emerged in Study 1. Consistent with other research (e.g., Anderson & Bohon, 1996; Burnkrant & Page, 1984; Trapnell &

Campbell, 1999), the PRSC scale demonstrated a number of validity problems. In the stress moderation research, it was always assumed that people higher in PRSC would pay more attention to negative events than would people lower in PRSC. However, neither the full PRSC scale nor its subscales correlated with the aggregate diary measure of SFA. Furthermore, the two PRSC subscales correlated in opposite directions with the other diary variables. The Self-Reflection subscale, which taps individual differences in the tendency to engage in self-analysis, was positively associated with NA, rumination, and Self-Concept Confusion, whereas the Internal State Awareness subscale, which taps individual differences in awareness of inner thoughts and feelings, was negatively associated with these same variables. These findings provide additional evidence of internal consistency problem with PRSC scale.

Although SFA demonstrated the expected within-person effects, the aggregate measure of SFA showed relatively low temporal consistency across the diary period ($\alpha=.62$). Wood et al. (1990b), using the same measure but a longer diary time frame, achieved better reliability ($ICC=.79$). Further comparisons with Wood et al. demonstrate that I generally obtained stronger within-person correlations with SFA, but a weaker between-person correlation between SFA and NA. The different reliabilities for the SFA measure between the two studies may be a function of the different diary time frames used in the two studies (full day versus half day). Greenberg and Pyszczynski (1986) demonstrated that state SFA varies both as a function of the situation (e.g., as a response to negative feedback) and as a function of individual differences. In their study, shortly after negative feedback participants' generally demonstrated heightened state SFA; individual differences in levels of SFA emerged only after a significant time delay. Consistent with self-regulation theory, this pattern suggests that shortly after a negative event most people become self-focused. With time, however, some people's SFA decreases while others' persists. Thus, the influence of individual differences on levels of SFA emerges only after a time delay. Because the half-day diary time frame of Study 1 assessed SFA on average closer to the time the negative event occurred than did the full-day diary of Wood et al.; the time differential may account for the different reliabilities for aggregate SFA. The low reliability of the SFA measure as an individual difference factor would tend to produce less reliable between-person correlations. To better examine the affects of individual differences in SFA on health outcomes, Study 2 used a full day diary time interval to capture more individual difference variance in the measure of SFA.

Individual Differences in Rumination

In the present research, people's level of rumination in response to daily events displayed high temporal stability. Thus, people demonstrated clear individual differences in their daily levels of rumination in response to negative events – a finding consistent with Wood et al. (1990b). Wood et al. also found a between-person association between aggregate diary rumination and NA, but did not control for any third variables when examining this relation. The inclusion of a pretest measure of trait negative affectivity in the present study demonstrated that both aggregate diary rumination and NA were highly associated with dispositional NA, and thus that their association might simply be the product of dispositional NA. To rule out this possibility, pretest NA was partialled out when examining the relation between aggregate diary rumination and NA, and it was found that the association remained significant. This finding adds to the considerable body of evidence demonstrating that people who experience higher

levels of negative, symptom-focused rumination are more vulnerable to protracted emotional distress.

Additionally, the results from the present research suggest a possible agent of rumination – self-concept disruption. Both aggregate diary Self-Concept Confusion and rumination were independently associated with aggregate NA, but when both were simultaneously regressed on NA, rumination remained the only significant predictor. According to Baron and Kenny (1986), this pattern of results indicates that individual differences in rumination mediate the effect of Self-Concept Confusion on aggregate diary NA. That is, people who were more vulnerable to self-concept disruptions engaged in higher levels of rumination across the diary period which, in turn, caused higher levels of emotional distress. This pattern is consistent with Hyland's (1987) self-regulation theory of depression. According to Hyland, individual differences exist in people's tendency to perceive events as either having to do with higher level concepts such as self-esteem or self-efficacy versus lower level concepts such as the situational specifics of a problem. People who perceive events as having to do with their higher-order self-concepts are more vulnerable to experiencing protracted self-attention and depression in response to negative events.

In interpreting the present results, however, it is important to acknowledge that shared NA content rather than temporal closeness may explain the mediation sequence among aggregate diary rumination, Self-Concept Confusion and NA. The rumination items made explicit reference to negative mood states, perceptions and thoughts associated with the event whereas the Self-Concept Confusion measure did not. Overlapping NA variance and the direction of influence between rumination and negative mood are persistent problems in the research on self-attention and psychological well-being. To attempt to specifically examine the impact of self-attention on emotional distress, Study 2 investigates a form of rumination that does not reference negative mood states. In addition, to create a more clear temporal sequence in Study 2, the measure of emotional distress was collected 2-months after the diary phase.

Summary of Rumination Findings

Considering the within-person and between-person results for rumination together a more complex picture of rumination in daily life emerges. Research on individual differences in rumination has tended to emphasise qualitative differences between people such as people being either ruminators or reflectors (Trapnell & Campbell, 1999) or being either ruminators or distractors in response to negative moods (Nolen-Hoeksema, 1991, 1996). The present findings, however, demonstrated that people generally ruminate when they are in a negative mood and following goal-setbacks. Thus, it appears to be the amount of rumination that distinguishes people, not whether or not people ruminate when in a negative mood. This conclusion is consistent with that drawn by Wood et al. (1990b), who observed that the "combination of within-subject and between-participants effects suggests that there is a pervasive tendency to ruminate when upset but that some individuals are able to snap out of this preoccupation, whereas others who are not are more severely and continually distressed." (p. 1034).

The finding that high levels of rumination predict psychological distress is also consistent with Ingram's (1990) theory of depression, which identifies self-absorption as the causal agent in emergent depression, and Pyszczynski and Greenberg's (1987) self-regulation theory of reactive depression. Both Ingram and Pyszczynski and Greenberg make the point that bouts of self-

attention are common in day-to-day life. Ingram argued that what distinguishes people and what underlies a wide range of psychopathologies including depression is people's degree of self-absorption: internally focused attention that is both persistent and inflexible. A variant on this idea is Pyszczynski and Greenberg's theory of self-regulation perseveration. In this theory, they argue that it is the inability to escape self-attention that creates a vulnerability to depression. Self-regulation perseveration occurs when a person continues to focus on negative self-discrepancies that they are unable to resolve. This self-attention produces a spiralling process in which self-focus intensifies NA, increases the internality of attributions for the event, and leads to neglect of other concerns. The mounting self-criticism and negative affect may in turn undermine the stability and positivity of the self-schema, culminating in a state of depression. Study 2 takes a closer look at self-attention perseveration by assessing protracted multi-day rumination associated with daily negative events. Factors that might contribute to prolonged rumination such as self-concept disruption, and thought and emotional suppression were also investigated.

CHAPTER III

Study 2

Although a substantial body of research implicates self-attention in the aetiology of depression, the simple conclusion that self-attention processes are universally harmful is challenged by some of the findings obtained in Study 1. Within-person fluctuations in self-attention (both SFA and rumination) appear to be fairly typical responses to both goal-setbacks and negative mood states in daily life, and these fluctuations did not predict individual differences in negative affect. Thus, contrary to Nolen-Hoeksema's assertions, the tendency to ruminate when in a negative mood appears to be common and, for many people, unproblematic. Additionally, individual differences in SFA were not associated with higher levels of aggregate daily NA. On the other hand, people who on average showed higher levels of rumination over the course of the diary study were more vulnerable to negative mood states even after controlling for trait NA. Together these findings raise the possibility that it is specifically negative, ruminative forms of self-attention following negative events that undermines emotional well-being.

Using a design similar to Study 1, Study 2 extends the investigation of self-attention processes and emotional well-being in four ways. First, I test the boundaries of the self-attention magnitude effect (the tendency for individual differences in self-attention to predict emotional distress) by asking the question "do individual differences in more benign forms of self-attention also predict levels of emotional distress?" This question attempts to determine whether it is simply the magnitude of self-attention in daily life (independent of the negativity of the self-attention) that produces subsequent emotional distress. Second, I attempt to distinguish the effects of individual differences in initial versus protracted self-attention. To do this, I directly measured multi-day-protracted attention (i.e., protracted thought about daily negative events). Third, two psychological factors that have been proposed by a variety of theorists to cause protracted attention, self-concept disruption and thought suppression, were examined. Finally, to test the limits of conclusions drawn about self-attention processes based on individual difference analyses, the above variables were again tested as components of within-person self-regulatory responses to daily events.

Boundaries of the self-attention magnitude effect

Numerous studies conducted by different researchers have demonstrated that individual differences in negative, symptom-focused rumination predict emotional distress (Study 1, present research; Just & Alloy, 1997; Nolen-Hoeksema, 1996, Wood et al., 1990b). Even more damning to theories advocating the health benefits of chronic self-attention are findings that individual differences in non-negative forms of self-attention predict emotional distress (e.g., Nolen-Hoeksema et al., 1997; Wood et al., 1990b). These findings raise the possibility that chronically high levels of any form of self-attention in response to negative events, not just negative rumination, create a vulnerability to experiencing protracted depressed moods. Below I review the research on these other forms of self-attention and their relation to well-being.

SFA. The research investigating the effect of dispositional SFA on well-being has generated ambiguous results both with the PRSC measure and, more recently, with the

unobtrusive measure of SFA. The unobtrusive measure is assessed as the proportion of self-related thoughts in event descriptions (e.g., Wood et al., 1990b) or in sentence completion tasks (Exner, 1973; Greenberg & Pyszczynski, 1986). Using an unobtrusive measure in their diary study, Wood et al. (1990b) found that aggregate diary SFA was a stable individual difference factor that reliably correlated with aggregate diary NA. I did not replicate these findings in Study 1. Aggregate diary SFA did not exhibit high reliability as an individual difference factor and it was not reliably associated with aggregate NA. As I suggested in the discussion, this divergence between studies may have been the product of different diary time frames. Whereas I sampled the diary variables twice a day, Wood et. al. sampled only once a day. The lower temporal stability of my daily SFA measure, and the stronger within-person and weaker between-person correlations with SFA (relative to Wood et al.) all suggest that the shorter diary time frame captured more situational than dispositional variance in SFA.

To attempt to replicate and extend Wood et al. (1990b), I adopted a longer diary time frame. SFA was again assessed unobtrusively from the self-related content in participants' diary event descriptions. While in Study 1 the diary component lasted 2 weeks and was completed twice daily, in Study 2 the diary component consisted of two, 2-week segments (separated by a period of 2 months) in which a full day rather than half-day diary interval was used. The number of data points (28) were thus the same in Study 1 and 2, but in Study 2 the diary component covered a 4 week rather than 2 week period. Given the longer diary rating period, daily levels of SFA were expected to reflect more individual difference variance than situational variance, and thus to be more comparable to Wood et al. (1990b). As such, aggregate diary SFA was expected to demonstrate higher reliability (i.e., stability) and stronger correlations with individual differences in well-being.

In Study 1, psychological distress was operationalized using the NA adjectives of the PANAS. In Study 2, daily anxious mood was again assessed, but a smaller set of adjectives was used. Additionally, a self-report measure of depression was administered pre-diary and one month post-diary. Including a measure of depression collected at a separate time from the daily measures of self-attention has two related advantages. First it creates a clear time sequence between the measures of self-attention and psychological distress which, in a correlational design, facilitates the researcher's ability to draw inferences about the direction of influence. Second, given that negative mood tends to elicit self-attention, Just and Alloy (1997) have argued that assessing the measures at separate time points helps to unconfound the self-attention predictor from the mental health criterion or dependent measure.

Self-Analysis and Protracted attention. In a recent study, Nolen-Hoeksema et al. (1997) examined Ruminative Response Style and an affectively-neutral form of self-attention – self-analysis – as predictors of emotional well-being in men who had lost their romantic partners to AIDS. One month after the loss, participants were interviewed and asked open-ended questions about the loss and how they coped with it. The well-being indicators, assessed both one month and one year after the loss, included depressed mood, positive states of mind, and positive morale. From the free-response narratives, two types of self-attention were coded. Participants' negative self-thoughts, such as what they saw as wrong with themselves or with their life, were coded as ruminative responses. Self-focusing thoughts that were directed toward understanding the meaning of the loss and toward dealing with one's own reactions to the loss were coded as

self-analysis. The measures of Self-analytic Style and Ruminative Response Style were the proportion of each type of thought relative to the overall number of thought units.

The results demonstrated that people higher in Self-analytic Style had less positive states of mind and higher levels of depression one year following the loss. Indeed, Self-analytic Style was a more reliable predictor of depressed mood than Ruminative Response Style: individual differences in Ruminative Response Style only predicted levels of positive mood one year after the loss. Nolen-Hoeksema et al.'s findings are consistent with the hypothesis that high levels of self-attention, regardless of the negativity of the attention, create a vulnerability to psychological distress. One limitation in drawing this conclusion, however, is that self-analysis was assessed after a protracted period of time (one-month) and was thus a measure of people's tendency to engage in protracted self-analysis rather than tapping levels of initial self-analysis. In their theory of self-regulation perseveration, Pyszczynski and Greenberg (1987) argued that it is an inability to escape self-attention that creates a vulnerability to depression. It therefore remains possible that it is only people who have difficulty terminating their self-analysis associated with events who later develop depression. People who engaged in higher levels of self-analysis shortly after negative events may in fact experience positive health outcomes from this responsive self-attention.

To assess the independent effects of the tendency to engage in initial self-analysis versus protracted attention on psychological well-being, the present research assessed both forms of self-attention as responses to daily negative events. Based on Nolen-Hoeksema et al.'s (1997) definition, the Initial Self-Analysis index assessed thinking that was directed at dealing with the negative event itself, and with the emotions and reactions it provoked. None of the items in the index made reference to negative feelings. Levels of Initial Self-Analysis associated with daily negative events, like SFA, were assessed at the end of each day. Protracted attention, perseverating about negative events for days after their occurrence, is what most people would consider prototypical rumination. Past research on self-attention and well-being, however, has never directly assessed the length of people's ruminations about events. Using daily diary methodology, I was able to track levels of protracted attention associated with specific events over time. To do this, participants indicated in their daily diaries how much they were continuing to think about events they had described 1, 2, 4, and 7 days earlier. The amount of protracted attention for any one event was calculated as the average amount of thought associated with the event across those four time points. The chronic tendencies to engage in initial self-analysis and protracted rumination were assessed by aggregating respondents' daily ratings. These aggregates were then tested as predictors of subsequent depression controlling for pretest depression.

Psychological factors that may contribute to rumination

Study 2 also sought to identify psychological factors that may stimulate or perpetuate rumination. One factor in Study 1 that was highly related to rumination at both the within and between levels of analysis was daily Self-Concept Confusion – the extent to which negative events elicited temporary uncertainty, doubt, or confusion in participants' self-concepts (Campbell, 1990). In a self-regulation theoretical framework, Self-Concept Confusion serves as an indicator of the extent to which daily events disrupted higher level self-related concepts in the

self-regulatory hierarchy. The results of the regression analysis testing both aggregate rumination and aggregate Self-Concept Confusion as predictors of aggregate NA suggested that individual differences in rumination may mediate the effects of Self-Concept Confusion on negative affect. In other words, people who in response to negative events experienced more self-disruption subsequently ruminated more about the events and this rumination in turn caused higher levels of emotional distress.

This pattern of relations is consistent with Hyland's (1987) self-regulation theory of depression. According to Hyland (1987), individual differences exist in people's tendency to perceive problems at the system level (i.e., as having to do with self-esteem or self-efficacy) versus the more concrete program level (as having to do with the specifics of a problem). He argued that people higher in system level error sensitivity would be more vulnerable to protracted self-attention and depression in response to negative events. To further examine the role of self-disruption as a factor causing protracted attention and depression, self-disruption was again assessed in Study 2. To more directly capture Hyland's notion of system level error sensitivity, disruption to both self-concept clarity and self-esteem were included in the measure of Self-Concept Disruption (SC disruption). It was expected that SC disruption would be positively associated with rumination and depression at both the within- and between-person levels of analysis.

Speculations about the origins of rumination have also been offered by researchers of mental control and intrusive thoughts (e.g., Wegner, 1994). In a recent paper, Gold and Wegner (1995) argued that both the initial suppression of thoughts and the suppression of expression about events might increase the extent to which people experience intrusive thoughts about the event later. Wegner (1992) has argued that people's initial attempts to control and suppress unwanted thoughts sets up an automatic cognitive search for those thoughts, which tends to undermine efforts to block the thoughts. Furthermore, once people stop actively suppressing the thoughts, they often display a rebound effect: that is, they think about the suppressed thought more than people who never suppressed the thought to begin with. To investigate the link between suppression and rumination, the present research included measures of both thought suppression and expression as coping responses to daily events. Because the negative effects of suppression are likely to be delayed rather than immediate, I predicted that suppression of thoughts and expression would be associated with lower levels of initial self-analysis but higher levels of protracted attention.

Self-Attention and the Self-Regulation Process

Some researchers have drawn global conclusions about self-attention processes based on between-person analyses. For example, when Nolen-Hoeksema et al. (1997) demonstrated that individual differences in Self-analytic Style predicted subsequent levels of depression, they argued that their findings challenged the notion in classic grief theories that working to understand and assimilate one's negative life experience promotes positive adaptation to loss (e.g., Bowlby, 1980; Raphael, 1984). This conclusion far exceeds the explanatory power of the between-person analysis. The between-person analysis simply demonstrated that relative to people who engaged in less self-analysis, those who engaged in more self-analysis one-month after the event were more distressed one year later. This does not preclude the possibility that

most participants in Nolen-Hoeksema et al.'s study engaged in at least some level of initial self-analysis to deal with their significant loss. Indeed, in Study 1 of the present research increases in SFA and rumination in response to goal-related setbacks and to negative moods were typical responses to daily negative events. Moderate increases in self-analysis may thus have been the normative response to the loss of a romantic partner, and may have been both necessary and helpful for dealing with the loss. A subset of participants, however, may have been unable to contain or terminate their rumination, and this perseveration may explain their subsequent depression. If most people ruminate following a negative event but only those who continue to ruminate become depressed, it cannot be concluded that rumination per se is harmful.

In addition to investigating the impact of chronic self-attention on well-being, the present research also tests the self-attention variables (SFA, Initial Self-Analysis, and protracted attention) as components of within-person self-regulation processes. To do this, people's level of self-attention in response to goal-related negative events was again compared to their level of self-attention in response to goal-unrelated events. Using a similar procedure to Study 1, participants completed a goal inventory (embedded in a set of other questionnaires) in which they listed their current set of higher-order personal goals or "life tasks." When they participated in the diary study, they rated their mood during the day, described the most negative event that occurred that day, appraised the event, and indicated their levels of self-analysis, coping and protracted attention. After the diaries were completed and returned, independent raters read each described event and judged whether it was or was not related to one of the personal goals listed on the participant's goal inventory. In Study 1, participants' personal goals were never mentioned during the diary phase. To include a validity check on the independent goal-relevance coding in Study 2, participants also rated for each diary event the extent to which they felt an important goal was at stake. Consistent with the results of Study 1, I expected that relative to goal-unrelated events, goal-related events would elicit higher levels of all forms of self-attention (SFA, Initial Self-Analysis, and protracted attention), higher negative mood, and higher ratings of the extent to which goals were at stake.

Summary

To summarise, in the diaries I assessed self-attention (SFA, Initial Self-Analysis, and protracted attention), mood, and coping strategies (thought suppression, and expression). The pretest included a measure of depression and of trait self-attention (RRQ-Rumination and RRQ-Reflection).⁶ Follow up depression was assessed one month after the second diary session. The post-test depression measure and aggregate diary anxious mood constituted the indicators of emotional distress. The primary research questions were: (1) what forms of self-attention predict individual differences in emotional distress controlling for initial levels of distress?, (2) what psychological factors predict protracted attention?, and (3) what forms of self-attention vary within-people as a function of the goal-relevance of daily events?

Method

Study 2 was conducted in five stages: pretest (end of September), diary introductory session (beginning of November), diary segment 1 (November, 4-17), diary segment 2 (January,

⁶ PRSC was not included in Study 2 due to its demonstrated validity problems.

13-26), and follow-up session (end of February). Participants included 63 undergraduate students (47 women, 16 men), with an age range of 17 to 35 years ($M=19.81$). They were selected from a larger sample, recruited from first- and second-year psychology courses, which completed a pretest battery including the RRQ (Trapnell & Campbell, 1999), and the Beck Depression Inventory (BDI-1; Beck, 1967). The BDI is one of the most widely used self-report measures of depression. It is a 21-item questionnaire that assesses the presence and severity of cognitive, motivational, somatic, and affective symptoms of depression over the past week.

Daily Diary

At the diary information session, participants completed the Personal Goal Inventory (embedded in a set of other questionnaires) in which they listed their current set of higher-order personal goals or "life tasks." At this session, participants were given their first set of diary report forms with the instructions to complete it at bedtime, for the next 14 days. They returned 7 days of their completed diaries at the end of the first week, and again, at the end of the second week. Participants were contacted by telephone during the first week of January to pick up their second set of diaries and to begin them on January 13th. Again, they returned 7 days of their completed diaries at the end of each week of the second diary session.

Given the break between the 2 diary segments, the missing data were higher in Study 2 than in Study 1. Seventy per cent of participants ($N=44$) submitted complete data. Of the remaining 19 participants, 10 missed 3 days or less, 4 missed between 5 and 7 days, and 5 did not complete the second 2-week phase of the diary segment. Each diary-rating period contained the following items.

Anxious mood. Anxious mood was assessed with 3 adjectives (nervous, afraid, guilty). Participants rated the extent to which they experienced each mood during the day on a 5-point scale (very slightly or not at all, a little, moderately, quite a bit, extremely). A daily anxious mood index was calculated by averaging the three adjectives ($\alpha=.65$).⁷

Event description and appraisal. Participants described the most bothersome event / problem / issue of the day. Independent coders later coded the events as either related or unrelated to participants' list of personal goals. Interrater agreement, assessed on the diaries of 15 participants, was 90%. Participants again rated the importance and seriousness of the event (5-point scales, ranging from not at all=1 to very=5): (1) "In the overall scheme of things, how serious was this event for you?" and (2) To what extent does the event represent something that is personally important to you?"

Goals-at-stake and self-concept disruption. Participants rated the extent to which the following were at stake due to the event: (1) not achieving a goal that is important to them and (2) losing their own self-respect or self-esteem (3-point scales, ranging from 0=not at all to 2=a lot). These primary appraisal items were adapted from Folkman et al. (Folkman, Lazarus,

⁷ The diary included other mood adjectives which, when factor analysed, formed an angry/sad factor and a positive mood factor in addition to the anxious mood factor. Neither the angry/sad nor positive mood factors varied as a function of the goal-relevance of daily events, but anxious mood did. Thus, the present study focused on the anxious mood index.

Dunkel-Schetter, DeLongis, & Gruen, 1986). Self-Concept Confusion was assessed using two of the three items in Study 1: to what extent did the event cause (1) you to question your beliefs about yourself? and (2) your beliefs about yourself to conflict with one another (5-point scales, ranging from 1=not at all to 5=a lot)? The third item in the Study 1 index reflected indecision and was omitted because, although indecision is a plausible product of low Self-Concept Confusion, it is not part of the construct definition (see Campbell et al., 1996). The two Self-Concept Confusion items and the self-esteem-at-stake item were all highly intercorrelated and were thus combined to form a daily Self-concept disruption (SC-disruption) index. To do this, the daily ratings for each item were harmonised to a common 0 to 1 scale. The daily mean of the three items composed the SC-disruption index ($\alpha = .96$).

Initial self-analysis. Six items were developed to assess initial self-analysis associated with the event. First, participants rated (1) the extent to which the event occupied their thoughts that day and (2) the extent to which they found themselves thinking about their reactions to the event and how the event made them feel (5-point scales from not at all=1 to a lot=5). The remaining four items were assessed as coping responses to the events. Participants were asked to rate how much they used the following as coping strategies (4-point scales, from 0=does not apply or not at all to 3=a lot): (1) "thought over different ways to deal with the event", (2) "privately tried to work through my feelings about the event", (3) "thought over my reactions to it or how it made me feel", (4) "spent time thinking about the event itself (e.g., how or why it happened)". Responses to these 6 items were highly intercorrelated, and were thus combined to form the Initial Self-Analysis index. Given the two different rating scales, the daily ratings on each item were converted to a common 0 to 1 scale and a daily mean of the 6 items was calculated to form the Initial Self-Analysis index ($\alpha=.84$).

Suppression and expression. Suppression and expression were also assessed as coping responses to the daily events (4-point scales from not at all=0 to a lot=3). Suppression has some similarity to the dimension of "distancing" identified in coping research and expression combines aspects of both "confrontive coping" and "seeking social support" (e.g., Folkman et al., 1986). To assess suppression, one item from the revised Ways of Coping (Folkman et al., 1986) was used, "went on as if nothing had happened", and three additional items were developed to assess both cognitive and emotional forms of suppression. These items included: "refused to have my feelings get too affected by it", "acted like it didn't affect me", "ignored my feelings about it or my reaction to it", "kept the event out of my thoughts". When the items were combined, the suppression index was reliable ($\alpha=.79$). The expression items adapted from the Ways of Coping included: (1) "I revealed my feelings about it", (2) "openly displayed my feelings about it", (3) "contacted someone in order to try to deal with it", and (4) "kept my true feelings about it to myself" (negatively scored). The expression index was moderately reliable ($\alpha=.73$).

Protracted attention. On each day that it was possible, participants rated the extent to which they thought about the diary events that had occurred 1, 2, 4 and 7 days prior. For example, on the second day of the diary, respondents were asked to reread the first day's event and rate the extent to which that event "had occupied their thoughts" (5 point scale) on day 2. On the 7th day of each diary segment, they were asked to rate the extent to which the event that occurred yesterday, two days ago, four days ago and one week ago each continued to occupy

their thoughts on that 7th day. Therefore, not every diary entry has all four of these protracted attention ratings. For example, the last day of each 14-day diary segment has none of them, and the second to last day has only the one-day rating. All the events in the first week of each diary segment have all four protracted attention ratings.

Follow-up Session

Fifty-nine of the 63 participants returned to the laboratory one-month after the second diary phase to complete the follow-up BDI.

Results

First, I present the within-person effects including the analyses testing self-regulatory responses to goal-related and goal-unrelated setbacks and the within-person correlations showing the situational associations among the diary variables. Next I present the results from the individual difference analyses. These include the reliability analyses of the aggregate diary variables, the correlations among the pretest and aggregate diary variables, and the partial correlations predicting follow-up depression controlling for pretest depression.

The Self-Regulation Process: Analyses Comparing Goal-Related and Goal-Unrelated Events.

On the goal inventories, participants listed on average 5.98 ($SD = 2.23$) goals. Participants' diaries contained on average 11.78 goal-related events ($SD = 5.51$) and 14.48 goal-unrelated events ($SD = 6.22$). To examine self-regulatory responses to negative events, the diary measures (event appraisals, SFA, Initial Self-Analysis, self-disruption, and anxious mood) were averaged across participants' goal-related and goal-unrelated events. Paired sample t-tests were used to compare participants' level of response to their goal-related events relative to their goal-unrelated events. Table 2.1 gives the means of the dependent measures as a function of goal-relevance. Given the large number of diary variables, $p < .01$ is adopted as the significance level to reduce the familywise error rate. Because the analyses yielded few reliable gender effects, the results presented are collapsed across gender, with exceptions noted in footnotes.

Table 2.1

Paired Sample T-tests and Means for Diary Measures as a Function of Goal-Relatedness

Diary Variables	Goal-Related	Goal-Unrelated	t(62)
Goals at stake	1.22	0.66	12.42***
Perceived importance	3.69	3.05	6.40***
Perceived seriousness	3.14	2.76	4.18***
Anxious mood	1.68	1.54	4.00**
SFA	0.77	0.39	14.57***
Initial self-analysis	0.60	0.56	2.93**
Self-concept disruption	0.46	0.40	4.34***
Suppression	1.11	1.30	-2.02*
Expression	0.78	0.85	-3.73***

* $p < .05$, ** $p < .01$ *** $p < .001$ (two-tailed).

Event appraisals. Consistent with Study 1, participants again appraised goal-related events as significantly more important and serious than goal-unrelated events. In both Studies 1 and 2 independent coders, using participants' goal inventories, judged the diary events as either related or unrelated to the participants' listed goals. In Study 2, participants also directly rated the extent to which they perceived their goals to be at stake due to the event. Validating the independent goal-relevance coding, participants rated their goals as significantly more at stake on those events coders had judged as goal-related versus goal-unrelated.⁸

Mood. Anxious mood, which included the adjectives nervous, afraid, and guilty, yielded a significant effect for goal-relatedness. Thus, consistent with Study 1, daily levels of anxious mood were sensitive to the goal-relevance of negative events. The present findings are also consistent with Duval and Wicklund's (1972) suggestion that negative mood states might help motivate self-regulation.

SFA and Initial Self-Analysis. Consistent with self-regulation theories and the results of Study 1, daily levels of SFA, measured unobtrusively as the proportion of self-related thoughts in participants' event description, were significantly higher for goal-related events than goal-unrelated events. Despite my prediction that the within-person effects would be weaker for SFA due to the full day rather than the half-day diary rating period, the effect of event goal-relation on SFA was substantial and highly reliable. Initial Self-Analysis, thinking directed at dealing with the event itself and with the emotions and reactions it provoked, also varied as a function of goal-relation such that goal-related events provoked more self-analysis than did goal-unrelated events.

SC-disruption. Goal-related events relative to goal-unrelated events elicited more self-disruption; that is, higher levels of Self-Concept Confusion and threat to self-esteem. Thus, as would be expected, daily negative events impacting on important goals were generally experienced as more threatening to the integrity of the self than events unrelated to goals.

Suppression / Expression. Levels of suppression and expression produced the opposite pattern to the above findings; both were higher for goal-unrelated events than goal-related events. Levels of suppression, the extent to which participants coped with negative events by suppressing or ignoring their thoughts and feelings, were marginally higher for events unrelated to goals than for goal-related events. Participants were also less likely to express their reactions and emotions associated with goal-related events than they were for goal-unrelated events. Generally, this pattern suggests that relative to goal-unrelated events, goal-related events elicited thoughts that were harder to suppress or ignore, but they were also more difficult to discuss with others.

Protracted attention. Recall that participants rated the extent to which they had continued to think about diary events 1, 2, 4, and 7 days after the event had occurred. The amount of protracted attention in which each participant engaged at each time lag (1, 2, 4, and 7 days) was aggregated as a function of goal-relevance. To test for differences in protracted attention both by goal-relatedness and across time, a 2 X 4 (goal-relevance X time) repeated measures analysis of variance (ANOVA) was used (see Table 2.2). A significant goal-relevance main effect

⁸ The three appraisal variables (importance, seriousness and goals-at-stake) were primarily relevant to analyses of differences in goal-relevance and thus were not including in subsequent analyses.

demonstrated that participants ruminated more about goal-related events ($M=2.34$) than goal-unrelated events ($M=2.04$). A significant main effect for time indicated, as would be expected, that self-attention decreased over time ($M_s=2.65, 2.26, 1.99, 1.86$, see Figure 1). The interaction between goal-relevance and time was not significant.⁹

Table 2.2

Repeated Measures Analysis of Variance for Level of Protracted Attention as a Function of Goal-Relevance and Time

	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Main effect					
Within+Residual	48.62	58	.84		
Goal relevance	14.72	1	14.72	17.55	.000
Main effect					
Within+Residual	42.72	232	.18		
Time	133.55	4	33.39	181.32	.000
Interaction					
Within+Residual	28.52	232	.12		
Goal relevance X Time	.76	4	.19	1.55	.189

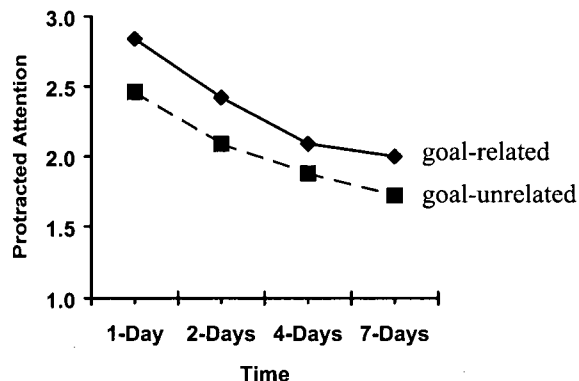


Figure 1. Mean levels of protracted attention for goal-related and goal-unrelated negative events on 1, 2, 4, and 7 days following the event.

The protracted attention measure was collapsed across time for subsequent analyses. For the within-person correlations, only a 2-day protracted attention index was constructed. This was decided because including the later rumination time points (4- and 7-day) would have reduced the number of data points available for the within-person correlations from 26 time points to 20 with the 4-day ratings and 14 with the 7-day ratings. A 2-day protracted attention

⁹ A goal-relevance X time X gender ANOVA (with repeated measures on the first 2 factors) demonstrated that in addition to the goal-relevance and time main effects, there was a significant main effect for gender, $F(1,61) = 8.54$, $p=.005$, but no interactions. On average women ($M=2.33$) experienced higher levels of protracted attention than did men ($M=1.86$).

index was calculated for each of the 26 events that had these ratings (excluding the last 2 events of each diary session). It was simply calculated as the average rumination ratings for 1- and 2-days following the event. For the between-person analyses, however, an aggregate protracted attention index based on all four rumination ratings was constructed. For each participant, their average amount of rumination 1-day, 2-days, 4-days, and 7-days across all events was first calculated. Then an average of these averages was taken to estimate overall protracted attention.

Moderation of the Goal-Relation Effects

Next I tested whether the pretest self-attention (RRQ-Rumination and RRQ-Reflection) and depression (BDI-1) variables moderated the goal-relation effects and whether individual differences in the goal-related differences predicted follow-up depression scores (BDI-2). To do these analyses, difference scores were calculated by subtracting the goal-unrelated value from the goal-related value on each of the diary variables. Table 2.3 presents the correlations between the difference measures and the pre- and post-test measures. As in Study 1, none of the pretest variables were reliably correlated with the goal-related differences. Moreover, these differences were not correlated with BDI-2.

Table 2.3

Correlations between Pretest Measures and Diary Difference Scores

Goal-Related Difference Scores:	Pre- and Post-test Variables			
	RRQ- RUM	RRQ- REFL	BDI-1	BDI-2
D-Anxious mood	.05	-.05	.22	.20
D-Self-focus attention	-.21	-.17	-.03	-.04
D-Initial self-analysis	-.13	-.05	-.16	-.12
D-Protracted attention	-.10	-.10	-.07	-.10
D-Self-concept disruption	-.09	-.11	.02	-.06
D-Suppression	.07	-.05	.00	-.03
D-Expression	.04	.02	.02	-.12

Note. RRQ-RUM = Rumination; RRQ-REFL = Reflection; BDI = Beck Depression Inventory. The correlations are based on between 61 - 63 subjects.

Within-Person Correlations Among the Diary Variables

The within-person correlations assess the extent to which certain psychological states tend to co-occur following negative events, holding individual differences constant. Of primary interest were the associations with daily mood and self-attention. Therefore, within-person correlations were only calculated between each of the diary variables and (1) anxious mood and (2) the self-attention variables (SFA, initial self-analysis, and protracted attention) (see Table 2.4). With protracted attention, the within-person correlations capture a time sequence and thus represent the association between levels of the diary variables on a particular day with the amount that people thought about the event over the next two days.

Table 2.4
Average Within-Persons Correlations

	Anxious Mood	SFA	Initial Self- Analysis	Protracted Attention
Anxious mood	--			
SFA	.09 (.23)**	--		
Initial self-analysis	.32 (.19)***	.12 (.26)***	--	
Protracted attention	.13 (.23)***	.19 (.29)***	.35 (.26)***	--
SC-disruption	.29 (.26)***	.27 (.30)***	.49 (.21)***	.28 (.28)***
Suppression	-.05 (.27)	-.11 (.23)**	-.20 (.29)***	-.12 (.27)**
Expression	.10 (.24)**	-.11 (.25)**	.21 (.28)***	.07 (.25)*

Note. The average within-subjects correlations are based on between 57 - 62 subjects. Standard deviations are provided in parentheses. SFA = self-focused attention; SC = self-concept.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Correlations among the self-attention variables. The self-attention variables were all reliably intercorrelated: those events that elicited higher levels of SFA also elicited higher levels of Initial Self-Analysis (.12) and protracted attention (.19), but Initial Self-Analysis and protracted attention were the most highly associated (.35). Given that SFA and Initial Self-Analysis are conceptually very similar and that they were assessed at the same time point, the relatively low magnitude correlation demands further attention. The low magnitude association suggests that the unobtrusive measure of SFA may be assessing a different aspect of self-attention than is the self-report measure of Initial Self-Analysis, or it is assessing a different psychological construct altogether. In the present research, the most reliable result obtained with SFA, assessed as the proportion of self-referencing thoughts in participants' event descriptions, was its variability as a function of goal-relevance. Thus, it is possible that the unobtrusive measure of SFA may assess the self-relevance of daily events rather than the level of self-attention the event provoked.

Consistent with this speculation, daily SFA was more highly associated with the daily levels of SC-disruption (.27), the extent to which the self was at stake due to the event, than it was with Initial Self-Analysis (.12). To further test SFA as an indicator of event self-relevance, SFA was correlated with participants' ratings on the goals-at-stake appraisal measure. The within-person association between SFA and ratings of goals-at-stake was highly reliable, $M = .35$, $SD = .27$, $t = 9.14$, $p < .000$. Thus, events that were more self-relevant (i.e., related to personal goals and to the self-concept) elicited more self-referencing statements in the event descriptions. It may therefore be more accurate to describe the SFA measure as an indicator of the self-relevance of daily events, and to use Initial Self-Analysis as the indicator of levels of self-attention associated with the event.

Anxious mood and self-attention. Although daily fluctuations in anxious mood were accompanied by fluctuations in SFA, anxious mood varied much more substantially with fluctuations in Initial Self-Analysis. The finding that Initial Self-Analysis and negative mood states co-occur in daily life is consistent with laboratory research (e.g., Salovey, 1992; Wood et al., 1990a), and adds further support for the proposition that Initial Self-Analysis is a more valid indicator of daily self-attention than is SFA. It is also worth noting that Initial Self-Analysis, a

self-attention measure that did not specifically reference negative moods, demonstrated a similar strength of association with daily anxious mood (.32) as did the negative symptom-focused rumination and NA measures (.41) in Study 1. Thus days on which people experienced more severe negative moods, were days on which they engaged in higher levels of self-analysis and negative rumination. Anxious mood was also associated with levels of protracted attention: when people experienced higher levels of anxious mood on a particular day, they engaged in more protracted attention during the following 2 days.

SC-disruption with mood and self-attention. Negative daily events that caused higher levels of SC-disruption also elicited higher levels of anxious mood, SFA, Initial Self-Analysis, and protracted attention. Indeed, SC-disruption was the best predictor of SFA and Initial Self-Analysis, and was second only to Initial Self-Analysis in predicting protracted attention. Thus, events that disrupted the self-concept were particularly commanding of people's attention. This finding is consistent with Pyszczynski and Greenberg's (1987) theory of self-regulation perseveration, in which they state that events that impinged on goals important to the individual's identity or self-worth elicited stronger and, when difficult to resolve, longer self-regulatory responses.

Suppression and Expression. Based on the mental control literature, I had predicted that the suppression of reactions to events (thoughts, emotions, and expression) would result in lower levels of Initial Self-Analysis, but would subsequently cause a rebound effect of higher levels of protracted attention. The results were supported for Initial Self-Analysis, but the more theoretically important rebound effect with protracted attention did not emerge. Events that elicited higher levels of Initial Self-Analysis were ones on which people engaged in less suppression of reactions and more expression about the events. The magnitudes of these associations were lower but in the same direction with protracted attention. These results thus provide no evidence that, in the natural ecology of daily life, suppression of initial reactions to events provokes protracted rumination.

There are several possible explanations for the null findings. First, the time frame of two days following the event may have been too short to detect a rebound effect. People may be effective at suppressing their thoughts and reactions about events for more than 2-days and thus the rebound effect would not emerge until sometime later. Alternatively, the mental rebound effect observed in prior research may be a product of the artificial laboratory conditions under which thought suppression is often examined. In this research, the experimenter selects an irrelevant object (e.g., a white bear) and imposes thought suppression. It could be the external imposition of suppression that creates a reactance-motivated rebound effect. That is, people may become obsessed with the white bear primarily because the experimenter prohibited thinking about it. When suppression is a self-selected coping response to negative events, a rebound effect may not result.

Moderation of the Within-person Correlations

To test for moderation effects, the within-person correlations were correlated with the pretest and follow-up measures (see Table 2.5). None of the pretest variables were significantly correlated with the within-person correlations. These findings suggest that people higher in trait

forms of self-attention (i.e., RRQ-Rumination and RRQ-Reflection) or pretest depression do not show a higher correspondence between their daily levels of self-attention and negative mood than do people lower on these pretest factors. Similarly, none of the within-person correlations were significantly associated with follow-up depression scores. Thus, the degree of association between a person's daily level of self-attention and negative mood does not, in itself, appear to be harmful to psychological well-being.

Table 2.5

Correlations between the Within-Person Correlations and the Pre- and Post-test Measures

	Pre- and Post-test Variables			
	RRQ-RUM	RRQ-REFL	BDI-1	BDI-2
Within-person Correlations:				
Within-Person Correlations with Anxious Mood				
SFA / Anxious	-.05	-.06	-.02	-.14
Initial Self-Analysis / Anxious	-.09	.04	-.20	-.08
Protracted attention / Anxious	.15	.16	-.06	.01
SC-disruption / Anxious	.20	.19	.08	.01
Suppression / Anxious	.01	.11	-.05	-.14
Expression / Anxious	.06	.14	.00	-.04
Within-Person Correlations with SFA				
Initial Self-Analysis / SFA	.01	-.03	.05	.02
Protracted attention / SFA	-.18	-.10	-.11	.03
SC-disruption / SFA	-.09	-.19	.08	.03
Suppression / SFA	.03	-.21	-.11	.11
Expression / SFA	-.07	.02	-.02	.11
Within-Person Correlations with Initial self-analysis				
Protracted attention / Initial Self-Analysis	.14	.08	-.06	.10
SC-disruption / Initial Self-Analysis	.24	-.01	.09	.17
Suppression / Initial Self-Analysis	-.17	-.14	-.09	-.11
Expression / Initial Self-Analysis	.09	.20	.04	-.09
Within-Person Correlations with Protracted attention				
SC-disruption / Protracted attention	.06	.02	-.04	.10
Suppression / Protracted attention	.20	-.12	.13	.14
Expression / Protracted attention	.15	.12	.01	.00

Note. RRQ-RUM = Rumination; RRQ-REFL = Reflection; BDI = Beck Depression Inventory; SFA = self-focused attention; SC-disruption = self-concept disruption. The correlations are based on between 61 - 63 subjects.

* $p < .05$ (two-tailed).

Individual Differences: Relations among the Aggregate Diary Variables

This section examines the relations among the individual difference factors: pretest variables, aggregate diary measures, and follow-up depression. First, I examine the extent to which the aggregate diary measures represented reliable individual differences; second I examine

the relations among the aggregate diary measures; third I examine how pretest self-attention and depression were associated with the aggregate diary variables; finally, I test the individual difference factors as predictors of follow-up depression controlling for pretest depression.

Reliabilities and descriptive statistics of the aggregate diary measures. For each participant, the diary measures were averaged across all of the 28 rating periods. The reliability of the aggregates was assessed by treating each rating period as an item in a 28-item scale and then computing the Cronbach alpha reliability coefficient. The alpha coefficient provides an indicator of the extent to which participants' ratings were stable across the diary rating periods. Table 2.6 presents the reliabilities and descriptive statistics of the aggregate measures.

Table 2.6
Reliabilities and Summary Statistics for the Aggregate Diary Variables.

	Combined Sample (N=63)			Females (N=47)		Males (N=16)	
	Alpha	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Anxious mood	.94	1.66	0.49	1.72	.53	1.48	.28
Self-focused attention	.78	0.60	0.17	0.59	.17	0.64	.16
Initial self-analysis	.89	0.58	0.08	0.59	.08	0.55	.09
Protracted attention	.88	0.21	0.62	2.33	.60	1.86	.58
Self disruption	.93	0.44	0.12	0.45	.12	0.42	.14
Suppression	.94	0.81	0.43	0.76	.40	0.93	.51
Expression	.91	1.20	0.41	1.25	.41	1.06	.38

With the exception of SFA, the reliabilities for the diary aggregate variables were all above alpha=.87, indicating that participants were relatively consistent in their ways of responding to negative events. Although aggregate SFA had a lower reliability than the other diary variables, it was higher than in Study 1 (alpha=.78 versus .62) and was comparable to that obtained in Wood et al. (1990b, ICC=.79). The increase in reliability suggests, as predicted, that measuring SFA using a full-day rating period captured more individual difference variance. The high reliabilities obtained overall, especially given that the two diary sessions were separated by a 2-month period, indicates that participants daily response to negative events were temporally stable over a relatively long time. Independent sample t-tests were used to test for gender differences on the diary aggregates. Only levels of aggregate protracted attention differed significantly as a function of gender, $t=2.74$ (61), $p<.01$, such that women engaged in significantly higher levels of protracted attention than men. This finding is consistent with past research demonstrating gender differences in levels of rumination (Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, 1987, 1990, 1991).

Relations among the aggregate diary variables. The between-person correlations among the aggregate diary variables are presented in Table 2.7. With respect to relations among the self-attention variables, Initial Self-Analysis and protracted attention were highly correlated such that people who experienced higher magnitudes of Initial Self-Analysis over the course of the diary also experienced higher average levels of protracted attention. Consistent with the within-person correlations, aggregate SFA was not highly associated with the self-report measures of self-attention, but was reliably associated with aggregate SC-disruption. This pattern of relations

again suggests that SFA may more accurately assess self-relevance rather than self-attention. SC-disruption was also the best predictor of Initial Self-Analysis and protracted attention. The aggregate measure of SC-disruption was designed to capture Hyland's (1987) notion of individual differences in "high system level error sensitivity", that is, people's tendency to perceive problems at the level of the self rather than at the level of the specifics of a problem. Consistent with Hyland's prediction, persons more vulnerable to self-concept disruptions engaged in more chronic self-attention.

Table 2.7

Intercorrelations Among the Aggregate Diary Variables

Aggregate Diary	Initial SA	Protracted Attention	SC- Disruption	Sup- pression	Expres- sion
SFA	.24	.16	.36**	.05	-.10
Initial Self-Analysis	--	.51***	.68***	-.12	.33**
Protracted Attention		--	.63***	-.17	.13
SC-disruption			--	.00	.08
Suppression				--	-.52***

Note. The correlations are based on between 62 - 63 subjects. SFA = self-focused attention, SC = self-concept, SA = self-analysis.

* $p < .05$; ** $p < .01$, *** $p < .001$ (two-tailed).

With respect to coping, I had predicted that the suppression of both thoughts and expression about events might avert initial self-analysis, but would subsequently cause a rebound effect of higher levels of protracted attention. Aggregate levels of thought suppression were not reliably correlated with either Initial Self-Analysis or protracted attention. Emotional expression was reliably correlated with levels of Initial Self-Analysis in the predicted direction such that people who expressed more also engaged in more self-analysis. But the rebound reversal was not obtained with protracted attention. Thus, individual differences in thought and emotion suppression do not appear to be important factors influencing protracted attention.

Relations between the Pretest and Aggregate Diary Measures

Table 2.8 presents the correlations between the pretest and aggregate diary measures. RRQ-Reflection, the tendency to engage in self-attention out of intellectual curiosity, was not reliably associated with either initial and protracted self-attention measures. Thus, people who generally enjoy introspecting and analysing their reasons for doing things did not demonstrate a strong inclination to engage in higher levels of Initial Self-Analysis and protracted attention following negative events. RRQ-Rumination, the tendency to engage in self-attention due to perceptions of threat or injury to the self, was associated with both diary measures of self-attention, but more substantially with protracted attention. Thus, although protracted attention did not explicitly reference negative content, the tendency to perseverate about negative daily events was related to trait rumination.

Table 2.8

Correlations between the Pretest, Aggregate Diary, and Psychological Health Measures

	Pretest			Psychological Health		
	RRQ-RUM	RRQ-REFL	BDI-1	ANX MOOD	BDI-2	BDI-2 Controlling BDI-1
Pre-test:						
RRQ-Rumination	--	.25*	.58***	.44***	.42**	.04
RRQ-Reflection		--	-.05	.19	.16	--
BDI-1			--	.55***	.71***	--
Aggregate Diary:						
Self-focus attention	.22	.00	.24	.17	.21	--
Initial self-analysis	.17	.19	.23	.49***	.34**	.26*
Protracted attention	.42**	.22	.53***	.53***	.39**	.11
Self-concept disruption	.40**	.22	.45**	.67***	.37**	.17
Suppression	.08	-.17	.16	.02	.10	--
Expression	-.17	.11	-.05	.22	-.14	--
Anxious mood	.44***	.19	.55***	--	.35**	.08

Note. BDI = Beck Depression Inventory. The zero-order correlations are based on between 61 – 63 participants. The degrees of freedom for the partial correlations range between 54 – 56.

* $p < .05$; ** $p < .01$, *** $p < .001$ (two-tailed)

Pretest Depression. Consistent with past research demonstrating a distinction between trait rumination and reflection (Trapnell & Campbell, 1999), RRQ-Rumination was associated with pretest levels of depression, but RRQ-Reflection was not. Initial levels of depression were also highly positively associated with aggregate diary protracted attention, but were not reliably associated with Initial Self-Analysis. Thus, people experiencing higher levels of depressed mood prior to the diary study experienced more difficulty terminating attention associated with those events. This finding offers support, in a naturalistic context, for Pyszczynski and Greenberg's (1987) theory of the depressive self-focusing style. Pyszczynski and Greenberg demonstrated in the laboratory that depressed people have a distinctive self-focusing style; this style included a tendency to experience protracted self-attention and to focus on negative rather than positive events. Pretest depression scores were also positively associated with aggregate levels of SC-disruption indicating that the self-concept clarity and self-esteem of people higher in pretest depression were more vulnerable to disruption following daily negative events. This outcome is consistent with Campbell's (1990, Campbell & Lavalley, 1993; Campbell et al., 1996) demonstration that Self-Concept Confusion is characteristic of people low in self-esteem and high in neuroticism.

Predicting Psychological Distress

The primary objective of Study 2 was to test individual differences in forms of non-negative self-attention (both initial and protracted) as predictors of psychological distress. A secondary objective was to identify psychological factors that might exert their influence over psychological distress by causing higher levels of self-attention. To meet these objectives, the

aggregate diary and pretest variables were first correlated with the two measures of psychological distress: aggregate diary anxious mood and BDI-2 (see Table 2.8). To control for pre-diary levels of depression when examining the relations between self-attention and BDI-2, partial correlations were calculated (see Table 2.8, last column). Comparable results were obtained for aggregate anxious mood and BDI-2.

Factors related to depression. The zero-order correlations demonstrated that pretest RRQ-Rumination and three of the aggregate diary measures (Initial Self-Analysis, protracted attention, and SC-disruption) were reliably correlated with follow-up depression and aggregate anxious mood. When these factors were tested as predictors of BDI-2 after controlling for BDI-1 using partial correlations, however, only Initial Self-Analysis remained a reliable predictor. Thus, people who chronically engaged in higher levels of self-analysis immediately following negative events experienced higher levels of depression one month after the diary sessions were completed independent of their levels of pretest depression. This result demonstrates that it is not solely the tendency to engage in negative rumination that creates a vulnerability to depression. Chronically engaging in higher levels of self-analysis following negative events also has a negative impact on psychological well-being.

The null partial correlations for RRQ-Rumination, protracted attention and SC-disruption were due, at least in part, to the fact that these factors were highly associated with pretest depression scores. People entering the study with higher levels of depression rated themselves as higher in the general tendency to ruminate (RRQ-Rumination). During the diary study, participants higher in initial depression experienced more pronounced disruptions to their self-concept clarity and self-esteem due to daily negative events and, during the week following the event, had more difficulty terminating event-related thoughts. This pattern suggests that RRQ-Rumination, protracted attention, and SC-disruption may be features or consequences of depression rather than causes per se.

Factors not related to depression. Not all forms of self-attention assessed in the present research were associated with follow-up depression. RRQ-Reflection was unrelated to BDI-1, and was somewhat, but not reliably, correlated with anxious mood and BDI-2. Thus people who generally enjoy introspecting and do it out of an intellectual curiosity did not show a strong likelihood of developing depression. People higher in the tendency to suppress their thoughts and reactions to negative events also were not more likely to experience anxiety or depression. Emotional expression was positively but not reliably associated with levels of anxious mood, and weakly negatively associated with depression. Thus, people who coped with their daily negative events by talking about their emotions experienced somewhat more anxious mood, but somewhat less depression.

Discussion

This discussion summarises the major findings in Study 2. A more thorough discussion of the implications of these findings, of relations between Study 1 and 2, and of the limitations of the present research is provided in the General Discussion.

Within-person Processes

The within-person analyses investigated whether the forms of self-attention assessed in Study 2 tended to fluctuate in daily life in the service of self-regulation and in response to negative mood states. With respect to self-regulation, participants' goal-related events, relative to goal-unrelated events, elicited higher levels of initial self-analysis, protracted attention and, especially, SFA. In addition to the self-attention variables, goal-related events: (1) were perceived as more important and serious, and as more related to personal goals, (2) caused more self-disruption to self-esteem and self-concept clarity, (3) elicited higher levels of anxious mood, and (4) elicited less suppression of thoughts and expression of feelings associated with the event. None of the goal-related differences was moderated by individual differences in RRQ-Rumination, RRQ-Reflection or pretest depression, and none predicted follow up depression. Together these findings support the notion in self-regulation theories (Carver & Scheier, 1981; Martin & Tesser, 1989; Pyszczynski & Greenberg, 1987) that elevated levels of self-attention are a common self-regulatory response to significant events in daily life.

With respect to situational correspondence between self-attention and mood participants' daily levels of Initial Self-Analysis and protracted attention were associated with levels of anxious mood. Further, these within-person correlations were not moderated by the pretest variables, nor did they predict levels of follow-up depression. Thus, the correspondence between self-attention and negative mood states appears to be rather typical and not in and of itself harmful to well-being. These findings are consistent with the diary study conducted by Csikszentmihalyi and Figurski (1982) and with laboratory research (Salovey, 1992; Scheier & Carver, 1977; Wicklund, 1975; Wood et al. 1990a), which has demonstrated both that intensifying moods elicits self-attention and that increasing self-attention intensifies mood states. With respect to SFA, participants' daily levels of SFA fluctuated more highly with their perceptions that their goals-were-at-stake and with their level of SC-disruption than with their level of initial self-analysis. These results suggest that the unobtrusive measure of SFA might be measuring event self-relevance rather than level of self-focused attention.

Predicting Psychological Distress

Despite the fact that Initial Self-Analysis serves a self-regulatory function in day-to-day life, people who engaged in chronically higher levels of self-analysis following daily events were more vulnerable to subsequent depression. This finding indicates that self-attention directed at dealing with the event and the emotions and reactions that the event provoked can have the same negative effect on psychological well-being as negative, symptom-focused rumination. Furthermore, initial self-analysis was not simply the product of people's tendency to experience self-concept disruption. The chronic tendency to perceive daily events as threatening to the self and to persevere about the events over the week following the events are best described as

features or consequences of pre-existing depression rather than causes per se. With respect to pretest trait self-attention, RRQ-Rumination was associated with negative health outcomes, while RRQ-Reflection was not – a finding consistent with past research (Trapnell & Campbell, 1999). Finally, the present research offered no support for the hypotheses advanced by researchers of mental control (e.g., Gold & Wegner, 1995) that initial thought suppression or the absence of expression about events may increase later unwanted thoughts and emotions. People who suppressed their thoughts, feelings or expression following daily negative events were not more vulnerable to protracted attention or to depression.

CHAPTER IV

General Discussion

In response to circumstances and experiences in their daily life, people toggle between an internal and external focus of attention. People, however, differ in their proclivity to engage in self-directed attention, and in the amount and duration of self-attention they experience once attention is directed inward. Many researchers, clinicians, and self-regulation theorists have predicted health benefits associated with people's tendency to engage in self-examination, especially in response to difficult life circumstances. Contrary to these predictions, an expanding body of evidence has demonstrated that individual differences in a variety of forms of self-attention including Ruminative Response Style (Nolen-Hoeksema, 1996), self-analysis (Nolen-Hoeksema et al., 1997), and self-focused attention (Wood et al., 1990b) are all associated with higher levels of psychological distress. The present research sought to distinguish the forms and states of self-attention that serve a self-regulation function from those that create a vulnerability to depression.

In the research on self-attention and well-being, there has been a tendency to draw global conclusions about self-attentional processes based on between-person analyses. For example, when Nolen-Hoeksema et al. (1997) demonstrated that individual differences in Self-analytic Style predicted subsequent levels of depression, they argued that these findings challenged the notion that working to understand one's negative life experience promotes positive adaptation to loss. The between-person level of analysis, however, can obscure potentially beneficial within-person self-regulatory functions of self-attention. Furthermore, while substantial evidence implicated individual differences in negative forms of self-attention (e.g., rumination) in creating a vulnerability to depression, the research on more affectively neutral forms of self-attention (e.g., SFA and self-analysis) has been less conclusive.

To investigate the within-person self-regulatory functions of self-attention and to identify the impact of different types of chronic self-attention on psychological well-being, the present research used a combined within- / between-person design. Using diary methodology I examined self-attentional responses to respondents' own naturally-occurring daily events. The diary self-report self-attention measures (rumination, Initial Self-Analysis, protracted attention) specifically assessed levels of state self-attention in response to daily negative events and varied in terms of their explicit reference to negative affect. Assessing self-attention following negative circumstances (e.g., events, feedback, or moods) is most appropriate for the investigation of self-regulation processes because these processes occur when people experience a negative self-discrepancy. When aggregated, the diary self-attention measures thus assessed chronic tendencies to engage in self-attention in response to negative circumstances. The pretest measures of self-attention (PRSC and RRQ) tapped trait forms of self-attention that were not specifically linked to negative circumstances.

Within-Person Effects: Self-Regulation and Daily fluctuations in Self-Attention

Goal-relevance effects. One of the primary objectives of the present research was to examine whether fluctuations in a variety of forms of self-attention (SFA, Initial Self-Analysis,

rumination and protracted attention) compose a within-person self-regulatory response to daily negative events. Self-regulation theories (Carver & Scheier, 1981; Duval & Wicklund, 1972; Pyszczynski & Greenberg, 1987; Martin & Tesser, 1989) describe psychological factors that aid the individual in the pursuit of goals. Therefore, to examine self-attention in the service of self-regulation, participants' level of self-attention associated with their goal-related negative events was compared to their self-attention for goal-unrelated negative events. Consistent with self-regulation theory, all forms of self-attention assessed in the diaries (SFA, Initial Self-Analysis, rumination, and protracted attention) varied as a function of goal-relatedness. Relative to goal-unrelated events, negative events that impinged on people's important goals elicited higher levels of SFA, negative rumination, Initial Self-Analysis, and protracted attention. None of these within-person effects were moderated by pretest measures of trait self-attention (PRSC or RRQ) or psychological distress (NA, depression), and none were correlated with individual differences in psychological distress (aggregate diary NA, or follow-up depression). Thus, in daily life it appears to be typical for people to respond to goal-setbacks by engaging in introspection and self-analysis and even in negative, symptom-focused rumination.

In addition to self-attention, a variety of other variables assessed in the diaries varied as a function of goal-relevance. Not surprisingly, events related to participants' important personal goals elicited stronger appraisals of event importance and seriousness and more disruption to self-concept clarity and self-esteem than did goal-unrelated events. Further, participants were less likely to cope with their goal-related events by suppressing their thoughts and emotions, or by talking with other people. With respect to mood, both Study 1 and 2 demonstrated that goal-related events elicited higher levels of anxious mood. These findings allow for the possibility that, under certain circumstances, anxiety may serve a positive self-regulatory function. Duval and Wicklund (1972) argued that self-attention together with negative affect motivates behaviour aimed at reducing negative self-discrepancies. In their model, self-attention and short-term experiences of negative affect are considered adaptive and necessary. In contrast, Carver and Scheier (1981, 1990) have argued that the motivation for discrepancy reduction arises independently from the arousal of negative affect. The present results suggest that anxiety in response to goal-related setbacks may serve a self-regulatory function. Similar to the self-attention findings, however, these results simply demonstrated that increased anxiety is a common response to goal setbacks, not that it necessarily serves an adaptive function.

Within-person correlations with SFA. The pattern of within-person correlations obtained with the unobtrusive SFA measure raised concerns about this measure's construct validity as a measure of self-attention. Daily levels of SFA fluctuated more strongly with perceptions that goals-were-at-stake and with levels of SC-disruption than with the initial self-analysis measure of attention. These results suggest that the unobtrusive measure of SFA might be tapping event self-relevance rather than participants' level of self-focused attention. Unobtrusive measures of self-attention were originally adopted in laboratory studies because researchers were concerned that direct questions about levels of self-attention would either introduce demand characteristics or induce self-focus (Wood et al., 1990a). Greenberg and Pyszczynski (1986) developed the method of coding participants' free-response thought descriptions for self-referencing content following negative feedback. And Wood used the same method in a laboratory study (Wood et al., 1990a) and in a diary study (Wood et al., 1990b). While the measure yielded the expected

results in the laboratory research, it did not produce the expected pattern of within-person correlations in the diary study.

In the laboratory, participants were asked to write down "anything that comes to mind" for several minutes following a mood manipulation or failure feedback, and these thoughts were later coded for level of self-referencing content. In the diary studies, participants' level of SFA was coded from descriptions of their most negative daily events. One key difference between the laboratory and diary studies is that in the laboratory the situation is held constant. In diary studies, daily events differ between people and across time (from day-to-day). The self-referencing content of diary-event descriptions may thus be tapping variance associated with the degree of self-relevance of the event as well as SFA. If the unobtrusive measure is capturing something other than level of SFA, this may explain the inconsistent results between the diary studies using this measure and the laboratory studies that have used a variety of SFA measures and have repeatedly demonstrated an association between state self-attention and negative moods. For the remainder of the general discussion, SFA will not be considered one of the measures of self-attention.

Within-person correlations between self-attention and negative moods. The other self-attention variables (self-report) fluctuated across events with negative mood states. On average, participants' daily levels of negative rumination were highly associated with levels of negative affect (Study 1), and daily levels of Initial Self-Analysis were highly associated with levels of anxious mood (Study 2). These findings are consistent with laboratory studies that have demonstrated that manipulating negative moods elicits increased self-attention (Salovey, 1992; Wood et al. 1990a) and that increasing self-attention intensifies mood states (Scheier & Carver, 1977; Scheier et al., 1981). Salovey (1992) has developed a self-attentional model that incorporates self-regulation theory to explain why moods, both happy and sad, elicit self-focused attention. In the affect-action model, both positive and negative moods are hypothesised to heighten attention toward relevant self-information and this information, in turn, guides behaviour to either maintain positive moods or repair negative moods. Drawing on his research on emotional intelligence, Salovey argues that self-attention in response to negative affect is adaptive because it motivates behaviour that can ameliorate negative moods.

Models that ascribe a positive role to state self-attention in response to negative moods, however, directly contradict Nolen-Hoeksema's Ruminative Response Style theory. Nolen-Hoeksema (1991, 1996) argues that self-attention in response to depressed moods interferes with effective problem solving. She also argues that only a subset of people chronically direct attention toward their depressed moods; others instead distract themselves to relieve their moods. The second point is contradicted by the within-person results of the present study and previous laboratory research, which suggest in contrast that increased rumination and self-analysis are common responses to negative mood states. Indeed, Just and Alloy (1997) have argued that in real life people's attempts to keep their minds off of their depressed moods is extremely difficult. Citing Wenzlaff, Wegner, and Roper (1988), Just and Alloy noted that when people are in a depressed state they have enhanced accessibility of negative thoughts and thus have difficulty finding positive distractors unless some are made highly accessible for them. Similarly, Martin et al. (1993) argued that although distraction may temporarily suspend rumination, if an important self-discrepancy remains unresolved, rumination will resume.

The present research demonstrated that it was not the general tendency to become self-focused when in a negative mood that created a vulnerability to depression. Rather it was people who showed chronically higher levels of self-analysis and rumination in response to negative circumstances who were more vulnerable to subsequent depression (as described in the following section on Individual Differences). If we accept the proposition that negative mood states generally capture our attention, the costs or benefits of that self-attention may depend on factors or processes that emerge following the initial self-attention.

Moderation of the within-person effects. Laboratory and diary research examining state self-attention as a process variable has rarely tested for trait moderators of the observed self-attention effects. For example, laboratory research in which state negative affect is induced and subsequent levels of self-attention are measured (e.g., Salovey, 1992; Wood et al., 1990a) has not examined the impact of individual differences on levels of self-attention. In the present research, two dispositions most likely to influence the within-person self-attention effects -- trait self-attention (PRSC, RRQ) and psychological distress (trait NA, depression) -- were tested as moderators of the goal-related differences in self-attention and of the within-person correlations. Although these individual differences have previously been implicated in the stress-coping process (e.g., Campbell et al., 1991; DeLongis et al., 1988; Frone & McFarlin, 1989; Mullen & Suls, 1982), none reliably moderated the present within-person effects. These results suggest that goal-related fluctuations in self-attention and the within-person correlations between self-attention and negative mood are not unique to people higher in trait self-attention or people higher in trait NA.

Individual Differences in Pretest Self-Attention

PRSC. The Private Self-Consciousness scale (PRSC, Fenigstein et al., 1975) was designed to assess individual differences in people's tendency to become focused on their inner feelings, thoughts, and physical sensations. Researchers investigating self-attention as a moderator of the stress-illness relation believed that people higher in PRSC would be more likely to engage in self-attention following negative events. Building on this assumption, some researcher argued that this heightened self-attention would ameliorate the effects of negative events on well-being, while others believed it would exacerbate the health impacts of negative events. Support for both perspectives had been obtained (e.g., Hull et al, 1986; Mullen & Suls, 1982; Suls & Fletcher, 1985). These conflicting findings have been attributed in part to the existence of distinct sub-factors within the PRSC (e.g., Bernstein et. al., 1986; Trapnell & Campbell, 1999).

Consistent with the theory that PRSC captures two distinct forms of trait self-attention, in the present research the two subscales of the PRSC correlated in opposite directions with people's tendency to ruminate following daily events and with their average levels of negative affect across the diary period. The Self-Reflectiveness subscale (PRSC-SR), assessed with items such as "I'm always trying to figure myself out," was positively associated with RRQ-Rumination, and aggregate diary rumination and NA. The Inner State Awareness subscale (PRSC-ISA), assessed with items such as "I'm alert to changes in my mood," was negatively associated with aggregate diary rumination, Self-Concept Confusion, and NA. A number of

implications can be drawn from these findings. First, there are at least two distinct forms of trait self-attention. Second, these different traits are differentially related to levels of self-attention following negative events and to psychological health outcomes. Thus, people can be high in a trait form of self-attention (i.e., PRSC-ISA) that is associated with lower levels of rumination following negative events.

A parallel divergence between two forms of self-attention was obtained by Swinkels and Guiliano (1995), who distinguished individual differences in people's tendency to identify or label moods (mood labelling) typified by items such as "right now, I know what kind of mood I'm in" and in people's tendency to focus on moods (mood monitoring) assessed with items such as "I find myself thinking about my mood during the day". They found that mood monitoring was associated with more negative expectancies, more rumination on negative mood, and intense negative affective reactions. In contrast, the ability to label moods was unrelated to levels of rumination and was associated with more positive expectancies for mood regulation, lower levels of depression, higher levels of life satisfaction, and greater satisfaction with social support. Other studies have demonstrated that the mere labelling of an emotion tends to reduce the perceived intensity of the emotion (Berkowitz & Troccoli, 1990; Keltner, Locke, & Audrain, 1993, study 4; Schwartz, 1990).

Trait forms of self-attention that combine self-attention with enhanced self-understanding, such as Internal State Awareness and mood labelling, capture the notion of emotional intelligence. Salovey et. al., (1993) defined emotional intelligence as the ability to monitor and identify one's own and other's emotional experiences and to use this information to guide one's thinking and actions. These kinds of traits explain how a person high in a trait form of self-attention can in fact spend less time ruminating about daily events. Martin and Tesser (1996) have advanced a similar but broader perspective. They have argued that rumination and negative emotions are the products of people's ability to identify the goal that is at stake due to negative events. That is, people who quickly and efficiently identify the goal at stake will spend less time ruminating, will experience less strong emotional reactions, and will engage in more immediate and appropriate discrepancy reduction efforts. Thus health outcomes associated with individual differences in self-attention may have less to do with the propensity to engage in self-attention and more to do with ability to extract useful information from that attention.

Trait forms of self-attention that tap the motivation to engage in self-analysis combined with the ability to identify one's emotional state and underlying reasons for that state may improve psychological health outcomes by increasing the individual's ability to engage in anticipatory or proactive coping. Anticipatory coping involves appropriate and useful preparation for the potentially stressful consequences of an upcoming event (Folkman & Lazarus, 1985). People who naturally tend to examine their life circumstances and who have the ability to understand the personal impact of those circumstances, may be more likely to plan in anticipation of stressful events. Proactive coping involves the accumulation of resources and the acquisition of skills in preparation for life-in-general, without reference to any particular stressor (Aspinwall & Taylor, 1997). Proactive coping can enable people to avoid stressful events altogether or to minimise their impact when they occur. Both forms of coping have been linked to positive health outcomes.

RRQ. In an effort to develop more psychometrically rigorous measures of the different forms of trait self-attention confounded in the PRSC, Trapnell and Campbell (1999) developed the Reflection and Rumination questionnaire (RRQ). They argued that trait rumination and reflection represent two motivationally distinct forms of self-attention. People high in RRQ-Rumination are also high in trait neuroticism and display a vulnerability to perceiving threat or injuries to the self. People high in trait reflection are high in trait openness to experience and enjoy self-contemplation due to their epistemic curiosity. Consistent with the motivational definition of RRQ-Rumination, the present research demonstrated that people higher in RRQ-Rumination experienced more disruption of their self-concept clarity and threat to their self-esteem in response to daily events. With respect to daily self-attention, RRQ-Rumination was highly associated with aggregate diary rumination (Study 1) and protracted attention (Study 2), but not reliably with initial self-analysis following negative events (Study 2).

With respect to the measures of psychological well-being, RRQ-Rumination was reliably associated with pretest trait NA (Study 1) and pretest depression (Study 2) as well as all of the outcome measures of psychological distress: aggregate diary NA (Study 1) and anxious mood (Study 2), and follow up depression (Study 2). However, due to the high associations with pretest NA and depression, RRQ-Rumination did not reliably predict the outcome measures of psychological distress once pretest levels were controlled. This pattern has also occurred in the research on Ruminative Response Style. In Nolen-Hoeksema et. al. (1997), Ruminative Response Style did not reliably predict time 2 depression after controlling for time 1 depression due to the high association between Ruminative Response Style and time 1 depression. However, in studies using prospective designs in which levels of depression are controlled in the initial sample selection (e.g., Just & Alloy, 1997; Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema et al., 1994) Ruminative Response Style has repeatedly emerged as an independent predictor of depressed mood. The design of the present research does not rule out the possibility that RRQ-Rumination is an independent vulnerability factor. To clearly test this hypothesis, a sample that is homogenous on levels of depression but varies in RRQ-Rumination should be selected at the start of the study.

In contrast to RRQ-Rumination, RRQ-Reflection was not reliably associated with aggregate diary rumination (Study 1), Initial Self-Analysis (Study 2), or protracted attention (Study 2) nor with any of the measures of psychological distress. People higher in the tendency to self-reflect out of an intellectual curiosity were thus no more likely to self-attend following negative events or to experience higher levels of psychological distress. However, unlike people higher in PRSC-ISA, people higher in RRQ-Reflection did not garner any psychological health benefits from their curiosity-driven self-attention. The RRQ-Reflection construct thus appears to be somewhat different from PRSC-ISA and from the mood-labelling construct identified by Swinkels and Guiliano (1995), both of which may confer some psychological benefits. What can account for the divergence between RRQ-Reflection and these measures? While RRQ-Reflection taps individual differences in the extent to which people enjoy self-reflection, it does not imply that the self-reflection produces accurate self-knowledge or understanding. Both PRSC-ISA and mood labelling in contrast do assess knowledge or the perception of knowledge concerning one's current emotional state. It may be accurate self-knowledge or the belief in one's accuracy that accounts for the positive health outcomes.

Individual Differences in Aggregate Diary Self-Attention

The daily aggregate ratings of level of Initial Self-Analysis, negative rumination, and protracted attention were highly reliable, which indicated that participants' displayed consistent or trait-like levels of self-attention in response to daily negative events.

Rumination. While some of the broad claims about self-attention in response to negative mood in Ruminative Response Style theory did not hold up in this research, Nolen-Hoeksema has provided convincing evidence that people who are chronically higher in ruminative responses are more vulnerable to depression. The self-report rumination index in Study 1, modeled after Nolen-Hoeksema's (1991) definition of Ruminative Response Style, assessed the extent to which people continued to think about the event after it ended, and how much they focused on its negative aspects and on how badly the event made them feel. Given that Ruminative Response Style is the extent to which people focus specifically on their depressed moods and the symptoms of that depression, the rumination index in this research is similar but not identical to Ruminative Response Style. Despite the differences, the results obtained with the aggregate rumination index were highly consistent with Ruminative Response Style research. Aggregate diary rumination was highly associated with aggregate diary NA (Study 1), even after controlling for pretest dispositional NA. Thus, people who chronically experienced higher levels of rumination following negative daily events also experienced higher average levels of NA during the diary period.

Aggregate diary rumination was also highly associated with Self-Concept Confusion. That is, people who ruminated more about their negative events also (1) felt more uncertain or torn in different direction about how to respond to the situation, (2) questioned and changed their beliefs about themselves, and (3) experienced more conflict among their self-beliefs. Indeed a mediational analysis suggested that levels of negative rumination were the products of this Self-Concept Confusion, and rumination in turn caused negative affect. Rumination in this scenario represents an effort to restore self-knowledge or clarity; however, the intense focus on these self-threatening events also produces protracted NA. Although this pattern is intuitively plausible; given that diary rumination, Self-Concept Confusion, and NA were all assessed at the same time point, conclusions about their causal relations are tenuous at best. Further, a similar mediational pattern was not obtained with Initial self-analysis and SC-disruption in Study 2. Because the question of what causes higher levels of self-attention is central to dealing with the impact of self-attention on psychological well-being, the relation between self-concept disruption and self-attention deserves more careful scrutiny in future research.

Protracted attention and self-concept disruption. Protracted attention was a self-report measure of the average amount of time people spent thinking about a particular negative event during the week following the event. Based on Pyszczynski and Greenberg's (1987) theory of self-regulation perseveration, it was predicted that chronic protracted attention would be associated with subsequent depression. Consistent with this prediction, protracted attention was associated with follow-up depression; however, because it was more highly associated with pretest depression it did not predict follow-up depression when pretest levels were controlled. Similar results were obtained with self-concept disruption. Pretest depression predicted the extent to which people chronically experienced daily events as threatening to their self-esteem

and self-concept clarity. This pattern of results suggests that protracted attention and self-concept disruption are features or consequences of pre-existing depression. That is, when people are dealing with depression daily events take a larger toll on their self-esteem and elicit more self-concept uncertainty. In addition, depressed people have more difficulty either resolving or putting events to rest days after the event occurred. Elevated self-concept disruption may cause depressed people to experience daily events as more stressful. Depressed people's psychological and attentional responses to daily events may serve to perpetuate their depression.

Initial self-analysis. Considerable research has demonstrated that chronic levels of negative rumination are related to levels of protracted depressed moods. The results from a recent study by Nolen-Hoeksema et al. (1997), however, demonstrated that individual differences in a non-negative form of self-attention that involves trying to understanding the meaning of negative events and one's own reactions to these events (i.e. self-analysis) were associated with subsequent depression. Indeed, in Nolen-Hoeksema et al. (1997) people's level of self-analysis was a better predictor of subsequent depression than was their level of negative, symptom-focused rumination. Her study raised the possibility that chronically high levels of any form of self-attention following negative events indicate a problem. However, in Nolen-Hoeksema et al. (1997) level of self-analysis was assessed for a one-month period following a serious life event and thus assessed people's level of protracted self-analysis following the death of a romantic partner. To distinguish the effects of immediate self-analysis from protracted attention, I separately assessed initial self-analysis the same day a negative event occurred and protracted attention associated with the event during the following week (Study 2). Initial self-analysis was a self-report index that measured thinking directed at dealing with the event itself and with the emotions and reactions it provoked -- it did not reference negative mood states or symptoms.

Initial self-analysis was highly correlated with both self-concept disruption and protracted attention indicating that people who engaged in more self-analysis immediately following negative events also tended to experience more threat to their self-esteem, more Self-Concept Confusion, and more protracted event-related thoughts. With respect to follow up depression, people higher in initial self-analysis experienced higher levels of depression one month after the second diary session was completed, independent of pretest depression. This finding indicates that the chronic tendency to engage in higher levels of initial self-analysis immediately following negative events created a vulnerability to subsequent depressed mood. In fact, initial self-analysis was the only reliable predictor of the change-in-depression scores in Study 2. Thus it is not simply people's tendency to focus on negative aspects of events or to agonise about events over time that creates a vulnerability to depression; even people's same-day self-attention aimed at understanding their negative daily events and dealing with their reactions to them, when persistently high, were problematic.

Combining the Between- and Within-Person Levels of Analysis

The present research attempted to reconcile a paradox in the self-attention literature. Researchers investigating the negative health outcomes of individual differences in self-attention (e.g., Nolen-Hoeksema and colleagues) have begun advocating that people generally avoid self-attention when experiencing negative moods and following significant life events. Self-

attention, however, has been identified in theoretical models as a necessary element of self-regulation and in laboratory studies as a typical response to intense moods and failure on tasks. Consistent with self-regulation theory and laboratory research, the present research demonstrated that in daily life people generally engage in self-analysis, and even protracted self-attention and negative rumination, in response to their negative moods and goal setbacks, and that these general tendencies are not harmful to well-being. Consistent with Nolen-Hoeksema, however, the present results also demonstrated that people who chronically engaged in higher levels of self-attention following negative daily events were more susceptible to anxiety and depression.

From these results, a number of conclusions can be drawn. First, self-attention appears to be a natural self-regulatory response to negative moods and setbacks. Second, for many people this self-attentional response is limited and therefore does not create a risk for depression. Third, some people have chronic difficulty containing their self-attentional response to negative circumstances and these higher levels of self-attention appear to create a vulnerability to depression. These findings suggest that self-attention is an unavoidable aspect of life, especially following negative circumstances. Further, if self-attention following negative circumstances is an automatic self-regulatory response, then higher levels of self-attention may simply indicate problems in self-regulation. That is, people who experience higher levels of self-attention following negative events may be people who are less efficient or skilled at resolving self-discrepancies. From this perspective, self-attention is primarily an indicator or symptom of difficulty resolving problems, and thus a depression treatment that concentrates exclusively on reducing levels of self-attention and does not include devising better methods of dealing with negative self-discrepancies, may be doomed to failure.

The conclusion that self-attention is a symptom of unresolved self-discrepancies helps to reconcile the present research with the body of research that has identified physical and mental health benefits from self-attention in the form of writing or talking to therapists (e.g., Donnelly & Murray, 1991; Murray, Lamnin, & Carver, 1989; Pennebaker, 1993; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). Pennebaker and Francis (1996) have stressed that these positive health outcomes are the product of strategies that enable the person to reorganise their problem, that is, to gain insight into their problems and awareness about alternative explanations for their upheaval. In their research, it is specifically the reorganisation process that confers the health benefits not the self-attention per se. Thus individual differences in the ability to gain insight and understanding into events may in fact explain individual differences in levels of self-analysis, rumination, and negative emotions. If self-attention in response to negative events is a normal self-regulatory response, then people who quickly extract insight from their life events will require less self-analysis. In contrast, people who have difficulty reorganising the problem may remain in self-regulation and indeed exaggerate the impact of the event.

Limitations and Future Research

There are two primary limitations in the present research. First, the use of university student samples limits the generalizability of the findings. This limitation is tempered to some degree by the fact that the results of the present research were largely consistent with self-attention research conducted on community samples. Second, the correlational design limits the extent to which causal inferences can be drawn. In Study 2, a distinct time sequence between the

assessment of chronic self-attention in response to negative events and the outcome measure of depression was created. What remains unclear, however, is whether level of chronic self-attention causes emergent depression or whether it functions largely as a mediational factor between a different causal agent and depression. If people's level of self-attention in response to negative events is a product of some other causal agent, ameliorative action directed at decreasing self-attention might be pointless. Several potential non-attentional causal agents were examined, including self-concept disruption, thought suppression and emotional expression; but these did not consistently fit the criteria as causal agents in a mediational model.

Future research should continue the search for factors that cause individual differences in self-attentional responses to negative events. In the general discussion it was suggested that individual difference in people's ability to gain insight into or reorganise their problems might account for individual differences in self-attention and psychological health outcomes. People's ability to identify their emotional states or their goals-at-stake due to events may be means by which they gain insight and understanding. To better understand the nature of individual differences in self-attention, it would also be helpful to know when differences in self-attention emerge. In a laboratory study, Greenberg and Pyszczynski (1986) demonstrated that people engage in similarly higher levels of self-attention immediately following failure on a task, but individual differences in self-attention emerged only after a time delay (the length of time it took them to read a 10 page essay). These laboratory findings suggest that immediately following negative daily events there may be no individual differences in self-attention. The design of the present research, however, did not enable me to pin point when individual differences emerged. Finally, future research should investigate whether or not self-attention is a crucial component of self-regulation and is indeed adaptive. The within-person results demonstrated that increased self-attention was a common response to goal-setbacks, they did not demonstrate that increased self-attention was necessary for reducing self-discrepancies.

Conclusions

Is self-attention beneficial or harmful to psychological well-being? The present results and the research of Nolen-Hoeksema clearly demonstrate that people who chronically engage in more self-attention following negative daily events are more susceptible to anxiety and depression. There were no positive health outcomes associated with higher levels of attention to negative events. One cannot conclude from these findings, however, that all levels of self-attention are problematic. The present research also demonstrated that people generally engage in self-analysis, and even protracted self-attention and negative rumination, in response to their negative moods and goal setbacks. These within-person findings indicate that for many people their self-attentional response to negative moods and goal-setbacks does not create a risk for depression. Thus, the central conclusion from this research is that self-attention is harmful to well-being only when people have chronic difficulty containing their self-attentional response to negative circumstances.

References

- Anderson, E. M., & Bohon, L. M. (1996). Factor structure of the Private Self-Consciousness Scale. Journal of Personality Assessment, 66, 144-152.
- Aspinwall, L. G., & Taylor, S. E. (1997). A stitch in time: Self-regulation and proactive coping. Psychological Bulletin, 121, 417-436.
- Bandura, A. (1989). Self-regulation of motivation and action through internal standards and goal systems. In L. Pervin, (Ed.), Goal concepts in personality and social psychology (pp. 19-85). New Jersey: Erlbaum.
- Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.
- Beck, A. T. (1967). Depression: Clinical, experimental, and theoretical aspects. New York: Harper and Row.
- Blaney, P. H. (1986). Affect and memory: A review. Psychological Bulletin, 99, 229-246.
- Bower, G. H. (1981). Mood and memory. American Psychologist, 36, 129-148.
- Bowlby, J. (1980). Attachment and loss (Vol. 3). New York: Basic Books.
- Brockner, J. (1979). The effects of self-esteem, success-failure, and self-consciousness on task performance. Journal of Personality and Social Psychology, 37, 1732-1741.
- Burnkrant, R., & Page, T. (1984). A modification of the Fenigstein, Scheier, and Buss self-consciousness scale. Journal of Personality Assessment, 48, 629-637.
- Buss, A. H., & Plomin, R. (1975). A temperament theory of personality development. New York: Wiley-Interscience.
- Butler, L. S., & Nolen-Hoeksema, S. (1994). Gender differences in responses to depressed mood in a college sample. Sex Roles, 30, 331-346.
- Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. Journal of Personality and Social Psychology, 59, 538-549.
- Campbell, J. D. (1991). Daily events and experiences: Research challenges and direction. Paper presented at the 99th Annual Convention of the American Psychological Association, San Francisco.

- Campbell, J. D., & Lavalée, L. F. (1993). Who am I? The role of self-concept confusion in understanding the behavior of people with low self-esteem. In R. F. Baumeister (Ed.), Self-esteem: The puzzle of low self-regard (pp. 3-22). New York: Plenum Press.
- Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavalée, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. Journal of Personality and Social Psychology, 70, 141-156.
- Cantor, N., & Langston, C. A. (1989). "Ups and downs" of life tasks in a transition. In L. A. Pervin (Ed.), Goal concepts in personality and social psychology (pp. 127-168). New Jersey: Erlbaum.
- Cantor, N., Markus, H., Niedenthal, P., & Nurius, P. (1986). On motivation and the self-concept. In R. M. Sorrentino & E. T. Higgins (Eds.), Handbook of motivation and cognition: Foundations of social behavior (pp. 96-121). New York: Guilford Press.
- Cantor, N., Norem, J. K., Brower, A. M., Niedenthal, & Langston, C. (1987). Life tasks, self-concept ideals, and cognitive strategies in a life transition. Journal of Personality and Social Psychology, 53, 1178-1191.
- Cantor, N., Norem, J. K., Langston, C., Zirkel, S., Fleeson, W. & Cook-Flannagan, C. (1991). Life tasks and daily life experience. Journal of Personality, 59, 425-451.
- Carver, C. S., & Glass, D. C. (1976). The self-consciousness scale: A discriminant validity study. Journal of Personality Assessment, 40, 169-172.
- Carver, C. S., Lawrence, J. W., & Scheier, M. F. (1996). A control-process perspective on the origins of affect. In L. L. Martin & A. Tesser (Eds.), Striving and feeling: Interactions among goals, affect, and self-regulation (pp. 11-52). New Jersey: Erlbaum.
- 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). Origins and functions of positive and negative affect: A control-process view. Psychological Review, 97, 19-35.
- Cohen, J., & Cohen, P. (1975). Applied multiple regression/correlation analysis for the behavioral sciences. Hillsdale, N. J.: Erlbaum.
- Csikszentmihalyi, M., & Figurski, T. J. (1982). Self-awareness and aversive experience in everyday life. Journal of Personality, 50, 15-28.
- DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. Journal of Personality and Social Psychology, 54, 486-495.

- Donnelly, D. A., & Murray, E. J. (1991). Cognitive and emotional changes in written essays and therapy interviews. Journal of Social and Clinical Psychology, 10, 334-350.
- Duval, S., & Wicklund, R. A. (1972). A theory of objective awareness. NY: Academic Press.
- Duval, S., & Wicklund, R. A. (1973). Effects of objective self-awareness on attributions of causality. Journal of Experimental Social Psychology, 9, 17-31.
- Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well being. Journal of Personality and Social Psychology, 51, 1058-1068.
- Emmons, R. A. (1991). Personal strivings, daily life events, and psychological and physical well being. Journal of Personality, 59, 453-472.
- Emmons, R. A. (1992). Abstract versus concrete goals: Personal striving level, physical illness, and psychological well being. Journal of Personality and Social Psychology, 62, 292-300.
- Emmons, R. A., & Diener, E. (1986). A goal-affect analysis of everyday situational choices. Journal of Research in Personality, 20, 309-326.
- Exner, J. E. (1973). The self-focus sentence completion: A study of ego-centricity. Journal of Personality Assessment, 37, 437-455.
- Fenigstein A., Scheier, M. F., & Buss, A. (1975). Public and private self-consciousness. Journal of Consulting and Clinical Psychology, 43, 522-527.
- Folkman, S., & Lazarus, R. S. (1985). If it changes, it must be a process: Study of emotion and coping during three stages of a college examination. Journal of Personality and Social Psychology, 48, 150-170.
- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. Journal of Personality and Social Psychology, 50, 992-1003.
- Frone, M. R., & McFarlin, D. B. (1989). Chronic occupational stressors, self-focused attention, and well being: Testing a cybernetic model of stress. Journal of Applied Psychology, 74, 876-883.
- Gold, D. B. & Wegner, D. M. (1995). Origins of ruminative thought: Trauma, incompleteness, nondisclosure, and suppression. Journal of Applied Social Psychology, 25, 1245-1261.
- Goleman, D. G. (1995). Emotional intelligence. New York: Bantam Books.

- Greenberg, J., & Pyszczynski, T. (1986). Persistent high self-focus after failure and low-self-focus after success. The depressive self-focusing style. Journal of Personality and Social Psychology, 50, 1039-1044.
- Gur, R. C., & Sackeim, H. A. (1978). Self-confrontation and psychotherapy: A reply to Sanborn, Pyke and Sanborn. Psychotherapy: Theory, Research and Practice, 15, 258-265.
- Higgins, E. T., Klein, R., & Strauman, T. (1985). Self-concept discrepancy theory: A psychological model for distinguishing among different aspects of depression and anxiety. Social Cognition, 3, 51-76.
- Hull, J. G., & Young, R. D. (1983). Self-consciousness, self-esteem, success-failure as determinants of alcohol consumption in male social drinkers. Journal of Personality and Social Psychology, 44, 1097-1109.
- Hull, J. G., Young, R. D., & Jouriles, E. (1986). Applications of the self-awareness model of alcohol consumption: Predicting patterns of use and abuse. Journal of Personality and Social Psychology, 51, 790-796.
- Hyland, M. E. (1987). Control theory interpretation of psychological mechanisms of depression: Comparison and integration of several theories. Psychological Bulletin, 102, 109-121.
- Ickes, W., Wicklund, A., & Ferris, C. (1973). Objective self-awareness and self esteem. Journal of Experimental Social Psychology, 9, 202-219.
- Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. Psychological Bulletin, 107, 156-176.
- Ingram, R. E., Johnson, B. R., Bernet, C. Z., & Dombeck, M. (1992). Cognitive Therapy and Research, 16, 451-472.
- Ingram, R. E., Lumry, A. E., Cruet, D., & Sieber, W. (1987). Attentional processes in depressive disorders. Cognitive Therapy & Research, 11, 351-360.
- Ingram, R. E., & Smith, T. W. (1984). Depression and internal versus external focus of attention. Cognitive Therapy and Research, 8, 139-152.
- Just, N. & Alloy, L. B. (1997). The response styles theory of depression: Tests and an extension of the theory. Journal of Abnormal Psychology, 106, 221-229.
- Laxer, R. (1964). Self-concept changes of depressed patients in general hospital treatment. Journal of Consulting Psychology, 28, 214-219.

- Leventhal, H. (1980). Toward a comprehensive theory of emotional. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 13). New York: Academic Press.
- Liebling, B. A., & Shaver, P. (1973). Evaluation, self-awareness, and task performance. Journal of Experimental Social Psychology, 9, 297-306.
- Lewinsohn, P. M., Mischel, W., Chaplin, W., & Barton, R. (1980). Social competence and depression: The role of illusory self-perceptions. Journal of Abnormal Psychology, 89, 203-212.
- Little, B. R. (1989). Personal projects analysis: Trivial pursuits, magnificent obsessions and the search for coherence. In D. M. Buss & N. Cantor (Eds.), Personality psychology: Recent trends and emerging directions (pp. 15-31). New York: Springer-Verlag.
- Lyubomirsky, S., & Nolen-Hoeksema, S. (1995). Effects of self-focused ruminative on negative thinking and interpersonal problem solving. Journal of Personality and Social Psychology, 69, 176-190.
- Mandler, G., & Sarason, S. B. (1952). A study of anxiety and learning. Journal of Abnormal and Social Psychology, 47, 166-173.
- Markus, H. R., & Ruvolo, A. (1989). Possible selves: Personalized representations of goals. In L. A. Pervin (Ed.), Goal concepts in personality and social psychology (pp. 211-242). Hillsdale, NJ: Erlbaum.
- Martin, L. L., & Tesser, A. (1989). Toward a motivational and structural theory of ruminative thought. In J. S. Uleman & J. A. Bargh (Eds.), Unintended thought: The limits of awareness, intention, and control (pp. 306-326). New York: Guilford.
- Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. In R. Wyer (Ed.), Advances in social cognition (pp. 1-48). Hillsdale, NJ: Erlbaum.
- Martin, L. L., Tesser, A. & McIntosh, W. D. (1993). Wanting but not having: The effects of unattained goals on thoughts and feelings. In d. M. Wegner & J. W. Pennebaker (Eds.), The handbook of mental control (pp. 552-572). New York: Prentice Hall.
- McIntosh, W. D., Harlow, T. F. & Martin, L. L. (1995). Linkers and Nonlinker: Goal beliefs as a moderator of the effects of everyday hassles on rumination, depression, and physical complaints. Journal of Applied Social Psychology, 25, 1231-1244.
- Michela, J. L. (1990). Within-person correlational design and analysis. In C. Hendrick & M. S. Clark (Eds.), Review of Personality and Social Psychology. Beverly Hills, CA: Sage.
- Mittal, B., & Balasubramanian, S. (1987). Testing the dimensionality of the Self-Consciousness Scales. Journal of Personality Assessment, 51, 53-68.

- Morrow, J., & Nolen-Hoeksema, S. (1990). Effects of responses to depression on the remediation of depressive affect. Journal of Personality & Social Psychology, 58, 519-527.
- Mullen, B., & Suls, J. (1982). "Know Thyself": Stressful life changes and the ameliorative effect of private self-consciousness. Journal of Experimental Social Psychology, 18, 43-55.
- Murray, E. J., Lamnin, A. D., & Carver, C. S. (1989). Emotional expression in written essays and psychotherapy. Journal of Social and Clinical Psychology, 8, 414-429.
- Nadich, M., Gargan, M., & Michael, L. (1975). Denial, anxiety, locus of control, and the discrepancy between aspirations and achievements as components of depression. Journal of Abnormal Psychology, 84, 1-9.
- Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. Psychological Bulletin, 101, 259-282.
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. Journal of Abnormal Psychology, 100, 569-582.
- Nolen-Hoeksema, S. (1996). Chewing the cud and other ruminations. In R. Wyer (Ed.), Advances in social cognition (pp. 135-144). Hillsdale, NJ: Erlbaum.
- Nolen-Hoeksema, S., McBride, A., & Larsen, J. (1997). Rumination and psychological distress among bereaved partners. Journal of Personality and Social Psychology, 72, 855-862.
- Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and distress following a natural disaster: The 1989 Loma Prieta earthquake. Journal of Personality and Social Psychology, 61, 105-121.
- Nolen-Hoeksema, S., Morrow, J., & Fredrickson, B. L. (1993). Response styles and the duration of episodes of depressed mood. Journal of Abnormal Psychology, 102, 20-28.
- Nolen-Hoeksema, S., Parker, L., & Larson, J. (1994). Ruminative coping with depressed mood following loss. Journal of Personality and Social Psychology, 67, 92-104.
- Novacek, J. & Lazarus, R. S. (1990). The structure of personal commitments. Journal of Personality, 58, 693-715.
- Pennebaker, J. W. (1993). Putting stress into words: Health, linguistic, and therapeutic implications. Behaviour Research and Therapy, 31, 539-548.
- Pennebaker, J. W., & Francis, M. E. (1996). Cognitive, emotional, and language processes in disclosure. Cognition and Emotion, 10, 601-626.

- Pennebaker, J. W., Kiecolt-Glaser, J. K., & Glaser, R. (1988). Disclosure of traumas and immune function: Health implications for psychotherapy. Journal of Consulting and Clinical Psychology, 56, 239-245.
- Pervin, L. A. (1989). Goal concepts in personality and social psychology: A historical perspective. In L. Pervin (Ed.) Goal concepts in personality and social psychology (pp. 1-12). Hillsdale, NJ: Erlbaum.
- Pervin, L. A. (1991). Self-regulation and the problem of volition. In M. Maehr & P. Pintrich (Eds.), Advances in motivation and achievement (Vol. 7, pp. 1-20). Greenwich: JAI Press.
- Piliavin, J., & Charng, H. (1988). What is the factorial structure of the Private and Public Self-Consciousness Scales? Personality and Social Psychology Bulletin, 14, 587-595.
- Powers, W. T. (1973). Behavior: The control of perception. Chicago: Aldine.
- Pryor, G. G., Gibbons, F. X., Wicklund, R. A., Fazio, R. H., & Hood, R. (1977). Self-focused attention and self-report validity. Journal of Personality, 45, 514-527.
- Pyszczynski, T., & Greenberg, J. (1987). Self-regulatory perseveration and the depressive self-focusing style: A self-awareness theory of reactive depression. Psychological Bulletin, 102, 122-138.
- Raphael, B. (1984). The anatomy of bereavement: A handbook for the caring professions. London: Hutchinson.
- Salovey, P. (1992). Mood-induced self-focused attention. Journal of Personality and Social Psychology, 62, 699-707.
- Salovey, P., Hsee, C. K., & Mayer, J. D. (1993) Emotional intelligence and the self-regulation of affect. In D. M. Wegner & J. W. Pennebaker (Eds.), Handbook of mental control. Century psychology series (pp. 258-277). New Jersey: Prentice Hall.
- Salovey P., & Mayer, J. D., (1990) Emotional intelligence. Imagination, Cognition & Personality, 9, 185-211
- Sanborn, D. E., Pyke, H F., & Sanborn, C. J. (1975). Videotape playback and psychotherapy: A review. Psychotherapy: Theory, Research and Practice, 12, 179-186.
- Scheier, M. F., & Carver, C. S. (1977). Self-focused attention and the experience of emotion: Attraction, repulsion, and elation. Journal of Personality and Social Psychology, 35, 625-636.
- Scheier, M. F., Carver C. S., & Gibbons F. X. (1981). Self-focused attention and reactions to fear. Journal of Research in Personality, 15, 1-15.

- Seligman, M. E. P., Abramson, L. Y., Semmel, A., & von Baeyer, C. (1979). Depressive attributional styles. Journal of Abnormal Psychology, 88, 242-247.
- Shrout, P. E. & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. Psychological Bulletin, 86, 420-428.
- Smith, T. W., & Greenberg, J. (1981). Depression and self-focused attention. Motivation and Emotion, 5, 323-331.
- Smith, T. W., Ingram, R. E., & Roth, D. L. (1985). Self-focused attention and depression: Self-evaluation, affect, and life stress. Motivation and Emotion, 9, 381-389.
- Stone, A. A. (1981). The association between perceptions of daily experiences and self- and spouse-related mood. Journal of Research in Personality, 15, 510-522.
- Stone, A. A. (1987). Event content in a daily survey is differentially associated with concurrent mood. Journal of Personality and Social Psychology, 52, 56-58.
- Suls, J. & Fletcher, B. (1985). Self-attention, life stress, and illness: A prospective study. Psychosomatic Medicine, 47, 469-481.
- Swinkels, A., & Giuliano, T. A. (1995). The measurement and conceptualization of mood awareness: Monitoring and labeling one's mood states. Personality and Social Psychology Bulletin, 21, 934-949.
- Teasdale, J. D. (1985). Psychological treatments for depression: How do they work? Behaviour Research & Therapy, 23, 157-165
- Tennen, H., & Herzberger, S. (1987). Depression, self-esteem, and absence of self-protective attributional biases. Journal of Personality and Social Psychology, 52, 72-80.
- Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. Journal of Personality and Social Psychology, 76, 284-304.
- Watson, P. J., & Biderman, M. D. (1993). Narcissistic Personality: Inventory factors, splitting, and self-consciousness. Journal of Personality Assessment, 61, 41-57
- Watson, P. J., Morris, R. J., & Hood R. W., Jr. (1988). Sin and self-functioning, part 1: Grace, guilt, and self-consciousness. Journal of Psychological Theology, 16, 254-269.
- Wegner, D. M. (1992). You can't always think what you want: Problems in the suppression of unwanted thoughts. In M. Zanna (Ed.), Advances in experimental social psychology (Vol. 25, pp. 192-225). San Diego, CA: Academic.

- Wegner, D. M. (1994). White bears and toher unwanted thoughts. New York, NY: Guilford.
- Wenzlaff, R. M., Wegner, D. M., & RoperD. W. (1988). Depression and mental control: The resurgence of unwanted negative thoughts. Journal of Personality and Social Psychology, 55, 882-892.
- Wicklund, R. A. (1975). Objective self-awareness. In L. Berkowitz (Ed.), Advances in experimental social psychology, 8, 233-275. New York: Academic Press.
- Wicklund, R. A., & Duval, S. (1971). Opinion change and performance facilitation as a result of objective self-awareness. Journal of Experimental Social Psychology, 7, 319-342.
- Wood, J. V., Saltzberg, J. A., & Goldsamt, L. A. (1990a). Does affect induce self-focused attention? Journal of Personality and Social Psychology, 58, 899-908.
- Wood, J. V., Saltzberg, J. A., Neale, J. M., Stone, A. A., & Rachmiel, T. B. (1990b). Self-focused attention, coping responses, and distressed mood in everyday life. Journal of Personality and Social Psychology, 58, 1027-1036.
- Zirkel, S., & Cantor, N. (1990). Personal construal of life tasks: Those who struggle for independence. Journal of Personality and Social Psychology, 58, 172-185.