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Can't Get It Out of My Head: The Role of Gender in the Relations Between Ruminative Styles, Negative Affect, and Stress Behaviors

by

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ABSTRACT

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Rumination is a common mental experience that has received relatively little attention with respect to its precise dimensionality. The current research identifies seven such dimensions in the newly developed Survey of Ruminative Styles (SRS). Two of the ruminative styles (Distraction and Social Disclosure) were used differentially based on gender with females endorsing these styles more than males. Surprisingly, previously documented gender differences indicating females' greater tendency towards ruminative thought and brooding (e.g., Nolen-Hokesema and colleges) were not replicated in this analysis. The various ruminative styles also demonstrated differential validity as predictors of negative and positive affect and stress behaviors.
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INTRODUCTION

Although the experience of rumination has a great deal of intuitive appeal, developing an appropriate definition of the construct is more of a challenge. Complicating the issue of definition is the plethora of names that have been attached to the concept of ruminative thought. Some researchers refer explicitly to rumination (e.g., Martin & Tesser, 1996; Lyubomirsky & Nolen-Hoeksema, 1993), but similarities can be seen in many other, related concepts such as mind-wandering (e.g., Smallwood & Schooler, 2006; Wegner, 1997), off-task, task-unrelated thinking, or irrelevant thinking (e.g., Seibert & Ellis, 1991), daydreaming (e.g., Greenwald & Harder, 1995), zoning out (e.g., Schooler, Reichle, & Halpern, 2005), attentional failure or lapse (e.g., Robertson, Manly, Andrade, Baddeley, & Yiend, 1997), and stimulus-independent thinking (e.g., Teasdale, Dritschell, Taylor, Proctor, Lloyd, Nimmo-Smith, et al., 1995). Some researchers treat the concept holistically (Martin & Tesser, 1996), whereas others refer to rumination as having multiple dimensions, such as brooding and reflecting (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Further muddying the waters is the fact that researchers in the domain of rumination rarely reference each others' work, preferring instead to stay isolated within their respective subfields (e.g., cognitive, clinical, social, & industrial-organizational psychologies). Some of these subfields emphasize rumination as distraction from a salient task or stimulus; others describe the characteristics of free association or stream of consciousness. In the current study, I eschew these constraints and adopt a broad perspective that defines rumination as goal-relevant, repetitive, and persistent thought.

Perhaps the proliferation of ruminative research can be best understood as a key antecedent of negative affect (NA) and depression. A recent review (Watkins, 2008) of repetitive thought identified depression, anxiety, and problems with physical wellbeing as the
major negative consequences that can occur in individuals who engage in ruminative thought. Additionally, Nolen-Hoeksema and her colleagues have found strong linkages between recurring thoughts and a variety of negative experiences such as increased anger and sadness, cognitive impairment, anxiety, and depressive disorders (Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema & Morrow, 1993; Nolen-Hoeksema, Parker, & Larson, 1994).

In addition to the influence of rumination on negative affect, one must also consider the role of rumination in the escalation of negative affect into a wide variety of associated detrimental outcomes (Karney, Bradbury, Fincham, & Sullivan, 1994; Shoal & Giancola, 2003; Suls & Bunde, 2005; Watson & Clark, 1984; Watson & Pennebaker, 1989). For example, clinical research has established a linkage between NA and both pathological disorders, such as depression, and behaviors, such as suicide (e.g., Knowles, Tai, Christensen, & Bentall, 2005; Rudd, Joiner, & Rajad, 1996). Beyond the depressive aspects of NA, more agitated NA often influences the manner in which we process information. In Easterbrook's (1959) seminal work, he found that a particular form of NA, anxiety, narrows the scope of cues utilized and therefore results in inhibited task performance. Similarly, anger has been demonstrated to encourage an increased usage of stereotyping, leading to a reduction in complex decision making ability (Bodenhausen, Sheppard, & Kramer, 1994). Experiences of NA, particularly in conjunction with aroused states, can also lead to imprudent risks and self-defeating behaviors (Leith & Baumeister, 1996).

Within Industrial-Organizational (I-O) psychology, research has linked the experience of NA with work stress and counterproductive work behaviors (e.g., Brief, Burke, George, Robinson, & Webster, 1988; Burke, Brief, & George 1993; Penney & Spector, 2005). In addition, a recent meta-analysis cites NA as a major contributor to detrimental
job-related issues such as turnover intentions, dimensions of job burnout, and decreased job satisfaction and organizational commitment (Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003). It is important for employees, particularly those who must work with teammates or in the customer service industry to be able to regulate the expression of NA at work in order to effectively perform their jobs (Grandey, 2000; 2003; Organ & Ryan, 1995). Overt expression of NA due to the failure to regulate emotions in the work environment can have disadvantageous outcomes (Totterdell & Holman, 2003). A recent body of research has looked at the emotional experience and regulation of NA. This research indicates that the experience of NA can be taxing for employees, leading increased job stress and burnout (Brotheridge & Grandey, 2002; Zapf, Seifert, Schmutte, Mertini, & Holz, 2001) and, if unregulated, decrements in performance (Beal, Trougakos, Weiss, & Green, 2006). Rather than regulating NA and enduring the drain on one's self-control, employees' efforts could be directed at preventing the prolonged experience of NA through selection of more effective rumination strategies.

*Styles of Ruminative Thought*

Historically, the treatment of rumination was as a unitary construct, emphasizing the repetitive nature of thinking and its tendency to prolong depressive episodes (Nolen-Hoeksema & Morrow, 1991). These authors did, however, contrast repetitive thought with efforts to deploy attention elsewhere, implicating distraction as one potential strategy to reduce rumination. Recent research by Trapnell and Campbell (1999), however, considers how inwardly focused, ruminative thought can occur in different forms. These researchers were concerned less with rumination per se than they were with self-focused attention, a closely related form of thinking. They distinguished between two types of self-focused attention, labeled rumination and reflection. Rumination bears great resemblance to the
construct as discussed by Nolen-Hoeksema and colleagues (e.g., Lyubomirsky & Nolen-Hoeksema, 1995). Reflection, in contrast, refers to self-focused thinking that is highly introspective and emphasizes obtaining a "deeper" understanding of the self. Although this work was influential and important for first acknowledging such a distinction, the measure of reflection used was highly related (both empirically and conceptually) to the broader personality domain of Openness to Experience.

The distinction between rumination and reflection received further confirmation from a series of studies by Segerstrom and colleagues (Segerstrom, Stanton, Alden, & Shortridge, 2003). Using a variety of methods, including sorting tasks, standard questionnaires, and open-ended responses, these authors identified two primary dimensions of repetitive thought, this time labeled valence and purpose. Using multidimensional scaling techniques, the Valence dimension captured persisting negative thoughts (e.g., includes scales assessing self-reproach, worry, intrusive thoughts) on one end of the spectrum and positive thoughts (e.g., includes scales assessing hope, optimism, and positive reappraisal) on the other end. Purpose, in contrast, captured the need or desire to introspect (e.g., includes openness to experience, need for cognition, and the reflection scale of Trapnell and Campbell, 1999) versus the tendency to understand the situation (scales assessing attention to moods, emotion clarity, and cognitive rehearsal and processing). Although evidence across three studies in this paper generally supported these two dimensions, it was clear that other factors occasionally surfaced. Part of the rationale for the current study is to provide greater clarity to the multiple ruminative styles that likely exist.

Nolen-Hoeksema's own research group recently acknowledged a similar structure to their own measure of rumination (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). In a reanalysis of data from earlier studies, these authors identified not one but three factors.
One of these factors contained elements of depressive thoughts and was recommended to be removed from future work examining rumination, as its content represents contamination from the construct domain of depression. The remaining items fell into two categories, which the authors labeled brooding and reflection. Brooding consists of internally focused thoughts of negative valence (e.g., "I think 'what am I doing to deserve this.'"), whereas Reflection refers to continued thinking in an introspective and contemplative manner (e.g., "I go away by myself and think about why the event happened"). The authors also acknowledged that other styles of rumination are likely to exist and that future research should explore the broader structure and function of the construct.

In an attempt to more fully explore the domain of the rumination construct, various rumination styles were identified by a newly developed Survey of Ruminative Styles (SRS; Beal & Raley, 2008). The SRS looks at the multiple methods available to engage in ruminative thought. Building off of previous measures, seven styles of ruminative thought including the general persistent ruminative tendency were identified and examined for their relationships with NA and PA as well as stress related behaviors. Table 1 provides brief descriptions of each of these seven styles. Below, I provide a more complete conceptual definition of each style.

**Persistent Ruminative Thought.** Despite a vast amount of literature on rumination, many of the items and scales involved in this literature do not assess the tendency to experience persistent thoughts recurring around a single topic. As such, the first goal of the new measure (i.e., the SRS) was to assess the extent to which people report being preoccupied by recurring thoughts about negative events.

**Brooding.** A brooding style of rumination is characterized by an inward negative focus of repetitive thoughts. Only recently was brooding differentiated from reflection and
depression-related items in a reanalysis of Nolen-Hoeksema and colleagues Ruminative Responses Scale (RRS); prior to this study, rumination was considered more of a unitary construct in their research and had some overlap with measures of depression (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Further research on brooding (alternatively labeled Self-Blame or Stagnant Deliberation by some researchers) as a factor of rumination found that the brooding factor was largely driving the past findings of relations between rumination and negative outcomes including depression, anxiety, dysphoria, and NA (Burwell & Shirk, 2007; Feldman & Hayes, 2005; Gortner, Rude, & Pennebaker, 2006; Roberts, Gilboa, & Gotlib, 1998; Rude, Maestas, & Neff, 2007).

Contemplative Reflection. Ruminative styles similar to what I call Contemplative Reflection have appeared in the work of several groups of researchers under the more general term of "reflection". For example, the Rumination-Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999) identifies reflection as a broad tendency to be inquisitive or introspective about the self. In addition, this form of rumination is comparable to Treynor and colleagues' (2003) Reflection scale of the RRS. This reflection factor consists of items similar to the RRQ, pertaining to a desire for self-knowledge such as "go someplace alone to think about your feelings." These forms of reflection often have been cited as more constructive rumination styles than brooding (Trapnell & Campbell, 1999; Treynor, et al., 2003). Recent research has found a connection between reflection (as measured by the RRS) and creativity, although strong linkages remain between reflection and depression in that same study (Verhaegen, Joormann, & Khan, 2005). The general definition for this ruminative style that is used in the current study's development of the SRS (and encapsulates much of both Trapnell and Campbell's and Treynor et al.'s forms of Reflection) is thoughts concerning one's current or desired state. Importantly, this style of rumination does not
focus on how to bridge any discrepancies between current and desired states.

Of interest are a handful of items from the RRS and RRQ that seem to go beyond an assessment of one's current or desired state. Some of these, primarily from the RRQ, appear to extend to a more general openness to self-analysis (i.e., are not necessarily involved in rumination per se). Others, however, touch on more than just contemplation, emphasizing a need to understand why there is a discrepancy between current and desired states. For instance, the RRS includes the item, "analyze recent events to try to understand why you are depressed." These sorts of items are of particular interest for the current study, as they could be more helpful in reducing future ruminative thought. Specifically, if, as Martin and Tesser (1996) claim, rumination is triggered primarily by discrepancies between current and desired states (i.e., perceived goal blockage), then ruminative styles that explicitly address these discrepancies might be more effective in reaching a state of closure between current and desired states. Therefore, a separate category of reflection was identified and titled Closure-Focused Reflection.

Closure-Focused Reflection. Closure-Focused rumination consists of thoughts aimed at "closing the gap" between current and desired states (Carver, Lawrence, & Scheier, 1996). Presumably when this style of rumination is utilized it would allow ruminators to psychologically work toward some element of closure and permit termination of current and future ruminative episodes, perhaps even reaching some sort of resolution for the discrepancy (Martin & Tesser, 1996; Treynor, et al., 2003). Assuming that such a resolution is more likely with this style, it could help stem the continued experience of NA and associated negative outcomes.

Furthermore, similar concepts provide encouraging evidence for the utility of Closure-Focused Reflection. For example, Problem Analysis is a type of anticipatory coping
strategy that emphasizes an understanding not only of stressful situations, but also of the events and reactions that are likely to lead to such stressful situations. Studies of Problem Analysis generally find that it has a weaker relationship with depression symptoms than other types of recurrent thought such as brooding (Feldman & Hayes, 2005). Thus, individuals who engage in Closure-Focused Reflection are anticipated to have more positive (or at least less negative) outcomes than those who use the Brooding style.

**Alternative Outcomes.** Another style of rumination that is being considered is the act of imaging alternative outcomes. Ruminating about what might have been or how things would have turned out differently had not been explicitly studied in comparison to other styles of rumination. The Alternative Outcomes style of rumination is anticipated to have similar effects on stressful outcomes as the Closure-Focused Reflection, although perhaps not as positive considering Alternative Outcomes may lend itself to more dwelling on what went wrong and not have the benefit of leading to a sense of resolution.

**Distraction.** Early research by Nolen-Hoeksema and colleagues (Nolen-Hoeksema, 1991; Nolen-Hoeksema & Morrow, 1991) differentiated distracting responses from ruminative responses and found that participants asked to engage in distraction experienced an improvement in mood over participants instructed to ruminate. Similarly, people assigned to a distraction condition often report more positive moods and reduced anxiety and anger compared to those in a thought listing or ruminative condition (Blagden & Craske, 1996; Bushman, Bonacci, Pedersen, Vasquez, & Miller, 2005; Norem & Illingworth, 1993). Presumably, distraction is effective in reducing repetitive thought, but might also be taxing in other ways, given the need for thought suppression of the ruminative topic. Such thought suppression is likely to impinge upon one's cognitive and regulatory resources, as illustrated in studies by Wegner and colleagues and Baumeister and colleagues (Baumeister, Bratslavsky,
Muraven, & Tice, 1998; Muraven, Tice, & Baumeister, 1998; Wegner, 1989; Wegner, Schneider, Kuntson, & McMahon, 1991). The present study considers distraction as one potential style for managing ruminative thoughts.

Social Disclosure. The ruminative styles discussed above all have concerned intra-individual patterns of recurring thought. In contrast, the Social Disclosure style of rumination extends these thought processes to include other people. In particular, this style of rumination refers to any effort to discuss the topic of ruminative thought with one or more individuals. Note that this style is not identical to social support seeking, as it does not necessitate the seeking or receiving of such support; instead, it merely refers to communication of the ruminative topic. An examination of depressed individuals who were assigned to a social disclosure condition showed that they did not experience increases in NA and in some cases exhibited a boost in PA compared to those in a "small-talk" situation, where communication occurred, but was not relevant to topics of personal stress. Thus, it is likely that for some individuals the act of disclosing information about the self could be an adaptive style of rumination (Kashdan & Roberts, 2006; 2007). Therefore the SRS was designed to assess the possibility and effectiveness of communicating ruminative thoughts to other people.

These seven factors represent a broader scope of ruminative thought than has heretofore been examined. As such, I anticipate that an assessment of these ruminative styles will provide evidence of the existence of these intercorrelated, yet conceptually distinct factors.

H1: A seven factor structure will provide an acceptable fit to the SRS data.

Several other potential models may also provide an acceptable fit to these data. In keeping with the advice offered by MacCallum, Wegener, Uchino, and Fabrigar (1993), I
examined several possible alternative models in addition to the hypothesized model.

*Gender and Negative Affect*

In addition to identifying and assessing the various styles of rumination, the present study intends to assess other variables that may play an important role in the experience of NA and rumination. The primary variable of interest in reviewing the linkages between rumination and NA is gender. Meta-analytic studies of gender differences on the Big Five and other personality inventories have consistently shown a tendency for females to endorse the Anxiety or Neuroticism personality factors, suggesting a greater inclination for women to report NA (Feingold, 1994; Schmit, Realo, Voracek, & Allik, 2008). Of relevance to the current study is that one of the more successful efforts at explaining these gender differences in NA has been research on rumination (Nolen-Hoeksema, Larson, & Grayson, 1999). For example, in Mor and Winquist's (2002) meta-analysis, studies with a greater number of females in their samples had stronger relations between self-focused thinking (similar to rumination/brooding) and NA. Similarly, N-H and colleagues (Nolen-Hoeksema, & Jackson, 2001) found that women's greater prevalence of depression could be explained by their greater tendency to ruminate, such that when controlling for rumination, the gender differences in depression were no longer present.

*Gender and Ruminative Styles*

In linking ruminative thought to depression, one of the key findings by Nolen-Hoeksema and colleagues was an interesting discovery regarding gender. Depressive rumination (brooding) could be considered a mediating variable which explained the increased rate of depression observed in females relative to males (Nolen-Hoeksema, & Jackson, 2001). However, studies of the various styles of rumination, particularly those with predictions for positive outcomes, have not examined the role of gender differences (e.g.
The present study examines the differential usage of ruminative styles by males and females (if indeed males and females do endorse different ruminative styles). Based on prior research examining well-known ruminative styles, it seems likely that females will engage in more persistent ruminative thought, as well as be more likely to engage in brooding (Ptacek, Smith, & Zanas, 1992; Treynor, Gonzalez, & Nolen-Hoeksema, 2003); however, it is more difficult to make predictions for newly conceived ruminative styles such as Closure Focused Reflection. Despite the lack of data specifically pertaining to these ruminative styles, research in related areas can provide clues as to the likely gender differences in reported usage of ruminative styles.

**H2:** Women are more likely than men to report Persistent Ruminative Thought.

**H3:** Women are more likely than men to report a Brooding style of rumination.

For example, research on cognitive reappraisal of emotions bears some similarity to the ruminative style of Closure-Focused Reflection. Cognitive reappraisal is a concept discussed in the literatures on coping and emotion regulation. It refers to attempts by those experiencing stress or unwanted emotions to substitute disruptive thoughts with modified interpretations of the situation. Presumably, these modified interpretations are more positive than the initial thoughts that accompany the stressful event or unwanted emotion (Gross, 1998; Lazarus & Folkman, 1985). Similarly, Closure-Focused Reflection refers to efforts to think about the negative event differently, but focuses specifically on arriving at some understanding or goal-relevant conclusion. Nevertheless, we can examine the findings for gender differences in cognitive reappraisal to suggest potential expectations of gender differences in Closure-Focused Reflection.

Interestingly, the literature concerning these differences is fractured. Some research suggests that females are less likely to engage in problem-focused coping, a more general
category that includes cognitive reappraisal (Folkman & Lazarus, 1980; Ptacek et al., 1992). In contrast, Gross and John (2003) find no gender differences in a dispositional measure of cognitive reappraisal; however, the latter findings are focused on responses to unwanted emotions only, whereas the earlier research supporting gender differences pertained to coping strategies for general stressful life events. Given that rumination is something that occurs in response to a wide variety of negative life events, it is possible that the SRS measure of Closure-Focused Reflection will indicate greater usage by males.

\[ H4: \text{Men are more likely than women to report using a Closure-Focused Reflection style of rumination.} \]

Trapnell and Campbell (1999) found that their measure of reflection, which we conceptualize as Contemplative Reflection, found a high degree of overlap with Openness to Experience. Across a number of samples and in many countries, recent meta-analytic studies of Openness to Experience had no consistent findings with regard to gender differences on this personality trait. As such, gender differences are not anticipated for Contemplative Reflection (Feingold, 1994; Schmitt, Realo, Voracek, Allik, 2008).

Research on the use of distraction as a way to alleviate rumination also reveals mixed findings. Nolen-Hoeksema and Morrow (1991) measured the tendency to use distraction as a means to avoid thinking about negative events. Across three different occasions, these researchers found no gender differences. Occasionally, however, research does reveal some indication that females or males favor this strategy. For example, a study by Ptacek and colleagues (1992) found that women used the distraction coping strategy (termed "avoidance" in their study) to a greater extent than men, but also used all coping strategies to a greater extent than men. When overall usage was taken into account, the gender difference was not found. Other studies have indicated that men are more likely to use a distraction
style of rumination than women (Kleinke, Staneski, & Mason, 1982; Nolen-Hoeksema, Larson, & Grayson, 1999). Given the preponderance of evidence that suggests no gender differences, the current study anticipates similar findings.

A well-known and consistent gender difference indicates that women are more likely to be communal in nature compared men (Eagly, Johannesen-Schmidt, & van Engen, 2003; Feingold, 1994; Schmitt et al., 2008). Given this tendency, it is likely that women would use ruminative styles that involve others. In addition, a large body of research indicates that women engage in self-disclosure of their thoughts and feelings to others more than do men (Dindia & Allen, 1992; Hendrick, 1981, Tannen, 1990). Given the ubiquitous nature of this gender difference, it seems likely that women will engage in a Social Disclosure Ruminative style more than men.

**H3: Women are more likely than men to report using a Social Disclosure style of rumination.**

**Ruminative Styles and Negative Affect/Positive Affect**

Numerous studies have established the strong relationship between rumination and NA. In fact, all styles of rumination, even those posited to be more adaptive, should be linked to NA due to the fact that rumination occurs primarily in response to negative or otherwise stressful events. Indeed, it seems unlikely that potential positive outcomes can result from engaging in ruminative thought; however, various studies have reported the potential for ruminative thought to lead to actual problem solving (Szabo & Lovibond, 2006) and better job performance for some individuals (Perkins & Corr, 2005). Watkins (2008) provided a thorough review of constructive consequences for ruminative thought, including increased trauma recovery, anticipatory planning, and engaging in positive health behaviors.

Considering that NA represents the dominant response to rumination, a key strategy would be to identify which styles of rumination buffer the NA response, and thus could be
considered more adaptive. Based on previous research on rumination and related constructs, some styles of rumination are predicted to lead less negative, or potentially positive outcomes. Based on the literature discussed above, Contemplative Reflection, Closure-Focused Rumination, Distraction and Social Disclosure are all likely to be more constructive than Brooding. Furthermore, Closure-Focused Rumination seems likely to confer greater affective benefits than Contemplative Reflection.

H6a: A Brooding style of rumination will exhibit a stronger positive relation to NA than will Contemplative Reflection, Closure-Focused Reflection, Distraction, and Social Disclosure styles of rumination.

H6b: A Brooding style of rumination will exhibit a stronger negative relation to Positive Affect (PA) than will Contemplative Reflection, Closure-Focused Reflection, Distraction, and Social Disclosure styles of rumination.

H7a: A Contemplative Reflection style of rumination will exhibit a stronger positive relation to NA than will a Closure-Focused Reflection style of rumination.

H7a: A Contemplative Reflection style of rumination will exhibit a stronger negative relation to PA than will a Closure-Focused Reflection style of rumination.

Beyond the basic relations between ruminative styles and NA, the current study also had some predictions concerning the effect of gender on NA. As described above, Nolen-Hoeksema and colleagues (Nolen-Hoeksema, & Jackson, 2001; Nolen-Hoeksema, S., Larson, J., & Grayson, 1999) made a compelling case for the mediating role of rumination in the link between gender and NA. In addition to replicating that finding, the present study aims to examine to what extent the different styles of rumination will also serve as potential mediators. Considering the tentative nature of many of the predicted gender differences in ruminative styles, specific predictions will be made only for Brooding and Persistent
Ruminative Tendency. In particular, Brooding and Overall Ruminative Tendency both are predicted to be more frequently employed by women; therefore, it is likely that Brooding and Persistent Ruminative Tendency will mediate the relationship between gender and NA.

*H8: Gender will have an indirect effect on NA and PA through its influence on Ruminative Styles.*

**Exploratory Examination of Stress-Behaviors**

Studies have linked rumination to stress-related behaviors such as binge eating and alcohol abuse (Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). Given the existing relations between NA and a variety of stress-related behaviors, I will also explore the extent to which different ruminative styles relate to these behaviors, as well as the extent to which affect mediates any observed relations. Due to the dearth of research on these varying ruminative styles, it is not possible to propose specific hypotheses concerning differential relations between the styles and stress-behaviors.

In addition, it also will be worthwhile to explore the connection between gender and these stress-related behaviors. There is some existing research suggesting that males and females differ with respect to the manner in which they react to negative affective experiences (Repetti et al.). Again, however, given the complex set of relations between gender, ruminative styles, and negative affect, specific hypotheses concerning the precise pattern of relations among these constructs seems premature. Nevertheless, the current dataset will provide an opportunity to explore these relations.

Several recent studies have pointed to the need for further analysis of the various styles of rumination and resultant positive and negative outcomes associated with their usage (Mor & Winquist, 2002; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). The present study intends to take a fresh approach to the study of ruminative styles through the development
and analysis of the SRS, a new measure that is designed to capture the various ways in which people ruminate. Analysis of these styles as they relate to gender, affective outcomes, and stress behaviors should open up new possibilities for further research of rumination in everyday life.

Method

Participants

Participants were 307 college students participating in the Wellness Center Survey at Rice University. The majority of the participants were female (211, 68.7%), over twice the number of male respondents (96, 31.3%). Participants' ages ranged from 18 to 38 with a mean age of 21 (SD = 3). More than half of the participants reported their ethnicity as White/Caucasian (179, 58.3%). Asian participants made up the next largest group with a quarter of the sample (78, 25.4%), followed by Mexican/Chicano, and Other Hispanic (28, 9.2%), Other (15, 4.9%), and African American (7, 2.3%).

Procedure

Students were invited to participate through an email from the Wellness Center. The email described the aims of the research as examining student health and wellness behaviors in the context of their daily stressors. The email was sent to all undergraduate and graduate students at Rice University.

Measures

The questionnaire was administered through the Internet and participants received a link to the survey in the email invitation. Questionnaires were completed when convenient for participants and the survey took around 30-45 min. to complete. The following scales were administered in the questionnaire (other scales were administered as part of a larger research initiative):
Demographic information. Participants reported their age, gender, ethnicity, and their student status and year of study.

Survey of Ruminative Styles (SRS). This 30-item measure was developed to assess the seven facets of rumination: brooding, persistent ruminative thought, contemplative reflection, closure-focused reflection, alternative outcomes, social disclosure, and distraction. An initial pilot of a similar measure was conducted with an undergraduate sample. An item analysis of these facets led to the deletion of one item due to poor factor loadings. Participants responded on a five point scale where 5 = very often and 1 = not at all.

Positive Affect Negative Affect Scale. This scale was adapted from Watson, Clark, Tellegen's (1988) Positive Affect Negative Affect Scale (PANAS). The original scale asks participants to report on the extent to which they experienced a list of 10 positive and 10 negative affective states. The scale was modified by adding two additional positive and two additional negative states. For the purpose of the comparison with the SRS and other measures used, participants were asked to respond to the questionnaire considering only affective states of the past week. Responses were on a five-point scale ranging from one “Very Slightly or Not at All” to five “Extremely.” Positive affect included items such as Happy and Proud, whereas negative affect included items such as Irritable and Depressed. In the current sample, both NA and PA exhibited acceptable levels of internal consistency (NA α = .849; PA α = .890).

Stress Related Behavior Checklist. This checklist was adapted from Achenbach’s (1978) Child Behavior Checklist to focus specifically on common experiences of college students. Participants recorded the frequency that they experienced or engaged in a list of 23 stress-related behaviors such as “done something impulsive,” “nervous eating,” or “had difficulty sleeping.” Responses were on a seven-point scale ranging from one “much less than
average" to seven "much more than average." Internal consistency reliability for this measure also achieved an acceptable level ($\alpha = .910$).

**Beck Anxiety Inventory (BAI).** The BAI (Beck & Steer, 1990) asks participants to indicate to what extent they have been bothered by a list of 21 anxiety symptoms such as "dizzy or lightheaded" and "numbness or tingling" in the past week. Responses were on a five-point scale ranging from one "not at all" to five "severely (I could barely stand it)." In the current sample, the BAI reached an acceptable level of internal consistency reliability ($\alpha = .931$).

**Beck Cognitive Checklist (CCL).** The CCL consists of two subscales, the 14-item CCL-D, which asks how often negative thoughts about one's self and experiences typically occur, and the 12 item CCL-A, which asks how often negative thoughts concerning anxieties about dangers to one's self typically occur. Responses were on a five-point scale ranging from one "never" to five "always." Internal consistency reliability for this measure also achieved an acceptable level ($\alpha = .950$).

**Results**

**Data Analytic Strategy**

The data were analyzed using a structural equation modeling approach. Below, the measurement models for the SRS and outcome measures are described (see Table 2 for reliability information and correlations between each latent factor). Hypotheses were tested using a nested model strategy whereby model fit was assessed (using $\chi^2$, CFI, and RMSEA indices), and paths relevant to the hypotheses were constrained accordingly to be equal or zero. Details on this procedure are provided where each hypothesis is tested.

**Confirmatory Factor Analyses**

**Survey of Ruminative Styles.** The initial model specified a seven-factor structure for the
30-item measure, with items selected on the basis of a prior pilot study. Table 3 presents the specific items along with their means, standard deviations, and respective path loadings. The model fit the data acceptably, but did not attain excellent levels of fit, $\chi^2 (384) = 929.818, p < .05$; $CFI = .907$; $RMSEA = .068$. From examining the loadings and modification indices, it was apparent that one item, from the Contemplative Reflection scale, cross-loaded with multiple other factors. Following the logic of Anderson and Gerbing (1988), who suggested first refining the measurement model prior to testing structural aspects of the model, I deleted this item from the scale and re-estimated model fit. The fit of this model was substantially improved, $\chi^2 (356) = 742.243, p < .05$; $CFI = .931$; $RMSEA = .059$. I therefore proceeded using this model to reflect ruminative styles in further hypothesis tests.

I next examined the possibility that the seven factors reflected an underlying higher-order factor of general rumination. Specifically, it is possible that the seven styles of ruminative thought could be better represented through a single higher-order latent factor that explains the covariance between the seven latent ruminative styles. Although this model captures the same set of relations between the SRS items, it does so in a more parsimonious fashion. The higher-order factor model fit the data reasonably well, $\chi^2 (370) = 800.273, p < .05$; $CFI = .924$; $RMSEA = .062$; however, the gain in parsimony was not justified given the loss of fit, $\Delta \chi^2 (14) = 58.030, p < .05$.

In addition to examining the plausibility of a higher-order factor, it is also possible that some ruminative styles do not exhibit discriminant validity from other ruminative styles; therefore, there is the potential that one or more of the dimensions would be best represented as a single style. None of the correlations between the latent factors exceeded .60, and no combination of factors resulted in significant model fit improvement (all $p$'s < .05). The pattern of these results support the hypothesized correlated seven factor model
(i.e., H1 was supported); therefore, this model was used when testing subsequent hypotheses.

**Endogenous Outcome Measures.** Given the large number of items used to assess the various outcome measures (i.e., PANAS, BAI, CCL, Stress Behaviors), I was concerned that even with a relatively large sample \((N = 307)\), model convergence and stability might be an issue. Several authors have suggested the use of item parcels in such situations, whereby several items first are combined (i.e., averaged) and then treated as the indicators in the complete structural model (Bagozzi & Edwards, 1998; Landis, Beal, & Tesluk, 2000). As such, parcels were created by first running a single-factor exploratory factor analysis for each scale. Items were sorted by factor loading and items were placed into parcels by equating average factor loadings as closely as possible (see Landis et al. for details on this procedure). These parcels were used in all subsequent confirmatory factor models and hypothesis tests.

In an attempt to cover a wider range of negative affective outcomes, I examined not only the Negative Affectivity scale of the PANAS, but also two other measures of specific negative affect: the BAI (assessing anxiety) and the CCL (assessing depression and anxiety). Conceptually, these specific forms of negative affect should form a higher-order global negative affect factor. To achieve this structure, I specified a model with a Global Negative Affect (GNA) higher-order factor, consisting of the sub-scales of negative affect (from the PANAS), anxiety, and depression (from the BAI and CCL). To avoid construct contamination between the more general PANAS factor and the more specific affect factors, items that were best reflected by particular affect factors were specified to load on their respective factors (e.g., the "anxious" item from the PANAS was specified to load on the Anxiety latent factor). This model, with a higher-order Global Negative Affect factor fit the data acceptably well, \(\chi^2 (41) = 68.624, p < .05; CFI = .990; RMSEA = .047\). The remaining
constructs of PA and Stress Behaviors were separately assessed as outcome variables. Theoretically, Stress Behaviors could be seen as a more distal outcome with PA and GNA as immediate predictors (Ajzen & Fishbein, 1977). This model was tested and found to have acceptable fit $\chi^2 (129) = 265.820, p < .05$; $CFI = .967$; $RMSEA = .059$. Table 4 lists these latent factors along with the loadings for each of the parcels used as indicators. Consistent with prior literature examining relations between positive and negative affective states (James & James, 1999), the correlation between GNA and PA was negative and significant (path coefficient = -$0.357, p < .05$). Interestingly, although the path from GNA to stress behaviors was large and significant (path coefficient = $0.749, p < .05$), the path from PA to stress behaviors was non-significant (path coefficient = $0.054, p = .376$).

**Gender and Ruminative Styles**

Gender differences were predicted for four of the seven styles of rumination: Persistent Ruminative Thought, Brooding, Closure-Focused Reflection, and Social Disclosure. Previous evidence was not sufficient to make reasonable predictions for gender differences for the remaining three ruminative styles; nevertheless, I examined the possibility that these ruminative styles exhibited gender differences. Despite the fact that previous research suggested gender differences for Persistent Ruminative Thought, Brooding, and Closure-Focused Reflection, path estimates indicated no gender differences for these ruminative styles (see Table 5), providing no support for H2, H3, and H4. As predicted, Social Disclosure was used differentially by males and females, with females endorsing that ruminative style more than males, supporting H5. Although no specific hypotheses were proposed, Distraction, Alternative Outcomes, and Contemplative Reflection were also analyzed for gender differences. Path coefficients indicated gender differences for Distraction, with females more likely to report using that ruminative style than males. No
gender differences were found for Alternative Outcomes or Contemplative Reflection.

**Ruminative Styles and Affect**

I predicted that the Brooding ruminative style would have a stronger relationship with GNA than the potentially beneficial styles of distraction, contemplative reflection, closure-focused reflection, and social disclosure. To examine this hypothesis, a model was constructed that constrained the paths to be equal from these five ruminative styles to GNA (H6a) and to PA (H6b). Then, the fit of this model was compared to one that freed the paths from Brooding to GNA and to PA. If brooding exhibits a larger positive effect on GNA and a larger negative effect on PA, and the model freeing these paths fits better than the model constraining these paths, then these hypotheses will have general support. As can be seen in Table 5, the pattern of effects was consistent with these predictions. In addition, the model allowing brooding to be freely estimated fit better than the model constraining it to equal the other four styles, $\Delta \chi^2 (2) = 60.584, p < .05$. To more closely examine whether these differential relations existed both for GNA and PA, these models were compared separately. Both of these model comparisons revealed significantly larger effects for Brooding than the other four styles, GNA $\Delta \chi^2 (1) = 54.075, p < .05$; PA $\Delta \chi^2 (1) = 15.513, p < .05$.

Hypothesis 7 predicted that Contemplative Reflection would show a stronger positive association with GNA and a stronger negative relationship with PA than Closure-Focused Reflection. To test these hypotheses, a constrained model was constructed where the paths from Contemplative Reflection to GNA and PA were set equal to the paths from Closure-Focused Reflection to GNA and PA. This constrained model then was compared with a freely estimated model. The results indicate that the freely estimated model provided a better fit, $\Delta \chi^2 (2) = 6.152, p < .05$. These findings coupled with the relations shown in Table 5
indicate that Contemplative Reflection is more strongly related to GNA and PA. Models with GNA and PA as outcomes were then compared separately to see if the effect established above exists for both forms of affect. The data supported the hypothesized stronger negative relation of Contemplative Reflection with PA ($\Delta \chi^2 (1) = 4.709, p < .05$). However hypothesis 7a, predicting Contemplative Reflection to have a stronger positive relation to NA than a Closure-Focused Reflection style of rumination, was not supported ($\Delta \chi^2 (1) = 2.442, p = .12$)

Hypothesis 8 examined whether gender has indirect effects on affect through the differential use of particular ruminative styles. As gender differences were observed only for Social Disclosure and Distraction, analyses of indirect effects were limited to these ruminative styles. That is, as Brooding and Persistent Ruminative Thought were unrelated to gender, indirect effects through these styles could not have occurred in this sample. Indirect effects through Social Disclosure and Distraction received partial support, with the path from Gender to PA through Distraction attaining significance ($Z = -2.034, p < .05$). Paths from gender to PA through Social Disclosure, and paths from Gender to GNA through both Social Disclosure and Distraction were not supported by the data (all $p$'s > .05).

Finally, I examined a complete model linking gender to stress behaviors through ruminative styles and affect. Given the prior results that PA did not predict stress behaviors and that only PA was predicted by gender through ruminative styles, the complete chain was unsupported (all $p$'s > .05)

Discussion

One of the primary aims of the current research was to develop a measure of Ruminative Styles which broadened the understanding of the various styles individuals employ when engaged in ruminative thought. The SRS identified seven potential styles of
rumination. Exploratory analysis of the data did not suggest the presence of an overarching higher order factor for the ruminative styles captured by the SRS, thus all seven Ruminative Styles were retained and assessed separately. As predicted, each of the seven Styles of Rumination was distinct enough to stand on their own as separate variables, and relations between the various Ruminative Styles, though generally positive, varied greatly as can be seen in the correlation table (i.e., Table 2).

The identification of additional styles of rumination is an improvement over previous measures of rumination which only differentiated between Brooding and Reflection (Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Trapnell & Campbell, 1999; Treynor, et al., 2003). In addition to assessing these two facets of rumination, the SRS adds four other Ruminative Styles as well as making a distinction between Closure-Focused Reflection and Contemplative Reflection, which heretofore had not been disentangled from the more general concept of Reflection. Thus the development of the SRS is a step towards a more complete understanding of the various Styles of Ruminative Thought and individuating them from one another.

Though the SRS is an improvement over previous measures of Rumination, it exhibited some limitations. As noted in the results, one item had to be dropped from the measure, resulting in one of the scales of the SRS consisting of only two items instead of three. Future research into Ruminative Styles may want to further improve upon the scale by the addition of more items for particular styles, as it is unlikely that the entire domain of even these specific constructs can be captured by only two or three items. Also, it is possible that potential new styles of rumination have not been captured by these seven domains; therefore, future research may wish to define a more comprehensive structure of ruminative thought.
One of the most compelling findings in the past literature on rumination was the discovery of gender differences in Rumination. Specifically, Nolen-Hokesema and colleagues (Nolen-Hoeksema, & Jackson, 2001; Nolen-Hoeksema, S., Larson, J., & Grayson, 1999) found that women were more likely to report engaging in persistent ruminative thought and brooding. Surprisingly, in contrast to this previous research, the current study did not find evidence for the differential usage by males and females of the brooding and persistent rumination styles. It is possible that the timing of the survey could have been a factor in the lack of support for gender differences in brooding and persistent rumination. Data for the SRS was collected in the final weeks of the semester just before the administration of final exams. The overall elevated levels of stress experienced by students during this time could have suppressed the effect of gender on the endorsement of these ruminative styles.

In assessing gender differences in Closure-Focused Reflection and Contemplative Reflection previous research had mixed findings. Based primarily on the research surrounding gender differences in cognitive reappraisal, males were proposed to use Closure-Focused Reflection more than females. Examination of the path coefficients did not support this hypothesis, nor did it indicate gender differences in the use of Contemplative Reflection. Further refinement of these measures and the addition of more items assessing reflection may yield findings more consistent with the prediction, particularly with respect to the measure of Contemplative Reflection, which contained only two items.

For the other newly developed measures of ruminative styles, gender differences were predicted and supported for females demonstrating more Social Disclosure than males. This finding is consistent with the literature on women’s greater tendency towards self-disclosure, (Dindia & Allen, 1992; Hendrick, 1981, Tannen, 1990) a construct similar to the
Social Disclosure style of rumination. Unfortunately, the SRS did not refer to the specific content of social disclosure. Considering recent research documenting differential effects based on the content of self-disclosures (Lyubomirsky, Sousa, & Dickerhoof, 2006) it may prove important to specify the subject matter for future measurement of social disclosure.

Previous research had mixed findings for the gendered use of distraction as a ruminative style and therefore no predictions regarding gender differences were made. Interestingly, the present study found that females report using Distraction more than males. This finding is consistent with Ptacek, et al.’s (1992) study of coping strategies which also found females were more likely to use distraction as a strategy when coping with negative events; however, this finding is inconsistent with other studies finding no gender differences (e.g., Nolen-Hoeksema & Morrow, 1991) or even a gender difference in the opposite direction (e.g., Kleinke, Staneski, & Mason, 1982; Nolen-Hoeksema, Larson, & Grayson, 1999). One possible reason the current study found evidence of greater female use of distraction is the fact that this style of rumination reflects an attempt to steer the attention away from ruminative thoughts and towards a more positive (or at least neutral) consideration. This sensitivity to shifting ones thoughts towards daily activities or other things seems to be greater for women. It might be interesting for future research to focus on specifically what things are used for distraction, as some research has suggested that women often use food as a method of distraction from negative thoughts (Byrne, Cooper, & Fairburn, 2003).

It is important to recall that all of the ruminative styles as identified and assessed by the SRS represent reactions to negative life events. As such, all styles were thought to be likely to show a positive relationship with negative affect and a negative relationship with positive affect. That is, people should be more likely to acknowledge most forms of
rumination to the extent that they are actually experiencing negative events that are known to serve as triggers of ruminative thought (Martin & Tesser, 1996). The current study suggested, however, that some styles may be more closely related to affect resulting from these negative events than other styles, and other styles may allow for a buffering of this anticipated relationship through weaker relations with affect.

Specifically, as identified in most of the previous literature on the topic of rumination, it was predicted that Brooding would be more detrimental to the experience of affect, exhibiting a stronger positive association with negative affect and a stronger negative association with positive affect (Burwell & Shirk, 2007; Feldman & Hayes, 2005; Gortner, Rude, & Pennebaker, 2006; Roberts, Gilboa, & Gotlib, 1998; Rude, Maestas, & Neff, 2007; Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Trapnell & Campbell, 1999; Treynor, et al., 2003). This pattern of results was observed in the correlations listed in Table 5. Further analysis of path coefficients indicated that Brooding had a stronger positive relationship with GNA and a stronger negative relationship with PA than distraction, contemplative reflection, closure-focused reflection, and social disclosure, which had been identified as potentially being the more beneficial styles with respect to impact on affect. These findings solidly confirmed the previous research signifying Brooding as a disadvantageous style with respect to the experience of affect.

Beyond brooding, the present research also sought to disentangle the ruminative style of reflection. Some previous research had indicated that reflection might be a more beneficial strategy to employ (at least in comparison to brooding) when assessing state affect as an outcome (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). However, when distinguishing Contemplative Reflection from Closure-Focused Reflection, it was predicted that Contemplative Reflection would be the style of reflection that is more associated with
unconstructive outcomes with regards to affect. In particular Contemplative Reflection was shown to have a stronger negative relationship than Closure-Focused Reflection with PA. The opposite pattern, however, was not observed with GNA. Therefore the current data suggest that the effect of Closure-Focused Reflection on affect occurs through the relation between this style and PA, but not through GNA. This finding is of particular interest given the overall tendency for all styles of rumination to serve as indicators of negative affect. Additionally it is notable that only one of the reflective styles of rumination exhibits this pattern of relations with affect, as that more precisely specifies the role of these ruminative styles in association with state affect.

One of the key findings of Nolen-Hoeksema and colleagues was the role of their measure of rumination (most similar to the SRS styles of Brooding and Persistent Ruminative Thought) as a mediating variable linking gender and negative outcomes (Nolen-Hoeksema, & Jackson, 2001). As indicated above, the present study did not find gender differences in the usage of Brooding or Persistent Ruminative Thought, therefore it was not possible to replicate this finding. However, the other styles of rumination which did show gender differences were examined to determine if a similar mediating relationship could be found with indirect effects of gender functioning through Distraction or Social Disclosure. Only one such path was observed, implying that females experience greater PA (or males experience less PA) through the use of (or, for males, the avoidance of) Social Disclosure. The three other potential paths (through Distraction to GNA and PA and through Social Disclosure to GNA) were not supported by the data. Thus, in the current sample, females experienced greater PA and this relation was due to the fact that they relied more on social disclosure as a means of ruminating.

Finally, the exploration of stress behaviors demonstrated that GNA was identified as
the driving variable influencing the endorsement of the various stress behaviors. PA, though negatively correlated, did not show a significant path coefficient to stress behaviors. In the future it may be illustrative to identify behaviors which are anticipated to have a stronger linkage to the expression of PA, such as organizational spontaneity behaviors (George & Brief, 1992), creativity (Isen & Baron, 1991), or a broader focus of processing information (Fredrickson, 1998).

The development of the SRS is a foundation for further research into the facets and characteristics of ruminative styles. The identification of seven ruminative styles adds nuance to the previous dichotomous structure of brooding and reflecting (Treynor et al., 2003). However, as with any new scale, additions and modifications to future incarnations of the SRS will improve both the scope of understanding the various ruminative styles as well as distinguishing the particular attributes that make up each style of rumination.

The SRS evaluated the extent to which individuals reported using various styles of rumination in the past week. However, in assessing ruminative styles in this way one aspect of rumination that was not measured was the extent to which one consistently endorses a style of rumination. It may be the case that for certain individuals they only prefer to use a limited number of ruminative styles repeatedly, whereas for others perhaps they regularly use a wider variety of styles. Future research may wish to get at the extent to which the pattern of use of ruminative styles is a more stable trait versus a more provisional occurrence.

The current research has proposed linkages between gender, ruminative styles as identified by the SRS, and outcomes such as state affect and stress behaviors. While the current study assesses these fundamental components of the ruminative predecessors of only a limited scope of outcomes, it is likely that the differential usage of ruminative styles has an impact on a wide variety of consequences, both positive and negative. Additionally, if one
were able to help individuals learn how to utilize particular styles of rumination over others they may find less of a need to regulate negative affect and the resultant drain on regulatory resources and ultimately performance. Future research should assess the extent to which one can be trained to exhibit the more positive ruminative styles and further evaluate the effect of these styles on negative and positive affect as well as relevant behaviors.
References


Table 1. Definitions of seven ruminative styles.

<table>
<thead>
<tr>
<th>Ruminative Style</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistent Ruminative Thought</td>
<td>General inability to rid oneself of thoughts concerning the negative event</td>
</tr>
<tr>
<td>Brooding</td>
<td>An inward, self-blaming focus of thoughts about the event</td>
</tr>
<tr>
<td>Contemplative Reflection</td>
<td>Thinking about the event without a specific goal or aim</td>
</tr>
<tr>
<td>Closure-Focused Reflection</td>
<td>Trying to understand the causes and consequences of the negative event</td>
</tr>
<tr>
<td>Alternative Outcomes</td>
<td>Imagining how the negative event might have gone differently</td>
</tr>
<tr>
<td>Distraction</td>
<td>Deliberately turning thoughts away from the negative event</td>
</tr>
<tr>
<td>Social Disclosure</td>
<td>Sharing thoughts of the negative event with others</td>
</tr>
</tbody>
</table>
Table 2. Correlations between gender and latent factors included in study.

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gender</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>PRT</td>
<td>.018</td>
<td>(.930)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Brooding</td>
<td>.015</td>
<td>.595*</td>
<td>(.908)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>CR</td>
<td>.056</td>
<td>.550*</td>
<td>.469*</td>
<td>(.794)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>CFR</td>
<td>.074</td>
<td>.588*</td>
<td>.391*</td>
<td>.594*</td>
<td>(.646)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>AO</td>
<td>-.006</td>
<td>.479*</td>
<td>.306*</td>
<td>.400*</td>
<td>.524*</td>
<td>(.894)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Distraction</td>
<td>-.188*</td>
<td>.073</td>
<td>.105</td>
<td>.155*</td>
<td>-.074</td>
<td>.109</td>
<td>(.749)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>SD</td>
<td>-.199*</td>
<td>.102</td>
<td>.153*</td>
<td>.029</td>
<td>.374*</td>
<td>.123*</td>
<td>.039</td>
<td>(.938)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>GNA</td>
<td>.018</td>
<td>.529*</td>
<td>.679*</td>
<td>.498*</td>
<td>.320*</td>
<td>.310*</td>
<td>.068</td>
<td>-.009</td>
<td>(.911)</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>PA</td>
<td>-.018</td>
<td>-.310*</td>
<td>-.312*</td>
<td>-.198*</td>
<td>-.031</td>
<td>-.135*</td>
<td>.096</td>
<td>.108</td>
<td>-.382*</td>
<td>(.905)</td>
</tr>
<tr>
<td>11.</td>
<td>SB</td>
<td>-.018</td>
<td>.336*</td>
<td>.359*</td>
<td>.322*</td>
<td>.170*</td>
<td>.173*</td>
<td>.065</td>
<td>.091</td>
<td>.700*</td>
<td>-.212*</td>
</tr>
</tbody>
</table>

Note: Reliabilities are in parentheses. Correlations are between latent factors and therefore correct for measurement error. Gender coded 0 = female, 1 = male; PRT = Persistent Ruminative Thought; CR = Contemplative Reflection; CFR = Closure-Focused Reflection; AO = Alternative Outcomes; SD = Social Disclosure; GNA = Global Negative Affect; PA = Positive Affect; SB = Stress Behaviors. N = 307; * = p < .05.
Table 3. Latent factor structure, item content, means, standard deviations, and path loadings for the Survey of Ruminative Styles

<table>
<thead>
<tr>
<th>Latent Factor</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistent Ruminative Thought</td>
<td>I find it almost impossible to put the event out of my mind</td>
<td>2.932</td>
<td>1.207</td>
<td>.823</td>
</tr>
<tr>
<td></td>
<td>I tend to replay the event over and over in my mind</td>
<td>3.199</td>
<td>1.243</td>
<td>.793</td>
</tr>
<tr>
<td></td>
<td>Despite efforts to stop, I find myself continuing to think about the event</td>
<td>3.094</td>
<td>1.138</td>
<td>.856</td>
</tr>
<tr>
<td></td>
<td>I become preoccupied with thoughts about the event</td>
<td>2.896</td>
<td>1.158</td>
<td>.833</td>
</tr>
<tr>
<td></td>
<td>I find it hard to put the event out of my mind</td>
<td>3.088</td>
<td>1.197</td>
<td>.883</td>
</tr>
<tr>
<td></td>
<td>I find it difficult to focus my attention on something else</td>
<td>2.961</td>
<td>1.122</td>
<td>.792</td>
</tr>
<tr>
<td>Brooding</td>
<td>I think &quot;Why do things like this always happen to me?&quot;</td>
<td>2.179</td>
<td>1.195</td>
<td>.888</td>
</tr>
<tr>
<td></td>
<td>I wonder what it is about myself that causes these things to happen to me</td>
<td>2.446</td>
<td>1.252</td>
<td>.757</td>
</tr>
<tr>
<td></td>
<td>I think &quot;Why can't I handle things better?&quot;</td>
<td>2.603</td>
<td>1.257</td>
<td>.679</td>
</tr>
<tr>
<td></td>
<td>I think &quot;Why do I have problems other people don't have?&quot;</td>
<td>2.176</td>
<td>1.256</td>
<td>.771</td>
</tr>
<tr>
<td></td>
<td>I wonder why this sort of thing always seems to happen to me</td>
<td>2.580</td>
<td>1.264</td>
<td>.824</td>
</tr>
<tr>
<td></td>
<td>I think &quot;What am I doing to deserve this?&quot;</td>
<td>2.163</td>
<td>1.177</td>
<td>.831</td>
</tr>
<tr>
<td>Contemplative Reflection</td>
<td>I go away by myself and think about why the event happened</td>
<td>2.857</td>
<td>1.174</td>
<td>.861</td>
</tr>
<tr>
<td></td>
<td>I go someplace alone to think about my feelings</td>
<td>2.655</td>
<td>1.179</td>
<td>.764</td>
</tr>
<tr>
<td>Closure-Focused Reflection</td>
<td>I want to continue to think about the event until I feel it is resolved</td>
<td>3.290</td>
<td>1.154</td>
<td>.710</td>
</tr>
<tr>
<td></td>
<td>I think about why this thought is bothering me</td>
<td>3.345</td>
<td>1.145</td>
<td>.598</td>
</tr>
<tr>
<td></td>
<td>I analyze events to try to understand why the event happened</td>
<td>3.244</td>
<td>1.101</td>
<td>.556</td>
</tr>
<tr>
<td>Alternative Outcomes</td>
<td>I continue to think about the event but imagine alternative outcomes</td>
<td>3.195</td>
<td>1.240</td>
<td>.836</td>
</tr>
<tr>
<td></td>
<td>I wonder how the event might have gone differently</td>
<td>3.407</td>
<td>1.135</td>
<td>.919</td>
</tr>
<tr>
<td></td>
<td>I think about how I could have acted differently and changed the event</td>
<td>3.515</td>
<td>1.101</td>
<td>.831</td>
</tr>
<tr>
<td>Distraction</td>
<td>I try to find an activity that will otherwise engage my thoughts</td>
<td>3.502</td>
<td>.988</td>
<td>.676</td>
</tr>
<tr>
<td></td>
<td>I try to forget about the thought by participating in a distracting activity</td>
<td>3.414</td>
<td>1.020</td>
<td>.738</td>
</tr>
<tr>
<td></td>
<td>I distract myself with my daily activities</td>
<td>3.339</td>
<td>.981</td>
<td>.569</td>
</tr>
<tr>
<td></td>
<td>I try to think of other things</td>
<td>3.368</td>
<td>.945</td>
<td>.584</td>
</tr>
<tr>
<td></td>
<td>I redirect my thoughts towards more pleasant topics</td>
<td>3.160</td>
<td>1.018</td>
<td>.477</td>
</tr>
<tr>
<td>Social Disclosure</td>
<td>I talk to others about the event and see what they think</td>
<td>3.221</td>
<td>1.259</td>
<td>.935</td>
</tr>
<tr>
<td></td>
<td>I share my thoughts with others to get feedback</td>
<td>3.127</td>
<td>1.247</td>
<td>.969</td>
</tr>
<tr>
<td></td>
<td>I try to find out if others are thinking about the event in the same way</td>
<td>2.925</td>
<td>1.230</td>
<td>.807</td>
</tr>
<tr>
<td></td>
<td>I tell someone else about my issues</td>
<td>3.195</td>
<td>1.245</td>
<td>.847</td>
</tr>
</tbody>
</table>

Note: all path coefficients are significant at $p < .05$. 

Table 4. Latent factor structure and path loadings for affective outcomes and stress behaviors

<table>
<thead>
<tr>
<th>Latent Factor</th>
<th>Indicators</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Negative Affect</td>
<td>NA</td>
<td>.788</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>.611</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>.765</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>Parcel 1</td>
<td>.827</td>
</tr>
<tr>
<td></td>
<td>Parcel 2</td>
<td>.827</td>
</tr>
<tr>
<td></td>
<td>Parcel 3</td>
<td>.850</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Parcel 1</td>
<td>.878</td>
</tr>
<tr>
<td></td>
<td>Parcel 2</td>
<td>.877</td>
</tr>
<tr>
<td></td>
<td>Parcel 3</td>
<td>.799</td>
</tr>
<tr>
<td></td>
<td>Parcel 4</td>
<td>.871</td>
</tr>
<tr>
<td>Depression</td>
<td>Parcel 1</td>
<td>.948</td>
</tr>
<tr>
<td></td>
<td>Parcel 2</td>
<td>.889</td>
</tr>
<tr>
<td></td>
<td>Parcel 3</td>
<td>.900</td>
</tr>
<tr>
<td></td>
<td>Parcel 4</td>
<td>.904</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>Parcel 1</td>
<td>.861</td>
</tr>
<tr>
<td></td>
<td>Parcel 2</td>
<td>.876</td>
</tr>
<tr>
<td></td>
<td>Parcel 3</td>
<td>.880</td>
</tr>
<tr>
<td>Stress Behaviors</td>
<td>Parcel 1</td>
<td>.681</td>
</tr>
<tr>
<td></td>
<td>Parcel 2</td>
<td>.713</td>
</tr>
<tr>
<td></td>
<td>Parcel 3</td>
<td>.792</td>
</tr>
<tr>
<td></td>
<td>Parcel 4</td>
<td>.811</td>
</tr>
</tbody>
</table>

Note: all path coefficients are significant at $p < .05$. 
Table 5. Structural path coefficients for antecedents and consequences of ruminative styles.

<table>
<thead>
<tr>
<th>Influence on Ruminative Style</th>
<th>Persistent Ruminative Thought</th>
<th>Brooding</th>
<th>Contemplative Reflection</th>
<th>Closure-Focused Reflection</th>
<th>Alternative Outcomes</th>
<th>Distraction</th>
<th>Social Disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.018</td>
<td>.014</td>
<td>.055</td>
<td>.082</td>
<td>-.007</td>
<td>-.190*</td>
<td>-.199*</td>
</tr>
<tr>
<td>Influence of Ruminative Styles on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNA</td>
<td>.179*</td>
<td>.471*</td>
<td>.284*</td>
<td>-.212</td>
<td>.073</td>
<td>-.045</td>
<td>-.007</td>
</tr>
<tr>
<td>PA</td>
<td>-.290*</td>
<td>-.200*</td>
<td>-.180</td>
<td>.380*</td>
<td>-.085</td>
<td>.179*</td>
<td>.028</td>
</tr>
</tbody>
</table>

* = p < .05.