Effects of rumination on internal and external locus of control

Michael R. Sterling
Rowan University

Follow this and additional works at: https://rdw.rowan.edu/etd

Let us know how access to this document benefits you - share your thoughts on our feedback form.

Recommended Citation
https://rdw.rowan.edu/etd/847

This Thesis is brought to you for free and open access by Rowan Digital Works. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Rowan Digital Works. For more information, please contact LibraryTheses@rowan.edu.
EFFECTS OF RUMINATION ON INTERNAL AND EXTERNAL LOCUS OF CONTROL

Michael R. Sterling

A Thesis
Submitted in partial fulfillment of the requirements of the Master of Arts in Mental Health Counseling and Applied Psychology Degree
Of
The Graduate School
at
Rowan University
January 15, 2007

Approved by

Date Approved

© January 15, 2007 Michael R. Sterling
ABSTRACT

Michael R. Sterling
EFFECTS OF RUMINATION ON INTERNAL AND EXTERNAL LOCUS OF CONTROL
2006/07
Dr. Janet Cahill
Master of Arts in Mental Health Counseling and Applied Psychology

The primary goal of this study was to explore the relationship between rumination, locus of control, and depressive symptomology. The current project utilized a survey methodology, in which 54 undergraduate students were required to complete the Response Style Questionnaire (RSQ), the Rotter Locus of Control Scale (LOC), and the Beck Depression Inventory II (BDI-II). Previous literature has not examined the relationship between rumination and locus of control. It was hypothesized that ruminative thought and external locus of control would be positively correlated. Correlations were run between the scores of each questionnaire, as well as gender of the participants. Results indicated a positive correlation between the RRS and the BDI (r = .658, p < .01), supporting previous literature. The primary hypothesis was not supported and no other significant results were found. Possible explanations for this, as well as suggestions for further research are discussed.
<table>
<thead>
<tr>
<th>Chapter: 1</th>
<th>Introduction and Literature Review</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter: 2</td>
<td>Method</td>
<td>13</td>
</tr>
<tr>
<td>Chapter: 3</td>
<td>Results</td>
<td>16</td>
</tr>
<tr>
<td>Chapter: 4</td>
<td>Discussion</td>
<td>17</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction and Literature Review

Affective distress, such as depression and anxiety, is a prevalent mental health concern in today’s society (American Psychiatric Association [APA], 1994). Individuals respond to depression in a variety of ways. For example, some individuals experience feelings of worthlessness and self-blame, others have reoccurring thoughts of death or suicidal ideation, and still other tend to have repetitive thoughts about their depression known as rumination (Davison & Neale, 1998). Susan Nolen-Hoeksema has developed a theory of depression, the Response Style Theory of depression, where rumination is the central construct (Nolen-Hoeksema, 1987). Rumination, as defined by Nolen-Hoeksema, is the passive and repetitive focus on one’s depressive symptoms and the meaning of those symptoms (Nolen-Hoeksema, 1998). She argues this rumination is a primary factor in the maintenance of depressive symptoms and mood. The ruminative response style draws depressive individuals’ attention to his or her emotional state and inhibits any actions that might correctly identify causes of depressed mood or distract the individual from their depressed mood. Individuals engaging in ruminative thought tend to focus in on their particular symptoms (for example, fatigue, sadness, etc.), the possible causes of their depression, and the consequences of their depression (Nolen-Hoeksema, 1991).

Research has shown a high comorbidity rate between anxiety and depression (Clark, 1989, Clark & Watson, 1991; Mineka, Watson, & Clark, 1998). Therefore, it is likely that rumination and anxiety have a similar relationship as rumination and depression. Nolen-Hoeksema (2000) examined whether individuals who engaged in a ruminative response were more likely than nonruminators to have depressive disorders, as well as anxious and depressive symptoms. The sample consisted of 1,317 respondents
living in the San Francisco Bay Area ages 25 to 75 years old. Respondent’s depression, anxiety, and ruminative response were measured in two clinical interviews, one at the start of the study and the second one a year later. Depression was measured using the Beck Depression Inventory, the Hamilton Rating Scale for Depression, and the Structured Clinical Interview for the DSM-IV. The results indicated that respondents diagnosed with major depressive disorder had significantly higher ruminative response scores than subjects without a depressive disorder (F(1, 1089) =51.70, p < .0001). In addition, using a logistic regression analysis, rumination was found to significantly predict depressive disorders (odds ratio = 1.06, Wald = 39.74 (p < .0001), as well as equally predict depressive and anxious symptoms (F(3, 1067) = 92.26, p < .0001). Ruminaton also had the highest mean scores with mixed anxious/depressive symptoms (M = 51.71) over depression (M = 47.32), anxiety (M = 43.79), and absence of symptoms (M = 39.74). These findings support the conclusion that ruminative response interacts similarly with anxiety as it does with depression.

In a related study, Segerstrom, Tsao, Lynn, Alden, and Craske (2000) examined the specific relationship between worry - rumination and anxious - depressive symptoms and thought content in both a student sample and in an outpatient clinic sample. They hypothesized that repetitive thought found in both rumination and worry would be positively correlated with both anxiety and depression. They also hypothesized that repetitive thought in the presence of stress would predict anxious and depressive symptoms after the stress had ended.

Results from their first trial indicated that worry and global rumination had the highest correlation (R = .52 for students; .55 for patients, p < .001). Less significant
correlation occurred between worry and global rumination and depressive rumination
(students, t(107) = 3.73, p < .001; patients, t(37) = 2.56, p < .05. Repetitive thought was
more highly correlated with depressive cognitions than with anxious cognitions in the
student sample, while equally correlated in the patient sample. Depressive content was
more correlated with depressed subjects (students, t(107) = 3.14, p < .01; patients, t(37) =
2.61, p. < .05) and anxious content was more correlated with anxious subjects (students,
t(107) = 1.70, p < .10; patients, t(37) = 2.69, p. < .05). Using structural equation
modeling, Segerstrom et al. (2000) found that a latent variable, repetitive thought, was
significantly correlated to both depression and anxiety. Results from their second trial
indicated that initial symptoms of both anxiety (z = 3.37, p < .05) and depression (z =
4.32, p .05) significantly predicted follow-up symptoms indirectly through repetitive
thought (Segerstrom et al., 2000).

Fresco, Frankel, Mennin, Turk, and Heimberg (2002) sought to better understand
the relationship between worry and rumination. They conducted a factor analysis on
items from the Penn State Worry Questionnaire (PSWQ), the Response Styles
Questionnaire (RSQ), and the Mood and Anxiety Symptom Questionnaire-Short Form
(MASQ). The first factor, Worry Engagement, consisted of items from the PSWQ.
Factor 2, Dwelling on the Negative, consisted of items from the Ruminative Response
Scale (RRS) of the RSQ. The third factor, Active Cognitive Appraisal, consisted of self-
reflective items from the RSQ. Factor 4, Absence of Worry, consisted of items showing
a lack of worry from both the RSQ and the PSWQ.

Results of the factor loading indicate that despite the similarities in the constructs
of rumination and worry, there are distinct differences. It was found that Worry
Engagement, Dwelling on the Negative, and Active Cognitive Appraisal were all positively correlated with each other as well as all negatively correlated with Absence of Worry. Both anxious and depressive specific symptoms were more highly correlated with Dwelling on the Negative than Worry Engagement, and both were more highly correlated with anxious and depressive symptoms than Active Cognitive Appraisal (Fresco et al., 2002).

In a supporting study, Muris, Roelofs, Meesters, and Boomsma (2004) sought to determine if rumination and worry are distinct from one another despite their similarities. They also sought to determine a link between rumination and depression, and worry and anxiety. Similar to Fresco et al., (2002), factor loading indicated that items from the worry measure (factor 1) were distinct from items from the rumination measure (factor 2). Rumination items were divided into two separate factors depending on the tendency to dwell on negative feelings or analyze what went wrong. Results indicated a significant correlation between rumination and worry ($r = .55$, $p < .001$). Rumination, worry and negative attribution were positively correlated with depressive and anxious symptoms, with worry and rumination more highly correlated to anxious symptoms. Distraction negatively correlated with both anxious and depressive symptoms. Depressive symptoms were more highly correlated with negative attributions and distraction (Muris et al., 2004). These results support the results of Fresco et al., (2002) in that despite similarities between rumination and worry, there are substantial differences. These results also indicate a stronger link between worry and anxiety over worry and depression. Specifically, worry is a predictor of anxious symptoms, and that both anxiety and depression are related to rumination.
Ruminative response focuses on internal attributes associated with depression and anxiety. This can be distinguished from a distractive response, which focuses one’s attention towards external activities. In a study by Morrow & Nolen-Hoeksema (1990) both ruminative and distractive responses to depressed mood were examined. Subjects induced to a saddened or depressive mood were randomly assigned to one of four conditions (active/ruminative, active/distracting, passive/ruminative, and passive/distracting). The ruminative conditions involved self-focused tasks, while the distractive condition diverted attention toward external focus. The active condition involve physical activity in the form of a Q-sort in which subjects needed to stand and walk around to complete it, while the passive condition remained seated. Results indicated that subjects who were in the distracting/active condition experienced the most significant reduction of depressed mood. Following that condition, reduction in depressed mood was shown in the distracting/passive condition, the ruminative/active condition, and the ruminative/passive condition respectively.

In a similar study, Nolen-Hoeksema & Morrow (1993) examined the effects of rumination and distraction on subjects with a naturally occurring depressed mood. Moderately depressed subjects and nondepressed subjects were assigned to ruminative or distracting conditions. The ruminative condition consisted of 45 items pertaining to symptom, emotion, and self-focused thoughts, i.e., “what your feelings might mean.” The distracting condition consisted of 45 items that were externally focused, i.e., “the size of the Golden Gate Bridge.” Subjects focused on these tasks for 8 minutes. The results indicated that depressed subjects negative moods significantly increased in the ruminative condition, while significantly decreasing in the distractive condition. In non-
depressed subjects neither rumination nor distraction produced any significant changes in depressed mood.

Studies have shown that distraction can alleviate dysphoric symptoms by taking attention away from negative self-focus and placing it on more positive or neutral external-focus (Morrow et al., 1990; Nolen-Hoeksema et al., 1993). However, individuals who engage in dysphoric rumination tend to self-perpetuate their ruminative thought process by actively avoiding distraction, even when the distraction is rated as enjoyable (Lyubomirsky & Nolen-Hoeksema, 1993). In examining whether or not dysphoric and nondysphoric subjects who engaged in either a ruminative or distracting task assessed how much they would enjoy a number of distracting activities, as well as the likelihood that they would engage in these activities, it was found that subjects in the dysphoric/ruminative group did not differ in their estimates of enjoyment of pleasurable activities from the other three groups. However, dysphoric ruminators were less likely to engage in pleasant activities than the dysphoric/distancing, nondysphoric/ruminative, and nondysphoric/distactive groups. Results from a second study examining whether or not depressed mood without the presence of ruminative thought would affect subjects’ judgments of their likelihood of participating in pleasant activities indicated that there were no significant differences between dysphoric and nondysphoric groups. These results show that dysphoric subjects who were not forced to ruminate reported similar expectancies and motivation than nondysphoric subjects to engage in pleasant, distracting activities (Lyubomirsky et al., 1993).

Not only does a ruminative response style of coping with depression focus individuals’ attention on their current symptoms and future outlook, but has also been
shown to influence the retrieval of memories. In a series of studies, Lyubomirsky, Caldwell, & Nolen-Hoeksema (1998) examined the effects of dysphoric rumination on the retrieval of autobiographical memories. Two of the studies examined whether inducing rumination in dysphoric subjects would lead to the retrieval of more negative memories, both freely recalled and prompted, than those induced to distract. Their results indicated dysphoric subjects induced to ruminate freely recalled more negative memories than did dysphoric subjects made to distract and nondysphoric ruminators and distracters respectively. When asked to recall two positive and two negative memories and provide a written description of each, subjects in the dysphoric-ruminative condition were rated more negatively on both their "happy" and "unhappy" memory descriptions than dysphoric subjects made to distract or nondysphoric ruminators and distracters.

Further studies by Lyubomirsky et al. (1998) indicated that dysphoric ruminators, when given 10 positive and 10 negative events that could occur in their lives, rated negative events as more likely to occur than positive ones. The dysphoric-ruminative group showed the highest tendency to rate the likelihood of negative events occurring over positive ones, followed by the dysphoric-distractive group. In contrast, both nondysphoric conditions rated positive events as more likely to occur. Even when not given specific instructions to retrieve positive or negative memories and allowed to describe whatever memories occurred naturally when asked ruminative or distracting questions, dysphoric ruminators showed the highest negativity in tone.

Another enduring method of assessing personality is along the dimensions of internal versus external locus of control. Developed as part of Rotter’s Social Learning Theory, locus of control refers to an individual’s generalized expectancy of where
reinforcement derives. Those with an internal locus of control believe that reinforcement comes from their own behaviors, actions, and attributes. Conversely, individuals with an external locus of control believe that their success or failure is controlled by luck, chance, or other powerful individuals (Rotter, 1966).

Some previous research has examined the relationship between locus of control and depression. For example, Natale (1978) explored the connection between depression and external locus of control, as well as elation and internal locus of control. Forty-five female undergraduate college students were placed into either an elation condition, a depression condition, or a neutral condition. Each condition contained 15 subjects. Subjects were then given Rotter’s locus of control scale. Afterwards, they were given a writing speed task which consisted of writing down numbers from 100 in one minute, as well as six seven-point semantic differential scales (1 being extremely depressed and 7 being extremely elated), and a personal feeling scale to determine their current mood state. Subjects then underwent Trimboli’s adaptation of Velten’s mood induction procedure (MIP). The MIP consisted of reading 60 self-referent statements on index cards. A tone was sounded every 20 seconds to indicate movement to the next card. Afterwards, subjects again filled out Rotter’s locus of control scale, the writing speed task, the semantic differential scales, and the personal feeling scale (Natale, 1978).

A one-way ANOVA indicated that there were no differences between the preinduction neutral, depressed, or elated groups. Group mood differences between the three conditions post-mood induction was examined by an independent analysis of variance ($F = 9.90; df = 2, 42; p < .01$). Personal feelings for each of the three conditions all differed significantly ($p < .05$). Differences across the three conditions for the writing
speed test was also significant ($F = 10.84; df = 2, 42; p < .01$). These findings indicate that depression increased feelings of external locus of control, while elation increased internal locus of control. No connection between locus of control and neutral mood was found (Natale, 1978).

In a related study, Kennedy, Lynch, and Schwab (1998) examined the relationship between locus of control and a variety of depressive and anxious disorders found in the DSM-III R. Their sample consisted of 193 participants recruited through advertisement for clinical drug trials. The sample included 45 participants diagnosed with Major Depressive Disorder (MDD), 20 with Panic Disorder (PD), 13 with Generalized Anxiety Disorder (GAD), 30 with Social Phobia (SP), 28 with Obsessive Compulsive Disorder (OCD), 25 with Mixed Anxiety Depressive Disorder (MAD), and 32 graduate students as a Comparison Group (CG). In addition to DSM-III R diagnostic criteria, respondents also met criteria on the Hamilton Depression Scale (HAM-D), Hamilton Anxiety Scale (HAM-A), Montgomery-Asberg Depression Scale (MADS), Duke Brief Social Phobia Scale, MIMH Obsessive-Compulsive Scale, Yale-Brown Obsessive Compulsive Scale (Y-BOCS), Raskin Depression Scale, Covi Anxiety Scale, and the Structured Clinical Interview for Diagnosis (SCID).

Respondents were given Levenson’s Locus of Control Scale to complete and return on their next visit. Levenson’s Locus of Control Scale is a modification of Rotter’s Locus of control scale, in which external locus of control (E) is divided into two scales, control by powerful others (P) and by chance (C). Internal locus of control (I) remains the same as Rotter’s original measure.
Results indicated that out of the patients’ mean HAM-A and HAM-D scores, 
GAD (25.7, SD = 3.0) had the highest mean score on the HAM-A, followed by MD 
(23.4, SD = 2.3) and MAD (21.0, SD = 2.3) on the HAM-D. For the I scale, the results 
indicated only small differences between the clinical populations’ mean scores (ranging 
from 30.6, SD = 6.3 to 34.1, SD = 7.5, p < .05) and the comparison groups mean scores 
(34.3, SD = 5.1, p < .05). On the P scale, patients with MD (23.8, SD = 9.8, p < .05), SP 
(21.8, SD = 8.2, p < .05), and MAD (23.4, SD = 9.99, p < .05) had significantly higher 
mean scores than the CG (14.3, SD = 6.5, p < .05). On the C scale, patients with MD 
(20.7, SD = 8.5, p < .05), PD (20.4, SD = 9.8, p < .05), SP (20.6, SD = 8.1, p < .05), 
MAD (22.1, SD = 7.3, p < .05) had significantly higher scores than the CG (13.4, SD = 
6.3, p < .05).

Patients’ mean I scale scores correlated negatively with the P scale scores across 
all disorders except for GAD, however only the difference for OCD (-0.525, p < .01) was 
significant. I scale scores also correlated negatively with C scale scores, with MD (-
0.409, p < .05) and MAD (-0.454, p < .05) reaching significance. Lastly, P and C scale 
sores were all significantly positively correlated (p < .01) (Kennedy et al., 1998).

Results from Kennedy et al. (1998) indicated that individuals diagnosed with 
various types of anxiety and depressive disorders were more likely to attribute life events 
as controlled externally, or more specifically controlled by powerful others or by chance. 
These findings lend support to Rotter’s theory that individuals who display an external 
locus of control would be less adjusted than those who display an internal locus of 
control.
Further support for the nature and strength of the relationship between locus of control and depression was indicated in a meta-analysis conducted by Bernassi, Sweeney, and Dufour (1988). Four hundred twenty-seven studies from 1966, the year Rotter introduced the construct of locus of control (Rotter, 1966) to 1986 were examined for content relating to the relationship between locus of control and depression. Out of the 427 articles reviewed, 97 met the criteria to be used in the study. Studies were excluded if the subjects participated in any therapy programs that altered their locus of control or depression, had no information about the relationship between locus of control and depression, the locus of control scales used provided subscales for positive and negative events, or in which locus of control for a single task outcome was assessed. The results indicated a mean effect size of .31, which offers strong support for the hypothesis that greater externality is associated with greater depression (Bernassi et al., 1988).

A review of the current literature has shown that depressed individuals who engage in a ruminative response increase both the duration of their depression, as well as the severity of it (Nolen-Hoeksema et al., 1993, Nolen-Hoeksema et al., 1991). When presented with a distraction from their self-focus, subjects’ negative mood is lessened (Lyubomirsky et al., 1993; Morrow et al., 1990; Nolen-Hoeksema et al., 1993). These findings indicate a positive correlation between ruminative response and depressive affect.

Research has also shown that external locus of control is related to depression. Studies have indicated that depressed individuals show more externality than those who are not suffering from negative affective states (Bernassi et al., 1988; Kennedy et al., 1998; Natale, 1978, Rotter, 1966). They perceive themselves as lacking control in their
lives and therefore unable to correct their current mood, much like individuals who engage in rumination (Lyubomirsky et al., 1993).

Given the connection between rumination and depression, as well as external locus of control and depression, it stands to reason that there should be a relationship between locus of control and ruminative thought. However, no previous research has examined the possibility of such a relationship. Therefore, the purpose of this study is to test whether or not the constructs of locus of control and ruminative response have any relationship to one another. Specifically it is hypothesized that individuals who engage in high levels of ruminative thought are more likely to have an external locus of control, while those who do not ruminate would possess an internal locus of control.
Chapter 2: Method

Participants

The participants consisted of fifty-four undergraduate students enrolled in various psychology courses. The sample contained 43 women (79.6%) and 11 men (20.4%). Age ranged from 19 to 44 years old, with a mean age of 22 years old. 85.2% were Caucasian, 5.6% were African American, 5.6% were Hispanic, and 3.7% chose the category of “Other”. The majority of the participants were undergraduate students with 91 or more credits (55.6%), followed by undergraduate students with 61 – 90 credits (37%), and finally undergraduate students with 31 – 60 credits (7.4%). Participants not currently working consisted of 29.6%, while 70.4% were employed (7.4% full-time and 63% part-time). Lastly, 31.5% of participants resided on campus while 68.5 lived off campus. The participants were not representative of a clinical population and possessed adequate functioning to be enrolled and pursuing college degrees.

Measures

*The Response Style Questionnaire* (RSQ; Nolen-Hoeksema & Morrow, 1991). The RSQ is a 71-item self-report questionnaire used to assess how subjects tend to respond to their own negative symptoms and emotions. The Ruminative Response subscale (RRS) was used in the current study. This scale consists of 22 items describing responses to depression that focus on self, symptoms, and the possible consequences of those symptoms. Each item is rated a 4-point Likert-type scale with 1 indicating “never” to 4 indicating “always.” Examples of items include “I think about how sad I feel,” “I think about my feelings of fatigue and achiness,” and “I think about a recent situation,
wishing it had gone better.” Higher scores indicate greater levels of engagement in ruminative thought.

Rotter Locus of Control Scale (LOC; Rotter, 1966). Rotter’s Locus of control Scale (LOC) consists of 29 forced choice questions, 6 of which are filler items. Respondants choose between two statements pertaining to various areas of life, such as “Many of the unhappy things in people's lives are partly due to bad luck” Or “People's misfortunes result from the mistakes they make.” Each response indicates either internality or externality. Select items are give a score of 1 and summed to give a final total score. Higher scores indicate greater levels of external locus of control.

Beck Depression Inventory II (BDI-II; Beck & Steer, 1987). The Beck Depression Inventory II (BDI-II) is a 21-item instrument designed to assess the severity of depression in adolescent and adult populations. Each item assesses a different area of life such as “Sadness,” “Loss of Pleasure,” “Aggravation,” and “Tiredness and Fatigue.” Each item consists of a group of 4 statements rated from 0-3. The BDI is scored by summing the ratings given by the examinee for each of the 21 items. Higher scores indicate greater levels of depression.

In addition to the measures mentioned above, a demographic questionnaire developed by the researchers was administered. Data obtained using this questionnaire will include subjects’ age, gender, ethnicity, matriculation status, employment status, and on or off campus residency.

Procedure

Data was collected in a group format from three different undergraduate psychology courses. The measures were completed individually by the participants prior
to the beginning of class. Before participating in the study, the requirements of the study were explained to the participants both orally and in writing, and informed consent was obtained. Once consent to participate was obtained subjects were be given a packet containing the materials described above. After completion of the packet subjects were given a debriefing statement that included the purpose of the study and the contact information for researchers. The informed consent form was immediately placed in a separate sealed envelop and kept separate from the questionnaire packets to ensure confidentiality. The entire study took approximately 15 minutes.
Chapter 3: Results

All of the 54 response questionnaires given to participants were used in the analysis of data. The initial analysis explored the demographic characteristics of the samples. These results have already been present above. Results for the RRS were examined next. The mean score for this instrument was 45.5370, SD = 9.33994. Scores ranged from 31 to 73. The RRS score range is from 22 to 88, thus these results indicate that the sample as a whole was in the normal range on the instrument. This range has been shown previously where RRS scores ranged from 22 to 76 in a sample of 1,317 subjects and 22 to 75 from 1,132 of those same subjects one year later (Nolen-Hoeksema, 2000). Scores on the Rotter LOC scale of 4 to 11 indicate internal locus of control, while 12 to 23 indicate external locus of control. The LOC scores in this study ranged from 6 to 20 with a mean of 12.8491, SD = 3.33049. These results indicated very mild externality (Rotter, 1966). Scores for the BDI ranged from 0 to 37 with a mean of 12.5926, SD = 8.82646. This mean falls into the minimal depression range of the BDI.

A Pearson's r was computed to determine the relationship between the RSS and the LOC scales. These results indicated no significant correlation between the two (r = .163, p < .242). A Pearson's r indicated no significant correlation between the BDI and the LOC scales (r = .116, p < .407). However, a positive correlation between RRS and BDI scores was indicated (r = .658, p < .01). T-tests between gender and RRS scores, gender and LOC scores, and gender and BDI scores did not approach significance.
Chapter 4: Discussion

Analysis of the results indicated that the hypothesis of a positive correlation between external locus of control and ruminative thought was not supported. In fact, no relationship was indicated between locus of control and depression or locus of control and rumination. The only result to reach significance was that of rumination and depression, which supports previous research indicating a positive correlation between the two (Fresco et al., 2002; Lyubomirsky et al., 1998, 1993; Morrow et al., 1990; Muris et al., 2004; Nolen-Hoeksema, 1987, 1991, 1998, 2000; Nolen-Hoeksema et al., 1991, 1993; Segerstrom et al., 2000).

The absence of significant results can be attributed to a number of factors pertaining to the current study. First among these is the size of the sample. Previous studies examining rumination have used sample sizes anywhere from 40 (Lyubomirsky et al., 1998) to 1317 (Nolen-Hoeksema, 2000) subjects. Studies on locus of control have used samples of 45 (Natale, 1978) to 193 (Kennedy et al., 1998). Due to the sample size of 54 subjects, there was not enough power to find subtle differences. Also, these samples have included a diverse composition, including men, women, children, inpatient, outpatient, student, and community based populations. The sample in the current study consisted primarily of Caucasian females currently enrolled in a university pursuing degrees and thus most likely high functioning. The homogeneity of the sample could likely account for the significant findings in the study, due to the fact that females have been shown to be more susceptible to depression and rumination (Nolen-Hoeksema, 1987). However, the lack of diversity in the sample, as compared to previous studies, could have affected the results of the LOC scale.
The measures themselves could have also added to the lack of significant findings. The sample on a whole had low BDI scores, averaging a score of 13 out of a possible 63. As the hypothesis was that depression would be a mediating factor between rumination and locus of control, this low average could have affected the possible relationship between RRS scores and LOC scores.

Lastly, a lack of significant findings in terms of locus of control is Rotter’s measure itself. Lamont (1972) found that “endorsement of I-E test items may be due to the interaction between item mood-level and degree of depression in the testee, rather than to I-E content” (p. 190). As the mean BDI score indicates, participants were on average minimally depressed (m = 12.59), therefore would not show a great deal of externality. Perhaps using Levenson’s Locus of Control Scale (Kennedy et al., 1998) would have provided a more detailed representation of external versus internal locus of control.

It is also important to note that the goal of the present study was not to show locus of control as a meaningful predictor of rumination, but rather to investigate the potential connection between locus of control and rumination, specifically through their relationship with depression. Perhaps focusing further research on more specific shared symptoms of depression, such as hopelessness or helplessness, would yield more significant findings in terms of the potential relationship between rumination and locus of control.

Regardless of the outcome of this pilot study, the literature has indicated a connection between both rumination and locus of control to depression. Future research examining this relationship should use a larger sample size, mirroring those used in
previous studies. Another factor that should be modified in future studies is the homogeneity of the sample. More diversity, such as an even distribution of male and female subjects, as well as a variety of different populations such as inpatients would provide a more thorough representation of the connection between rumination, locus of control, and depression. Finally, using and/or developing more precise instruments to measure these constructs would aid in the examination of their relation to one another. With these factors in mind, future research might better confirm or deny the possibility of a relationship between locus of control and ruminative thought.


