

RUMINATION AND DEPRESSION: IMPLICATING
HOPE AS A MODERATOR

By

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A thesis submitted in partial fulfillment of
the requirements for the degree of
MASTER OF SCIENCE IN PSYCHOLOGY

WASHINGTON STATE UNIVERSITY
Department of Psychology

AUGUST 2009

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ACKNOWLEDGMENT

I would like to thank Dr. Paul Kwon for his guidance with this project, and Dr. G. Leonard Burns, Dr. Michael Steele, and Dr. Brett Parmenter for their helpful suggestions. I would like to acknowledge Matt Eisenhower, Lindsey Phillips, Kyle Thomas, and Lindsey Wright for their outstanding efforts in collecting data. I would like to thank Zack Tollman for his tireless support in editing. Most importantly, I would like to thank Stephen Locker for his love, support, and understanding.

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HOPE AS A MODERATOR

Abstract

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August 2009

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The present study examines the effects of rumination and hope on depression. It was hypothesized that hope would moderate the relationship between rumination and depression, given that greater goal-directed activity in the face of obstacles may elicit beneficial aspects of rumination. Three hundred ninety-six undergraduate students completed measures of rumination, hope, and depressive symptoms. Main effects were found for both rumination and hope, and a two-way interaction between rumination and hope was found as hypothesized, indicating that high hope served as a buffer against the depressive effects of rumination. The results were significant for both the brooding and reflection subtypes of rumination, suggesting that hope may serve as a better framework for understanding the adaptive value of rumination.

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CHAPTER ONE

INTRODUCTION

Rumination has long been implicated as a cognitive risk factor for depression (e.g., Just & Alloy, 1997; Nolen-Hoeksema, 1991). In particular, those who ruminate are at an increased risk to develop depressive symptoms (Just & Alloy; Nolen-Hoeksema, Morrow, & Fredrickson, 1993). While rumination is often examined in terms of exacerbating depressive symptoms, few studies have focused on factors that may serve to decrease the severity of a depressive reaction. The present study focuses on hope as a factor that may buffer against the negative effects of rumination in predicting depressive symptoms.

Rumination

Research on rumination has focused primarily on its role in predicting depressive symptoms (e.g., Nolen-Hoeksema, 1987; Nolen-Hoeksema, Morrow, & Fredrickson, 1993). Rumination has been defined as “behaviors and thoughts that focus one’s attention on one’s depressive symptoms and on the implications of these symptoms” (Nolen-Hoeksema, 1991, p. 569). Specifically, an individual who ruminates focuses excessively on their symptoms of depression, such as fatigue and difficulty concentrating, as well as the causes and consequences of such symptoms (Nolen-Hoeksema, 1987). As a result of such focus, rumination has been shown to predict onset of depressive episodes (Nolen-Hoeksema & Morrow, 1991), as well as severity (Just & Alloy, 1997; Nolan, Roberts, & Gotlib, 1998) and duration (Nolen-Hoeksema, Morrow, & Fredrickson) of such depressive episodes. While those who actively distract themselves in response to stress tend to have less depressive outcomes, the ruminator passively focuses on their

negative symptoms, which serves to further exacerbate the extent to which they have already elicited a negative stress response (Nolen-Hoeksema, 1987).

More recently, research has focused on rumination as a two-factor model (Burwell & Shirk, 2007; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Initially posited by Treynor et al., the two-factor model distinguishes between two subtypes of rumination: brooding and reflective pondering (which we will refer to as “reflection” or “reflective rumination”). Brooding can be defined as a passive, cyclical focus on negative emotions, while reflection is a more active, problem-solving, and insight-finding process (Treynor et al.). Results on brooding and reflection have yielded differential findings in terms of their effects on depressive symptoms, and have been somewhat difficult to interpret. Studies have found brooding to be associated with negative depressive outcomes both in the short term and over time (Burwell & Shirk; Treynor et al.). Results regarding reflection are less clear; some studies suggest that reflection may lead to an increase in dysphoria in the short term, but may become adaptive over time, predicting overall decreases in depression in longitudinal studies. (Burwell & Shirk; Treynor et al.). These results suggest that the action of each type of rumination may not be as clearly adaptive or maladaptive as initially thought.

A ruminative response is to some extent related to goal-related thought (Martin & Tesser, 1989; 1996). Martin and Tesser assert that the opportunity for rumination presents itself when an individual’s goal progress is obstructed. When the goal is seen as being particularly important and the obstacle severe enough to thwart goal progress, an individual might begin to ruminate about the goal blockage. Specifically, the ruminative focus is on negative feelings in response to the goal blockage, on the reasons for the goal

blockage, and on the potential outcomes of the blocked goal process. In this manner, rumination can be viewed as searching for a way to reach an unattained goal, or a means of reconciling a decision to not continue with goal progress. Rumination ceases only when the obstacle has been overcome and/or unobstructed goal-related thought process has resumed.

Hope

Hope has been proposed as another dispositional variable that relates to the pursuit of goals (Snyder et al., 1991). Conceptualized in a cognitive model, hope serves as a protective factor to stressful events (e.g., Curry, Snyder, Cook, Ruby, & Rehm, 1997). Hope is defined as a goal oriented process comprised of two parts: agency and pathways (Snyder, 1994b). The agency component of hope is the motivational agent that drives a person to achieve particular goals; the pathways component relates to beliefs regarding the route that one might take in order to get there. The combination of both the agency and pathways components of hope is essential to develop a full understanding of hope: what Snyder has coined the “will” and the “way” (Snyder et al., 1991). A person who is high in hope, then, must display high pathways, as well as agentic thinking relative to their goals. That is, an individual who is high in hope will be highly motivated to achieve his or her goal(s), and will have determined the steps they will take in order to achieve such goals, often developing alternate routes. A person who is high in agency might think, “I feel energetic and motivated to achieve my goals.” A person who is high in pathways might think, “I can imagine many ways to attain the things in life that are most important to me.” While it is possible that an individual may possess only pathways

or only agentic thinking, it important to note that an individual cannot be “high” in hope without *both* high pathways and high agency thinking (Snyder, 1995).

Much of the research has focused on the positive outcomes for those who are high in hope. Specifically, high hope individuals have been found to have superior academic performance (Curry et al., 1997; Snyder, Cheavens, & Michael, 1999), better psychological adjustment (Kwon, 2002; Snyder et al., 1991), and better problem-solving skills (Chang, 1998; Chang & Banks, 2007) than their low-hope counterparts.

Additionally, those who are high in hope have more positive coping skills than those who are low in hope (Chang, 1998; Chang & DeSimone, 2001), and experience fewer depressive symptoms during times of stress (Arnau, Rosen, Finch, Rhudy, & Fortunato, 2007; Needles & Abramson, 1990). Of note are the emotions that result when an individual encounters goal-related obstacles. Over the course of goal pursuit, an individual will often encounter obstacles to their goals, or goal-directed thinking. Results have shown that those who successfully pursue their goals experience positive emotions, while those who encounter goal-related barriers experience negative emotions (Snyder, Sympson, Ybasco, & Borders, 1996). Those who are high in hope, then, even though they may encounter barriers, are essentially unaffected by their potentially negative results because their pathways thinking has allowed them to devise several possible ways of achieving their goals, and are thus able to continue in their goal pursuit.

Rumination and Hope

Insofar as both rumination and hope can be conceptualized as goal-related cognitive functions, it would follow that they may have some relationship in determining the circumstances under which an individual may or may not develop depression. As

results have shown, rumination typically predicts depressive symptoms (Nolen-Hoeksema & Morrow, 1991). Given the findings with those who are high in hope, it would seem likely that an individual who ruminates but engages in hopeful thinking might experience a decreased depressive reaction. Although an obstacle has interrupted goal-related thought and hence produced a ruminative reaction, the high hope individual is able to devise an alternative plan to overcome the obstacle (as a result of high pathways thinking), and also has sufficient motivation to institute such a plan (as a result of high agentic thinking), even in the face of rumination. Thus, high hope may serve to buffer against the potentially negative effects of rumination by providing the individual with a plan and the necessary motivation to overcome both the obstacle as well as the rumination. Once the individual who is high in hope overcomes his or her obstacle to goal-related thinking, it is likely that the individual's rumination will cease.

Conversely, consider the individual who has encountered a barrier to his or her goal, ruminates in response to that barrier, and is low in hope. This individual is unlikely to develop an alternate route to achieve their goal, or have the drive to continue with goal-directed thinking. Additionally, the individual is not likely to have the energy or the available pathways thinking to overcome the rumination that has resulted. As a result, it is likely that the low hope individual will not be able to overcome the obstacle and that rumination will persist, thus furthering the extent to which they will experience a depressive reaction.

Given the theoretical link between rumination and hope, hope may be critical in illuminating the distinction between brooding and reflective rumination. As previously discussed, results regarding the difference between brooding and reflective rumination

have been mixed, and difficult to interpret (Burwell & Shirk, 2007; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). By interpreting these differences in light of hope, however, the distinctions between the two types of rumination may become clearer. According to the Brooding subscale of the Ruminative Response Scale (RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003) an individual who engages in brooding rumination might “think about a recent situation, wishing it had gone better” (item 13). The low hope individual who ruminates in this manner is likely to give up, and to stop goal pursuit as a result of low motivation and lack of alternate routes to continue with goal progress. This response is typical of what has been conceptualized as “brooding” rumination because it is characterized by maladaptive thought and will likely lead to dysphoria. On the other hand, the high hope individual who ruminates in this manner is likely to resolve to overcome their negative thinking, and generate the motivation to pick themselves back up and continue with goal pursuit. Such a response is still labeled as “brooding” rumination, but does not capture the essence of a maladaptive, brooding response because of its adaptive nature.

In a similar manner, although reflection has been conceptualized as primarily adaptive, reflection items on the RRS may tap into either adaptive or maladaptive processes. According to the subscale, a reflective ruminator might want to “go away by [themselves] and think about why [they] feel this way” (item 11). The high hope individual who ruminates in this way is likely to use this opportunity as motivation to continue with goal pursuit. Such a response is typical of what has been conceptualized as “reflective” rumination because it is characterized by adaptive thought, and will ultimately lead to decreases in dysphoria. On the other hand, the low hope individual

who ruminates in this manner is likely to feel that they cannot go on, and give up goal pursuit. This response is still characterized as “reflective” rumination, but is maladaptive and is at odds with the proposed “adaptive” nature of a reflective ruminative response.

As a result of the proposed differential ruminative responses of those who are high versus low in hope, we propose a conceptualization of rumination in which the distinction between brooding and reflective rumination is not the key determinant in determining whether rumination is adaptive or maladaptive. Rather, we believe that for both subtypes of rumination, the adaptive value of the cognition will be associated with the level of hope involved.

To our knowledge, previous research has not attempted to integrate hope and rumination theory in the manner we have suggested. Although Michael and Snyder (2005) examined a relationship between hope and rumination, hypothesizing that hope would predict low levels of rumination among bereaved individuals, results showed no relationship between hope and rumination. It is of note that they examined an indirect relationship between hope and rumination by positing hope as a construct that would be related to psychological adjustment by predicting low levels of rumination and high levels of finding meaning. Additionally, they examined bereavement-related rumination as measured by the Rumination Index Questionnaire. Thus, their study was functionally different from the present study, and their null findings in regards to hope and rumination cannot be directly linked to the present predictions.

Given the previous findings on hope and rumination, we hypothesize main effects of both hope and rumination on depression, such that those who are low in hope will experience a greater depressed mood than those who are higher in hope, and those who

are high in rumination (both brooding and reflection) will experience a greater depressed mood than those who are low in rumination. Additionally, we hypothesize that hope will serve as a moderator in the relationship between rumination and depression, such that those who are high in rumination (both brooding and reflection) and low in hope will experience a particularly pronounced depressed mood in relation to those who have only one risk factor. In other words, having both risk factors is hypothesized to lead to levels of depression beyond the additive effects of the risk factors.

CHAPTER TWO

METHOD

Participants

Participants were 396 undergraduate students (148 male, 246 female, 2 not specified) from a large university in the Northwest. Students were recruited from introductory psychology courses, and received course credit for their participation. The mean age of participants was 19.9 years ($SD = 2.7$). In order to identify participants who were randomly responding or who were inattentive to questionnaire items, six “validity check” items were added throughout the questionnaires (“Please leave this question blank”). Because they responded incorrectly to one or more of these items, the data of twenty-five participants was not included in the final analyses. An additional six participants were not included in the final analysis for several reasons: five had significant missing data, and one disclosed that he had been randomly responding.

Measures

Ruminative Responses Scale (RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). The 22-item subscale of the 71-item Response Styles Questionnaire (Nolen-

Hoeksma & Morrow, 1991) assesses tendency to engage in rumination in response to depressed mood. The items are self and symptom-focused, and also focus on causes and consequences of the participant's mood. In particular, the questionnaire asks participants to what extent they engage in certain ruminative behaviors when they feel "down, sad, or depressed." Participants indicate the extent to which they participate in these behaviors by checking "almost never," "sometimes," "often," or "almost always" for each item. The questionnaire is scored by first converting the four questionnaire responses into numeric values: (0) "almost never," (1) "sometimes," (2) "often," (3) "almost always." The total score for the scale is the sum of all of the items on the scale (range = 0-66). The RRS showed adequate reliability in the present study, $\alpha = .916$. The RRS has been divided into three subscales: Reflection, Brooding, and Depression-Related. The Reflection subscale contains five items, assesses the extent to which an individual engages in reflective rumination, and asks, for example, if the participant tried to "Go away by yourself and think about why you feel this way." The Brooding subscale also contains five items, assesses the extent to which an individual engages in brooding rumination, and asks, for example, if the participant tried to "Think about a recent situation, wishing it had gone better." Both Reflection and Brooding subscales showed adequate reliability in the present study, $\alpha = .738$ and $\alpha = .758$, respectively. Because the Depression-Related subscale is confounded with our dependent variable, it will not be examined in this study.

Hope Scale (HS; Snyder et al., 1991). The HS is a 12-item scale that assesses both Agency (4 items) and Pathways (4 items) components of hope. There are also 4 filler items. Based on an 8-point Likert scale, participants rate each item based on the

extent to which the item is true for them (1= Definitely False, 8=Definitely True). The total hope score is the sum of the Agency items and the Pathways items. Higher scores indicate higher hope. The HS had adequate reliability in the present study, $\alpha = .799$.

Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). The BDI is a 21-item scale that measures depressive symptomatology. Each item includes four statements; one is neutral, while the other three describe varying degrees of depressed symptoms. For each of the 21 items, participants are given a series of statements and are asked to choose the statement that best describes their mood in the past two weeks. Each item is scored from 0 to 3; higher scores indicate greater symptom severity. The second edition assesses both increases as well as decreases in appetite, weight, and sleep patterns, while the first edition (Beck, Rush, Shaw, & Emery, 1979) assessed only decreases in these symptoms. The BDI showed adequate reliability in the present study, $\alpha = .899$.

CHAPTER THREE

RESULTS

Means, standard deviations, and intercorrelations for each questionnaire are presented in Table 1. In order to examine the role of rumination (the total score, as well as the brooding and reflection subscales), hope, and their interaction in predicting level of depressed mood, hierarchical multiple regression analyses were conducted. At Step 1, the main effects of rumination and hope were entered, and at Step 2, the two-way interaction term (rumination x hope) was entered. In order to reduce multicollinearity, all predictor variables were centered prior to completing the regression analyses.

As is shown in Table 2, significant main effects were found for rumination (both brooding and reflection) as well as hope, which indicates that each variable accounted for a significant portion of unique variance in depressive symptoms. Specifically, high levels of rumination generally predicted high levels of depressive symptoms, while high levels of hope generally predicted low levels of depressive symptoms. Additionally, as predicted, a significant two-way interaction was found for rumination and hope in predicting depressive symptoms, such that those who were high in rumination (both brooding and reflection) and low in hope experienced the greatest levels of depressive symptoms (see Fig. 1-3).¹ The combination of high rumination and low hope led to a level of depressive symptoms that was beyond the additive effects of the two risk factors.

CHAPTER FOUR

DISCUSSION

The present study builds upon previous research through the integration of both hope and rumination in an interactive model, which allows us to better understand their roles in depression. Consistent with previous research (Chang & DeSimone, 2001; Just & Alloy, 1997), both rumination and hope independently predicted levels of dysphoria, such that those who were low in hope experienced a greater level of depressed mood than those who were higher in hope, and those who were high in rumination (both brooding and reflection) experienced a greater level of depressed mood than those who were low in rumination. Our results also supported our main hypothesis that there would be a two-way interaction between hope and rumination.

Specifically, high hope served as a buffer against the negative, depressogenic effects of rumination. It is likely that, although an individual may respond to a stressful

life event by ruminating, their high levels of hope provide a plan to overcome the event that may have initially triggered the rumination and the rumination itself (pathways thinking), as well as the motivation to overcome both event and rumination (agentic thinking). In contrast, it was found that low hope further exacerbated depressive outcomes associated with high rumination. The individual who ruminates and is low in hope experiences dysphoria as a result of the rumination, which is ultimately made worse by low levels of hope, particularly because they do not feel as though they have the motivation to overcome the event that may have triggered the rumination nor do they have the resources to overcome the rumination itself (agentic thinking). Additionally, they do not have a plan to overcome the event or rumination (pathways thinking). As a result, the individual who both ruminates and is low in hope experiences a depressive reaction much greater than might be expected of someone who experiences either rumination or low hope independently.

In understanding how hope may serve to buffer against potentially deleterious effects of rumination, it is also possible that those who are high in hope tend to ruminate in different ways than their lower-hope counterparts, thus leading those who are high in hope to experience lower levels of depression than those who are low in hope. Specifically, it may be that those who are high in hope may be engaging in rumination that serves an adaptive function, regardless of whether that rumination is categorized as “brooding” or “reflection.” In referring to the example previously detailed, an individual who engages in brooding rumination might “think about a recent situation, wishing it had gone better” (item 13, RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). While brooding typically indicates a maladaptive, depressive response, the high hope individual

who ruminates in this way is likely to use such thoughts in an advantageous manner by resolving to overcome their negative thinking and by generating the motivation to continue with goal pursuit despite a potential obstacle. Thus, high hope serves as the defining characteristic that allows the individual to elicit an adaptive ruminative response.

Similarly, it is likely that those who are low in hope may be engaging in rumination that serves a maladaptive function, which ultimately exacerbates the extent to which they may have already experienced a depressive response. For example, an individual who engages in reflective rumination might want to “go away by [themselves] and think about why [they] feel this way” (item 11, RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). The low hope individual who ruminates in this way is unlikely to interpret this statement in an adaptive manner, and is instead likely to feel they cannot go on and give up in their goal pursuit. Such a response serves to further fuel a depressive reaction in a way that promotes further depressive symptoms and maladaptive thought.

Thus, we see that hope serves to define a ruminative response as either adaptive or maladaptive, and helps us understand individual differences in ruminative responses more clearly than does the originally proposed distinction between brooding and reflective rumination.

The present research has important implications for our understanding of depression as well as for the psychotherapy techniques that may help those who suffer from depressive symptoms. In particular, these findings highlight the importance of instilling hope during therapy both generally as well as to achieve specific therapeutic outcomes. Additionally, the present research may help inform the development of specific therapeutic techniques for improving ruminative tendencies as well reducing the

dysphoric effects of rumination. It is also essential to continue to study the traits of those who do not tend to experience depressive outcomes, as such research helps shed light on how to best help those who do struggle with depression.

While the present study was strong in many ways, there are several limitations that warrant discussion. It should be noted that causal conclusions cannot be drawn as a result of this research, and results should be interpreted as purely correlational. In order to draw causal conclusions, further research should examine the interaction of hope and rumination with the use of a longitudinal design. Additionally, because the present study used a sample of college students, results should be generalized to other populations with caution.

In order to build on the present study, future research should examine the interaction of hope and rumination with a longitudinal design. Such a design will allow causal conclusions to be made and will help to solidify our understanding of brooding and reflective rumination and how hope may interact with these variables over time.

FOOTNOTES

¹Although gender was found to interact with the main effect of hope, it had no significant effect on the two-way interaction between rumination and hope.

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Table 1. Means, Standard Deviations, and Intercorrelations of Study Questionnaires.

Variable	M	SD	2	3	4	5
1. BDI	10.07	7.78	-.382*	.595*	.533*	.368*
2. HS	50.32	6.72		-.290*	-.314*	-.072
3. RRS	39.61	10.85			.851*	.803*
4. RRS-brooding	9.41	2.94				.548*
5. RRS-reflection	8.77	2.99				

Note: BDI = Beck Depression Inventory; HS = Hope Scale; RRS = Ruminative Response Scale.

* $p < .01$

Table 2. The Effects of Rumination and Hope on Depressive Symptoms

Variable	B	SE B	β
Step 1 ($R^2 = .399^{**}$)			
HS	-.242	.047	-.209**
RRS	.364	.029	.507**
Step 2 ($\Delta R^2 = .019^{**}$)			
RRS x HS	-.013	.004	-.142**
Step 1 ($R^2 = .332^{**}$)			
HS	-.264	.049	-.228**
RRS-brooding	1.134	.115	.429**
Step 2 ($\Delta R^2 = .022^{**}$)			
HS x RRS-brooding	-.055	.015	-.153**
Step 1 ($R^2 = .259^{**}$)			
HS	-.409	.050	-.353**
RRS-reflection	.893	.112	.334**
Step 2 ($\Delta R^2 = .019^*$)			
HS x RRS-reflection	-.052	.016	-.138*

Note: BDI = Beck Depression Inventory; HS = Hope Scale; RRS = Ruminative Response Scale.

* $p \leq .001$

** $p < .0001$

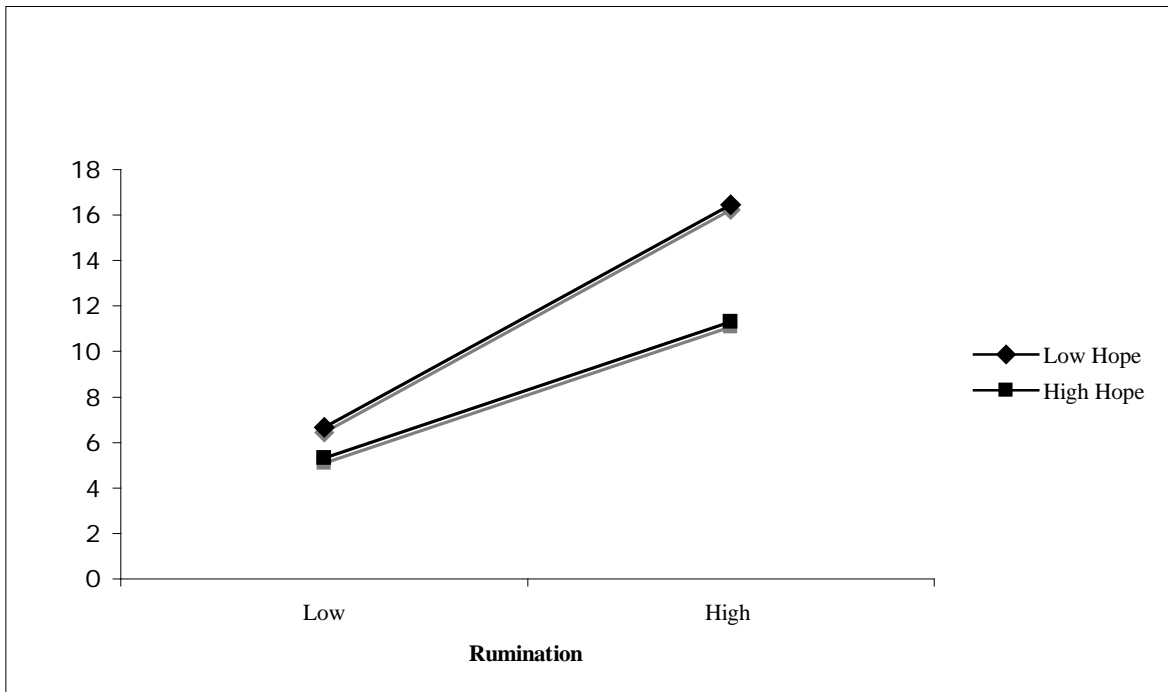


Figure 1. Predicted BDI scores as a function of total rumination and level of hope.

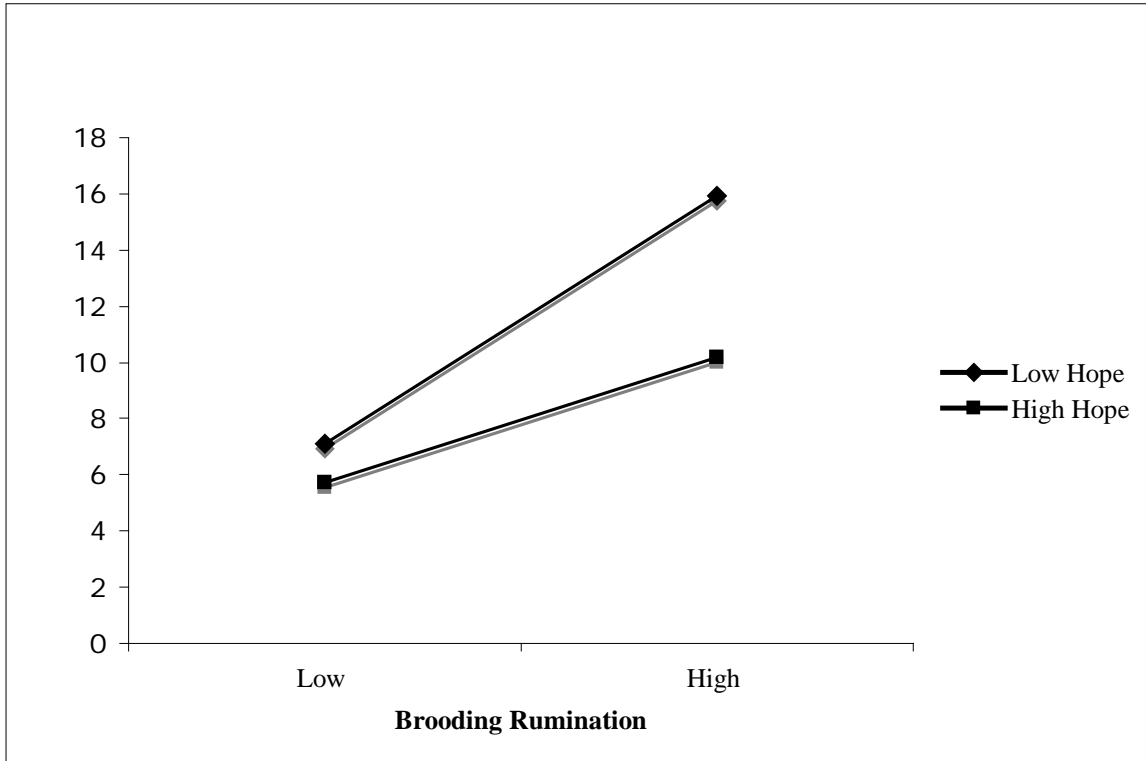


Figure 2. Predicted BDI scores as a function of brooding rumination and level of hope.

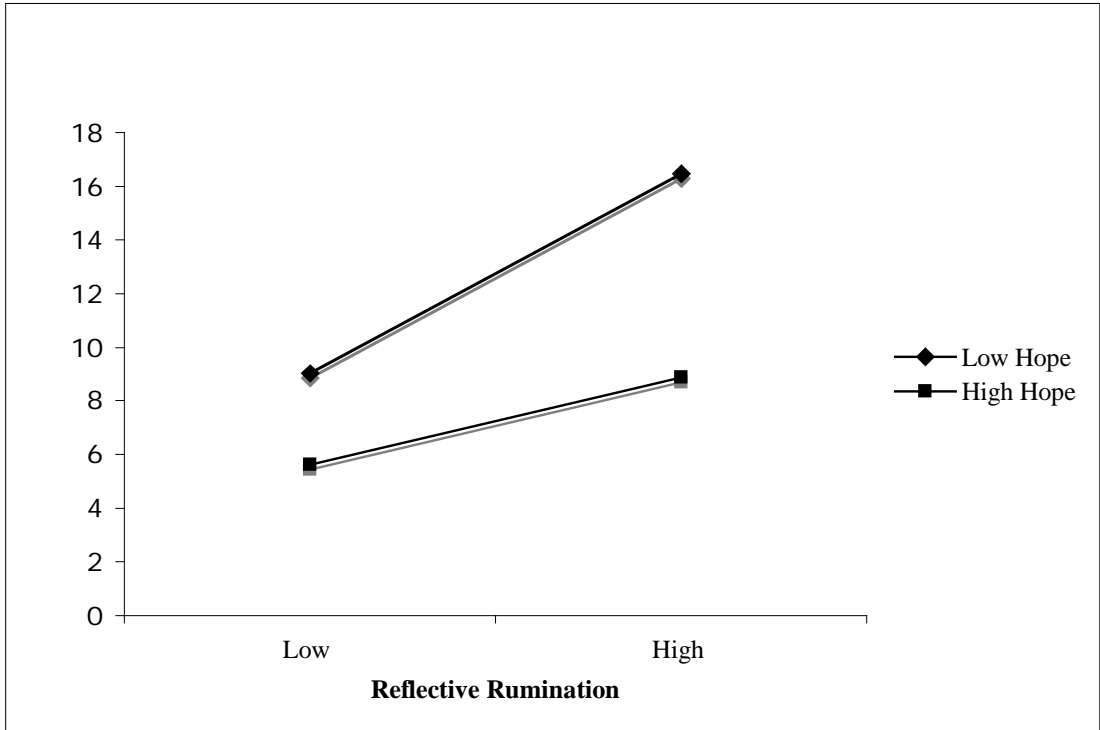


Figure 3. Predicted BDI scores as a function of reflective rumination and level of hope.