

# Further Investigations of Brooding and Pondering: Temporal stability and prospective vulnerability for depression symptoms in the face of negative life events

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## Introduction

Response Style Theory (Nolen-Hoeksema, 1991) proposes that a ruminative response style to depressive symptoms prolongs and can exacerbate depressed mood. Depressive rumination has been operationalized as a passive process, by which individuals persevere on their symptoms of distress without actively engaging in problem-solving behaviors to eliminate the distress. Depressive rumination has been linked to the onset of depression within non-depressed individuals (Just & Alloy, 1997; Spasojevic & Alloy, 2001), prolonged depressive episodes and symptoms (Kuehner & Weber, 1999), increased chronicity of depressive symptoms (Nolen-Hoeksema, 2000), and an increased risk for depression among women (Nolen-Hoeksema & Jackson, 2001). Despite these important findings for the phenomenology of depression, the current measures of rumination have yielded mixed support and results.

One of the most frequently used measures of rumination, the Ruminative Responses Scale (RRS) of the Response Styles Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991), has been criticized for its psychometric properties. First, the measure has shown relatively low test-retest reliability (Just & Alloy, 1997; Kasch et al., 2001). This finding contradicts theory that posits rumination as a stable construct that affects how individuals interact with their world. The second major criticism of the RRS is confounded by depressive content, and that many of the items contain content similar to measures of depressed mood—this making it difficult to differentiate the measurement of rumination with the measurement of depression. Recent refinement in the measurement of depressive rumination has arrived at a five item factor referred to as brooding (Treyner et al., 2003) that does not possess the depression content yet retains a strong relationship to depression, anxiety, worry, and deficits in emotion regulation. The present study is being conducted to evaluate whether brooding represents a temporally stable characteristic and also whether brooding predicts risk for depressive symptoms in the face of negative life events. The current study reports findings on sixty-six participants who were randomly selected from a full distribution of scores on the Ruminative Responses Scale of the Response Style Questionnaire (RSQ-R; Nolen-Hoeksema and Morrow, 1991; Treyner, Gonzalez and Nolen-Hoeksema, 2003), which was administered during a larger screening session. Individuals were then contacted via phone to set up two testing sessions with the second session occurring 4-6 weeks after the initial session.

## Hypotheses

> Given that depression content has been eliminated from the measurement of depressive rumination in the brooding factor and that depression is, by nature, an episodic disorder, the brooding factor will demonstrate stability over time.

> Brooding scores at the Time 1 assessment will moderate the relationship between negative life events and Time 2 depression symptoms after controlling for Time 1 depression symptoms. The form of this interaction will be that interaction of high Time 1 brooding and high Time 2 negative life events will be associated with the highest levels of Time 2 depression symptoms.

## Methodology

### Participants

• Sixty-six participants were identified from among approximately 1000 undergraduates who participated in a mass testing session to gain extra credit for an introductory to psychology course. Individuals were randomly selected from a full distribution of scores on the Ruminative subscale of the Response Style Questionnaire (RSQ-R; Nolen-Hoeksema and Morrow, 1991; Treyner, Gonzalez and Nolen-Hoeksema, 2003). The only inclusion criterion was that each individual was at least 18 years old. Individuals were then contacted via phone to set up two testing sessions with the second session occurring 4-6 weeks after the initial session. Participants who completed both sessions were given 3 credits towards their introductory psychology course.

### Data Collection

#### Phase 1

After consent and introduction, participants were given a packet of questionnaires that included the RSQ, BDI, MASQ-II, and LES. Upon completion, participants were asked to set up another session 4-6 weeks after Phase 1 to complete the second phase of the experiment.

#### Phase 2

During this phase, individuals were again asked to complete the RSQ, BDI-II, LES, and the MASQ.

## Measures

**Rumination subscale of the Response Style Questionnaire (RRS)** contains two distinct factors of Brooding and Pondering, and was developed to parse out depressive content from the original Ruminative subscale that typically shows a heterogeneous factor structure (Nolen-Hoeksema and Morrow, 1991; Treyner, Gonzalez and Nolen-Hoeksema, 2003; Fresco et al., 2002).

**The Beck Depression Inventory (BDI-II)** is a 21-item measure assesses the presence and severity of depressive symptoms (Beck, Steer, and Brown, 1996). Meta-analysis of BDI studies has demonstrated good internal consistency ( $\alpha = .94$ ) and moderate test-retest reliability ( $r = .69$ ; Yin & Fan, 2000).

**Life Experiences Survey (LES)** is a 57-item self-report measure that was designed to eliminate certain shortcomings of previous life stress measures and allows for separate assessment of positive and negative life experiences as well as individualized ratings of the impact of events. (Sarason, Johnson, & Siegel, 1978).

## RESULTS

### Examination of Stability

> Hypothesis 1 posited that the revised Brooding scale of the RRS will result in adequate stability over time. These analyses were modeled after Bagby et al.'s (2004) study, which examined both absolute and relative stability over time. Absolute stability examines mean differences across time and is assessed using a repeated measures analysis. Relative stability assesses the predictability of individual differences over time and test-retest correlations assess this.

> Data from these analyses provided mixed results. First, the test-retest correlations showed relative stability over time with  $r = .69, p < .01$ . However, the repeated measures analysis of absolute stability resulted in significant change from the first session to the second,  $F(1, 66) = 15.93, p < .05$ .

### Regression Analysis

> Hypothesis 2 posited that Time 1 brooding would moderate the relationship between intervening negative life events and Time 2 depression. This hypothesis was tested using hierarchical multiple regression analyses. With Time 2 depression scores (BDI-II) as the dependent measures, the respective Time 1 depression score were entered first as a covariate at Step 1. Time 1 brooding and Time 2 LES were entered as main effects at Step 2. Finally, the interaction of Time 1 brooding and Time 2 LES was entered at Step 3. If any of the interactions are significant, the form of the interaction was evaluated using the Cohen and Cohen (1983) analysis of partial variance.

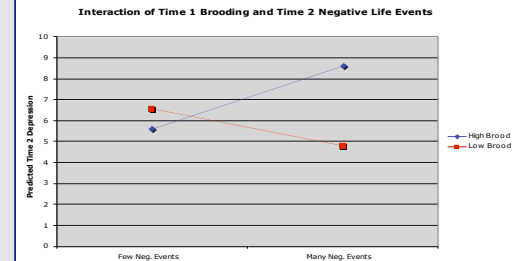
> The hierarchical multiple regression analysis revealed a significant brooding by number of negative life events interaction with an effect size approaching Cohen's (1988) convention of a medium effect ( $f^2 = .09$ ).

## Regression Table

	Predictor	B	pr	F	df	p	Step's R <sup>2</sup>
Step 1	BDI1	.62	.74	59.09	1, 50	<.001	.54
Step 2	Brood1	.58	.15	1.12	1, 49	ns	.55
Step 3	LES2	.25	.15	1.05	1, 48	ns	.56
Step 4	Brood1*LES2	.18	.29	4.44	1, 47	.04	.60

Note. BDI1 = Time 1 Beck Depression Inventory; Brood1 = Time 1 RRS Brooding score; LES2 = Time 2 Number of LES negative events

## Analysis of Partial Variance



## Conclusions

> Findings from the current study offer additional support for the brooding factor identified by Treyner et al. (2003), but must be interpreted with some caution.

- First, this sample consists of generally high functioning college students, thus, replication in community and clinical settings is needed for greater generalizability.
- Secondly, attrition from the initial testing session to the 4-6 week follow-up session resulted in a small sample size and a threat to external validity.