THE ROLE OF REJECTION SENSITIVITY IN POSTTRAUMATIC STRESS DISORDER; A PILOT INVESTIGATION

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THE ROLE OF REJECTION SENSITIVITY IN
POSTTRAUMATIC STRESS DISORDER:
A PILOT INVESTIGATION

A Thesis
Submitted to
The City College of New York

In Partial Fulfillment of
the Requirements for the Degree of
Masters of Arts in General Psychology

by
Grace Kiriakos
October, 2012

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The aim of this secondary data analysis is to explore the hypothetical relationship between rejection sensitivity (RS) level and PTSD symptom severity. We predicted that RS would be positively related to PTSD symptom severity. Pilot data from 39 individuals were analyzed to explore bivariate correlations on indices of RS, PTSD symptom severity, depression symptoms, and Borderline Personality Disorder (BPD) feature endorsement. RS was positively related to PTSD symptom severity at the trend level. Participants were then divided into a group of trauma-exposed individuals and control individuals. Independent samples $t$-tests were conducted to evaluate mean differences between groups in terms of RS, PTSD symptom severity, depression, and BPD. Mean group differences were significant for PTSD symptom severity, depression symptoms, and BPD feature endorsement, but not for RS. A hierarchical regression analysis was conducted to confirm or disconfirm the initial trend-level strength of correlation between RS and PTSD. RS did not significantly account for any of the variance in PTSD symptom severity. A mediation model for future study is proposed and discussed.
ACKNOWLEDGMENTS

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This Masters thesis is dedicated to all peers, professors, and participants who took part in the Pilot Social Scan PTSD project.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>vii</td>
</tr>
</tbody>
</table>

## CHAPTER

1. REVIEW OF LITERATURE       | 1
2. METHODS                   | 20
3. RESULTS                   | 28
4. DISCUSSION                | 34

REFERENCES CITED             | 42

## APPENDICES

A. TABLES                     | 51
B. FIGURES                    | 58
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. Participant Characteristics</td>
<td>52</td>
</tr>
<tr>
<td>A2. Scale Summaries</td>
<td>53</td>
</tr>
<tr>
<td>A3. Correlations</td>
<td>54</td>
</tr>
<tr>
<td>A4. Group Demographics</td>
<td>55</td>
</tr>
<tr>
<td>A5. Comparison of Group Means</td>
<td>56</td>
</tr>
<tr>
<td>A6. Hierarchical Linear Regression</td>
<td>57</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The Rejection Sensitivity Model</td>
<td>59</td>
</tr>
<tr>
<td>2.</td>
<td>Sampling and Flow of Participants in Pilot Project</td>
<td>60</td>
</tr>
<tr>
<td>3.</td>
<td>List of Measures Administered During Pilot Project</td>
<td>61</td>
</tr>
<tr>
<td>4.</td>
<td>Scatterplots</td>
<td>62</td>
</tr>
<tr>
<td>5.</td>
<td>Bar Graphs</td>
<td>68</td>
</tr>
<tr>
<td>6.</td>
<td>Proposed Mediation Model</td>
<td>71</td>
</tr>
</tbody>
</table>
The Need to Belong.

Pioneers of psychological theory -- Freud (1930), Maslow (1968), and, Bowlby (1978) -- have independently suggested that all human beings share an intrinsic motivation to cultivate and maintain social bonds with their fellow human beings. While this belief in the social nature of humanity is long-standing and pervasive across time and culture, Baumeister and Leary (1995) were the first to establish a firm empirical basis for this widely-shared assertion -- that the need to belong is a fundamental human motivation. Setting out to validate their “belongingness hypothesis,” Baumeister and Leary conducted a review of the literature and concluded that the need to belong is a psychological adaptation that evolved to aid in the survival and reproduction of our species. That is, natural selection pressures lead to the development of small group formations, such that an individual’s social connection to a group significantly increased his/her chances of survival.

Further support for the belongingness hypothesis abounds in the attachment literature. For example, researchers theorize that ancestral human beings who were able to form attachment bonds with conspecifics were more likely to survive and reproduce, and that the maintenance of long-term attachments between mating partners significantly increased chances that their offspring would survive to the age of reproductive maturity (Hazan, & Shaver, 1987).
This last point is important for two reasons. One, humans are built for long-lasting relationships with proximal others. Moreover, deprivation of social contact is a known cause of affective distress and vulnerability to psychopathology (Baumeister & Leary, 1995). And two, internal affective mechanisms -- such as opioid production for example -- are psychobiological adaptations that were naturally selected for in our evolutionary history, because such adaptations motivated and facilitated attachment bonds among conspecifics.

This evolutionary perspective is further supported by recent neuroimaging studies. In one fMRI experiment, researchers demonstrated that physical pain and social rejection share the same neurocognitive circuits in the dorsal anterior cingulate cortex (Eisenberger, Jarcho, Lieberman, & Naliboff, 2006). Baseline sensitivity to physical pain predicted sensitivity to social rejection. Conversely, Eisenberger et al. demonstrated that sensitivity to social pain (operationalized as social exclusion in a cyberball task) heightened sensitivity to physical pain. These findings further corroborate the belongingness hypothesis, suggesting that physical pain and social pain evolved to function as sources of information that guide human survival needs.

While Baumeister and Leary’s (1995) review set up a clear basis for the existence of a human, universal need to belong, it is not altogether clear what happens when this need is not met. There appears to be a continuum of physical and psychological reactions to social rejection. Individual differences in the ways that human beings react to perceived rejection give way to a range of adaptive and maladaptive coping mechanisms. Downey and Feldman (1996) termed this cognitive-affective processing variable, rejection sensitivity. An exploration of the development of this construct, its empirical
basis, and its relation to specific psychopathologies is explored in this study.

**Origins of Rejection Sensitivity: The Rejection Sensitivity Model.**

Rejection sensitivity is defined as the “cognitive-affective processing disposition to anxiously expect, readily perceive, and overreact to rejection,” (Downey & Feldman, 1996). The rejection sensitivity (RS) model provides a social-cognitive explanatory framework for understanding how early childhood rejection experiences contribute to subsequent impairments in interpersonal functioning. The theoretical underpinnings of this definition are directly tied to Bowlby’s (1980) theory of attachment. That is, early childhood experiences with primary caregivers shape the internal working models that guide an individual’s relational expectations and attendant action tendencies for interaction with subsequent social partners. Downey and colleagues postulate that, “When parents tend to meet children’s expressed needs with rejection, children become sensitive to rejection,” (Downey & Feldman, 1996; p. 1328). Thus, early attachment failures with a caregiver potentiate insecure internal working models in children.

The sequence of social-cognitive-affective components comprising the RS cycle (see Figure A1) starts with these early attachment failures. That is, physically abusive, emotionally abusive, neglectful, and/or overly critical parenting sets the stage for a high rejection sensitivity level (Downey, Lebolt, Rincon, & Freitas, 1998). Downey and Feldman (1996) theorize that a high rejection sensitivity level is maladaptive at both the personal and interpersonal level, stating, “RS affects individuals’ perception of their social reality by means of expectations, perceptual biases, and encoding strategies in activated interpersonal contexts,” (p. 2). High RS levels precipitate defensive response
typologies that can be expressed as anger, depression, jealousy, or anxiety, and typically reflect one’s early attachment style, resulting in maladaptive behavioral reactions (i.e. hostility, withdrawal, or ingratiation behaviors). For instance, in a large survey study of college students, Feldman and Downey (1994) found support for the theoretical link connecting RS, attachment style, and early experiences of parental rejection. Relative to controls, participants exposed to family violence and discord in childhood, were more likely to be insecurely attached as adults. Rejection sensitivity covaried systematically with attachment style, such that insecurely attached college students had significantly higher scores on a rejection sensitivity questionnaire, relative to securely attached participants.

Rejection from parents and rejection from peers are two primary sources of early rejection experiences (Romero-Canyas & Downey, 2005). The consequences for internalized expectancies of children whose expressed needs are met with rejection, result in a maladaptive psychological legacy, casting deleterious effects on subsequent social interactions. Specifically, the child learns to associate their need for support with the probability of rejection (see link 1 of Figure A1). The pain of these early childhood associations causes the child to place a high premium on avoiding rejection, contributing to the child’s development of hypervigilance for detecting rejection cues. This hypervigilance is a double-edged sword. Hypervigilance for rejection cues, a component mechanism of the defensive motivational system, originates to serve a protective function. The unfortunate consequence of such an attention bias (hypervigilance toward threat) is that it cognitively primes one to readily perceive and construe rejection in the ambiguous behaviors of others (link 2). This construal bias has affective consequences, such that the
perception of rejection (real or imagined) leads an individual to feel hurt, angry, and/or jealous (link 3).

Emotional reactions to perceived rejection potentiate behavioral overreactions that undermine actual interpersonal relationships (link 4). For example, maladaptive behavioral overreactions have been found to manifest as hostility or withdrawal of support from a romantic partner in women, and increased aggression toward a romantic partner in men (Downey, Freitas, Michaelis, & Khouri, 1998). In another example, children who angrily expected rejection at Time 1 (beginning of 6th-grade school year) were significantly more likely to react to perceived social slights with hostile aggression or ingratiating behaviors at Time 2, end of the school year (Downey, Bonica, London, & Paltin, 2007). Conversely, anxious expectations of rejection at Time 1 (the outset of a school year) predicted social withdrawal at Time 2.

Because defensive manifestations potentiate actual rejection from relationship partners, the link between rejection experiences and expectations of rejection is reinforced, further perpetuating the RS cycle (Ayduk, et al., 2000; Levy, Ayduk, & Downey, 2002). Thus, early rejection experiences constitute the psychological antecedent of a high rejection sensitivity level, leading one to anxiously (or angrily) expect rejection from significant others. In this way, anxious expectations of rejection trigger a self-fulfilling prophecy (Downey, Freitas, Michaelis, & Khouri, 1998).

Rejection Sensitivity: Definitional Issues.

Throughout the last decade of published articles on rejection sensitivity, Downey and colleagues define and discuss rejection sensitivity (RS) and high rejection sensitivity
(HRS) interchangeably. This is problematic, as the definition actually describes the cognitive-affective-behavioral pattern characteristic of a high rejection sensitivity level. More importantly, the definition fails to explicitly describe the cognitive-affective-behavioral patterns characteristic of an individual low in RS. The need to belong and the desire to avoid rejection are universal motivational systems. If every human being comes into this world equipped with sensitivity to rejection (high or low), they fall somewhere on the RS continuum. That said, an effort will be made to qualify RS as high or low, each time it is mentioned throughout the remainder of this manuscript.

There is considerable variation in the extent to which individuals are sensitive to rejection-specific social information. Rejection sensitivity itself is not inherently maladaptive. Rather, it is the degree to which one anxiously expects, readily perceives, and overreacts to perceived rejection that determines whether this information-processing mechanism is adaptive or maladaptive for the individual. To summarize, RS is only maladaptive to the extent that it prohibits an individual from attending to other cues in their social environment, (cues that may actually convey a message of social acceptance).

Motivational Priming & Lang’s Model of Human Emotions.

Building upon the ideas of William James and Charles Darwin, Lang (1995) defines emotions as action dispositions that potentiate a repertoire of “innate, action-specific behaviors,” (p. 382). Humans are equipped to register their emotions along two, distinct continua: (1) appetitive or aversive (valence), and (2) degree of emotional intensity (arousal). Valence determines which system is activated, and arousal determines the intensity of system activation. Emotions that activate the appetitive
system (e.g. excitement) prototypically drive approach behaviors (i.e. consummatory), whereas emotions that trigger the aversive system (e.g. fear) prototypically potentiate avoidance behaviors (e.g. flight).

According to this model, encounters with aversive-congruent, or threatening, stimuli trigger the activation of the defensive motivational system (DMS). The DMS system neurobiologically prepares the individual to carry out automatic behaviors to threat-congruent stimuli encountered in the external environment. In other words, the DMS serves to protect the individual from biological and social threats, (the former being an instinctual cue and the latter being a learned cue). Lang asserts that defensive reactions in humans typically take on one of two forms, the first being defensive action (i.e. fight or flight) and the second form being defensive immobility (i.e. freezing).

The key findings emerging from Lang’s (1995) startle probe study that are of most relevance to the present study concern motivational priming, as evidenced in startle probe potentiation. Conceptually, Lang hypothesized the following two corollary hypotheses: One, defensive reflexes (such as the startle reflex) are greater in amplitude when the “organism is aversively motivated,” meaning, the organism has already encountered threat, and as a result is experiencing negative affect. And two, defensive reflexes are smaller in amplitude when the organism is appetitively motivated, meaning, the organism has encountered positive stimuli and is in a concomitant state of affective positivity.

Eyeblink amplitude in humans is a reliable autonomic indicator of defensive motivational system activation (Lang, 1995). Lang demonstrated these corollary principles in a startle probe paradigm, finding that eyeblink amplitude in response to a
startle probe was greater in individuals who were aversively motivated. That is, individuals who had already encountered aversive stimuli, and who were in a preexisting negative mood state as a result of encountering said stimuli, were primed to perceive concurrent threatening stimuli in their external environment. Conversely, individuals who were appetitively motivated, showed a decrease in eyeblink amplitude, in response to the startle probe, relative to individuals who were aversively motivated. Stated simply, affective valence of one’s current mood state cognitively primes the individual to perceive cues that are consistent with their extant mood state.

Downey and colleagues built upon Lang’s model, to further understand the underlying mechanisms constituting the RS dynamic. Specifically, Downey et al. (2004) have shown that the RS dynamic is selectively triggered in motivationally-relevant situations (i.e. interpersonal contexts that afford the possibility of rejection). For example, relative to individuals low in RS, individuals high in RS evidenced heightened startle blink magnitude in response to an unexpected burst of white noise when viewing a rejection-relevant painting, but not while viewing a painting depicting rejection-irrelevant negativity. This finding provides further support for the idea that the RS dynamic serves a specific component function of the DMS, and that activation of the RS dynamic is contingent upon the rejection-relevance of encountered stimuli.

_Distinguishing Attachment Style from RS._

In their first published paper on RS, Downey and Feldman (1996) highlighted a research gap, asserting that, “Although attachment researchers view working models as guiding current information processing, they have paid little attention to directly
investigating how early rejection experiences shape the moment-to-moment cognitive and affective processes that generate behavior in specific social situations,” (p. 1328). If RS is conceptualized as a distinct information-processing variable pertaining to the processing of social information in situations that afford the possibility of rejection, then we can conceive of attachment as an information-processing variable that is more global in nature. Attachment styles reflect individual differences in internal working models of an individual’s sense of relatedness, or “lasting psychological connectedness between human beings,” (Bowlby, 1978). While attachment style can be reflected in social situations, it can also be reflected in situations that do not directly involve others (i.e. securely-attached individuals can independently explore their external surroundings, without need of company or reassurance).

Drawing upon Lang’s model of human motivation, it is clear that human beings possess psychological adaptations that were evolutionarily designed to facilitate the development of close social ties, as well as adaptations that were designed to facilitate the detection of potential social threats. RS is a dispositional information-processing dynamic that is triggered by encounters with rejection-congruent cues in the social environment. In other words, if RS is a component function of the DMS, then we know it is aversively motivated.

Attachment, on the other hand, cannot be easily relegated to one of Lang’s two opponent motivational systems, as the affects accompanying early childhood experiences with a caregiver are complex, meaning, they may be appetitively or aversively motivated. Lang proffers, “In this case, a conflict theory is assumed in which the behavioral resolution is determined by the relative strength (activation level) of each motive state,”
The complexity of attachment experiences is further indicated by the existence of a typology of four attachment styles, three of which have maladaptive consequences, and only one of which is desirable or healthy (Ainsworth, Blehar, Waters, & Wall, 1978).

Rejection Sensitivity and Psychopathology: Extant Research

To date, the majority of research examining rejection sensitivity has focused on the domains of interpersonal functioning and attention, respectively. For example, in a visual probe experiment investigating the relationship between RS and a vigilant-avoidant pattern of attention deployment, Berenson et al. (2009) found the following: Individuals high in RS exhibited attentional avoidance to supraliminally presented threatening faces, but not to neutral, or pleasant faces; high RS level was associated with endorsement of BPD features; additionally, high RS individuals did not have higher FNE (fear of negative emotion) scores, relative to individuals low in RS. Together, these findings suggest that RS is uniquely endemic to interpersonal processing, and is not better accounted for by a related, yet broader construct such as social anxiety, for example.

In relation to specific psychopathologies, rejection sensitivity has been examined in connection with depression and Borderline Personality Disorder (Mellin, 2008; Berenson et al., 2009). There is a paucity of research concerning the role RS may play in identifying psychological vulnerability to other psychopathologies. A brief review follows of the evidence linking RS to depression and BPD.

Depression and RS. Several studies have explored the role RS may play in vulnerability to depression onset. In a longitudinal study exploring the relationship
between RS and depression onset in a sample of incoming first-year undergraduate students ($N = 223$ females), Ayduk, Downey, and Kim (2001) found that high rejection sensitivity was strongly predictive of depression onset, following a partner-initiated break-up. Moreover, relative to individuals low in RS, being high in RS predicted relationship breakup with a romantic partner. Similarly, in a sample of undergraduate women with a history of childhood sexual abuse, Luterek et al. (2004) found that RS predicted depression symptom level. Interestingly, childhood sexual abuse alone did not predict depression, implying that RS may mediate the relationship between early sexual abuse and depression onset. In one college sample that included men ($N = 294$), a simple regression analysis on depression showed that RS significantly predicted depression symptom level, $\beta = .33$, $t(292) = 6.06$, $p < .01$, and accounted for 11% of the variance in depression scores, $R^2 = .11$, $F(1, 292) = 36.74$, $p < .01$ (Mellin, 2008). In a prospective study, Shalev et al. (1998) found that 45% of individuals with current PTSD had a co-occuring diagnosis of depression.

Borderline Personality Disorder and RS. Impairments in interpersonal functioning and emotional regulation in borderline patients led researchers to examine the role of rejection sensitivity in BPD. In a clinical sample of 22 borderline patients, attention impairments (measured by the Attention Network Task) and executive control (measured by the Wisconsin Card Sorting Test) were found to be meaningful endophenotypic markers of BPD symptomology (Fertuck, Lenzenweger, & Clarkin, 2005). Berenson and colleagues (2009) found that a vigilant-avoidant pattern of attention deployment in response to threatening faces predicted high rejection sensitivity and a relative increase in endorsement of BPD features.
There is some overlap in etiological risk factors underlying BPD and PTSD. Namely, sexual assault and childhood sexual abuse are alarmingly common antecedents to BPD, and to a lesser extent PTSD. For example, in a clinical sample of borderlines, 70% of individuals with BPD reported a history of childhood sexual abuse (Tull, 2012). Similarly, Gavranidou and Rosner (2003) found that women (27%) were more likely than men (8%) to have experienced childhood sexual abuse; early childhood sexual abuse also predicted exposure to rape and sexual abuse in adult women. Yasan et al. (2009) found domestic violence to be a significant predictor of PTSD onset in women. While the latter two findings are limited to women, collectively, they support the claim that childhood sexual abuse and adult sexual abuse are risk factors for vulnerability to BPD and PTSD.

Epidemiological studies have also highlighted a gender disparity in risk for both BPD and PTSD. For example, the DSM-IV-TR states that 75% of BPD diagnoses occur in women. Kessler (1995) observed that the risk for PTSD onset following exposure to a traumatic stressor is twice as high for women, relative to men. These shared risk factors - childhood sexual abuse and adult sexual abuse -- may help to explain the comorbidity rate. In one clinical sample of borderline patients \((N = 376)\), 55.9% of BPD patients met criteria for PTSD (Zanarini et al., 1998). In another sample, 75% of combat veterans seeking treatment for PTSD had a BPD diagnosis (Southwick, Yehuda, & Giller, 1993).

BPD shares some symptom overlap with PTSD, particularly around areas of psychosocial functioning, emotional regulation, and attentional control. For example, Foa et al. (1991) documented an attention-bias toward threat in rape victims with PTSD \((n = 15)\), theorizing that victims of PTSD will be motivationally primed to selectively
attend to stimuli that is congruent with the victim’s source of trauma, relative to non-PTSD rape victims \( (n = 16) \) and controls \( (n = 13) \). In this case, rape-related words were used in an Emotional Stroop Task that also contained neutral words, nonwords, and general threat words. Response latencies in non-PTSD rape victims, and in control participants did not vary by word type.

In a longitudinal study investigating links between BPD feature endorsement and life adjustment outcomes two years later, Bagge et al. (2004) found that extent of BPD feature endorsement predicted poor academic achievement (operationalized via GPA, and semesters on academic probation) and social maladjustment (operationalized via SAS semi-structured clinical interview) in a sample of young adults \( (N = 351) \). In other words, the authors provided evidence that presence of BPD features is predictive of poor academic achievement and social adjustment 2 years later. The findings from this regression analysis present a strong rationale for studying specific psychopathological features endorsed in non-clinical samples. That is, this is the first study to examine the specificity of BPD features in predicting outcomes relevant to young adults (i.e. according to Bagge et al., the predicted negative outcomes are not simply the effects of “general psychopathology”). The authors suggested affective instability and impulsivity - - two intractable symptom clusters that characterize the BPD disorder, and to some extent, PTSD -- may aptly account for the impairments in relating well to others in societal settings.

In the most comprehensive national survey study on PTSD to date \( (N = 8,098) \), Kessler (1994) found that 7.8% of respondents had a lifetime occurrence of PTSD; meaning, irrespective of type of trauma exposure, PTSD is fairly common in the general
population. It should be noted that prevalence rates vary widely across different populations. For example, among female survivors of intimate partner violence, PTSD rates have been found to range from 33% to 84% (Hien & Ruglass, 2009).

*PTSD and RS.* To date, there are no investigations that have directly assessed RS in relation to PTSD. The established co-morbidity rates and symptom overlaps among BPD, depression, and PTSD -- in addition to the empirical findings linking RS to BPD and depression (e.g. Zanarini, et al., 1998) -- prompted the current study. However, the description of the RS dynamic bears much semblance to the criteria defining PTSD in the DSM-IV-TR. Before comparing the two constructs, a brief description of PTSD criteria follows.

In terms of clinical presentation, PTSD is characterized by three symptom clusters: Reexperiencing (intrusive and recurrent thoughts, flashbacks, and nightmares), avoidance (persistent avoidance of feelings, people, places, and situations that are reminiscent of traumatic stressor), and hyperarousal (hypervigilance for threat cues, sleep disturbances, attention impairments, and exaggerated startle response). In terms of clinical assessment, PTSD symptoms must be tied to a traumatic event that posed a real or imagined life-threat, accompanied by feelings of “terror and helplessness.” In order to meet criteria for a current PTSD diagnosis, an individual must endorse Criterion A, and must endorse at least one symptom from the reexperiencing symptom cluster, at least three symptoms from the avoidance symptom cluster, and at least two symptoms from the hyperarousal symptom cluster. For the diagnosis to be considered “current,” the symptoms must be present for at least one month, prior to clinical assessment, and must be tied to significant impairments in daily functioning (PTSD; American Psychiatric
It is not yet known if RS plays a direct role in potentiating vulnerability to PTSD, following exposure to trauma. Conceptually, if RS is conceived of as a cognitive-affective processing disposition that can be partially characterized as an attention bias toward social threat, it logically follows that individuals high in RS are motivationally primed to interpret future interpersonal transgressions personally. If one interprets an ambiguous social cue negatively, individuals high in RS and/or individuals with PTSD may suspend attention to incoming situational information that might actually mitigate said percepts and the subsequent affective-behavioral cascade triggered by that perception.

While RS has been defined as a dispositional processing variable that is selectively activated in motivationally-relevant contexts, PTSD has been defined as an anxiety disorder following exposure to trauma. Both constructs -- whether a maladaptive trait or disorder -- involve a cognitive-affective-behavioral cascade of responses that is triggered by perceived threats. While the degree of arousal between RS and PTSD in response to perceived threats or trauma-triggers are not necessarily of the same intensity, they involve similar patterns in cognitive-affective processing. Namely, as a result of prior rejecting experiences or trauma, high RS individuals and PTSD individuals come to expect more threat. They are motivationally primed to perceive threat, resulting in appraisals that may actually reinforce a sense of social threat or danger. Appraisal biases prompt emotional reactions that are fear based. Fear precludes one’s ability to process incoming information. Lang explains, “Defense responses reflect a suspension of processing -- input rejection -- and augur active escape,” (1995; p. 2). So while a
suspension of processing may be adaptive in the face of immediate danger, it becomes maladaptive in the face of innocuous and/or ambiguous new experiences. This description bears semblance to social cognitive theories about how early attachment failures and stressors impact an individual’s expectancies, attention biases, and appraisal biases (Feldman & Downey, 1996; Felmingham, et al., 2011). Specifically, individuals high in RS, individuals with BPD, and individuals with PTSD, prioritize information about social threat, above and beyond information that is neutral or positive in valence.

Interestingly, reducing RS level and reducing PTSD symptom level share treatment approaches, bolstering the rationale for a theorized link between RS and PTSD. Specifically, Herman states that the antidote to PTSD lies in social action at both the interpersonal and institutional level (Herman, 1992). In her chapter, “A Healing Relationship,” in Trauma and Recovery, Herman stresses the importance of trusting, dyadic relationships, in helping the PTSD individual to mitigate, or relearn, maladaptive associations between traumatic event and external cues that are reminiscent of the traumatic stressor in their present environment (i.e. reconstruct the trauma narrative). Similarly, Downey and colleagues suggest that supportive social relationships with significant others, affords the high RS individual an opportunity to break the cycle of negative expectations, emotions and behaviors that characterize the RS dynamic -- as they provide the high RS individual a context for relearning maladaptive relational expectancies, as well as a context for developing and practicing “less malevolent explanations for others’ behavior,” (Downey and Feldman, 1996; p. 1340).

Epidemiologically, PTSD has been linked to depression and BPD (Zanarini et al., 1998). Empirically, RS has been linked to depression (Ehnvall et al., 2009) and BPD
(Berenson et al., 2009), but not to PTSD. We set out to explore the theoretical link between RS and PTSD. An attention bias toward social threat is the common denominator underlying RS, BPD, and PTSD. If a link exists between RS and PTSD we expect that it will be positively related to PTSD symptom severity scores.

Present Aims

The present study aims to connect the rejection sensitivity research on BPD to the PTSD research. Specifically, this study aims to address the hypothesized link between an individual’s rejection sensitivity level and PTSD symptom severity. Rejection sensitivity may be a significant predictor of vulnerability to PTSD onset, following exposure to trauma. Given the retrospective nature of this secondary data analysis, it will not be possible to make any causal statements about this latter point. However, because of the temporal direction of human development (monotonic), and because rejection sensitivity is a function of the defensive motivational system, this analysis may contribute to a preliminary rationale for the direct study of RS in relation to PTSD.

This study will also function as a replication study. Specifically, the present analyses aims to replicate previous findings regarding the established relationship between high rejection sensitivity level and endorsement of BPD features (Boldero et al., 2009; Auduk et al., 2008; Eisenberger, et al., 2006), and high RS and in relation to incidence of depression (Ayduk, Downey, & Kim, 2001; Baumeister & Leary, 1995).

Statement of Hypotheses

**H₁:** Rejection sensitivity level will be predictive of PTSD symptom severity.
Rationale for Hypothesis 1. Rejection sensitivity and PTSD are theoretically related. The RS dynamic and the PTSD symptom picture share etiological risk factors, treatment approaches, and an underlying cognitive processing mechanism -- an attention bias toward threat. Examining the degree to which rejection sensitivity level covaries with PTSD symptom severity may shed light on the role this underlying dispositional processing variable may play in compounding an individual’s vulnerability to develop said attention bias toward threat; as future interpersonal transgressions, particularly those on the order of life-threat, may reinforce early maladaptive relational schemas. Therefore, the first hypothesis will explore the relationship between rejection sensitivity level and PTSD symptom severity. This will be done using the Rejection Sensitivity Questionnaire and the Modified Post-Traumatic Symptom Scale - Self Report. It is predicted that individuals high in RS will evidence greater severity of PTSD symptoms, following exposure to trauma.

$H_2$: Rejection sensitivity level and depression symptom level will be positively related.

Rationale for Hypothesis 2. Given that a high RS level predicted depression symptoms in college women, survivors of childhood sexual abuse, and college men, it will be important to track depression symptom level in the present sample. This will be done using the Rejection Sensitivity Questionnaire and the Beck Depression Inventory. It is predicted that greater rejection sensitivity will be associated with greater endorsement of depression symptoms. Therefore, RSQ scores and BDI scores will be positively related.
**H3:** Rejection sensitivity and BPD feature endorsement will be positively related.

*Rationale for Hypothesis 3.* There is an established link in the literature (reviewed above) between rejection sensitivity and BPD feature endorsement, such that a higher RS level predicts greater BPD symptomology. Given that PTSD and BPD are highly comorbid, it will be important to replicate previous findings connecting the positive association between RS level and BPD symptom level. This relationship will be explored using the *Rejection Sensitivity Questionnaire* and the BPD-item endorsement on the *SCID-II-PQ* (items 90-104). It is predicted that a higher rejection sensitivity level will predict greater endorsement of BPD features.

**H4:** Relative to controls, trauma-exposed individuals will differ significantly on RSQ, BDI, SCID-II-PQ, and mPSS-SR outcome scores.

*Rationale for Hypothesis 4.* Rejection sensitivity level has been shown to reflect early rejection experiences. Exposure to trauma is requisite parameter of the PTSD diagnosis. And given that depression and BPD are highly comorbid with PTSD, it will be important to compare how trauma-exposed individuals and controls may differ on indices of RS, depression, BPD feature endorsement, and PTSD symptom severity. Such a comparison requires that the present sample be separated into a trauma-exposed group and a control group. This will be done using the *Clinician Administered PTSD Scale* (CAPS), such that any individual meeting Criterion A will be designated to the trauma-exposed group, and all others will be relegated to the control group. It is predicted that, relative to controls, trauma-exposed individuals will have higher scores on indices of rejection sensitivity, depression, BPD feature endorsement, and PTSD symptom severity.
CHAPTER TWO: METHOD

Participants

The sample consisted of thirty-nine ($N = 39$) individuals who participated in the pilot project, an ongoing study of threat-appraisal processing among individuals with and without PTSD. Twenty-five participants were female (64.1%); fourteen were male (35.9%). The ages for this sample ranged from a minimum age of 19 to a maximum age of 62. Mean age for participants was 35.97 years ($SD = 11.14$ years). Forty-one percent of participants were African American, 20.5% were Caucasian, 15.4% were Asian, 15.4% were Hispanic, and 7.7% were of other ethnicity. The demographic characteristics for the present sample are presented in Table A1.

Participants in this study were recruited by the research group, The Research Center for Trauma and Addiction at the City College of New York, for an ongoing translational pilot study examining how individuals with and without PTSD respond to different types of threats. Recruitment methods included a mixture of flyers, posted throughout the NYC area, and paid Craigslist advertisements, posted in the “Gigs” section of the community-generated, classifieds website. In order to determine eligibility, interested participants called the listed number on the flyer and were pre-screened in a five to ten minute interview over the phone. Phone pre-screen rule-out criteria included: Being below age 18 or above age 65; an inadequate command of the English language; a
known history of seizures; and/or a current history of violence (defined as “serious injury to another person in past three years”). Eligible participants returned for a 4-hour baseline interview (Phase I) with a trained clinical assessor at the Center for Trauma and Addiction (TAP), to determine eligibility for participation in the experimental task (Phase II). Exclusion criteria for Phase II included the following: any history of psychosis, a current substance abuse or dependence (defined as “abuse or dependence within past three months), a Mini-Mental State Exam score below 24 (MMSE < 24), suicidality, and/or refusal to be audio-taped. Although data from Phase II is not pertinent to the present analyses, the exclusionary criteria is relevant to understanding who was included in this secondary-data analysis. In other words, baseline assessment data from Phase I was only entered into the SPSS database for participants who successfully completed Phase II of the pilot investigation. Because PTSD is highly comorbid with other physical and psychological disorders, the representativeness of our sample is underdetermined.

The Pilot Project. The purpose of the pilot project, entitled “Social and Nonsocial Threat Appraisal in Posttraumatic Disorder (PTSD): An Interdisciplinary Collaboration to Link the Basic Sciences, Clinical Research and International Studies at CCNY,” was to investigate how individuals with PTSD, sub-threshold PTSD, trauma-exposed individuals with no PTSD, and control subjects, differ in response time and evoked-response potentials (ERPs) on a computerized temporal Flanker paradigm that measures attention-bias toward a variety of threatening and nonthreatening faces and scenes. Electroencephalography and reaction time were used to measure ERPs in response to time-locked visual stimuli that were supraliminally presented during the computerized temporal Flanker task that comprised the majority of Phase II testing.
Sampling, Flow, and Attrition Rate during the Pilot Project. Thus far, 338 individuals have been pre-screened over the phone. Of these, 236 were deemed eligible. Of the 236 deemed eligible, 107 individuals were scheduled for Phase I, during which participants were individually interviewed in a 4-hour clinical interview, administered by a masters-level clinical assessor. The remaining 129 eligibles either decided to discontinue participation, or were waitlisted for future Phase I scheduling. The main purpose of Phase I was to determine eligibility for Phase II, and diagnostic group designation for eligible participants. Of the 107 individuals scheduled for baseline assessment (Phase I), 73 participants completed the full-battery of assessments. Of the 73 interviewed, 52 were deemed eligible for Phase II. Of the 52 eligibles 46 were scheduled to come back for a four-hour randomization of computerized Flanker task trials (Phase II). Of the 46 scheduled for Phase II, 39 completed the experiment. During Phase II testing, two individuals were unable to complete the task. Thus, the total count of participants included in the present analyses is 39. Figure B2 illustrates the sampling and flow of participants in the present study.

Participants were compensated with $30 and a round-trip NYC Metrocard for completion of Phase I. Phase II participants were compensated with $70 and a roundtrip Metrocard upon completion of the experimental tasks. Thus, each individual included in the present analyses received a total sum of $100 for their time and participation in the pilot investigation.

Procedure.

For the purposes of this study, the researcher conducted a secondary data analysis
on data collected in the two-phase pilot project.

The Present Study. Among the clinical measures administered during Phase I of the pilot project, the six of particular relevance to the current analyses are the Rejection Sensitivity Questionnaire (RSQ), the Clinician Administered PTSD Scale (CAPS), the Posttraumatic Symptom Scale Self-Report (PSS-SR), the Structured Clinical Interview for Axis II Disorders-Personality Questionnaire (SCID-II-PQ), the Beck Depression Inventory (BDI). For a list of all measures administered during Phase I of the pilot project, see Figure B3.

Measures.

Rejection Sensitivity Questionnaire (RSQ). The RSQ, developed by Downey and Feldman (1996), is a self-report instrument designed to assess rejection sensitivity level. To date, it is the only available instrument for directly assessing interpersonal rejection sensitivity in adults. Based on Bandura’s (1986) expectancy-value model, sensitivity to rejection is operationalized by questions that ask participants to make ratings about hypothetical, rejection-related expectations and outcomes. Specifically, the 18-item questionnaire asks participants to rate nine hypothetical interpersonal situations (e.g. “You ask your parents or other family members to come to an occasion important to you”) on two dimensions. First, the RSQ asks participants to rate the degree to which one anxiously expects rejection (e.g., “(a) How concerned or anxious would you be over whether or not they would want to come”) on a 6-point scale ranging from (1) “very unconcerned” to (6) “very concerned.” And second, the RSQ asks participants to rate the perceived likelihood that the other individual will respond in an accepting way (e.g., “(b)
I would expect that they would want to come”) on a 6-point scale, ranging from, (1) “Very unlikely” to (6) “very likely” (b-items are reverse coded).

The first dimension measures the subjective value an individual places on the interpersonal outcome, and the second dimension measures expectancies about the outcome of seeking social support from a significant other. The two component factors used to operationalize the RS construct, are orthogonal; meaning, anxious expectancy ratings (factor 1) and perceived likelihood ratings (factor 2) for each hypothetical situation probed did not covary systematically (Downey & Feldman, 1996). It is important to note that individuals who expect rejection and are also concerned about rejecting outcomes, are defined as highly rejection sensitive (HRS), and are of particular interest to the current study.

In a paper describing the development and testing of the RSQ, Downey and Feldman (1996) demonstrate the psychometric reliability of their instrument. Specifically, the RSQ possesses high internal consistency ($\alpha = .83$) and high test-retest reliability. To clarify this last assertion, test-retest reliability was assessed between three time points, in an effort to document both its short-term and long-term test-retest reliability. The correlation between Time 1 and Time 2, (approximately three weeks), was .83 ($p < .001$), and the correlation between Time 1 and Time 3 (approximately four months) was .78 ($p < .001$). Moreover, validation studies of the RSQ confirm that RS has unique predictive utility, and is not redundant with measures of social anxiety, introversion, self-esteem, or attachment style (Downey & Feldman, 1996).

The RSQ produces two subscores and one total score. The first subscore represents the level of anxiety a participant feels about the outcome of each situation.
This is operationalized by summing the ratings from the first question pertaining to each of the 9 scenarios, and then dividing by nine. Thus, the rejection anxiety, or rejection concern subscore is an average of anxiety level across the nine interpersonal situations. The second subscore is an average of perceived likelihood ratings (operationalized by the second question) pertaining to each of the nine scenarios. These items are reverse coded (e.g. 7 - RSQ1b), summed, and averaged across nine hypothetical situations, producing an average that describes rejection expectation, or perceived likelihood, that a significant other will respond with rejection. The RSQ overall score is calculated by multiplying (weighting) the rejection concern score by the rejection expectancy score for each situation. The weighted scores are then summed and averaged across the nine hypothetical situations (Downey & Feldman, 1996). RSQ overall scores can take on a value ranging from 0 (lowest possible score) to 36 (highest possible score).

Modified Posttraumatic Symptom Survey - Self-Report. Based on the self-report measure designed by Foa, Riggs, Dancu, and Rothbaum (1993), the modified PSS-SR is a self-report measure devised to assess the frequency and severity of PTSD symptoms that are consistent with the DSM-V-R criteria (Coffey et al., 1998). The scale asks participants to rate 17 symptoms of PTSD along two dimensions, frequency and severity. Frequency responses are indicated with a 4-point Likert-type scale. A frequency score of 1 = “not at all”; 2 = “once a week”; 3 = “2-4 times per week/Half the time”; and 4 = “5 or more times per week/ Almost always.” Severity responses are indicated on a 5-point scale. A severity score of 1 = “Not at all”; 2 = “A little bit”; 3 = “Moderately”; 4 = “Quite a bit”; 5 = “Extremely.” PSS-SR frequency scores are calculated by summing the frequency ratings, thus a frequency score can range from 17 - 68. PSS-SR severity
ratings are also a sum of severity ratings, and can range from 17 - 85. The modified PSS-SR had been validated in both community and clinical samples (Falsetti, Resnick, Resick, & Kilpatrick, 1993).

The Clinician Administered PTSD Scale (CAPS). The CAPS is the gold standard for diagnostic assessment of PTSD. It can be used in a number of ways. The CAPS was used here for its utility in determining group designation (i.e. trauma-exposed group or control group). Participants were assigned to the trauma-exposed group if they endorsed Criterion A during the baseline interview. Participants who did not endorse Criterion A of the PTSD diagnosis comprise the control group.

The Semi-structured Clinical Interview for Axis II Disorders, the Personality Questionnaire (SCID-II-PQ). The SCID-II Interview and Personality Questionnaire were developed to aid researchers and clinicians in the diagnosis of DSM-IV-TR, Axis II disorders (First, 1997). The Borderline Personality Disorder module of the SCID-II-PQ was included in the present analyses to index Borderline Personality Disorder symptom endorsement. Typically, the PQ is deployed as a preliminary measure used to delimit the focus of a subsequent, clinician-administered SCID-II interview. Accordingly, the SCID-II-PQ was used as a screening tool in the pilot study, to cut down clinician-administered interviewing time on the SCID-II interview. However, for the purposes of the present secondary-data analysis, we only consider data from the personality questionnaire, in order to track endorsement of BPD features. As Ayduk et al. (2000) state, “Although much research on BP[D] has focused on clinical populations there is now ample evidence that, in non-clinical samples, individuals who endorse significant levels of BP features subsequently show considerable impairments in occupational and social adjustment,”
We hope to replicate previous findings documenting the positive relationship between rejection sensitivity level and BPD symptom endorsement.

The SCID-II-PQ is a standardized self-report inventory, designed to assess personality disorders. The Borderline Personality Disorder subscale consists of 14 items (i.e. PQ90 - PQ104), in which participants are asked to indicate the presence of a symptom by circling one of two answers, in a yes or no response-format. Each endorsed item is accorded 1 point. Typically, a minimum of five out of the requisite nine BPD symptoms need to be endorsed to meet the threshold required for a diagnosis. Scores from the SCID-II-PQ BPD module can range from 0 - 14.

*Beck Depression Inventory (BDI)*. The BDI (Beck et al., 1961) is a self-report inventory designed to assess frequency and severity of clinical symptoms of depression. Participants rate 21 symptoms of clinical depression on a 4-point scale indicating level of item endorsement (i.e., 0 = “I do not feel sad”; 1 = “I feel sad”; 2 = I am sad all the time and I can’t snap out of it”; 3 = “I am so sad or unhappy that I can’t stand it”). Scores are summed to create a total score. BDI total scores can range from 0 (lowest possible score) to 63 (highest possible score).

The BDI has high internal consistency; in a college student population $\alpha = .93$, in an outpatient sample $\alpha = .92$ (Buckley et al., 2001). The split-half reliability coefficient for the BDI is .93 (Foa et al., 1991). According to Berenson et al. (2009) BDI scores correlate with RSQ scores, $r(68) = .25$, $p < .05$. 


CHAPTER THREE: RESULTS

Pearson’s Product-Moment Correlations.

To explore the relationship between rejection sensitivity and PTSD symptom-level, one-tailed, Pearson’s product-moment correlations were conducted between the RSQ, the RSQ subscales, the PSS-SR, and the PSS-SR subscales. For a matrix of all correlations conducted in the present analyses, see Table A3.

It is important to note that one participant left an RSQ question blank, meaning the participant left two rating scales blank in response to one scenario. Consistent with Downey’s lab manager’s recommendations (L. Boamah-Wiafe, personal electronic communication, April 20, 2012), scores for the a-item and b-item of this RSQ question (#5) were replaced with the participant’s mean RSQ ratings for a-items and b-items, respectively.

The relationship between the RSQ Total scores and the PSS-SR Severity scores did not reach statistical significance, though the data indicate a trend, \( r = 0.239, p < .10 \). A scatterplot presents this result (Figure B4). RSQ Total scores and PSS-SR Reexperiencing subscores also fell short of reaching significance, though the data indicate a trend, \( r = 0.218, p < .10 \). Similarly, RSQ Total scores and PSS-SR Arousal subscores did not reach statistical significance, however, the data indicate a trend, \( r = 0.213, p < .10 \). Taken together, in this sample, the correlation between rejection sensitivity and PTSD symptom level was not shown to be statistically significant although there were trend levels associations. Thus, an exploration of the linear relationships among component elements comprising the RS construct and the component symptom clusters defining the PTSD diagnosis follows.
The relationship between the RSQ Expectations subscale scores and PSS-SR Severity scores failed to reach statistical significance, though the data show a trend, \( r = 0.247, p < .10 \). RSQ Expectations subscale scores and PSS-SR Avoidance subscale scores also indicated a positive trend, \( r = .242, p < .10 \), suggesting that expectations of rejecting outcomes might be related to psychological sequelae characterized by the PTSD Avoidance symptom cluster. A scatterplot presents the putative linear relationship between RSQ Expectations and PSS-SR Avoidance subscales (Figure B5). And lastly, while RSQ Expectations subscale scores and PSS-SR Reexperiencing subscale scores fell short of reaching statistical significance, the data exhibit a trend, \( r = 0.251, p < .10 \). Thus, the link between rejection sensitivity components and PTSD symptom clusters remains unclear.

To assess the replicability of previous reports concerning the linear relation between rejection sensitivity and the related constructs (specifically, depression and BPD features), Pearson’s product-moment correlations were conducted among RSQ Total, RSQ Anxiety subscale scores, RSQ Expectations subscale scores, the BDI scores, and the SCID-II-PQ90-104 scores. There was a strong, positive relationship between the RSQ Total scores and the BDI scores, \( r = .340, p < .05 \), indicating that higher rejection sensitivity scores are moderately predictive of higher depression scores. A scatterplot diagrams this correlation (Figure B6). There was a positive correlation between the RSQ Total scores and the SCID-II-PQ scores, \( r = .326, p < .05 \). A scatterplot illustrates this result (Figure B7), indicating that a statistically significant, positive correlation exists between rejection sensitivity level and endorsement of BPD features.

Regarding the RSQ Anxiety subscale scores, higher RSQ Anxiety subscale scores were not significantly correlated with higher BDI scores, \( r = .104, ns \). Similarly, higher rejection anxiety was not statistically correlated with greater endorsement of BPD features, \( r = .068, ns \). It is important to note that the RSQ Anxiety subscale scores were not significantly associated with any other construct explored in this correlational
analysis, (save for the RSQ Total and RSQ Expectations scores). Explanations for this finding are provided in the discussion section.

RSQ expectation subscale scores, on the other hand, evidenced a strong, positive relationship with BDI scores, $r = .412, p < .001$. A scatterplot illustrates this finding, showing that greater expectations of rejection are associated with greater symptoms of depression (Figure B8). There was also a strong positive correlation between RSQ Expectation subscale scores and endorsement of BPD features, $r = .461, p < .001$. Overall, higher expectations of rejection are predictive of higher endorsement of BPD features (Figure B9).

Pearson’s product-moment correlations were also computed to assess the degree to which symptom-endorsement of PTSD varied with symptom-endorsement of clinical depression and Borderline Personality Disorder, respectively. Not surprisingly, there was a strong, positive correlation between PSS-SR Severity scores and BDI scores, $r = .658, p < .001$. There was a strong, positive correlation between PSS-SR Severity scores and SCID-II-PQ scores, $r = .539, p < .001$, implying that greater endorsement of PTSD symptoms is highly predictive of greater endorsement of BPD features.

Lastly, it is worth noting that BDI scores were strongly correlated with the SCID-II-PQ items assessing BPD feature endorsement, $r = .643, p < .001$. Though this finding does not provide direct support for any of the present hypotheses, it does corroborate previous findings documenting the comorbidity rate between depression and BPD (e.g. Kessler, 1995).

*Independent Samples t-Tests.*

After exploring the linear relationships between rejection sensitivity (RSQ), rejection anxiety (RSQ Anxiety subscale) rejection expectations (RSQ Expectations subscale), PTSD symptom frequency (PSS-SR Frequency subscale), PTSD symptom severity (PSS-SR severity), depression symptoms (BDI), and BPD feature-endorsement
(SCID-II PQ items), the sample of 39 participants was split into two groups: a trauma-exposed group (n = 25), and a control group (n = 14). Trauma-exposure was determined by presence of PTSD Criterion A in a CAPS interview. That is, all individuals in the trauma-exposed group had experienced or witnessed at least one life-threatening event that was accompanied by feelings of “intense fear, helplessness, and horror,” (American Psychiatric Association, 2000). To compare mean differences between the trauma-exposed group and the control group, independent-samples t-tests were conducted for three demographic variables, all scales, and subscales.

To ensure that the control group did not differ significantly from the trauma-exposed group on demographic factors, independent t-tests were conducted between groups for age, gender, and ethnicity. The trauma-exposed group did not differ significantly from the control group in age, \( t(36.9) = -0.72, ns \), gender, \( t(31.01) = 1.15, ns \), nor ethnicity \( t(37) = 0.43, ns \). For a presentation of demographic group statistics, see Table A4.

We hypothesized that trauma-exposed individuals would have significantly higher rejection sensitivity scores than would control participants. This hypothesis was not supported by the data. Trauma exposed individuals were not significantly more rejection sensitive \( (M = 7.90, SD = 3.32) \), than control individuals \( (M = 7.17, SD = 3.75) \). A bar graph presents these findings in Figure B10. Note: the overlapping standard error bars in Figure B13 visually indicate that trauma-exposed individuals were not significantly more rejection sensitive, rejection anxious, or expecting of rejection, than were controls.

In terms of PTSD symptom severity, trauma-exposed individuals had higher PSS-SR Severity scores \( (M = 33.24, SD = 16.11) \) than did controls \( (M = 17.86, SD = 1.41) \). This mean difference in PSS-SR Severity scores was statistically significant, \( t(24.65) = 4.74, p < .001, d = -1.18 \). Not surprisingly, this statistically significant pattern in mean differences between groups was also found for all three PSS-SR subscale scores tapping the PTSD symptom clusters (for further detail refer to Table A4). This pattern of
findings is displayed in a bar chart (Figure B11).

In terms of depression symptom-level, trauma-exposed individuals had higher BDI scores ($M = 6.00, SD = 6.69$), relative to controls ($M = .79, SD = 1.12$). The mean difference in BDI scores was significant, $t(35.17) = 3.73, p < .01, d = 0.97$. In terms of BPD feature endorsement, trauma-exposed individuals endorsed more BPD features ($M = 2.48, SD = 2.73$) than did controls ($M = .71, SD = 1.27$). This mean difference in BPD item endorsement was statistically significant, $t(36.16) = 2.75, p < .01, d = 0.76$. A bar graph presents these group differences in depression symptom level and BPD feature endorsement level (Figure B12).

Hierarchical Regression Analysis.

We hypothesized that rejection sensitivity (RS) would be predictive of PTSD symptom severity. Thus far, weak support for this hypothesis was found in the trending correlations between RSQ scores and PSS-SR scores (see Table A2). The correlational analysis uncovered a complex pattern of covariation among all scales included in this study, with correlations between RS and PTSD symptom level being the weakest in association. An independent samples $t$-test between the trauma-exposed group and control group did not provide further support for our main hypothesis, showing that, relative to controls, trauma-exposed individuals were not significantly more likely to be higher in rejection sensitivity. To follow up on the implications of the initial trend-level correlations (i.e. to confirm or disconfirm the direct or indirect role RS may play in predicting PSS-SR Severity scores) a hierarchical regression analysis was conducted. A discussion of the preliminary regression analysis findings follows. For a table of hierarchical regression findings, see Table A6.

A hierarchical linear regression analysis was conducted on PSS-SR Severity scores in order to understand the relationship between covariates and PTSD symptom level. We expected exposure to trauma to be the most predictive of PTSD symptom
level. In the first step, exposure to trauma was entered as a dummy variable (0 = controls; 1 = trauma-exposed). Because the depression-PTSD correlation and the BPD-PTSD correlation were strongest in the present correlational analyses -- and because there is an extant link in the psychopathology literature between the three disorders -- we entered depression symptoms and BPD features in the second step. And finally, rejection sensitivity was added in the third step, as an exploratory predictor. Entering RS as a third step, afforded an opportunity to confirm or disconfirm the hypothesized utility RS may have in predicting PTSD symptom level.

Using the adjusted $R$-squared for model selection, Model 2 best fit the data, and did not include RS. Overall, Model 2 accounted for 52.7% of the variance in PSS-SR Severity scores ($R^2 = .527$, $p < .001$), and is a significant fit of the data, $F(2,34) = 12.62$, $p < .001$. The inclusion of RS in the third step did not explain any additional variance in the PSS-SR Severity scores ($R^2 = .527$, $p < .990$).

When PSS-SR Severity was predicted, it was found that group ($\beta = .27$, $p < .05$) and depression ($\beta = .40$, $p < .05$) were significant predictors. Both group, $t(36) = 2.05$, $p < .05$, and depression, $t(36) = 2.49$, $p < .01$, appeared to be a statistically significant additions to Model 2. While BPD features did have an effect on the criterion variable ($\beta = .27$) this effect was not significant. For a display of all three models tested in this hierarchical regression analysis, see Table A6.
We obtained mixed support for the present hypotheses. Specifically, the data fails to provide convincing support for the main hypothesis -- that rejection sensitivity level would be predictive of PTSD symptom severity. Strong support for the second hypothesis -- that RS would be positively related to depression symptom-level -- was found in the correlational analyses. Strong support for the third hypothesis -- that RS and BPD symptom endorsement would be positively related -- was also supported by the correlational analyses. And finally, regarding the fourth hypothesis, partial support was found in the t-test analyses, for the prediction that, relative to controls, trauma-exposed individuals would differ on indices of RS, depression, BPD feature endorsement, and PTSD symptom-level. Specifically, trauma-exposed participants had significantly higher BDI, SCID-II-PQ, and PSS-SR scores, relative to controls. This pattern between groups was not found for RS, however.

Moreover, the hierarchical regression analyses disconfirmed the main hypothesis, as RS did not significantly account for any of the variance in the PSS-SR Severity scores. When we regressed group designation (trauma-exposed or control group) on the criterion variable, group accounted for a significant portion of variance in PSS-SR symptom severity scores. This was not surprising; if anything, it reflects good construct validity of the PTSD diagnosis, apropos of the DSM-IV-TR, as exposure to trauma is the first and only requisite condition that needs to be met in order to be considered for a full PTSD.
diagnosis (according to CAPS interview guidelines). Interestingly, depression accounted for the most variance in PSS-SR scores, corroborating extant findings regarding the 50% co-morbidity rate between PTSD and depression (Stein & Kennedy, 2001).

There are several reasons why the hypothesized positive relationship between rejection sensitivity and PTSD symptom extent was not borne out in the data. For instance, out of the 39 participants included in this secondary-data analysis, only four met full criteria for a PTSD diagnosis. In order to truly disconfirm the main hypothesis, a study using a larger clinical sample is needed.

Additionally, the neurocognitive functioning of non-PTSD trauma-exposed individuals as compared to the neurocognitive functioning of PTSD subjects is not yet well understood, as some eye-tracking studies show significant overlap in selective attention impairments between the two groups (Kimble et al., 2010), while other investigations have found major differences in selective attention between groups (Felmingham, Rennie, Manor, & Bryant, 2011), in addition to neuro-anatomical differences in fMRI studies (i.e. reduced hippocampal volume is a putative biological substrate for both BPD and PTSD pathogenesis; Rodrigues, et al., 2011). Moreover, in a subclinical sample of college students ($N = 39$), Dewitte, Koster, De Houwer, and Buysse (2007) demonstrated that attachment anxiety and attachment avoidance significantly predicted a selective attention bias toward attachment-related threat words, but not toward general threat words, positive words, and neutral words. However, the present study included sub-clinical trauma-exposed individuals for the same reasons Bagge et al. (2009) found it worthwhile to study presence of BPD features in sub-clinical samples, as endorsement of any of the maladaptive features included in the PTSD diagnosis are likely
to be reflected in later life outcomes, though this last assertion is still speculative.

Another consideration, regarding the lack of relationship between RS and PTSD symptom extent, may have to do with the RSQ itself. Most studies have focused on participant ratings in response to standardized hypothetical interpersonal rejection scenarios. The RSQ may be too general in format and verb tense, to elicit information that accurately probes rejection anxiety and rejection expectations. This may explain why said participant left an item about romantic relationships blank, as the participant may not have been in a relationship. That is, there is little built-in flexibility within the questionnaire format for a participant to identify with the question, should this participant not be in a relationship during the time of RSQ administration. Alternatively, future RS research may be expanded by collecting data that focuses on real or imagined interpersonal transgressions, as they occurred for the individual, within a delimited time frame prior to RSQ administration. Perhaps a separate measure that taps “rejection history” can be developed and administered as an additional RSQ subscale (or in conjunction with the RSQ), to improve construct validity of the RSQ. The quality of autobiographical information related to experienced transgressions may likewise strengthen the content validity of the rejection sensitivity measure.

Theoretically, the RS model predicts a cognitive-affective-behavioral cascade for the high RS individual. However, the RSQ, the instrument used to operationalize the RS dynamic, fails to adequately probe the behavioral component stipulated by the RS model, as it does not include questions about behavioral reactions to anticipated and perceived rejection. More importantly, the questions are flawed by a built-in assumption, as the RSQ poses all questions from the standpoint of an individual who initiates social contact
with valued others. This semantic bias contradicts the RS model itself, as many high RS individuals are theorized and found to be socially withdrawn as a result of earlier rejection experiences. In other words, individuals high in RS may not identify with the question, and thus, their ratings may reflect an idealized self-concept, as opposed to an autobiographical one.

Relatedly, the RSQ does not probe behavioral reactions to perceived rejection directly. Therefore, future studies on RS may benefit from including a rating scale capturing predicted enactment of negative behavioral reactions to perceived rejection, (i.e. the scale can range from social withdrawal to hostile aggression). The RSQ is an important step in studying the rejection sensitivity construct. To summarize, the construct and questionnaire can be expanded upon to include items that tap history, maladaptive appraisals, and behavioral correlates associated with perceiving rejection.

Another possible explanation concerning the lack of detected relation between RS and PTSD symptom severity may lie in a contextual factor. That is, the cognitive-affective-behavioral cascade of the RS individual is triggered in motivationally-relevant situations, whereas cognitive and affective biases characteristic of PTSD are more pervasive and global, phenomenologically. In other words, the attention bias toward threat operates contiguously for the high RS individual, and only in settings that afford the potential for social rejection; whereas, the attention bias toward threat operates in a more continuous way (i.e. chronic hypervigilance) for the PTSD individual. This contextual factor may explain the apparent discrepancy between the first hypothesis and the present findings.

Finally, we must consider the possibility that RS may not be related to PTSD
symptom severity. Since the association between RS and BPD symptomology was replicated in the present findings, and in light of the comorbidity rate between PTSD and BPD, one possible explanation for the apparent lack of relation between RS and PTSD may lie in the differential importance of shared symptom clusters, as they relate to BPD and PTSD, respectively. For instance, perhaps interpersonal instability is more pertinent in understanding the dysfunctions most characteristic and destructive for the BPD individual. On the other hand, for example, avoidance of people, places, or objects reminiscent of the traumatic stressor may be the most characteristic and maladaptive symptom cluster for the PTSD individual. Note, these ideas are purely speculative, and are mentioned here only for illustrative purposes.

More study is needed to understand the cognitive sequelae generated by early rejection experiences. An outgrowth of attachment theory, RS is a relational construct, meaning it involves an internal working model that is comprised of expectations and appraisals about the external world and important others, in addition to expectations and appraisals about the individual’s self-concept. Thus, information related to self-concept and attributions following exposure to rejection should be directly assessed as well. Perhaps the quality of RSQ data, and the sensitivity of the measurement, can be improved by developing a semi-structured clinical interview format, not unlike that of the CAPS.

Limitations

There are some important limitations to note in this study. As mentioned above, the sample size was small, and may not be representative of the sub-clinical and clinical populations we aimed to study. Furthermore, the size of the sample may have limited the
statistical power to detect meaningful differences in PTSD symptom severity. Sample size is particularly relevant to the regression analysis, as some statisticians recommend a minimum acceptable number of 15 participants for every predictor entered in the model (Field, 2009; Green, 1991). Therefore, a larger sample size comparing full-PTSD participants, to trauma-exposed and control participants may bolster support for the theorized link between RS and PTSD symptom severity.

The present study was further limited by the circumstantial bounds that accompany a secondary-data analysis. For example, the pilot project required eight hours of participation over a contiguous two-day administration. PTSD individuals are notoriously difficult to recruit due to avoidance symptoms. These factors together -- the length of time required for research participation, in combination with the avoidance symptoms characteristic of a full-PTSD individual -- may explain and prohibit the trauma-exposed individual’s willingness to participate in a clinical research project that asks them to explore their trauma history.

Relatedly, the pilot project did not include a measure of adult attachment style in the clinical battery of baseline assessments. Because RS and attachment are inextricably linked, and because there is a surfeit of studies linking insecure attachment with psychopathological vulnerability (Wright, Crawford, & Castillo, 2009), future studies on RS will be strengthened by the inclusion of an attachment measure (e.g. the Adult Attachment Interview). More comparisons need to be made between the two constructs in order to fully understand the differential roles they play in contributing to psychopathological vulnerability.

Type of trauma was also a limiting factor, as it was not controlled for in this
study, thus restricting the generalizability of the present findings. Twenty-two of the 25 individuals who met PTSD Criterion A (88%) reported an interpersonal transgression as their source of traumatic stress. While interpersonal transgressions are consistently rated as the most common and severe source of traumatic stress (Olff et al. 2007) by both men and women, it will be interesting and necessary to focus exclusively on individuals who survived interpersonal trauma (dating violence, sexual assault, rape, physical assault, types of combat, etc.), if an understanding of the hypothesized link between RS and PTSD symptom extent is to be furthered.

Implications for Future Research

In summary, after detecting a positive trend between RSQ scores and PSS-SR severity scores in the preliminary correlational analysis, and after separating our sample into trauma-exposed and control group, we found no difference between groups in rejection sensitivity scores. This sequence of findings, in light of the theoretical rationale for a relationship between the two variables, was deemed inconclusive by the present author. In other words, if there is a connection between RS and PTSD, the link is not direct. This last point led us to consider and propose a mediation model for future study (Figure B13).

Interestingly, the relationship between RS and BPD, and the relationship between RS and depression, were replicated in the present analyses. Additionally, it was found that trauma-exposed individuals differed from controls on indices of BPD and depression, such that trauma-exposed individuals had significantly higher BPD and depression scores, relative to controls. That said, perhaps the relationship between RS and PTSD
symptom severity is mediated by BPD and depression, respectively.

Following the analysis of mediation guidelines articulated by Baron and Kenny (1986), we hypothesize that if RS is predictive of PTSD symptom-level following exposure to traumatic stress, the path is not direct. Accordingly, we propose that depression and BPD, two disorders highly comorbid with PTSD, may mediate the relationship between RS and PTSD symptom level. That is, variations in RS are predicted to significantly account for variations in depression symptom level and BPD feature extent, respectively; and variations in these two mediators will significantly account for variations in PTSD symptom severity level following exposure to trauma.

The mediation model can be tested through three estimated regression models, using data analytic techniques recommended by Judd and Kenny (1981). If mediation is established in future research, it will provide a valuable rationale for developing interventions that seek to reduce rejection sensitivity in high RS individuals. The public health gains of early RS interventions will be large, decreasing an individual’s psychological vulnerability to all three disorders. Alternatively, if mediation is not established, then future research may benefit from utilizing the RS construct to distinguish BPD and depression symptoms from PTSD symptoms.

In spite of the noted limitations, this study is the first to examine rejection sensitivity in relation to PTSD symptom severity. Overall, the findings are inconclusive and suggest that more study is needed in order to gain a more fine-grained understanding of the psychopathological vulnerability attendant with a high RS level.
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doi:10.1037/0022-3514.52.3.511


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visual attention to threatening stimuli in veterans of the Iraq war. *Journal of Anxiety Disorders*, 24, 293-299.


APPENDIX A:

TABLES
Table A1.

*Sample Demographics (N=39)*

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Percent of Sample</th>
</tr>
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<tbody>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>18 - 27</td>
<td>23.1%</td>
</tr>
<tr>
<td>28 - 37</td>
<td>38.5%</td>
</tr>
<tr>
<td>38 - 47</td>
<td>20.5%</td>
</tr>
<tr>
<td>48 - 57</td>
<td>12.8%</td>
</tr>
<tr>
<td>58 - 65</td>
<td>5.1%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>35.9%</td>
</tr>
<tr>
<td>Female</td>
<td>64.1%</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>20.5%</td>
</tr>
<tr>
<td>Black</td>
<td>41.0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>15.4%</td>
</tr>
<tr>
<td>Asian</td>
<td>15.4%</td>
</tr>
<tr>
<td>Other</td>
<td>7.7%</td>
</tr>
<tr>
<td>Group Designation</td>
<td></td>
</tr>
<tr>
<td>Trauma-exposed</td>
<td>64.10%</td>
</tr>
<tr>
<td>Control</td>
<td>35.90%</td>
</tr>
</tbody>
</table>

*Note.* Diagnostic categorization was determined in a baseline interview during Phase I of the pilot project. Categories are consistent with DSM-IV-TR criteria for full PTSD and subthreshold PTSD.
Table A2.

*Scale Summaries*

<table>
<thead>
<tr>
<th>Scale</th>
<th>$M$</th>
<th>$SD$</th>
<th>$\alpha^a$</th>
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</thead>
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<tr>
<td>RSQ Total</td>
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<td>3.45</td>
<td>.83</td>
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<td>Anxiety</td>
<td>3.40</td>
<td>1.19</td>
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</tr>
<tr>
<td>Expectations</td>
<td>2.51</td>
<td>1.05</td>
<td>---</td>
</tr>
<tr>
<td>PSS-SR Frequency</td>
<td>25.05</td>
<td>10.10</td>
<td>___</td>
</tr>
<tr>
<td>PSS-SR Severity</td>
<td>27.72</td>
<td>14.85</td>
<td>___</td>
</tr>
<tr>
<td>Re-experiencing</td>
<td>12.33</td>
<td>6.04</td>
<td>.78</td>
</tr>
<tr>
<td>Avoidance</td>
<td>21.13</td>
<td>11.13</td>
<td>.80</td>
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<tr>
<td>Arousal</td>
<td>19.31</td>
<td>9.56</td>
<td>.82</td>
</tr>
<tr>
<td>BDI Total</td>
<td>4.08</td>
<td>5.90</td>
<td>.93</td>
</tr>
<tr>
<td>SCID-II (PQ90 - PQ104)</td>
<td>1.85</td>
<td>2.44</td>
<td>---</td>
</tr>
</tbody>
</table>

*Note.* For all scales, except for one case of the BDI, $N = 39$. Due to missing BDI data, one case was excluded from data analyses. For the BDI, $N = 38$.

$^a \alpha = $ internal consistency.
Table A3.

**Bivariate Correlations Among Rejection Sensitivity, PTSD Symptoms, and BPD Features**

<table>
<thead>
<tr>
<th></th>
<th>RSQ Total</th>
<th>RSQ Anxiety</th>
<th>RSQ Expectations</th>
<th>PSS-SR Frequency</th>
<th>PSS-SR Severity</th>
<th>PSS-SR Re-experiencing</th>
<th>PSS-SR Avoidance</th>
<th>PSS-SR Arousal</th>
<th>BDI Total</th>
<th>SCID-II (PQ90-PQ104)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSQ Total</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Anxiety</td>
<td>.649**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectations</td>
<td>.685**</td>
<td>.038</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>PSS-SR Frequency</td>
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<td>.082</td>
<td>.198</td>
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</tr>
<tr>
<td>PSS-SR Severity</td>
<td>.239†</td>
<td>.013</td>
<td>.247†</td>
<td>.931**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Re-experiencing</td>
<td>.218†</td>
<td>.026</td>
<td>.251†</td>
<td>.872**</td>
<td>.866**</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Avoidance</td>
<td>.165</td>
<td>-.124</td>
<td>.242†</td>
<td>.915**</td>
<td>.915**</td>
<td>.733**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arousal</td>
<td>.213†</td>
<td>.054</td>
<td>.153</td>
<td>.887**</td>
<td>.927**</td>
<td>.781**</td>
<td>.759**</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>BDI Total</td>
<td>.340*</td>
<td>.105</td>
<td>.412**</td>
<td>.636**</td>
<td>.658**</td>
<td>.507**</td>
<td>.728**</td>
<td>.340*</td>
<td></td>
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<tr>
<td>SCID-II (PQ90-PQ104)</td>
<td>.326*</td>
<td>.063</td>
<td>.461**</td>
<td>.503**</td>
<td>.539**</td>
<td>.549**</td>
<td>.556**</td>
<td>.326*</td>
<td>.643**</td>
<td></td>
</tr>
</tbody>
</table>

Note. †p < .10, *p < .05, **p < .001
Table A4.

*Group Statistics on Demographic Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>$M$</th>
<th>$SD$</th>
<th>$t$</th>
<th>df</th>
<th>$p^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>T</td>
<td>36.84</td>
<td>12.82</td>
<td>-0.72</td>
<td>36.9</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>34.50</td>
<td>7.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>T</td>
<td>.61</td>
<td>.50</td>
<td>1.15</td>
<td>31.01</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>.79</td>
<td>.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>T</td>
<td>2.80</td>
<td>1.71</td>
<td>-0.43</td>
<td>37</td>
<td>.67</td>
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<tr>
<td></td>
<td>C</td>
<td>2.57</td>
<td>1.40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* T = Trauma-exposed group ($n = 25$), C = Control group ($n = 14$);

$p^a$ = two-tailed; †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. 
Table A5.

**Comparison of Means Between Trauma-Exposed Group and Control Group**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p (^{a})</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSQ Total</td>
<td>T</td>
<td>25</td>
<td>7.90</td>
<td>3.32</td>
<td>-.62</td>
<td>37</td>
<td>.537</td>
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<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>7.17</td>
<td>3.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>T</td>
<td>25</td>
<td>3.30</td>
<td>1.24</td>
<td>.713</td>
<td>37</td>
<td>.480</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>3.59</td>
<td>1.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectations</td>
<td>T</td>
<td>25</td>
<td>2.68</td>
<td>1.11</td>
<td>-1.35</td>
<td>37</td>
<td>.187</td>
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<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>2.21</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PSS-SR Frequency</td>
<td>T</td>
<td>25</td>
<td>29.08</td>
<td>10.65</td>
<td>-5.19***</td>
<td>25.59</td>
<td>.000</td>
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<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>17.86</td>
<td>1.46</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PSS-SR Severity</td>
<td>T</td>
<td>25</td>
<td>33.24</td>
<td>16.11</td>
<td>-4.74***</td>
<td>24.65</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>17.86</td>
<td>1.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-experiencing</td>
<td>T</td>
<td>25</td>
<td>14.76</td>
<td>6.37</td>
<td>-5.30***</td>
<td>24</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>8</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>T</td>
<td>25</td>
<td>24.84</td>
<td>12.47</td>
<td>-4.12***</td>
<td>24.74</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>14.5</td>
<td>1.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperarousal</td>
<td>T</td>
<td>25</td>
<td>22.72</td>
<td>10.39</td>
<td>-4.38***</td>
<td>28.28</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>13.21</td>
<td>2.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td>T</td>
<td>25</td>
<td>6.00</td>
<td>6.69</td>
<td>-3.73**</td>
<td>25.17</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>14</td>
<td>.79</td>
<td>1.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCID-II (BPD Items)</td>
<td>T</td>
<td>25</td>
<td>2.48</td>
<td>2.73</td>
<td>-2.75**</td>
<td>36.16</td>
<td>.009</td>
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<td></td>
<td>C</td>
<td>14</td>
<td>.71</td>
<td>1.27</td>
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<td></td>
</tr>
</tbody>
</table>

*Note.* \(^{\dagger}\)p < .10, *p < .05, **p < .01, ***p < .001; \(^{a}\)p = two-tailed;

T = Trauma-exposed group, C = Control group.
Table A6.

*Hierarchical Linear Regression on PTSD Symptom Severity Scores*

<table>
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<th></th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
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<td><strong>Step 1</strong></td>
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<td></td>
</tr>
<tr>
<td>Constant</td>
<td>17.86</td>
<td>3.49</td>
<td>---</td>
</tr>
<tr>
<td>Group</td>
<td>15.85</td>
<td>4.39</td>
<td>.52**</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>16.09</td>
<td>2.93</td>
<td>---</td>
</tr>
<tr>
<td>Group</td>
<td>8.27</td>
<td>4.03</td>
<td>.27*</td>
</tr>
<tr>
<td>Depression Symptoms</td>
<td>1.02</td>
<td>.41</td>
<td>.40*</td>
</tr>
<tr>
<td>BPD Features</td>
<td>1.35</td>
<td>.96</td>
<td>.22</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
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<td>.27†</td>
</tr>
<tr>
<td>Depression Symptoms</td>
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<td>.43</td>
<td>.40*</td>
</tr>
<tr>
<td>BPD Features</td>
<td>1.34</td>
<td>1.01</td>
<td>.22</td>
</tr>
<tr>
<td>Rejection Sensitivity</td>
<td>-.11</td>
<td>.87</td>
<td>-.03</td>
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</table>

*Note.* $R^2 = .266$ for Step 1, $\Delta R^2 = .261$ for Step 2 ($p = .001$), and $\Delta R^2 = .000$ for Step 3 ($p = .990$); †$p < .10$, *$p < .05$, **$p < .001$. 
APPENDIX B:

FIGURES
Figure B1.

*The Rejection Sensitivity Model*

Figure B2.

Sampling and Flow of Participants Through the Pilot Project

Figure 2. Participant flow chart for pilot project. Data was entered into the SPSS database for completed participants only. The present analyses are based on the first 39 participants of the ongoing pilot project.
Figure B3.

List of Measures Administered During the Pilot Project

<table>
<thead>
<tr>
<th>Measure</th>
<th>Time to Administer</th>
<th>Measure</th>
<th>Time to Administer</th>
</tr>
</thead>
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<tr>
<td>Consent Form (x2)</td>
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<td>STAI</td>
<td>10</td>
</tr>
<tr>
<td>Consent Form Quiz</td>
<td>5</td>
<td>POMS</td>
<td>5</td>
</tr>
<tr>
<td>HIPAA Form (x2)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Breathalyzer/Urine Toxicology</td>
<td>5</td>
<td>Emotional Temporal Flanker Task</td>
<td>2 hours</td>
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<tr>
<td>Demographics</td>
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<td>Image Ratings</td>
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</tr>
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<td>Locator Form</td>
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<td></td>
</tr>
<tr>
<td>MMSE</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*TAT &amp; GSR</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ToNI</td>
<td>10</td>
<td></td>
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</tr>
<tr>
<td>Trust-Fear Facial Discrimination Task</td>
<td>30</td>
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<td></td>
</tr>
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<td>*SCID-I/P (Psychotic, Mood, Substance Use, Anxiety)</td>
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<td>SCID-I Summary Form</td>
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<td></td>
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<td>*SCID-II, BPD Screening (if endorsed on SCID-II Personality Questionnaire)</td>
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<tr>
<td>SCID-II Summary Form</td>
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<td>*CAPS/CAPS Summary</td>
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<td>MDI</td>
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<td></td>
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<tr>
<td>PSS-SR</td>
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<td></td>
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<tr>
<td>IIP (32 item)</td>
<td>5</td>
<td></td>
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</tr>
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</table>

* Audiotaped
Scatterplot: Overall Rejection Sensitivity & Overall PTSD Symptom-Level

*Note.* $r = 0.239, p < .10$; RSQ = Rejection Sensitivity Questionnaire;
Figure B5.

*Scatterplot: Rejection Expectations & PTSD Avoidance Symptoms*

![Scatterplot](image-url)

Note. \( r = .245, p < .10; \) RSQ = Rejection Sensitivity Questionnaire, Rejection Expectations Subscale; PSS-SR = Post-traumatic Symptom Scale-Self Report PTSD Avoidance Subscale.
Figure B6.

Scatterplot: Overall Rejection Sensitivity & Depression Symptoms

Note. $r = .356, p < .05$; RSQ = Rejection Sensitivity Questionnaire; BDI = Beck Depression Inventory.
Figure B7.

Scatterplot: Rejection Sensitivity and BPD Features

Note. $r = .326, p < .05$; RSQ = Rejection Sensitivity Questionnaire; and SCID-II-PQ = Structured Clinical Interview for Axis II Disorders, Personality Questionnaire, (items 90-104); BPD = Borderline Personality Disorder.
Figure B8.

*Scatterplot: Rejection Expectations & Depression Symptoms*

![Graph showing the relationship between Rejection Expectations and BDI Scores.](image)

*Note.* $r = .409$, $p < .001$; RSQ Expectations = Rejection expectations subscale; BDI = Beck Depression Inventory.
Figure B9.

*Scatterplot: Rejection Expectations & BPD Features*

Note. $r = .452$, $p < .001$; RSQ = Rejection Sensitivity Questionnaire; and SCID-II-PQ = Structured Clinical Interview for Axis II Disorders, Personality Questionnaire, Items 90-104; BPD = Borderline Personality Disorder.
Figure B10.

Bar Graph: Rejection Sensitivity, Anxiety, & Expectations

Note. RSQ_Total = Rejection Sensitivity overall score; RSQ_anxiety = Rejection anxiety subscore; RSQ_expectations = Rejection expectations subscore
Figure B11.

*Bar Graph: Between-Subjects Comparison of PTSD Symptoms*

Figure B12.

Bar Graph: Between-Subjects Comparison of Borderline & Depression Symptoms

Note. SCID = Structured Clinical Interview for Axis II Disorders, BDI = Beck Depression Inventory.
Figure B13.

*Proposed Mediation Model for Future Study: The Impact of Rejection Sensitivity (RS) on Psychological Vulnerability*

*Note.* The dotted line displays our original hypothesis (i.e. RS will be predictive of PTSD symptom-level). The solid lines represent an alternative hypothesis for future study (i.e. RS is predictive of vulnerability to depression and BPD, but not to PTSD. 

\(^a\)BPD = Borderline Personality Disorder, \(^b\)PTSD = Post-Traumatic Stress Disorder.