EXPLORING THE IMPACT OF RUMINATION, DEFENSE STYLE, AND STRESS ON ADJUSTMENT AND DEPRESSIVE SYMPTOMS

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Abstract

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This study examined the hypothesized interaction between rumination and defense style as diatheses for maladjustment and dysphoria. One hundred sixty seven participants completed measures of defense style, rumination, depressive symptoms, and adjustment at Time 1, and returned four weeks later at Time 2 to complete measures of negative life experiences, major life stressors, depressive symptoms, and adjustment. Supporting our hypotheses, significant interactions were found among rumination, immature defense style, and stress in predicting changes in adjustment and depressive symptoms over time. Results indicated that individuals with high levels of rumination, if possessing immature defense style, are particularly prone to increases in depressive symptoms and maladjustment when faced with high stress. This work has potential benefits for understanding the cognitive mechanisms that lead to depression. Research and clinical implications are discussed.

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Introduction

Adjustment

The term "adjustment" is used broadly in the psychological literature, referring to mental health and psychological well-being. Historically, adjustment has been difficult to define, as for many years the psychological community has focused on mental illness, which is relatively easy to define in comparison to mental health (Vaillant, 2003). Specifically, there are reliable definitions that can be placed on mental illness, but the same is not true for mental health. Comparatively speaking, research is sparse in the area of successful adjustment, with notably fewer articles mentioning well-adjusted responses such as life satisfaction or joy. Literature on anxiety and depression, in contrast, is bountiful. A potential explanation for the discrepancy between positive psychology and psychopathology literature is the historical funding difference. In general, over time research on mental illness has received more funding than research on psychological health. This trend is beginning to change, but the disparity in the literature remains.

Given that psychology is working to better understand mental health and adjustment, Weissman and Bothwell (1976) created a questionnaire to assess an individual's adjustment. It is called the Social Adjustment Scale – Self Report (SAS – SR; Weissman & Bothwell, 1976). This 54-item self-report questionnaire assesses social and work-related functioning by querying informants on their performance and level of satisfaction in the following areas of life: Work Role (Work for Pay, Housework, Student), Social and Leisure, Extended Family, Primary Relationship (Cohabiting partner/spouse), Parental, and Family Unit (Current/former cohabiting partner/spouse, and children). Given the relative paucity of literature on psychological adjustment and since the concept of adjustment is used so widely in psychological research

literature, it is necessary to operationally define "adjustment." For the purposes of this project, adjustment will be defined by performance in the domains assessed by the SAS – SR. Therefore, an individual's performance in social and work-related domains will determine their overall level of adjustment or how well-adjusted they are in their daily functioning.

Despite the comparative lack of research on successful adjustment, there is a growing body of literature in this area which deserves attention.

Positive Psychology

Dr. Martin Seligman is the founding father of modern positive psychology. Upon his election as president of the American Psychological Association in 1998, Dr. Seligman gave a presidential address calling for an initiative to examine positive psychological outcomes. In the past 10 years, the field of positive psychology has grown immensely. So how is positive psychology defined?

Positive psychology is a branch of psychology that focuses on what makes the human experience fulfilling, and essentially what makes life worth living. Some examples include experiencing emotions like happiness or joy (Seligman & Csikszentmihalyi, 2000). One of the most unique aspects of positive psychology is its focus on the positive aspects of life, individual traits, individual experiences, and well-being as opposed to concentrating on psychopathology. In fact, the field of positive psychology values and attempts to maximize an individual's positive qualities and mental health.

Illustrating the goals of positive psychology in clinical practice, Joseph and Linley (2005) propose that positive outcomes should result from introducing positive psychology into the psychotherapeutic process. They describe their goal to assist their clients in realizing their own strengths and to promote a desire to use those strengths. Mindfulness, the authors proposed, is a

technique for the client to self-identify areas within themselves that they would like to improve. The authors posited that such inner self-exploration is vital in fostering feelings of self-awareness and self-determination. A person-centered approach is utilized and the authors suggest that it is the therapist's job to lead the client to listen to their own inner voice, practicing from the perspective that individuals innately realize what they need in order to have a fulfilling life. When Joseph and Linley (2005) describe their therapeutic goals and their beliefs about the therapeutic process, the positive psychology underpinnings become self-evident. It is worth explicitly noting that at no point did Joseph and Linley (2005) mention psychopathology or illness; they merely stated that the client should look within themselves to identify areas of further growth.

Not surprisingly, Seligman and his colleagues also utilize positive psychology as a therapeutic technique. In positive psychotherapy, the therapist assists the client in the amelioration of depressive symptoms. A positive psychotherapist works toward the goals of increasing the client's positive emotion, increasing their engagement, and enhancing their feelings of meaning as opposed to directly targeting their depressive symptoms (Seligman, Rashid, & Parks, 2006).

In this type of positive psychotherapy, the goals of treatment are defined by the symptoms of depression. In other words, depressed individuals typically experience a deficiency of positive emotion, a shortage of engagement in life, and an absence of feeling that life has meaning. The theory behind positive psychotherapy posits that these deficits are results of the depressive disorder. Therefore, encouraging the client to enhance their experience of positive emotions should in turn provide alleviation of depression.

Again the underpinnings of positive psychology show through in the context of the therapeutic goals. The therapist does not, at any point, focus on psychopathology. Rather, the therapist aids the client in restoring positive emotions, which can be a powerful, hope-rendering experience for the client.

Positive psychology has also been related to physical health outcomes. In the ever-growing field of research on the relationship between an individual's psychological state and their physical health, experiencing positive emotions has been shown to result in positive health outcomes. For instance, a literature review conducted by Cohen and Pressman (2006) found an inverse relationship between positive affect and morbidity, depressive symptoms, pain, and death rates among elderly individuals living in the community.

Additionally, Kubzansky and colleagues (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001) conducted a study examining the impact of optimism and positive mood on heart health. The results indicated that an optimistic explanatory style may serve a protective role in combating against the risk of coronary heart disease in older men.

There seems to be a clear relationship between experiencing positive emotions and successful physical health outcomes. How else does positive psychology relate to psychological adjustment?

Positive Psychology and Adjustment

The study of positive psychology is invested in learning about what constitutes successful adjustment and what people can do on an individual level to make themselves better adjusted. First and foremost, though, positive psychology has the difficult task of delineating what is considered psychologically healthy.

Vaillant (2003) composed a review article on mental health to aid in this difficult task. He described several different psychological models, which emphasize different aspects of positive mental health. One of the models that Vaillant (2003) described conceptualizes mental health as being "above normal," as evidenced by two measures. The first measure is the Health-Sickness Rating Scale, noting that a score of 95–100 indicates "an ideal state of complete functioning integration, of resiliency in the face of stress, of happiness and social effectiveness." The second measure is the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision's (DSM-IV-TR) Global Assessment of Functioning (GAF) Scale (American Psychiatric Association, 2000). Similarly, a score of 91–100 on the DSM-IV-TR GAF Scale, Axis V, indicates "superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities; no symptoms." Vaillant (2003) concluded that a high score on either of these scales is above average and indicative of mental health.

Another model reviewed by Vaillant (2003) describes mental health as maturity. He mentioned social, emotional, and neurological maturity as increasing the positive aspects of life, stating that mental health is realized through a continuing process of maturation. Drawing from theory in human development, Eriksonian development conceptualizes life as getting better with age.

Vaillant (2003) also described social-emotional intelligence and an individual's ability to empathize with others as signs of mental health. He described a complicated inner working of emotional regulation skills and how these skills relate to interpreting one's own emotional responses, the responses of others, appropriately modulating one's emotional expression, relating

to others emotionally, and focusing one's emotions, or motivation, on the achievement of a desired goal.

Lastly, subjective well-being, or an internal feeling of happiness, was noted as being a sign of mental health. Vaillant (2003) also mentioned that an individual's positive attitude has more impact on their environment than their environment has on their positive attitude. The significance of such a comment is that it does not matter how many positive events are occurring in an individual's life; as long as they have a positive attitude and feel internally happy, they will experience increased mental health.

Vaillant's (2003) review of mental health is comprehensive and tightly intertwines the concepts of positive psychology and adjustment. The practice of positive psychology, though, naturally tends to lead to well-adjusted outcomes. Additional examination of literature in the area of positive psychology and adjustment follows.

Wrapping up the discussion of the realm of positive psychology and successful adjustment, the other end of the spectrum should be introduced: maladjustment. Maladjustment is epitomized by the state of psychological depression. Further exploration of the effects of depression can offer a better indication of how far-reaching and serious maladjustment can become.

Depression

Psychological depression is typically characterized by an individual's behavioral, cognitive, and emotional symptoms. These symptoms include things like decreased mood, changes in appetite, weight, or sleeping patterns, difficulty concentrating or making decisions, frequent thoughts of death, etc. (American Psychiatric Association, 2000).

In fact, in the realm of psychological conditions, Major Depressive Disorder is one of the most frequently occurring and disabling conditions (Monroe, Slavich, Torres, & Gotlib, 2007). A few key characteristics of major depression make it disabling. The first characteristic is the recurrent nature of the disorder, wherein an individual will likely suffer from more than one major depressive episode in their lifetime and with each recurrence, the likelihood of future recurrence increases. The second characteristic is the far-reaching impact of the disorder, such that one episode of major depression can impact several areas of functioning in an individual's life. Both of these qualities illustrate the severity of impairment resulting from major depression as well as the level of maladjustment. The following discussion will focus on some of the aspects of life that are impacted by the symptoms of major depression and the consequences of depression that indicate maladjustment.

Depression and Maladjustment

One of the consequences of depression is associated with relational disruption. In particular, depression has negative implications for various aspects of interpersonal functioning. For instance, it has been suggested that marital adjustment suffers when couples are experiencing depressive symptoms. Coleman and Miller's (1975) findings indicated that marital maladjustment and depression are significantly positively correlated. Additionally, dysphoria may negatively impact social functioning. Research in this area indicates that individuals who suffer from chronic depression likely experience enduring social maladjustment (Agosti, 1999). Thus depressive symptoms have been implicated as contributors to long-term interpersonal maladjustment.

Moreover, depression has been linked to deficits in executive functioning. Depressive symptoms have been implicated to negatively influence individuals' cognitive flexibility as well

as cognitive inhibition (Philippot & Brutoux, 2008). In this study, depression was a stronger predictor of cognitive inhibition than rumination, suggesting that depression is cognitively taxing. Interestingly, these study results indicated that depressed individuals have impaired executive functioning independent of rumination. Philippot and Brutoux (2008) propose that dysphoric individuals likely suffer from cognitive inhibition, which is then further aggravated by rumination. Thus, research in this area indicates that depressive symptoms instigate functional decline in some aspects of cognitive processing.

Research has also posited a relationship between depression and work productivity. In particular, studies have suggested that individuals who suffer from depressive disorders tend to have severely impaired work productivity (Guenole, Chernyshenko, Stark, McGregor, & Ganesh, 2008). Specifically, depressed individuals have been found to take twice as many "sick days" or disability days on account of illness than other nondepressed employees (Broadhead, Blazer, George, & Tse, 1990).

These types of behaviors have not only extreme negative effects on work productivity, but they also strain economic resources. For example, the financial burden of lost work days by depressed individuals oftentimes exceeds economic resources designated for treatment (Greenberg, Stiglin, Finkelstein, & Berndt, 1993). Additionally, major depression is associated with substantial workplace loss. In 2006, an estimated $4,426 was lost annually for each worker with major depression and an estimated annual $36.6 billion was lost at the population level to the Unites States labor force (Kessler, Akiskal, Ames, Birnbaum, Greenberg, Hirschfeld, Jin, Merikangas, & Wang, 2006).

Additionally, depression has been demonstrated to have negative implications for health outcomes. Currently, Major Depressive Disorder is the leading cause of disability in the United

States for those ages 15 to 44 and by the year 2020, Major Depressive Disorder is projected to become the second leading cause of disability worldwide for both genders and all age groups (Murray & Lopez, 1996; The World Health Organization, 2004).

Similarly, higher rates of medical comorbidities are seen in depressed primary care patients. However, their higher degree of health care usage is evident even after adjusting for comorbid medical issues. This result suggests that depressive disorders are the true motivating factors in terms of utilizing the health care system (Gardner, Kleinman, Brook, Rajagopalan, Brizee, & Smeeding, 2006; Kessler et al., 2006). Taken together, the results of these studies readily suggest that depression can severely inhibit an individual's ability to be productive at their job. In addition, depression has negative effects on physical health.

Specifically, studies have indicated that depression is consistently associated with increased use of general medical services (Simon, Chisholm, Treglia, Bushnell, & The LIDO Group, 2002). Strikingly, the cost of health services for depressed patients in the United States is usually 50% to 100% higher than the rates for patients with comparable medical issues who do not suffer from depressive disorders (Simon, Von Korff, & Barlow, 1995).

To further elucidate the severity of work-related maladjustment that is associated with depression, research in this area has suggested that recovery from depression is associated with many positive, well-adjusted outcomes. Such outcomes include reductions in general medical expenses, increased productivity due to decreases in illness, reductions in health services costs, and overall considerable improvement in work functioning and participation (Simon et al., 2002).

These findings clearly demonstrate the toll that depression can take on an individual's adjustment. The descriptions of impairment in this section illustrate the significance of a

maladjusted response to stressful circumstances and in particular the devastating effect that depression can have on various aspects of adjustment. It is critical, then, that individuals respond to life stressors in an adaptive manner, so as to facilitate successful adjustment. For that reason, stress should be examined in further detail.

Stress and Adjustment

Stress

Stress is defined as "a negative emotional experience accompanied by predictable biochemical, physiological, and behavioral changes that are directed toward adaptation either by manipulating the situation to alter the stressor or by accommodating its effects" (Baum, 1990). Stress, an entire body phenomenon, influences individuals psychologically when they perceive there to be a discrepancy between their environmental demands and their anticipated ability to adequately cope with these demands (Vingerhoets, 2008). Essentially, stress ensues as a result of a discrepancy between an individual's demands and the availability of resources to accommodate those demands (Monroe, 1989). An additional factor influencing the onset of stress is an individual's stress reaction style.

A stress reaction style is a concept referring to individual variation in the anticipated experience of future stress (Guenole et al., 2008). This notion encompasses the range of symptoms that individuals expect to experience when environmental stressors arise. Thus, an individual's stress reaction style forms their perception of anticipated stressful events and greatly influences their reactions to upcoming stressors. If an individual's stress reaction style is negative or catastrophic in nature, they will perceive and experience more stress.

Increased stress can have negative effects on an individual's adjustment, and the individual may be more prone to experiencing negative outcomes. One such negative outcome is

the onset of depressed mood. Thus, a more detailed examination of stress and dysphoric mood follows.

Stress and Dysphoria

The experience of stress is often psychologically taxing and can result in negative psychological outcomes. For instance, recent research examining the effects of stress suggests that an individual's level of stress contributes to their level of dysphoria, with a direct relationship between these two variables. More specifically, the results of an unpublished thesis by LaVoy and Kwon (2008) indicated that stress was consistently associated with an individual's level of dysphoria. The longitudinal design of this study revealed that the onset of stressful circumstances was consistently, across all study conditions, significantly positively correlated with an increase in depressive symptoms. Thus, the outcome of this study provided a direct link between stress and dysphoric mood, where stressful circumstances are directly related to an increase in depressive symptoms. Stress, then, seems to have robust effects on mood and psychological adjustment. Naturally, one may wonder about different sources of stress and how these stressors impact mood and adjustment.

Stress and Adjustment

One of the greatest sources of stress that is documented in the literature is stress resulting from a major life event. Enduring life changes such as the death of a loved one, serving jail time, notable financial strain, interpersonal or relational conflicts, and other significant life events can result in an individual experiencing stress, which is oftentimes added to their preexisting level of stress (Sarason, Johnson, & Siegel, 1978). Experiencing major life events is especially significant due to their effect on mood. It has been argued that major life events play a key role in the onset of depression (Monroe et al., 2007).

Research examining the relationship between major life events, stress, and depressed mood has posited that first lifetime episodes of depression are more likely to occur after the onset of severe life events when compared to subsequent recurrences of depression (Monroe et al., 2007). These findings are especially significant, as enduring one severe major life event can essentially prompt a major depressive episode, which then puts the individual at an increased risk for suffering from additional recurrences of depression in the future (Monroe et al., 2007). Thus, one major life event can change the course of an individual's mood over their lifetime, which can additionally result in long-term maladjustment.

Further support for the impact of major life events on depressive symptoms can be illustrated through an additional study. Nolen-Hoeksema and Morrow (1991) conducted a prospective study of depressive symptoms after the 1989 Loma Prieta earthquake. The study results indicated increased depressive symptoms at follow-up as a result of this event. The prospective design of this research study lends itself nicely to this body of literature and allows for a clear relationship to be noted between the onset of a major life event and dysphoric mood outcomes.

Additionally, major chronic difficulties can also cause individuals to experience a great amount of stress. Major chronic difficulties are more longstanding than major life events. The chronicity of such events likely makes them stressful. Research conducted in this area suggests a relationship between major chronic difficulties and dysphoric mood. For instance, Monroe and colleagues (2007) found that individuals who had experienced more major chronic difficulties had a higher occurrence of previous major depressive episodes.

Further, given the recurrent nature of major depressive disorder, more minor stressors may become significant in the course of depression recurrence over the lifetime. Study findings

indicate that for individuals who suffer from severe melancholic depression, the onset of more minor stressors can cause them to experience a recurrent major depressive episode (Harkness & Monroe, 2006). These results suggest that individuals suffering from severe melancholic depression seem to be particularly sensitive to stress. Such stress sensitivity leads to decreased mood and maladjustment.

This brief literature review indicates that stress is extremely maladaptive and often leads to a maladjusted dysphoric response. It is arguable, though, that certain features of an individual's personality may moderate the relationship between stress and adjustment. Current literature on two common personality features, defense style and rumination, are examined as follows.

Personality Features that Moderate the Relationship between Stress and Adjustment

Defense Style

Psychoanalytic theory has historically labeled defense mechanisms as unconscious techniques that we use to reduce anxiety about unwanted unconscious thoughts and desires, and to reduce internal conflict, namely between the id and the superego (Cramer, 2000). Recently, though, the concept of defense mechanisms has evolved into a belief that defense mechanisms exist to protect the ego or our self-esteem (Cooper, 1998; Cramer, 2000). Thus, defenses are critical in helping individuals cope with and adapt to reality as well as deny, distort, and repress reality (Vaillant, 1998). In other words, defenses serve to mediate individuals' reactions to conflict and stressors, which can be both internal and external (American Psychiatric Association, 2000).

Vaillant (1998) asserted that defense mechanisms can be conceptualized as both state and trait constructs. For example, since defense mechanisms are used to protect the ego and self-esteem, if an individual is feeling threatened, their defense mechanisms are acutely activated, thus making defense mechanisms situation-specific. We must also consider, though, that the next time this individual feels threatened, they are likely to employ the same defense mechanisms that they used during the last crisis, thus also making defense mechanisms character-specific. The latter description of characterological differences are referred to as defense styles. An individual's defense style, then, can be thought of as a characteristic way that an individual responds to stressful or threatening situations, typically by making use of certain similar defense mechanisms in a regular manner.

Defense styles are typically arranged hierarchically based on their differing levels of maturity (Vaillant, 1976). According to previous literature (American Psychiatric Association, 2000), mature defense styles consist of defense mechanisms that are highly adaptive and allow the individual to be consciously aware of feelings, ideas, conflicting motives, and consequences. Mature defenses have been referred to as methods of coping (Vaillant, 1998). On the contrary, immature defense styles consist of defense mechanisms that are maladaptive and distort the individual's perception of themselves or their surroundings. Immature defenses have been referred to as defensive methods and, if used routinely in adulthood, may be suggestive of a psychotic disorder (i.e., experiencing reality differently than those around them or having a distorted perception of reality).

It is important to note that defense styles are expected to mature as an individual matures chronologically, mentally, and emotionally (Vaillant, 1976). Consequently, it is anticipated that children will engage in the use of more immature defenses than adults (Vaillant, 1998). Through

the normal process of development, though, individuals will typically begin to implement more mature defense mechanisms as they grow older. For instance, over the course of a 30-year longitudinal study, Vaillant (1976) found significant changes in participants' defense styles as they grew older. This process of development and maturity typically results in successful adjustment.

Maladjustment can result, though, if an adult is employing an immature defense style, despite their chronological age. This is suggestive that there has been an interruption in the defensive maturation process, such as an insult to the ego or self-esteem (Cooper, 1998; Cramer, 2000). The individual must then continue to employ defensive strategies to defend against further ego damage, and if they fail to acquire new defensive strategies, they may continue to utilize the same immature defenses that they were using at the time of the insult. For instance, a child who suffers damage to the ego at a young age will likely defend against further insults by using immature defense mechanisms, which are characteristic of children. As the child matures chronologically, if they do not learn more mature ways of defending, they will continue to use an immature defense style through adulthood.

Clearly the level of maturity of an individual's defense style has strong implications for their overall adjustment. So how can we determine which defense mechanisms are mature or immature?

Defensive Functioning Scale

The DSM-IV-TR (American Psychiatric Association, 2000, pp. 807 – 813) contains the Defensive Functioning Scale. This scale is an excellent source for referencing the level of maturity of a defense mechanism and determining the level of maturity of a defense style. In fact, it is currently the most accurate measure for the prediction of future mental health (Vaillant,

2003). The Defensive Functioning Scale was developed for use in clinical evaluations, but can also inform research practice, as it provides both a hierarchy based on maturity of defense and a glossary of definitions that have been consensually validated. Thus, the scale can be used broadly to further our knowledge of defenses.

Vaillant (2003) notes that all of the defense mechanisms in the Defensive Functioning Scale are used to defuse conflict and minimize stress, which they can do quite effectively. But does the use of a mature versus an immature defense style have long-term implications for adjustment?

Defense Style and Adjustment

Generally speaking, the use of mature defense mechanisms tends to appease other people, while employing immature defenses tends to aggravate others (Vaillant, 1998). Intuitively, then, it appears that individuals with an immature defense style likely create harsh interpersonal environments for themselves, whereas individuals who possess a mature defense style may experience more agreeable interpersonal dynamics. Chronic interpersonal stressors have negative implications for mental health, and those with immature defense styles may therefore be at risk.

When examining the relationship between maturity of defense style and health, the research findings in this area seem to show a clear pattern. Longitudinal studies have suggested associations between immature defense styles and poor psychological health, whereas mature defense styles were found to be associated with better psychological health and life adjustment in adulthood (Vaillant, 1976).

Vaillant's (1976) study design is notably meticulous and warrants further description. His participant group consisted of 95 college-age males who were attending a university in the

1930s. During this time, the participants were scrupulously evaluated on the basis of physical and emotional health. Regular follow-ups occurred roughly every two years, with the administration of extensive questionnaires assessing every aspect of the participants' lives. Additionally, all participants were reassessed through individual two-hour face-to-face interviews at the ages of 30 and 47.

Upon completion of data collection, Vaillant examined each participant's approximately 300-page data file, which included autobiographical vignettes that the participants recorded when they were in times of crisis or conflict; participants' ages were also recorded. Vaillant then identified all vignettes which illustrated the use of a common defense mechanism and de-identified them so that no language regarding particular defense mechanisms was detectable. Fifty clusters of vignettes along with a summary of the participant's character style were given to two independent judges, both blind to the participant's childhood and adult adjustment. The judges then rated the participants' characteristic use of defenses. As a replication study, Vaillant conducted the same rating procedure, unblinded, for the additional 45 participants.

The results of this study indicated significant changes in defense style as the participants aged, illustrating the anticipated maturational process among healthy adults. Specifically, mature defense styles were positively correlated with successful adjustment and negatively correlated with psychopathology. On the other hand, immature defense styles were negatively correlated with successful adjustment, and positively correlated with psychopathology. This study provides strong evidence for the adaptiveness of mature defenses and their healthy influence on adjustment.

Similarly, additional literature suggests that the use of mature defense styles predicts overall adjustment and objective physical health, whereas utilizing an immature defense style is

predictive of poor physical health outcomes (Vaillant & Schnurr, 1988). Thus, employing mature defenses has been shown to be adaptive and predictive of overall life adjustment and objective physical health, whereas it has been demonstrated that utilizing immature defenses is maladaptive, leading to overall maladjustment and poor physical health outcomes.

It is worth noting that in some circumstances, the use of immature defense mechanisms may be adaptive. For instance, denial, which has long been conceptualized as an immature defense mechanism, may be a well-adjusted response to certain situations. Under some extremely stressful circumstances, such as exposure to traumatic events, the use of denial may actually lead to successful adjustment. Such circumstances include things like exposure to combat or torture (Shale, Shale, & Shale, 2003; Vaillant, 1998). In these types of life-threatening situations, denial of reality may actually lead to better adjustment than would engagement of mature defenses.

Defense style has also been shown to act as a moderator between different cognitions and depressive symptoms. For example, negative attributional style has been associated with increased depressive symptoms, but only in the presence of an immature defense style (Kwon, 1999; Kwon & Lemon, 2000). Likewise, immature defense style was found as a moderator between low hope and depressive symptoms, such that low hope was associated with increased depressive symptoms, but only in the presence of immature defense style (Kwon, 2000, 2002; Reff, Kwon, & Campbell, 2005). Accordingly, employing an immature defense style seems to play a key moderating role in the relationship between various cognitions and depressive symptoms.

Similarly, a recent study conducted by Kwon and Olson (2007) found an association between rumination and depressive symptoms in the presence of an immature defense style.

They also found that rumination and defense style were each related to depressive symptoms independently, so more rumination was associated with increased depressive symptoms, as was more immature defense style. More importantly, rumination was associated with depressive symptoms more strongly when an immature defense style was present.

A follow-up study was conducted by LaVoy and Kwon (2008), which found similar results indicating that rumination acts as a diathesis to depression more strongly in the presence of an immature defense style. In other words, the findings indicated that individuals with high levels of rumination, if possessing immature defense style, are particularly prone to increases in depressive symptoms when faced with high levels of stress. Consequently, individuals possessing a ruminative cognitive pattern and an immature defense style are more likely to be maladjusted when faced with stress. The relationship between defense style and rumination and the negative implications for adjustment suggest that further investigation of rumination is warranted.

Rumination

What is rumination? Rumination is defined in the literature as a maladaptive coping response style in which an individual focuses on their depressed mood and the potential causes and results of it, in a passive and repetitive manner (Nolen-Hoeksema, 1991, 2000; Nolen-Hoeksema, Parker, & Larson, 1994). Research has shown that rumination may include engaging in behaviors such as isolating oneself to contemplate the symptoms of, reasons for, and effects of the depressed mood as well as worrying about the potential results of the depressed mood (Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999; Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 1994).

If rumination is known to be a maladaptive coping response style, then why do individuals engage in ruminative thought processes? Watkins and Baracaia (2001) asked study participants that very question. In response to this query, ruminators indicated that they believe there are benefits to be gained from ruminating. Such benefits include increasing self-awareness and understanding in relation to their depression as well as solving problems in hopes of preventing future mistakes. Thus, from the ruminator's perspective, it seems that there may be some benefits of ruminating.

Despite the benefits that ruminators believe they are gleaning from ruminating, ruminative cognitive processes are costly to other areas of functioning. For instance, Lyubomirsky and Nolen-Hoeksema (1995) conducted several studies to examine depressed individuals' interpretations of events and the effectiveness of their interpersonal problem solving skills. The outcomes of these studies suggest that dysphoric ruminators tend to have negatively biased interpretations of events. They also tend to be more pessimistic when interpreting positive future events. Additionally, dysphoric individuals who engage in ruminative thought processes tend to be inhibited in their ability to generate solutions to interpersonal problems. In sum, these results indicate that rumination can result in negative cognitive biases as well as compromised problem solving abilities. These results are intriguing, especially when compared to the outcome of Watkins and Baracaia's (2001) study. It appears that the features that ruminators believe they are gaining from ruminating, clarity of depression and problem solving, are the very features that are impaired by engaging in ruminative thought processes. Rumination, then, apparently has some relation to individuals' cognitive processing patterns.

Studies investigating ruminative thought patterns have suggested that there may be particular cognitive patterns seen in those who ruminate. One study examining the cognitive

patterns of ruminators focused on overgeneral autobiographical memory (Watkins & Teasdale, 2001). Ruminators tend to have higher overgeneral memory than those individuals who distract themselves from their depressive symptoms. The authors examined whether the relationship between rumination and overgeneral memory is due to increases in analytic thinking or increases in self-focus. The outcome of the study suggests that thinking style has a strong impact on overgeneral memory whereas depressive affect is significantly affected by focus of attention. Essentially, such results suggest that there may be a relationship between rumination and overgeneral memory in depression, such that overgeneral memory seems to be associated with persistent ruminations or attempts to understand personal difficulties.

To explore the cognitive processes of ruminators more closely, Davis and Nolen-Hoeksema (2000) used a neuropsychological test of set-shifting (i.e., Wisconsin Card Sorting Test), to examine the mental flexibility of ruminators. The investigators hypothesized that there may be a cognitive explanation for the mental perseveration that is characteristic of individuals who ruminate. The results of the study indicate that ruminators have a more inflexible cognitive style, which likely serves to perpetuate the repetitive ruminative thought process. In sum, there seems to be a strong relationship between rumination and particular cognitive characteristics. There is also a strong relationship between rumination and mood.

Rumination and Depression

Susan Nolen-Hoeksema has been on the forefront of research endeavors examining the effects of cognitive processes on overall mood outcomes. She has especially focused on ruminative cognitive patterns and the detrimental effects that rumination can have on mood. In 1991, Nolen-Hoeksema proposed her Response Styles Theory of Depression, asserting that individual differences in duration of depressive symptoms may be a result of the way in which an

individual responds to dysphoric mood symptoms. In this area of research, the responses that are typically contrasted are rumination about one's depressive symptoms and distraction from those symptoms. Nolen-Hoeksema proposed that individuals who ruminate when they are depressed are more likely to experience prolonged depressive episodes as well as more severe depressive symptoms when compared to those who use distraction in response to their dysphoric mood. Nolen-Hoeksema's Response Styles Theory of Depression has been notably influential in the depression literature.

Additional work has been done examining the outcomes of individuals' responses to depressed mood. Many of these studies are directly testing different aspects of Nolen-Hoeksema's Response Styles Theory of Depression. One such study was prompted by the observation that there are individual differences in the length and severity of depressive episodes across individuals (Nolen-Hoeksema, Morrow, & Fredrickson, 1993). The investigators conducted a study examining how mood outcomes would be affected by ruminative versus distracting responses to dysphoric mood. Based on the results of the study, the authors posited that individuals are more likely to suffer from longer periods of depression if they respond to their mood with a ruminative cognitive style. Thus, literature in this area suggests that a ruminative response style may serve to prolong depressive episodes. Additionally, ruminators tend to interpret life events more negatively, and exhibit negative cognitive bias when interpreting positive life events, which leads to an irrational view of reality (Lyubomirsky & Nolen-Hoeksema, 1995; Nolen-Hoeksema et al., 1993).

Furthermore, work examining the effects of response styles on the course of mood suggests similar negative outcomes as a result of ruminative cognitive patterns. Just and Alloy (1997) conducted a research study with the goal of clarifying and expanding Nolen-Hoeksema's

(1991) Response Styles Theory of Depression. The authors examined the response styles of nondepressed individuals. They found that individuals who reported that they tend to respond to dysphoric mood symptoms by ruminating were more likely to experience an onset of depressive symptoms when compared to individuals who reported that they engage in distraction when experiencing depressive symptoms. As such, rumination has been shown to instigate depressive episodes, which is likely due to the tendency of a ruminator to dwell on their problems, rather than attempting to prevent them from occurring (Just & Alloy, 1997; Nolen-Hoeksema, 2000).

In addition, it has been shown that individuals who ruminate tend to experience more severe depressive symptoms (Just & Alloy, 1997). This may be a result of ruminators' increased access to negative cognitions and beliefs that problems are more prominent in their lives than they are in actuality (Just & Alloy, 1997; Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998; Nolen-Hoeksema, 1991, 2000). These types of negative cognitive patterns can increase the severity of dysphoric symptoms.

The results of these studies have significant implications for the effects of rumination on an individual's mood and overall well-being. Rumination can not only instigate the onset of a depressive episode but also increase the severity and duration of one's depressive symptoms. Ruminative cognitive patterns, then, are arguably toxic to one's mood, which directly influences one's overall mental and physical health, well-being, and adjustment.

Rumination and Adjustment

Given our knowledge of Nolen-Hoeksema's (1991) Response Styles Theory of Depression and the negative impact that rumination has on overall well-being, how can individuals respond to dysphoric mood in a well-adjusted manner? Morrow and Nolen-Hoeksema (1990) examined four types of responses to depressed mood: active distraction,

passive distraction, active rumination, and passive rumination. The investigators found that the degree of an individual's rumination was more influential on mood than activity level (i.e., active or passive). The most adaptive coping response style was an active distracting style followed by a distracting passive response, a ruminative active style, and lastly a ruminative passive coping style, which was found to be related to the most maladjusted outcomes. Essentially, their findings suggested that there is a positive relationship between ruminative responses and depressive symptoms. In contrast, the greatest alleviation of depressive symptoms was seen in individuals who engaged in an active distracting response.

The results of the Morrow and Nolen-Hoeksema (1990) study provide implications for the relationship between rumination and adjustment. The study outcome suggests that the most well-adjusted individuals would likely engage in the use of an active distracting response style in the face of dysphoric affect, whereas the most maladjusted individuals would likely employ a more passive ruminative response style. Furthermore, dysphoric individuals who use distraction when faced with depressive symptoms tend to be as optimistic and effective in problem solving as nondepressed individuals.

To conclude, rumination is a maladaptive coping response style characterized by particular cognitive patterns. The process of rumination tends to instigate the onset of depressive episodes as well as increase the severity of symptoms and length of said episodes. When faced with dysphoric affect, though, an individual may not respond ruminatively; they may rather distract themselves from thoughts about their depressive symptoms. If they distract themselves actively, these individuals will likely have a well-adjusted response.

Summary and Discussion of Literature Review Results

This literature review has encompassed various topics. At the outset, adjustment was introduced. Conceptual and operational definitions of the term adjustment were presented to provide a foundation for conceptualizing the body of this study. Next, the concept of positive psychology was introduced and a detailed discussion of positive psychology's relationship to adjustment was offered. Following, a review of maladjustment and depression was recounted, with an in-depth analysis of the numerous costs of depression and various areas of functioning impacted by maladjustment. Additionally, a discussion of stress indicated a clear relationship between stress and maladjustment.

Furthermore, personality features that moderate the relationship between stress and adjustment were introduced. Specifically, the notion of defense style was introduced and a thorough review of maturity of defenses and adjustment outcomes was expounded. Overall, the literature suggests that there is a positive relationship between defense style maturity and adjustment. Lastly, the cognitive pattern of rumination was presented. Across the board, the rumination literature proposes an inverse relationship between utilizing ruminative cognitive processes and adjustment outcomes such that increased rumination is related to psychological maladjustment.

In closing, the findings in the positive psychology literature consistently make a strong case for successfully adjusted outcomes. On the contrary, the results of the depression, stress, and rumination studies present a united message of maladjustment, convincingly noting the severity in functional decline that results from depressed mood, enduring stress, and engaging in rumination. The defense style literature makes a strong case for more mature defense styles resulting in adjustment while immature defense styles tend to prompt maladjusted outcomes.

Present Study

To further this line of research, this study expanded upon the findings of the LaVoy and Kwon (2008) study. Similarly, the current study was also longitudinal in nature with the goal of exploring the impact of rumination, defense style, and stress on adjustment and depressive symptoms.

Based on the literature regarding the aforementioned risk factors for maladjustment and depression, the following hypotheses were proposed. It was hypothesized that rumination and immature defense style would interact as diatheses for maladjustment and depressive symptoms. In other words, it was proposed that the interaction between rumination and immature defense style would also interact with stress in predicting increases in depressive symptoms and maladjustment. It was further predicted that individuals experiencing extremely high levels of stress, if employing an immature defense style (i.e., use of defense mechanisms such as denial), would be maladjusted but experience less depressive symptoms.

Method

Participants

Participants were 167 (23 male, 144 female) Distance Degree Program (DDP) undergraduate students from a large university in the Pacific Northwest. They were recruited voluntarily from the university's online DDP course space and received course credit for their participation. The mean age of the participants was 29.6 years (SD = 8.6; range = 18 to 58). Of the initial pool of 304 participants, data from 7 participants were discarded due to their failure to follow questionnaire instructions and data from 130 participants were discarded due to their failure to complete the second part of the study within the four plus or minus one week time period allotted.

Procedure

The current study consisted of two assessment phases for each participant. At Time 1, participants were asked to complete the demographics form, the Ruminative Responses to Depression Questionnaire (RRDQ; Nolen-Hoeksema & Morrow, 1991), the Defense Style Questionnaire (DSQ; Bond, Gardner, Christian, & Sigal, 1983), the Beck Depression Inventory, Second Edition (BDI-II; Beck, Steer, & Brown, 1996), and the Social Adjustment Scale – Self Report (SAS-SR; Weissman & Bothwell, 1976). At Time 2, the same group of participants was asked to complete the Life Experiences Survey (LES; Sarason et al., 1978), the Inventory of College Students' Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990), the BDI-II, and the SAS-SR.

Measures

A demographics form was administered to gather basic information as well as contact information so that participants could be reminded of their follow-up appointment.

Ruminative Responses to Depression Questionnaire (RRDQ; Nolen-Hoeksema & Morrow, 1991). This 22-item scale measures participants' tendency to ruminate. The items assess participants' responses to depressed mood and are focused on the self, symptoms, and possible causes and consequences of their depressed mood. Participants indicate their inclination to ruminate in certain ways (1 = almost never; 4 = almost always), with a higher score representing a more ruminative coping response when the individual is feeling depressed.

Recently Treynor, Gonzalez, and Nolen-Hoeksema (2003) suggested dividing the rumination scale of the RRDQ further into two subscales, brooding and reflection, as the rumination subscale was found to have considerable overlap with depressive symptoms. Reflection is thought to alleviate depressive symptoms in the long-term, due to the problem

solving component involved in the reflective process, whereas brooding has been associated with increased depressive symptoms. Thus, reflective rumination is considered an adaptive coping response style and the brooding type of rumination is considered a maladaptive coping response style that is associated with increased depression over time (Treynor et al., 2003). The rumination subscale is reliable, with coefficient alphas of .94 for rumination, .86 for brooding, and .80 for reflection.

Defense Style Questionnaire (DSQ; Bond et al., 1983). This 88-item self-report questionnaire assesses participant agreement (1 = strongly disagree; 9 = strongly agree) with statements representing different defense mechanisms and assesses the participant's characteristic style of managing conflict. The DSQ factors are consistent with the *Diagnostic and Statistical Manual of Mental Disorders*' (III-R; American Psychiatric Association, 1987) grouping of defense mechanisms, as the factors were relabeled by Andrews, Pollock, and Stewart in 1989. Defense style, then, can be scored as mature (10 items), neurotic (16 items), and immature (46 items); 16 items on the DSQ are fillers. The current study focused only on the immature style, as the neurotic style is an intermediate level of defense style maturity, and generally, neurotic defenses have not predicted good or poor adjustment in previous longitudinal studies (e.g., Vaillant, 1976). Additionally, the mature scale has produced low levels of internal consistency reliability in previous studies (e.g., Kwon & Olson, 2007), and thus was not used in this study. The DSQ is a valid measure of defense style, as it significantly predicted defense styles of participants that had undergone clinical interview six to eight years earlier (Vaillant et al., 1986). The immature scale is reliable, with a coefficient alpha of .88.

The *Life Experiences Survey* (LES; Sarason et al., 1978) is a 66-item self-report questionnaire assessing life changes and events that occurred in the last four weeks (1 = occurred; 2 = did not occur). The LES is a reliable measure, with a coefficient alpha of .81.

The *Inventory of College Students' Recent Life Experiences* (ICSRLE; Kohn et al., 1990) is a self-report measure containing 49 items in which college students rate the extent to which specific negative experiences have been a part of their lives. Several domains are assessed and are directed toward college students; these include academic demands, employment/finances, romantic relationships, domestic responsibilities, future security, and time pressures. Items are rated on a four-point scale, from 1= not at all part of my life to 4 = very much a part of my life. The ICSRLE has good internal consistency, with a coefficient alpha of .98.

The *Beck Depression Inventory, Second Edition* (BDI-II; Beck et al., 1996) assesses for depressive symptoms via 20 self-report items (item 9, assessing for suicide, was removed). Participants rate each item on a 0 to 3 scale, with a higher score indicating greater symptom endorsement. This second edition of the inventory assesses increases or decreases in appetite, weight, and sleep; the first edition (Beck, Rush, Shaw, & Emery, 1979) only assessed for decreases. The BDI is a reliable and valid assessment instrument, with coefficient alphas of .89 for Time 1 and .93 for Time 2.

The *Social Adjustment Scale – Self Report* (SAS-SR; Weissman & Bothwell, 1976) is a self-report measure containing 54 items assessing social and occupational functioning. The SAS-SR includes several domains of adjustment as follows: Work Role (Work for Pay, Housework, Student), Social and Leisure, Extended Family, Primary Relationship (Cohabiting partner/spouse), Parental, and Family Unit (Current/former cohabiting partner/spouse, and

children). Each item is rated on a 5-point scale, with higher scores representing poorer adjustment.

The respondent's primary role determines calculation of the Work Role scale. More specifically, the Work for Pay, Housework, or Student section was used as the Work Role scale depending on which fit the respondent's lifestyle most closely. Also, if applicable, due to the DDP participants sampled in this study, the Work for Pay and Housework sections were used in addition to the Student section to calculate the Work Role score. Domain scores were calculated by averaging the items in each domain and a total score is calculated by averaging all items. The SAS-SR has good validity and test-retest reliability (Kwon, 2002). Coefficient alpha is not a suitable measure of internal consistency, due to participants skipping questions on the SAS-SR that do not apply to them.

Results

Descriptive statistics of study variables are shown in Table 1. To investigate the influence of rumination, defense style, and stress in accounting for levels of adjustment and dysphoria, twelve hierarchical multiple regression analyses were conducted. The criterion variables in the model were Time 2 BDI-II scores and Time 2 SAS-SR scores. Effects of baseline depressive symptoms and level of adjustment were removed from each model by entering the Time 1 BDI-II and Time 1 SAS-SR in each model's first step. The model's second step contained rumination (in addition to brooding and reflection), defense style immaturity, and stress. The model's third and fourth steps included the two- and three-way interactions, respectively. All predictor variables were centered to reduce multicollinearity (Aiken & West, 1991).

The first analysis, reported in Table 2, examined the relation between rumination, immature defense style, and stress measured by the LES, and their impact on depressive symptoms. The regression equation yielded an adjusted R square value of .56. Stress emerged as a main effect, though none of the two-way interactions reached significance, nor did the three-way interaction between rumination, immature defense style, and stress.

The second analysis, reported in Table 2, examined the relation between rumination, immature defense style, and stress measured by the ICSRLE, and their impact on depressive symptoms. The regression equation yielded an adjusted R square value of .56. Stress emerged as a main effect. None of the two-way interactions reached significance when initially entered into Step 3 of the regression equation. However, the two-way interaction between rumination and stress emerged as significant in Step 4 of the regression equation, only after the three-way interaction had been entered. Additionally, immature defense style emerged as a significant main effect only in Step 4 of the regression equation, after the three-way interaction was entered. Lastly, the three-way interaction between rumination, immature defense style, and stress also reached significance.

Figure 1 depicts the nature of the first three-way interaction. Individuals low in rumination and high in defense style immaturity were able to cope with high stress circumstances, and evidenced a decrease in depressive symptoms when experiencing high stress. On the contrary, individuals high in rumination and high in defense style immaturity displayed the opposite effect; their depressive symptoms increased with an increase in stress. Thus, it appears that level of rumination plays a key role when coupled with high defense style immaturity in influencing level of depressive symptoms.

For individuals high in rumination and low in defense style immaturity, depressive symptoms tended to increase with an increase in stress. Similarly, for individuals low in rumination and low in defense style immaturity, increases in stress were met with increases in depressive symptoms. Therefore, this pattern seemingly holds with those individuals low in defense style immaturity, regardless of level of rumination. Individuals with low defense immaturity had lower levels of depressive symptoms compared with individuals with high defense immaturity.

The third analysis, reported in Table 3, examined the relationship between rumination, immature defense style, and stress measured by the LES, and their impact on level of adjustment. The regression equation yielded an adjusted R square value of .49. Similar to the first analysis, stress emerged as a main effect; however, none of the two-way interactions reached significance, nor did the three-way interaction between rumination, immature defense style, and stress.

The fourth analysis, reported in Table 3, examined the relation between rumination, immature defense style, and stress measured by the ICSRLE, and their impact on level of adjustment. The regression equation yielded an adjusted R square value of .57. Stress emerged as a main effect. None of the two-way interactions reached significance when initially entered in Step 3 of the regression equation. However, similarly to the second analysis, the two-way interaction between rumination and stress emerged as significant in Step 4 of the regression equation, only after the three-way interaction had been entered. The three-way interaction between rumination, immature defense style, and stress did not evidence significance.

The fifth analysis, reported in Table 4, examined the relationship between reflective rumination, immature defense style, and stress measured by the LES, and their impact on level of dysphoria. The regression equation yielded an adjusted R square value of .56. Stress emerged as

a main effect. Although none of the two-way interactions reached significance, the three-way interaction between reflective rumination, immature defense style, and stress emerged as significant.

Figure 2 depicts the nature of the second three-way interaction. Individuals with low reflection in our study were less vulnerable to the depressive effects of stress when high defense style immaturity was present. These individuals evidenced decreased depressive symptoms under high levels of stress; however, it should be noted that individuals with high reflection and high defense immaturity had similar levels of depressive symptoms under high stress when compared to individuals with low reflection and high defense immaturity. Interestingly, this group of individuals with low reflection and high defense style immaturity evidenced the highest levels of depressive symptoms under conditions of low life stress.

The effect of stress on individuals with low reflection became quite different when low defense style immaturity was also present. The combination of low reflection along with low defense immaturity led to the lowest levels of depressive symptoms when low stress was present. However, the presence of high stress led to substantially higher levels of depression. In fact, individuals low in reflective rumination as well as defense immaturity evidenced the highest levels of dysphoria under conditions of high life stress.

Individuals high in reflective rumination showed greater depressive symptoms under conditions of low life stress, but interestingly, defense immaturity seemed to play the opposite role in conditions of high stress when coupled with high refection. Specifically, the presence of low defense immaturity was associated with lower levels of depressive symptoms when coupled with high reflection in high stress conditions. In fact, individuals low in defense style

immaturity who engaged in high reflective rumination evidenced the lowest levels of depressive symptoms under high stress conditions than any other group in the analysis.

The sixth analysis, reported in Table 4, examined the relation between reflective rumination, immature defense style, and stress measured by the ICSRLE, and their impact on level of depressive symptoms. The regression equation yielded an adjusted R square value of .54. Stress emerged as a main effect. None of the two-way interactions reached significance, nor did the three-way interaction between reflective rumination, immature defense style, and stress.

The seventh analysis, reported in Table 5, examined the relation between brooding, immature defense style, and stress measured by the LES, and their impact on level of adjustment. The regression equation yielded an adjusted R square value of .49. Stress emerged as a main effect. None of the two-way interactions reached significance, nor did the three-way interaction between brooding, immature defense style, and stress.

The eighth analysis, reported in Table 5, examined the relation between brooding, immature defense style, and stress measured by the ICSRLE, and their impact on level of adjustment. The regression equation yielded an adjusted R square value of .57. Stress emerged as a main effect. In addition, the two-way interaction between brooding and stress reached significance, though the three-way interaction between brooding, immature defense style, and stress was not significant.

Figure 3 depicts the nature of the two-way interaction between brooding and stress. Overall, individuals under low stress conditions reported better adjustment than those under high stress conditions, regardless of level of brooding. Adjustment outcomes were particularly positive if individuals had both low stress and high brooding.

The ninth analysis, reported in Table 6, examined the relation between brooding, immature defense style, and stress measured by the LES, and their impact on level of depressive symptoms. The regression equation yielded an adjusted R square value of .57. Stress emerged as a main effect. Brooding also reached a significant level in Step 3 of the regression equation, only after the two-way interaction had been entered. In addition, the two-way interaction between brooding and immature defense style reached significance, though the three-way interaction between brooding, immature defense style, and stress was not significant.

Figure 4 depicts the two-way interaction between brooding and immature defense style. Among individuals with low defense style immaturity, higher levels of brooding were associated with greater depressive symptoms. Among individuals with high defense style immaturity, brooding had the opposite effect – lower levels of brooding were associated with greater depressive symptoms.

The tenth analysis, reported in Table 6, examined the relation between brooding, immature defense style, and stress measured by the ICSRLE, and their impact on level of dysphoria. The regression equation yielded an adjusted R square value of .57. Stress emerged as a main effect. None of the two-way interactions reached significance, yet the three-way interaction between brooding, immature defense style, and stress did emerge as significant.

Figure 5 depicts the nature of the fourth three-way interaction. Overall, individuals low in defense style immaturity reported experiencing less depressive symptoms than those high in defense style immaturity, regardless of level of brooding or level of stress. The highest slope value (i.e., greatest effect of stress on depressive symptoms) was present in the high brooding and low defense style immaturity combination.

In low stress conditions, individuals high in brooding and low in defense style immaturity exhibited particularly low levels of depressive symptoms. This was a dramatic finding that drove the nature of the interaction; any combination of low brooding or high defense style immaturity led to similar levels of depressive symptoms near the sample mean.

The eleventh analysis, reported in Table 7, examined the relation between reflective rumination, immature defense style, and stress measured by the LES, and their impact on level of adjustment. The regression equation yielded an adjusted R square value of .51. Stress emerged as a main effect. None of the two-way interactions reached significance when initially entered into Step 3 of the regression equation. However, the two-way interaction between reflective rumination and stress emerged as significant in Step 4 of the regression equation, only after the three-way interaction had been entered. Additionally, the three-way interaction between reflective rumination, immature defense style, and stress also reached significance.

Figure 6 depicts the nature of the third three-way interaction. The highest slope value (i.e., greatest effect of stress on level of maladjustment) was present in the low reflection and low defense style immaturity combination. The lowest slope value (i.e., least effect of stress on level of maladjustment) was present in the high reflection and low defense style immaturity combination. Therefore, the role of reflective rumination and stress among individuals low in defense immaturity should be examined more closely.

Although individuals low in reflection and low in defense style immaturity reported the best level of adjustment in low stress, they were heavily influenced by the negative effects of stress, so much so that they evidenced the most maladjusted outcomes overall under highly stressful circumstances. In contrast, individuals high in reflective rumination and low in defense style immaturity were the least vulnerable to the effects of stress on maladjustment.

Individuals high in reflective rumination demonstrated elevated levels of maladjustment in low stress conditions, with level of defense style immaturity having very little impact on adjustment outcomes (i.e., those low in defense style immaturity had slightly better adjustment outcomes than those with high defense style immaturity). However, the presence of high stress led to substantial changes in adjustment outcomes. Individuals who were highly reflective as well as high in defense style immaturity displayed maladjusted outcomes when put under high stress. The opposite was true, though, of individuals who were highly reflective but low in defense style immaturity. Namely, these individuals showed well-adjusted outcomes in high stress. In fact, individuals with low defense style immaturity and high reflection were best equipped to deal with high levels of stress, reporting the greatest level of adjustment in high stress conditions overall.

The twelfth and final analysis, reported in Table 7, examined the relation between reflective rumination, immature defense style, and stress measured by the ICSRLE, and their impact on level of adjustment. The regression equation yielded an adjusted R square value of .56. Stress emerged as a main effect. None of the two-way interactions reached significance, nor did the three-way interaction between reflective rumination, immature defense style, and stress.

Discussion

The results of this study build on previous research findings by integrating and testing rumination, immature defense style, and two measures of negative life events in a longitudinal design while assessing for mood and adjustment outcomes. These results supported our predictions that rumination and defense style would interact as diatheses to depression and maladjustment. Stress consistently contributed to level of dysphoria and maladjustment, where

onset of stressful circumstances was met with an increase in depressive symptoms and a decrease in overall adjustment. However, the trends for defense style and rumination were less reliable, and in some cases were contrary to our hypotheses.

In general, the findings in this study suggest that individuals with low defense style immaturity were well adjusted and experienced less depressive symptoms under conditions of low stress. Their outcomes changed significantly, though, in the presence of high stress. Specifically, these individuals were negatively affected by stress rather profoundly, indicating that individuals with low defense style immaturity may lack necessary coping resources when faced with highly stressful life circumstances, resulting in compromised emotional health.

A notable exception to this finding was observed in individuals with low defense style immaturity coupled with high reflective rumination. In brief, Treynor and colleagues (2003) support a two-factor model of rumination which includes two components: reflective pondering (reflection) and brooding. The main difference between these two components is that reflection involves intentionally turning inward and reflecting on one's depressive symptoms with the goal of engaging in problem solving to decrease those symptoms, whereas brooding involves unintentionally turning inward to compare one's current circumstances and mood with an unachieved standard.

Both types of rumination are associated with increased depressive symptoms in the short-term, as they both involve turning inward to contemplate negative mood, yet reflection is thought to alleviate depressive symptoms in the long-term, which is likely due to the problem solving component involved in the reflective process. Brooding, on the other hand, has been associated with increased depressive symptoms both in the short-term and in the long-term. Hence, reflective rumination can be conceptualized as an adaptive coping response style and the

brooding type of rumination can be thought of as a maladaptive coping response style that is associated with increased depression over time (Treynor et al., 2003).

In the current study, individuals with low defense style immaturity coupled with high reflective rumination evidenced a decrease in depressive symptoms and an increase in adjustment outcomes when placed in high stress circumstances, supporting Treynor et al. (2003)'s assertions and suggesting that individuals possessing this combination of traits may be highly resilient to stress. This finding is quite remarkable, as it seems that these individuals are able to cope exceptionally well with highly stressful life circumstances. This enhanced coping under high stress is likely a consequence of their use of less immature defense mechanisms, which results in a less distorted worldview, and their high reflective rumination, which likely results in greater introspection, improved understanding of self, and increased problem-solving abilities.

While these traits appear to be highly efficacious for these individuals in high stress, similar studies conducted by Kwon and Olson (2007) and LaVoy and Kwon (2008) found that both brooding and reflective rumination may be adaptive or maladaptive, depending on defense style. The current study supports this assertion, as high reflective rumination actually led to increased depressive symptoms and decreased adjustment outcomes when coupled with high defense style immaturity. Likewise, in some cases brooding rumination was found to be adaptive in the presence of high defense style immaturity, which serves to support the conceptualization that maturity of defense style moderates the relationship between rumination and stress on mood and adjustment outcomes.

The current study supports a diathesis-stress model involving the two interactive diatheses, rumination and defense style. This work has potential benefits for understanding the

internal mechanisms that lead to depression, and further specifying the conditions under which rumination and defense style lead to depression.

The results of this study have potential implications in treating clients who engage in cognitive rumination, which typically manifests in mood and anxiety conditions. Traditional cognitive therapy involves identifying the client's disordered thinking, assisting the client in testing the reality or validity of such thoughts, and finally correcting the client's dysfunctional cognitive patterns (Freeman, Simon, Beutler, & Arkowitz, 1989). If the source of the client's maladjustment is, in fact, distorted cognitions and ruminative thought patterns, then cognitive therapy often proves to be very efficacious. But under some circumstances, a clinician may be presented with a ruminator, yet the core underlying issue may not be purely cognitive in nature. In such situations, it may not be fruitful to practice solely from a cognitive therapy perspective, as the source of the client's maladaptive cognitive patterns may be inaccessible if the client is employing immature defense mechanisms with the therapist in session. In fact, in such circumstances, treatment progress may only ensue after immature defenses have been confronted and worked through.

There are several areas of research that warrant further investigation. First and foremost, additional studies in this area would benefit from a larger sample size, which would serve to increase statistical power and assist in clarifying the relationships among the variables studied. Also, given that the current study was conducted via the Internet and was based on self-report data, it may be beneficial to replicate the study utilizing other formats, such as in-person paper-pencil-based data collection, clinical interview, naturalistic observation, and self-monitoring in vivo. Additionally, there has been some question as to whether individuals possessing high defense style immaturity may underreport distress (Cramer, 2000). Thus, it may also be fruitful

to gather other-report data to gain additional information regarding the individual's use of defenses on a day-to-day basis. Furthermore, although an off-campus student body was sampled in this study, the use of a college student sample may serve to limit the generalizability of the results to other populations. To increase the generalizability of findings, future work in this area could involve the use of other demographic groups in other occupational settings. Lastly, to offer more accurate clinical implications, it would be important to replicate the findings in clinical samples or other specific groups. Further research in this area would likely enhance our understanding of diatheses to depression, potentially enhancing psychotherapeutic efficacy.

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Table 1

Means, Standard Deviations, and Intercorrelations of Study Questionnaires

Variable	*M*	*SD*	2	3	4	5	6	7	8	9	10
1. Time 1 BDI	11.30	7.92	.73***	.64***	.56***	.55***	.51***	.34***	.71***	.38***	.68***
2. Time 2 BDI	9.88	8.48		.51***	.64***	.44***	.49***	.39***	.57***	.27***	.58***
3. Time 1 SAS	1.88	0.36			.68***	.48***	.47***	.24***	.48***	.22***	.44***
4. Time 2 SAS	1.87	0.36				.39***	.61***	.34***	.44***	.24***	.43***
5. DSQ	3.10	0.86					.41***	.28***	.46***	.24***	.50***
6. ICSRLE	6.11	11.10						.37***	.48***	.27***	.54***
7. LES	3.91	4.12							.25***	.16*	.30***
8. RRDQ	39.76	12.55								.80***	.89***
9. Reflect	8.62	3.29									.64***
10. Brood	9.23	3.45									

Note. BDI = Beck Depression Inventory – II; SAS = Social Adjustment Scale – Self Report; DSQ = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ = Ruminative Responses to Depression Questionnaire – Rumination subscale; Reflect = Ruminative Responses to Depression Questionnaire – Reflection subscale; Brood = Ruminative Responses to Depression Questionnaire – Brooding subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 2

The Effects of Rumination, Defense Style, and Stress on Depressive Symptoms

Variable	*B*	*SE B*	β
Step 1 ($\underline{R}^2 = .53$)			
Time 1 BDI	.78	.06	.73***
Step 2 ($\Delta\underline{R}^2 = .03$)			
Time 1 BDI	.63	.09	.59***
DSQ-I	.20	.63	.02
RRDQ	.07	.05	.11
Stress – LES	.34	.12	.17**
Step 3 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.65	.09	.61***
DSQ-I	.14	.63	.01
RRDQ	.08	.05	.11
Stress – LES	.32	.12	.15*
RRDQ x Stress – LES	.02	.01	.13
RRDQ x DSQ-I	-.09	.05	-.12
DSQ-I x Stress – LES	-.07	.20	-.03
Step 4 ($\Delta\underline{R}^2 = .002$)			
Time 1 BDI	.65	.09	.61***
DSQ-I	.03	.65	.00
RRDQ	.07	.05	.10
Stress – LES	.28	.13	.14*
RRDQ x Stress – LES	.02	.01	.10
RRDQ x DSQ-I	-.09	.05	-.12
DSQ-I x Stress – LES	-.09	.21	-.03
RRDQ x DSQ-I x Stress – LES	.01	.01	.06
Step 1 ($\underline{R}^2 = .53$)			
Time 1 BDI	.78	.06	.73***
Step 2 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.64	.09	.59***
DSQ-I	.16	.64	.02
RRDQ	.05	.05	.07
Stress – ICSRLE	.12	.06	.14*
Step 3 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.68	.09	.63***
DSQ-I	2.2	1.3	.22
RRDQ	-.09	.10	-.14
Stress – ICSRLE	.13	.06	.15*
RRDQ x Stress – ICSRLE	.01	.01	.26

RRDQ x DSQ-I	-.04	.06	-.05
DSQ-I x Stress – ICSRLE	-.15	.08	-.28
Step 4 ($\Delta R^2 = .01$)			
Time 1 BDI	.68	.09	.63***
DSQ-I	2.7	1.3	.28*
RRDQ	-.10	.10	-.15
Stress – ICSRLE	.17	.06	.20**
RRDQ x Stress – ICSRLE	.01	.01	.31*
RRDQ x DSQ-I	.13	.09	.18
DSQ-I x Stress – ICSRLE	-.16	.08	-.29
RRDQ x DSQ-I x Stress – ICSRLE	-.01	.00	-.30*

Criterion variable = Time 2 BDI

Note. BDI Time 1 & Time 2 = Beck Depression Inventory – II at Times 1 and 2; DSQ-I = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ = Ruminative Responses to Depression Questionnaire – Rumination subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

The Effects of Rumination, Defense Style, and Stress on Adjustment

Variable	*B*	*SE B*	β
Step 1 ($\underline{R}^2 = .47$)			
Time 1 SAS	.68	.06	.68***
Step 2 ($\Delta\underline{R}^2 = .05$)			
Time 1 SAS	.58	.07	.58***
DSQ-I	.00	.03	.01
RRDQ	.00	.00	.12
Stress – LES	.02	.01	.17**
Step 3 ($\Delta\underline{R}^2 = .002$)			
Time 1 SAS	.56	.07	.56***
DSQ-I	.00	.03	.01
RRDQ	.00	.00	.12
Stress – LES	.02	.01	.18**
RRDQ x Stress – LES	.00	.00	.06
RRDQ x DSQ-I	.00	.00	.03
DSQ-I x Stress – LES	-.01	.01	-.07
Step 4 ($\Delta\underline{R}^2 = .001$)			
Time 1 SAS	.56	.07	.56***
DSQ-I	.00	.03	-.00
RRDQ	.00	.00	.11
Stress – LES	.02	.01	.17*
RRDQ x Stress – LES	.00	.00	.04
RRDQ x DSQ-I	.00	.00	.03
DSQ-I x Stress – LES	-.01	.01	-.08
RRDQ x DSQ-I x Stress – LES	.00	.00	.05
Step 1 ($\underline{R}^2 = .47$)			
Time 1 SAS	.68	.06	.68***
Step 2 ($\Delta\underline{R}^2 = .11$)			
Time 1 SAS	.50	.06	.50***
DSQ-I	-.01	.03	-.02
RRDQ	.00	.00	.04
Stress – ICSRLE	.01	.00	.36***
Step 3 ($\Delta\underline{R}^2 = .012$)			
Time 1 SAS	.48	.07	.48***
DSQ-I	.07	.06	.17
RRDQ	-.01	.00	-.19
Stress – ICSRLE	.01	.00	.39***
RRDQ x Stress – ICSRLE	.00	.00	.29

RRDQ x DSQ-I	.00	.00	.04
DSQ-I x Stress – ICSRLE	-.01	.00	-.24
Step 4 ($\Delta R^2 = .003$)			
Time 1 SAS	.48	.07	.48***
DSQ-I	.08	.06	.20
RRDQ	-.01	.00	-.20
Stress – ICSRLE	.02	.00	.41***
RRDQ x Stress – ICSRLE	.00	.00	.31*
RRDQ x DSQ-I	.01	.00	.16
DSQ-I x Stress – ICSRLE	-.01	.00	-.24
RRDQ x DSQ-I x Stress – ICSRLE	.00	.00	-.15

Criterion variable = Time 2 SAS

Note. SAS Time 1 & Time 2 = Social Adjustment Scale – Self Report at Times 1 and 2; DSQ-I = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ = Ruminative Responses to Depression Questionnaire – Rumination subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4

The Effects of Reflective Rumination, Defense Style, and Stress on Depressive Symptoms

Variable	*B*	*SE B*	β
Step 1 ($\underline{R}^2 = .53$)			
Time 1 BDI	.78	.06	.73***
Step 2 ($\Delta\underline{R}^2 = .03$)			
Time 1 BDI	.71	.07	.66***
DSQ-I	.31	.63	.03
RRDQ-Reflect	-.03	.15	-.01
Stress – LES	.34	.12	.17**
Step 3 ($\Delta\underline{R}^2 = .005$)			
Time 1 BDI	.72	.07	.67***
DSQ-I	.29	.63	.03
RRDQ-Reflect	-.01	.15	-.00
Stress – LES	.31	.12	.15*
RRDQ-Reflect x Stress – LES	.03	.04	.05
RRDQ-Reflect x DSQ-I	-.24	.18	-.08
DSQ-I x Stress – LES	.03	.17	.01
Step 4 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.69	.07	.64***
DSQ-I	.19	.62	.02
RRDQ-Reflect	-.13	.15	-.05
Stress – LES	.24	.12	.12*
RRDQ-Reflect x Stress – LES	-.03	.04	-.05
RRDQ-Reflect x DSQ-I	-.19	.18	-.06
DSQ-I x Stress – LES	-.06	.17	-.02
RRDQ-Reflect x DSQ-I x Stress – LES	.13	.04	.22**
Step 1 ($\underline{R}^2 = .53$)			
Time 1 BDI	.78	.06	.73***
Step 2 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.69	.08	.64***
DSQ-I	.22	.64	.02
RRDQ-Reflect	-.05	.15	-.02
Stress – ICSRLE	.14	.05	.16*
Step 3 ($\Delta\underline{R}^2 = .01$)			
Time 1 BDI	.72	.08	.67***
DSQ-I	1.6	1.1	.17
RRDQ-Reflect	-.37	.30	-.14
Stress – ICSRLE	.14	.05	.16*
RRDQ-Reflect x Stress – ICSRLE	.02	.02	.16

RRDQ-Reflect x DSQ-I	-.16	.21	-.05
DSQ-I x Stress – ICSRLE	-.11	.06	-.20
Step 4 ($\Delta\underline{R}^2 = 001$)			
Time 1 BDI	.72	.08	.67***
DSQ-I	1.6	1.1	.17
RRDQ-Reflect	-.35	.30	-.13
Stress – ICSRLE	.15	.06	.17**
RRDQ-Reflect x Stress – ICSRLE	.02	.02	.17
RRDQ-Reflect x DSQ-I	.02	.35	-.01
DSQ-I x Stress – ICSRLE	-.10	.06	-.19
RRDQ-Reflect x DSQ-I x Stress – ICSRLE	-.01	.02	-.08

Criterion variable = Time 2 BDI

Note. BDI Time 1 & Time 2 = Beck Depression Inventory – II at Times 1 and 2; DSQ-I = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ-Reflect = Ruminative Responses to Depression Questionnaire – Reflection subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 5

The Effects of Brooding Rumination, Defense Style, and Stress on Adjustment

Variable	*B*	*SE B*	β
Step 1 ($\underline{R}^2 = .47$)			
Time 1 SAS	.68	.06	.68***
Step 2 ($\Delta\underline{R}^2 = .04$)			
Time 1 SAS	.59	.07	.59***
DSQ-I	.00	.03	.00
RRDQ-Brood	.01	.01	.12
Stress – LES	.01	.01	.16**
Step 3 ($\Delta\underline{R}^2 = .007$)			
Time 1 SAS	.60	.07	.60***
DSQ-I	.00	.03	-.00
RRDQ-Brood	.01	.01	.14
Stress – LES	.01	.01	.15*
RRDQ-Brood x Stress – LES	.00	.00	.04
RRDQ-Brood x DSQ-I	-.01	.01	-.10
DSQ-I x Stress – LES	.00	.01	.01
Step 4 ($\Delta\underline{R}^2 = .00$)			
Time 1 SAS	.60	.07	.60***
DSQ-I	-.00	.03	-.00
RRDQ-Brood	.01	.01	.13
Stress – LES	.01	.01	.15*
RRDQ-Brood x Stress – LES	.00	.00	.04
RRDQ-Brood x DSQ-I	-.01	.01	-.10
DSQ-I x Stress – LES	.00	.01	.01
RRDQ-Brood x DSQ-I x Stress – LES	.00	.00	.01
Step 1 ($\underline{R}^2 = .47$)			
Time 1 SAS	.68	.06	.68***
Step 2 ($\Delta\underline{R}^2 = .11$)			
Time 1 SAS	.50	.06	.50***
DSQ-I	-.01	.03	-.01
RRDQ-Brood	.00	.01	.02
Stress – ICSRLE	.01	.00	.37***
Step 3 ($\Delta\underline{R}^2 = .02$)			
Time 1 SAS	.51	.06	.51***
DSQ-I	.01	.06	.03
RRDQ-Brood	-.03	.02	-.25
Stress – ICSRLE	.01	.00	.38***
RRDQ-Brood x Stress – ICSRLE	.00	.00	.34*

RRDQ-Brood x DSQ-I	-.01	.01	-.11
DSQ-I x Stress – ICSRLE	-.00	.00	-.06
Step 4 ($\Delta \underline{R}^2 = .00$)			
Time 1 SAS	.51	.06	.51***
DSQ-I	.01	.06	.03
RRDQ-Brood	-.03	.02	-.25
Stress – ICSRLE	.01	.00	.38***
RRDQ-Brood x Stress – ICSRLE	.00	.00	.34*
RRDQ-Brood x DSQ-I	-.01	.02	-.11
DSQ-I x Stress – ICSRLE	-.00	.00	-.06
RRDQ-Brood x DSQ-I x Stress – ICSRLE	.00	.00	-.01

Criterion variable = Time 2 SAS

Note. SAS Time 1 & Time 2 = Social Adjustment Scale – Self Report at Times 1 and 2; DSQ-I = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ-Brood = Ruminative Responses to Depression Questionnaire – Brooding subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 6

The Effects of Brooding Rumination, Defense Style, and Stress on Depressive Symptoms

Variable	*B*	*SE B*	β
Step 1 ($\underline{R}^2 = .53$)			
Time 1 BDI	.78	.06	.73***
Step 2 ($\Delta\underline{R}^2 = .04$)			
Time 1 BDI	.63	.08	.58***
DSQ-I	.08	.63	.01
RRDQ-Brood	.32	.18	.13
Stress – LES	.32	.12	.16**
Step 3 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.68	.08	.63***
DSQ-I	-.00	.63	.00
RRDQ-Brood	.35	.18	.14
Stress – LES	.26	.12	.13*
RRDQ-Brood x Stress – LES	.04	.04	.06
RRDQ-Brood x DSQ-I	-.50	.17	-.19**
DSQ-I x Stress – LES	.15	.20	.06
Step 4 ($\Delta\underline{R}^2 = .001$)			
Time 1 BDI	.67	.08	.63***
DSQ-I	-.10	.67	-.01
RRDQ-Brood	.34	.18	.14
Stress – LES	.24	.13	.12
RRDQ-Brood x Stress – LES	.03	.05	.05
RRDQ-Brood x DSQ-I	-.50	.17	-.19**
DSQ-I x Stress – LES	.13	.21	.05
RRDQ-Brood x DSQ-I x Stress – LES	.02	.05	.04
Step 1 ($\underline{R}^2 = .53$)			
Time 1 BDI	.78	.06	.73***
Step 2 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.63	.08	.59***
DSQ-I	.08	.64	.01
RRDQ-Brood	.25	.19	.10
Stress – ICSRLE	.11	.06	.13*
Step 3 ($\Delta\underline{R}^2 = .02$)			
Time 1 BDI	.68	.08	.64***
DSQ-I	1.3	1.3	.13
RRDQ-Brood	-.14	.38	-.06
Stress – ICSRLE	.11	.06	.13*
RRDQ-Brood x Stress – ICSRLE	.03	.02	.21

RRDQ-Brood x DSQ-I	-.30	.21	-.11
DSQ-I x Stress – ICSRLE	-.09	.08	-.17
Step 4 ($\Delta \underline{R}^2 = .01$)			
Time 1 BDI	.70	.08	.65***
DSQ-I	2.1	1.4	.21
RRDQ-Brood	-.33	.38	-.14
Stress – ICSRLE	.16	.06	.18**
RRDQ-Brood x Stress – ICSRLE	.04	.02	.31
RRDQ-Brood x DSQ-I	.33	.35	.13
DSQ-I x Stress – ICSRLE	-.11	.08	-.20
RRDQ-Brood x DSQ-I x Stress – ICSRLE	-.03	.01	-.32*

Criterion variable = Time 2 BDI

Note. BDI Time 1 & Time 2 = Beck Depression Inventory – II at Times 1 and 2; DSQ-I = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ-Brood = Ruminative Responses to Depression Questionnaire – Brooding subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 7

The Effects of Reflective Rumination, Defense Style, and Stress on Adjustment

Variable	*B*	*SE B*	β
Step 1 ($\underline{R}^2 = .47$)			
Time 1 SAS	.68	.06	.68***
Step 2 ($\Delta\underline{R}^2 = .04$)			
Time 1 SAS	.61	.06	.61***
DSQ-I	.01	.03	.03
RRDQ-Reflect	.01	.01	.07
Stress – LES	.02	.01	.17**
Step 3 ($\Delta\underline{R}^2 = .01$)			
Time 1 SAS	.60	.07	.60***
DSQ-I	.01	.03	.03
RRDQ-Reflect	.01	.01	.06
Stress – LES	.02	.01	.19**
RRDQ-Reflect x Stress – LES	-.00	.00	-.07
RRDQ-Reflect x DSQ-I	.01	.01	.09
DSQ-I x Stress – LES	.00	.01	-.00
Step 4 ($\Delta\underline{R}^2 = .02$)			
Time 1 SAS	.57	.07	.57***
DSQ-I	.01	.03	.02
RRDQ-Reflect	.00	.01	.02
Stress – LES	.01	.01	.16*
RRDQ-Reflect x Stress – LES	-.00	.00	-.15*
RRDQ-Reflect x DSQ-I	.01	.01	.11
DSQ-I x Stress – LES	-.01	.01	-.04
RRDQ-Reflect x DSQ-I x Stress – LES	.01	.00	.20*
Step 1 ($\underline{R}^2 = .47$)			
Time 1 SAS	.68	.06	.68***
Step 2 ($\Delta\underline{R}^2 = .11$)			
Time 1 SAS	.50	.06	.50***
DSQ-I	-.01	.03	-.01
RRDQ-Reflect	.00	.01	.04
Stress – ICSRLE	.01	.00	.37***
Step 3 ($\Delta\underline{R}^2 = .01$)			
Time 1 SAS	.49	.06	.49***
DSQ-I	.04	.05	.09
RRDQ-Reflect	-.01	.01	-.04
Stress – ICSRLE	.01	.00	.38***
RRDQ-Reflect x Stress – ICSRLE	.00	.00	.09

RRDQ-Reflect x DSQ-I	.01	.01	.08
DSQ-I x Stress – ICSRLE	-.00	.00	-.12
Step 4 ($\Delta\underline{R}^2 = 001$)			
Time 1 SAS	.49	.06	.49***
DSQ-I	.04	.05	.09
RRDQ-Reflect	-.00	.01	-.04
Stress – ICSRLE	.01	.00	.38***
RRDQ-Reflect x Stress – ICSRLE	.00	.00	.09
RRDQ-Reflect x DSQ-I	.02	.01	.13
DSQ-I x Stress – ICSRLE	-.00	.00	-.11
RRDQ-Reflect x DSQ-I x Stress – ICSRLE	.00	.00	-.07

Criterion variable = Time 2 SAS

Note. SAS Time 1 & Time 2 = Social Adjustment Scale – Self Report at Times 1 and 2; DSQ-I = Defense Style Questionnaire, Immature; ICSRLE = Inventory of College Students' Recent Life Experiences; LES = Life Experiences Survey; RRDQ-Reflect = Ruminative Responses to Depression Questionnaire – Reflection subscale.
*$p < .05$. **$p < .01$. ***$p < .001$.

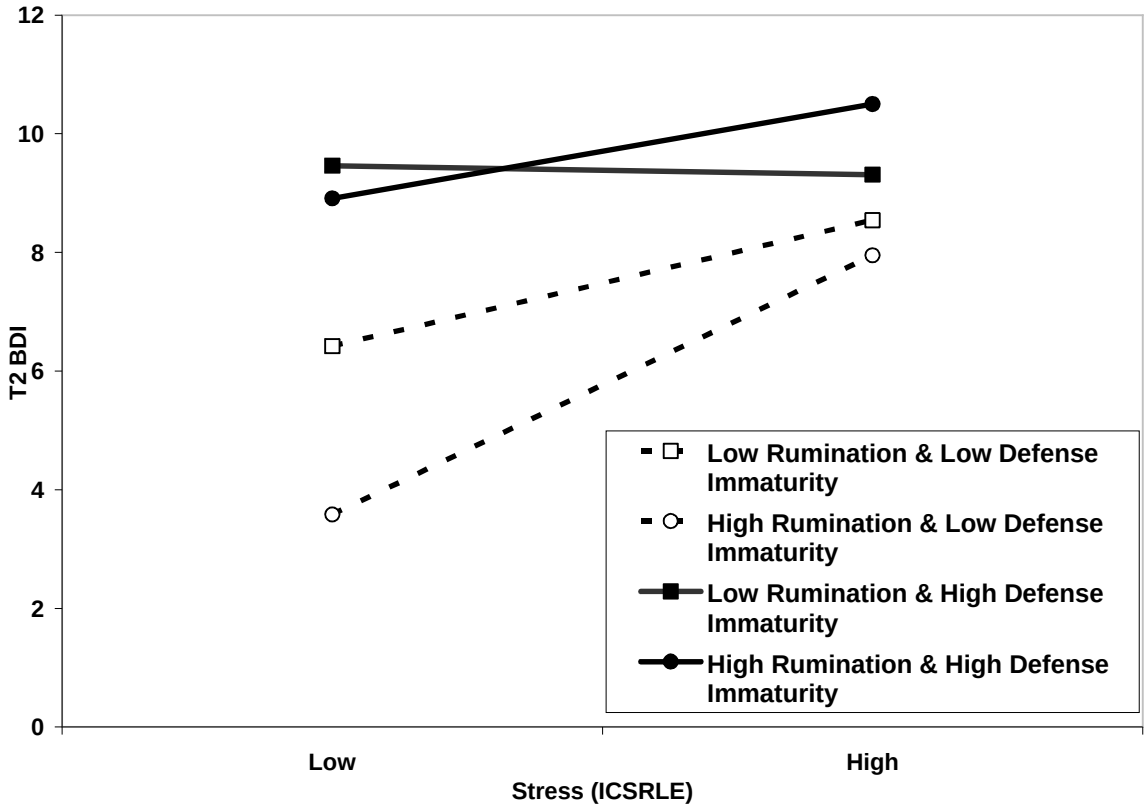

Figure 1. Interaction between rumination, defense style, and stress (measured by the ICSRLE) on depressive symptoms.

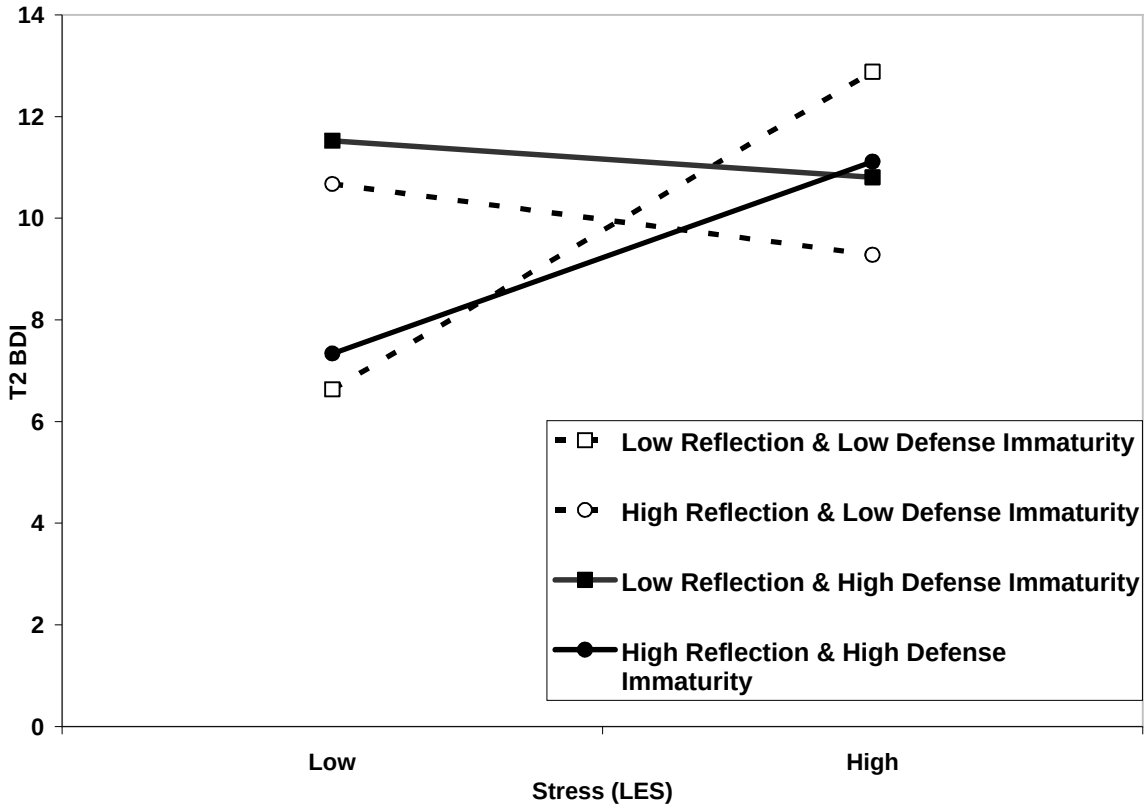

Figure 2. Interaction between reflective rumination, defense style, and stress (measured by the LES) on depressive symptoms.

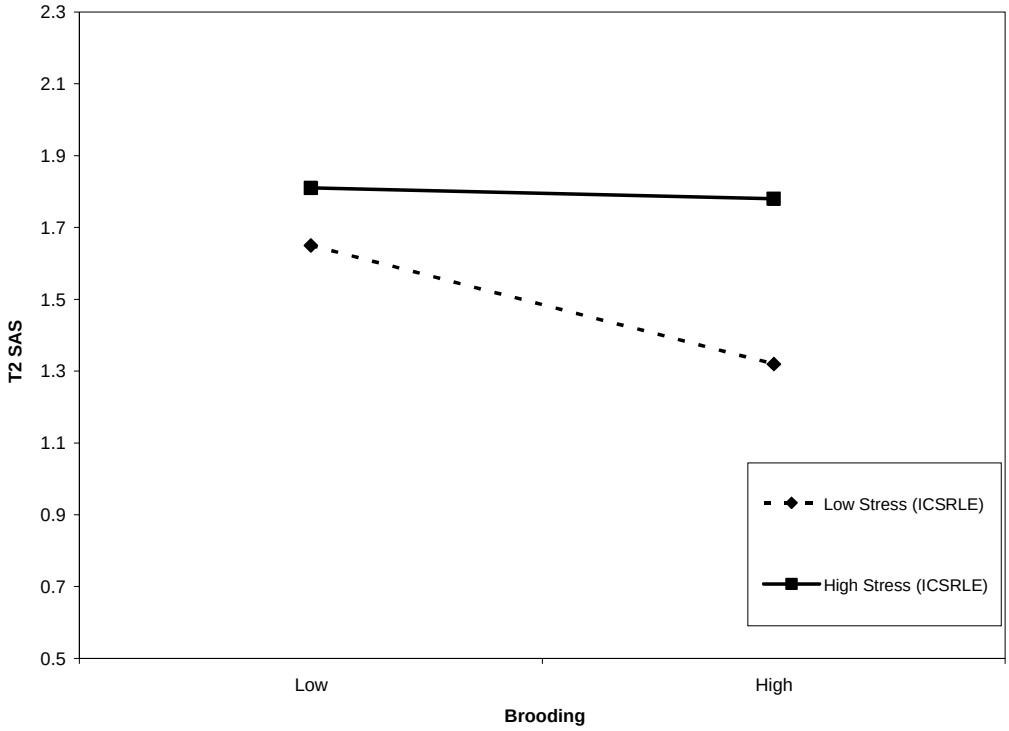

Figure 3. Interaction between brooding rumination and stress (measured by the ICSRLE) on adjustment.

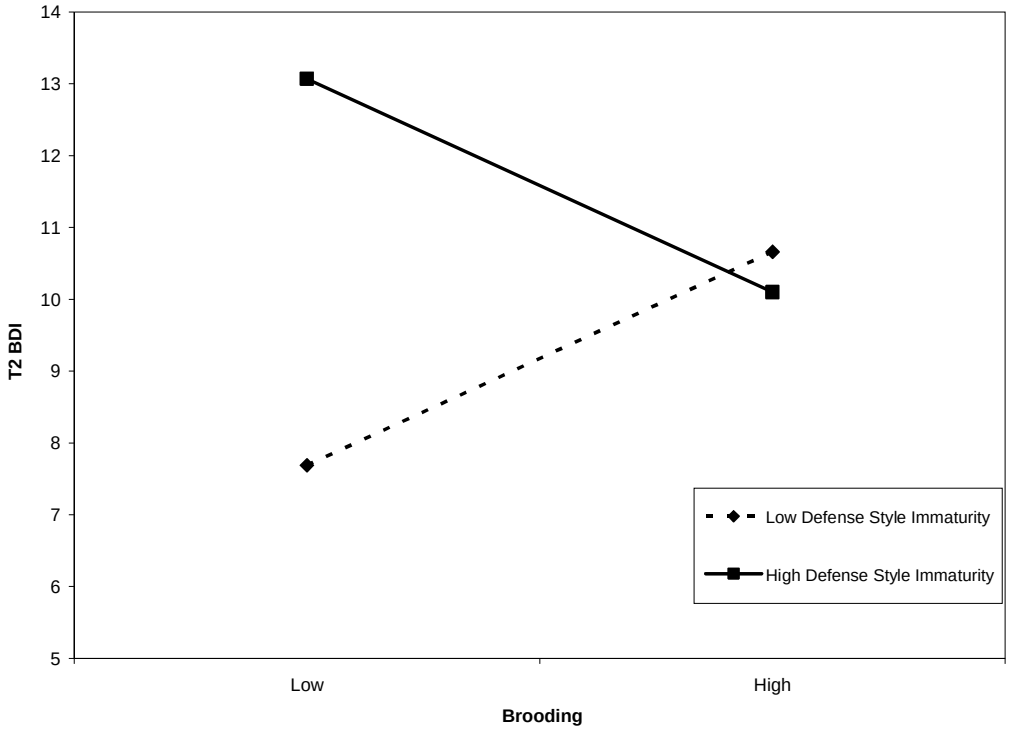

Figure 4. Interaction between brooding rumination and defense style on depressive symptoms.

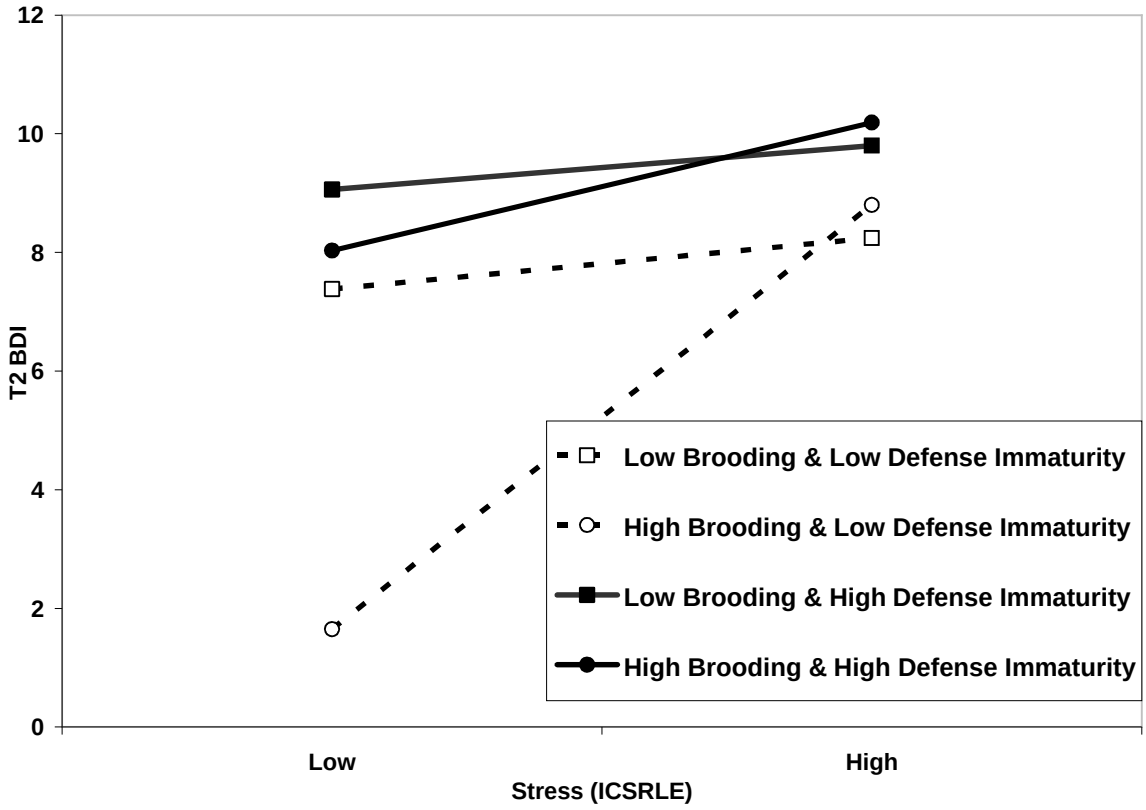

Figure 5. Interaction between brooding rumination, defense style, and stress (measured by the ICSRLE) on depressive symptoms.

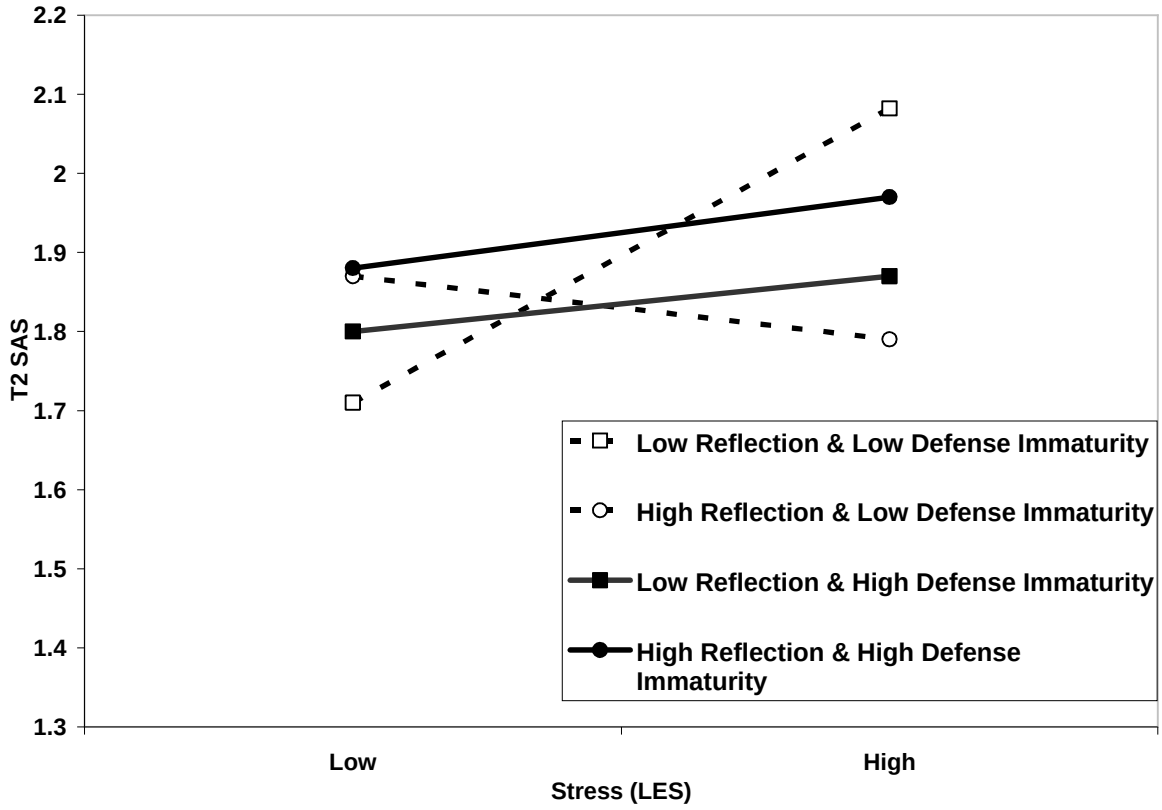

Figure 6. Interaction between reflective rumination, defense style, and stress (measured by the LES) on adjustment.