Self-Informant Agreement on Personality: The Moderating Effects of Depression and/or Anxiety

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THESIS
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Self-reports of Personality</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Informant-reports of Personality</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Self-Informant Agreement on Personality Measures</td>
<td>4</td>
</tr>
<tr>
<td>1.4 Aims and Hypotheses</td>
<td>6</td>
</tr>
<tr>
<td>2. METHODS</td>
<td>8</td>
</tr>
<tr>
<td>2.1 Participants</td>
<td>8</td>
</tr>
<tr>
<td>2.2 Procedure</td>
<td>9</td>
</tr>
<tr>
<td>2.3 Measures</td>
<td>10</td>
</tr>
<tr>
<td>2.3.1 Self- and Informant-Reports of the General Temperament Scale</td>
<td>10</td>
</tr>
<tr>
<td>2.3.2 Self- and Informant-Reports of Eysenck Personality Questionnaire</td>
<td>10</td>
</tr>
<tr>
<td>2.3.3 Self- and Informant-Reports of the Temporal Experience of Pleasure Scale</td>
<td>10</td>
</tr>
<tr>
<td>2.3.4 Self- and Informant-Reports of Anxiety Sensitivity Index-Revised</td>
<td>11</td>
</tr>
<tr>
<td>2.3.5 Self- and Informant-Reports of Behavioral Inhibition System/Behavioral Activation System</td>
<td>11</td>
</tr>
<tr>
<td>2.4 Data Analysis Plan</td>
<td>11</td>
</tr>
<tr>
<td>2.4.1 Rank-order Agreement</td>
<td>12</td>
</tr>
<tr>
<td>2.4.2 Mean-level Differences</td>
<td>13</td>
</tr>
<tr>
<td>3. RESULTS</td>
<td>14</td>
</tr>
<tr>
<td>3.1 Factor Analytic Findings</td>
<td>14</td>
</tr>
<tr>
<td>3.2 Self-Informant Agreement on Positive Affectivity</td>
<td>14</td>
</tr>
<tr>
<td>3.3 Self-Informant Agreement on Negative Affectivity</td>
<td>15</td>
</tr>
<tr>
<td>3.4 Self-Informant Agreement on Anxiety Sensitivity</td>
<td>15</td>
</tr>
<tr>
<td>4. DISCUSSION</td>
<td>17</td>
</tr>
<tr>
<td>4.1 Positive Affectivity</td>
<td>17</td>
</tr>
<tr>
<td>4.2 Anxiety Sensitivity</td>
<td>18</td>
</tr>
<tr>
<td>4.3 Negative Affectivity</td>
<td>20</td>
</tr>
<tr>
<td>4.4 Conclusions and Implications</td>
<td>21</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>24</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>38</td>
</tr>
<tr>
<td>VITA</td>
<td>41</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. RESULTS OF THE EXPLORATORY FACTOR ANALYSIS OF THE GTS, EPQ, ASI-R, BIS/BAS, AND TEPS</td>
<td>32</td>
</tr>
<tr>
<td>II. HIERARCHICAL LINEAR REGRESSION ANALYSES EXAMINING RANK-ORDER AGREEMENT BETWEEN SELF- AND INFORMANT-REPORTS OF PA</td>
<td>33</td>
</tr>
<tr>
<td>III. HIERARCHICAL LINEAR REGRESSION ANALYSES EXAMINING RANK-ORDER AGREEMENT BETWEEN SELF- AND INFORMANT-REPORTS OF NA</td>
<td>34</td>
</tr>
<tr>
<td>III. HIERARCHICAL LINEAR REGRESSION ANALYSES EXAMINING RANK-ORDER AGREEMENT BETWEEN SELF- AND INFORMANT-REPORTS OF ASI-R</td>
<td>35</td>
</tr>
<tr>
<td>FIGURE</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>1a.</td>
<td>The moderating effect of major depressive disorder on PA agreement</td>
</tr>
<tr>
<td>1.b</td>
<td>The moderating effect of panic disorder on ASI agreement</td>
</tr>
<tr>
<td>2.</td>
<td>The moderating effect of panic disorder on mean-level differences between self- and informant-reports of anxiety sensitivity</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>ASI-R</td>
<td>Anxiety Sensitivity Index-Revised</td>
</tr>
<tr>
<td>BFI</td>
<td>Big Five Inventory</td>
</tr>
<tr>
<td>BIS/BAS</td>
<td>Behavioral Inhibition System/Behavioral Activation System</td>
</tr>
<tr>
<td>EPQ</td>
<td>Eysenck Personality Questionnaire</td>
</tr>
<tr>
<td>GTS</td>
<td>General Temperament Scale</td>
</tr>
<tr>
<td>IR</td>
<td>Informant-report</td>
</tr>
<tr>
<td>MDD</td>
<td>Major depressive disorder</td>
</tr>
<tr>
<td>NA</td>
<td>Negative Affectivity</td>
</tr>
<tr>
<td>PA</td>
<td>Positive Affectivity</td>
</tr>
<tr>
<td>PD</td>
<td>Panic disorder</td>
</tr>
<tr>
<td>SNAP</td>
<td>Schedule for Adaptive and Nonadaptive Personality</td>
</tr>
</tbody>
</table>
SUMMARY

Abnormalities in positive and negative affectivity are risk factors for the development of psychopathology. Given that mood and anxiety disorder symptoms may influence self-ratings of personality traits, informant-reports of personality (i.e., from family members or close friends) are sometimes also collected. Although some have suggested that informant-reports are less biased by psychopathology than self-reports, little is known about the concordance between self- and informant-reports among those with anxiety and/or depression relative to those without. We investigated whether self-informant agreement on personality differs as a function of whether an individual has major depressive disorder (MDD) with no history of panic disorder (PD; n = 15), PD with no history of MDD (n = 21), comorbid PD and MDD (n = 28), or no history of psychopathology (n = 53). Informant-reported positive affectivity (PA) positively predicted self-reported PA among those with MDD, but not among those without. Likewise, informant-reported anxiety sensitivity positively predicted self-reported anxiety sensitivity among those with PD but not among those without. Finally, informant-reported negative affectivity (NA) positively predicted self-reported NA, and this relationship was not moderated by diagnosis. Results may indicate that PA and anxiety sensitivity are more noticeable to informants of those with MDD and PD, respectively. However, all associations between self- and informant-reports were moderate at best, which suggests that informant-reports may still contribute unique information to the assessment of personality and thus should be obtained when possible.
1. INTRODUCTION

Anxiety and depressive disorders are highly prevalent internalizing psychopathologies that are associated with significant impairment across multiple domains of life (Byers, Yaffe, Covinsky, Friedman & Bruce, 2010; Kessler, Petukhova, Sampson, Zaslavsky & Wittchen, 2012). Comprehensive assessment of personality can aid in the identification of individuals at risk for internalizing psychopathology, and provide valuable information about prognosis (Clark, Watson & Mineka, 1994; Harkness & Lilienfeld, 1997; Bagby, Quilty & Ryder, 2008). For example, it has been found that elevated neuroticism is associated with poorer treatment outcome in depression (Mulder, 2002), and longer major depressive episodes (Scott, Williams, Brittlebank & Ferrier, 1995). Other studies have found that high negative affectivity (NA) during adolescence longitudinally predicts the development of mood and anxiety pathology in adulthood (Kendler, Gatz, Gardner & Pedersen, 2006; Krueger, 1999; Wetter & Hankin, 2009).

There is also evidence to suggest that certain traits may differentially predict the development and prognosis of specific anxiety and mood pathologies. For example, heightened anxiety sensitivity, or the tendency to experience distress in response to benign bodily sensations associated with anxiety (e.g., heart racing or nausea), may connote risk for panic disorder (PD; McNally, 2002; Schmidt, Lerew & Jackson, 1997), but not depression (Schmidt, Lerew & Joiner, 1998). Reductions in anxiety sensitivity have also been associated with a decreased risk of relapse following successful treatment of panic disorder (Bruce, Spiegel, Gregg & Nuzzarello, 1995). Similarly, reduced positive affectivity (PA) has been implicated in the pathogenesis of depressive, but not certain anxiety disorders (Watson, Clark & Carey, 1988; Shankman & Klein, 2003). In sum, valid measurement of personality can provide valuable information for the advancement of psychopathology treatment and research effort.
1.1 **Self-reports of Personality**

A common method of ascertaining information about personality and temperament is by self-report - interviews or questionnaires that require self-assessment of one’s own trait-like tendencies or dispositions. For example, the widely-used NEO Personality Inventory (NEO-PI; Costa & McRae, 1992; Costa & McRae, 2008) asks individuals to rate on a likert scale the extent to which they agree or disagree with a given statement about themselves (e.g., How I feel about things is important to me; I’m pretty set in my ways).

Although self-report methodology is frequently employed for personality assessment in research and clinical settings, the degree to which self-report provides a comprehensive index of personality, especially among individuals with psychopathology, is unclear. It has been suggested that individuals with a personality disorder might lack insight about their own disposition, particularly in regards to less desirable traits, which may skew self-ratings of personality traits (Clark, 2007; Walters, Moran, Choudhury, Lee & Mann, 2004; Zimmerman, Pfohl, Stangl & Corenthal, 1986; Zimmerman, 1994). Moreover, the presence of mood and anxiety symptomatology may impact self-ratings of personality. Longitudinal studies have suggested that changes in depressive symptoms are associated with changes in how individuals rate themselves on personality measures over time (Parker et al., 1990; Hirschfeld et al., 1983; Jylha, Melartin, Rytasala & Isometsa, 2009; Ormel, Oldehinkel & Vollebergh, 2004), even when personality assessments are administered only twelve weeks apart (Griens, Jonker, Spinhoven & Blom, 2002). Similarly, Reich, Noyes, Coryell & O’Gormann (1983) found significant changes in self-reported personality after just six weeks among PD patients who responded to alprazolam treatment. Thus, self-reported personality measures collected from individuals with a current
mood or anxiety diagnosis may not be representative of their ‘true’ premorbid disposition (Griens, Jonker, Spinhoven & Blom, 2002; Ormel, Oldehinkel & Vollebergh, 2004).

1.2 **Informant-reports of Personality**

In an effort to obtain a more complete picture of an individual’s personality, researchers sometimes have family members or close friends (i.e., informants) also provide personality trait ratings for the proband (i.e., the individual whose personality is of interest; Clark, 2007; Klonsky, Oltmanns & Turkheimer, 2002; Walters et al., 2004; Zimmeran, Pfohl, Stangl & Corenthal, 1986). Due to the abovementioned potential for psychopathology to bias the self-assessment of personality, some have argued that high concordance between self- and informant-reports of personality is necessary to confirm the validity of the self-report among those with psychopathology (Funder & West, 1993; Ready & Clark, 2002; Yang et al., 1999).

The practice of using self-informant agreement to evaluate the accuracy of self-reported personality is grounded largely in assumption that informant-reports of personality are less biased by the proband’s psychopathology and social desirability, and thus more objective, than self-reports of personality (Funder & West, 1993; Pilgrim & Mann, 1990; Yang et al., 1999). However, there is evidence to suggest that both self- and informant-reports of personality may have strong incremental validity even if self- and informant-reports do not entirely correspond (Clifton, Turkheimer & Oltmanns, 2004; Galione & Oltmanns, 2013; Sherry et al., 2013). For example, Klein (2003) found that, among individuals with personality disorders, informant- and self-reports of personality pathology each contributed independently to the prediction of depressive symptoms and global functioning at follow-up.

The findings of Klein (2003) and others (Clifton, Turkheimer & Oltmanns, 2004; Galione & Oltmanns, 2013; Sherry et al., 2013) may suggest that obtaining self- and informant-reports of
personality is particularly valuable when the two sources provide divergent information, as each source may add to the predictive utility of personality assessment. Conversely, if self-informant agreement is high, obtaining both reports may be unnecessary and not worth the extra effort. Thus, determining whether self-informant concordance rates on personality measures are higher in certain populations may prove valuable for guiding clinicians and researchers as to when gathering assessments from both sources may be redundant.

1.3 **Self-Informant Agreement on Personality Measures**

In non-clinical samples, self-informant agreement on personality is typically modest but significant (Klonsky, Oltmanns and Turkheimer 2002; Connolly, Kavanagh and Viswesvaran; 2007). Importantly, agreement has been found to differ by trait, such that agreement is higher for those traits that are more observable, such as agreeableness or extraversion, relative to more ‘internal’ traits, such as neuroticism (Funder & Colvin, 1988; Funder & Dobroth, 1987; Clifton, Turkheimer & Oltmanns, 2004). That is, traits associated with visible behavioral manifestations tend to yield greater self-informant agreement than those traits associated with more private or less outwardly expressed behavioral manifestations.

Given that anxiety and depression are internalizing disorders, it is possible that personality traits relevant to those diagnoses yield poor self-informant agreement. However, this question remains relatively unexplored. In the broader literature, self-informant agreement on personality disorder diagnoses in clinical samples have yielded correlations ranging from .18 to .80 (Klonsky, Oltmanns & Turkheimer, 2002). Only two studies to date have examined self-informant agreement on Big Five personality traits among those with depression: Bagby et al. (1998) found self- and informant-ratings on the Revised NEO Personality Inventory (NEO-PI-R) to be highly similar ($r > .50$) among a sample of individuals with unipolar depression, an
agreement that is comparable if not slightly higher than what has been found across some non-clinical samples. Meanwhile, Ready and Clark (2002) found that there were no differences in agreement between individuals with a personality disorder with and without comorbid depression on the Big Five Inventory (BFI) and the Schedule for Nonadaptive and Adaptive Personality (SNAP). Interestingly, however, self-informant agreement on ratings of openness was higher for those with depression than those without.

Taken together, these studies suggest that concordance between self- and informant-ratings of personality among individuals with depression may be comparable to, if not higher than, concordance among those without. However, to our knowledge no study to date has compared self-informant concordance rates for those with depression, relative to those without a history of psychopathology, within the same sample. Therefore, it may be premature to conclude that the relationship between self- and informant-reports of personality for individuals with depression is comparable to that of individuals without a psychopathology, a factor that may be important to consider in between-groups research designs. Moreover, findings to date still leave unanswered the question of whether specific internalizing disorders differentially effect self-informant agreement on personality. That is, no studies have examined whether self-informant agreement differs for those with an anxiety disorder, relative to those without. In addition, investigations of agreement on personality among those with depression have focused primarily on personality disorder traits. Thus, it is unknown whether self-informant agreement will differ for traits that are especially relevant to a given disorder, such as anxiety sensitivity among those with panic disorder. It would also be beneficial to examine agreement on PA and NA across multiple measures so as to reduce the potential influence of method variance (Elliot & Thrash, 2002).
If self- and informant-reports of personality provide highly redundant information among individuals with anxiety or depression, this may suggest that it is unnecessary for clinicians and researchers to collect informant-reports in addition to self-reports of personality for those individuals with internalizing psychopathology. However, if concordance between self- and informant-reports of personality among those with anxiety or depression is poor, this may be indicative of an underlying issue in how personality is usually assessed for those individuals (i.e., solely by self-report). This would also provide reinforcement for the practice of collecting informant-reports in addition to self-reports of personality for those with internalizing psychopathology. Finally, differential agreement across those with and without internalizing psychopathology, or between diagnostic groups, may indicate that self- and informant-reports of personality should be collected for between-subjects designs in which personality is used as a predictor.

1.4 **Aims and Hypotheses**

The present study investigated whether self-informant agreement on personality trait ratings varies as a function of whether the individual has a diagnosis of major depressive disorder (MDD), PD, or comorbid MDD and PD. We examined self-informant agreement on broad composites of PA and NA determined from multiple scales. Although we anticipate that anxiety sensitivity will load onto the broad NA factor (Ho et al., 2011; Hong, 2010; Longley, Watson, Noyes & Yoder, 2006), we will also examine the relationship between self- and informant-reports of anxiety sensitivity separately due to its’ strong association with PD relative to MDD and other anxiety disorders (McNally, 2002; Schmidt, Lerew & Jackson, 1997). Mean-level differences between self and informant reports will also be examined.
Based on findings to date, we expected informant-reports to be positively associated with self-reports of personality across all participants. Due to the limited extant literature on the potential moderating effects of anxiety on the concordance between self- and informant-ratings on questionnaire measures of personality, we did not have specific hypotheses as to whether the relationship between self- and informant reports will differ between diagnostic groups (i.e., healthy controls, MDD, PD, or comorbid PD and MDD). However, as discussed above, some have suggested that informant-reports may provide a more valid index of personality than self-reports among those with psychopathology (Funder & West, 1993; Pilgrim & Mann, 1990; Yang et al., 1999). Thus, it is possible that self-informant agreement may be poorer among those with PD or MDD, relative to those with no history of psychopathology. Alternatively, it may be that individuals with a disorder exhibit a specific trait more outwardly than those without that disorder, which could result in superior self-informant agreement for those with that disorder (Funder & Colvin, 1988; Funder & Dobroth, 1987; Clifton, Turkheimer & Oltmanns, 2004). For example, anxiety sensitivity may be a more prominent, or observable trait to informants of those with PD than those without PD. Consequently, self-informant agreement on anxiety sensitivity may be stronger for those with PD, relative to those without.
2. METHODS

2.1 Participants

Data from the present study was collected as part of a larger investigation on laboratory measures of emotional processing, for which the complete procedure can be found elsewhere (Shankman et al., 2013). In brief, self-report measures of personality and temperament were collected from four groups of individuals (i.e., probands; N = 208), those with: (1) no history of Axis I psychopathology (i.e., healthy controls; n = 82), (2) current MDD and no lifetime history of PD (i.e., MDD-only group; n = 40), (3) current PD and no lifetime history of MDD (i.e., PD-only group; n = 28), (4) current PD and MDD (i.e., comorbids; n = 58). Diagnoses were made via the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1996). Participants in PD only and comorbid groups were allowed to have other current or past anxiety disorders, whereas participants in the MDD only group were not allowed to have a lifetime history of any anxiety disorders. In addition, due to the aims of the larger study (and to reduce the heterogeneity of those with MDD), all individuals with MDD had an early onset of dysthymia or MDD (i.e., prior to age 18). Participants were excluded if they had a lifetime diagnosis of a psychotic disorder, bipolar disorder, or dementia; were unable to read or write in English; had a history of head trauma with loss of consciousness; or were left-handed (left-handedness was confirmed using the Edinburgh Handedness Inventory; Oldfield, 1971).

Completed informant-reports were completed and returned for 117 (51%) of the 208 probands, with PD only (n = 15), MDD only (n = 21), comorbid PD and MDD (n = 28), and no history of psychopathology, (n = 53). Of those 117 probands, 51.3% were Caucasian, 26.5% were African-American, 7.7% were Hispanic, and 14.5% were Asian, and 65% were female. The mean age of this sample was 33.29 (SD = 12.71). Probands with informant-reports returned to
the laboratory did not differ from those without in ethnicity, $X^2 (3, N = 208) = 4.70, ns$, gender, $X^2 (1, N = 208) = .12, ns$, depression status, $X^2 (2, N = 208) = 2.94, ns$, panic status, $X^2 (2, N = 208) = 2.33, ns$, or age, $F (1, 198) = .04, ns$. Likewise, there were also no mean-level differences in NA, $F (1, 198) = .00, ns$, PA, $F (1, 198) = .12, ns$, or anxiety-sensitivity, $F (1, 198) = 1.23, ns$, between those probands for whom informant-reports of personality were obtained, relative to those for whom informant-reports were not obtained.

2.2 **Procedure**

After providing informed consent for participation in the study protocol, proband participants were administered a battery of self-report personality questionnaires. Participants were also asked to provide contact information for a family member or close friend who could potentially serve as an informant. Probands were provided the following instruction, “As described to you in the consent form, as a part of the study, we will ask a close friend or family member of yours to fill out a packet of questionnaires about your personal qualities and characteristics.” All probands were compensated, in cash, for their time.

A laboratory member contacted informants by phone to explain that they would be mailed a packet of personality questionnaires to complete about the family member or close friend who participated in the study. Informants were assured that study participants would not be permitted to view the informant’s personality ratings of them. Likewise, probands were assured that informants would not be permitted to view the proband’s personality ratings of themselves. Informant-reports of personality were identical to the self-report measures collected, however, other-report measures were reworded from first to third person either by the developers of the scales or with permission from the developers. Informants who returned the packets were
paid $20 for their participation. The numbers of days spanned between the administration of self- and informant-reports was skewed with a mean of 318.15 (SD = 377.18), but a median of 243.

2.3 Measures

2.3.1 Self- and Informant-Reports of the General Temperament Scale

The General Temperament Scale (GTS; Clark & Watson, 1990) is a 90-item true-false questionnaire designed to assess for negative and positive temperament. Higher scores on the negative temperament subscale indicate a tendency to experience negative emotions such as sadness or anger, whereas higher scores on the positive temperament subscale indicate a tendency to experience positive emotions, such as happiness or excitement. Of note, the GTS has also been incorporated into the widely used SNAP measure of personality (Clark, 1993). Cronbach’s alpha for self- and informant-reports of negative and positive temperament were above .88.

2.3.2 Self- and Informant-Reports of Eysenck Personality Questionnaire

Eysenck Personality Questionnaire (EPQ) is a 100-item questionnaire with yes or no answer options. The EPQ is designed to assess for trait neuroticism, extraversion, and psychoticism. Cronbach’s alpha for self- and informant-reports of neuroticism an extraversion were above .70.

2.3.3 Self- and Informant-Reports of the Temporal Experience of Pleasure Scale

The Temporal Experience of Pleasure Scale (TEPS; Gard, Gary, Kring & John, 2006) is an 18-item questionnaire, which requires participants to indicate yes or no to each item. The TEPS is designed to assess for trait differences in ability to derive pleasure from the anticipation and consummation of reward. The TEPS yields an overall experience of pleasure score, a 10-
item anticipatory pleasure score, and an 8-item consummatory pleasure scale. Cronbach’s alpha for self- and informant-reports of TEPS were above 83.

2.3.4 **Self- and Informant-Reports of the Anxiety Sensitivity Index-Revised**

The Anxiety Sensitivity Index-Revised (ASI-R; Taylor & Cox, 1998) is 36-item revised version of the original ASI developed by Reiss et al (1986). Statements are rated on a five-point scale ranging from “very little” to “very much.” The ASI is designed to assess the extent to which an individual experiences fear or distress in response to physiological indicators of anxiety, such as heart racing or nausea. Cronbach’s alpha for self- and informant-reports of anxiety sensitivity were above .95.

2.3.5 **Self- and Informant-Reports of the Behavioral Inhibition System/Behavioral Activation System**

The Behavioral Inhibition System/Behavioral Activation System Scale (BIS/BAS Scale; Carver & White, 1994) is a 26-item questionnaire. Statements are rated on a four-point scale ranging from “very true” to “very false.” The BIS/BAS includes a subscale for behavioral inhibition, and behavioral activation. The BIS scale is designed to assess for the tendency of individuals to experience negative affect or withdrawal behaviors in response to stimuli. The BAS scale is designed to assess for the tendency of individuals to experience positive affect or approach behaviors in response to stimuli. Cronbach’s alpha for self- and informant-reports of BAS and BIS were above .80.

2.4 **Data Analysis Plan**

Missing questionnaire items were imputed using the participant’s own average response on the missing item’s subscale. If a participant was missing more than 20% of a questionnaire’s items, we did not interpolate item-level responses. However, we did calculate factor scores (see
below) for these subjects using a combination of the participant's available data and the average of their group (i.e., control, panic, etc.). More specifically, missing subscale scores were imputed using the average z-score for that participant’s diagnostic group. Z-scores were then multiplied by the appropriate factor loading and added together to generate a factor score.

To reduce method variance for all analyses (Elliot & Thrash, 2002), we conducted principle component factor analyses using a varimax rotation, independently for each self- and informant-reports. Gender and age of the proband, and number of days spanned in between completion of the self-and informant-report were included as covariates for all analyses described below. All continuous variables were mean-centered. Diagnostic variables included the analyses described below were MDD (yes/no) and PD (yes/no). This 2x2 variable design allows for the examination of the main effects of PD and MDD, as well as the interaction of comorbid PD and MDD, on the relationship between self- and informant-reports of personality. As discussed earlier, we also conducted independent analyses of the relationship between self- and informant-reports of anxiety sensitivity.

2.4.1 **Rank-order Agreement**

We conducted a series of hierarchical regression analyses to examine the concordance between self- and informant-reports of personality. Scores on informant-reports were included as an independent variable, and scores on self-reports as the dependent variable. MDD and PD were included as separate moderators. For the analysis of self-informant agreement on each measure, covariates were entered in block one, and the main effects PD, MDD, and informant-rated personality were entered in block two. The two-way interactions of informant-rated personality x MDD, and informant-rated personality x PD status were entered in block three. Finally, the three-way interaction of MDD x PD x informant-rated personality were entered in block four to
examine the role of comorbid MDD and PD. However, this interaction term was subsequently removed from the model because there was no effect of comorbidity on rank-order agreement for any of the traits examined. Significant interactions of diagnosis by self-reported personality were followed up by examining the simple slopes (Aiken & West, 1991) of informant-rated personality for individuals with and without the diagnosis.

2.4.2 Mean-level Differences

We conducted a three-way mixed effects ANOVA to examine whether informants rated probands at different average levels than and proband’s rated themselves and whether this difference was moderated by diagnosis. Source of personality ratings (self- vs. informant-reported) were entered as within-subjects factors, and MDD status and PD status as between-subjects factors. Source by diagnoses interactions were followed-up to evaluate the directionality of the effect for that diagnostic group. Finally, analogous to the rank-order analyses, because there was no three-way interaction of PD x MDD x source of personality report on mean-levels of NA, PA, or ASI-R, this interaction term was subsequently removed from mean-level analyses.
3. RESULTS

3.1 Factor Analytic Findings

As predicted, factor analyses revealed a two-factor structure for self- and informant-reports of personality. More specifically, overall reward processing (TEPS), positive emotionality (GTS), extraversion (EPQ), and behavioral activation (BIS/BAS), loaded positively onto a PA factor. Anxiety sensitivity (ASI), negative emotionality (GTS), neuroticism (EPQ), and behavioral inhibition (BIS/BAS) loaded onto an NA factor (see Table 1).

3.2 Self-Informant Agreement on Positive Affectivity

There was a significant positive relationship between self- and informant-reported PA when collapsed across diagnostic groups, $\beta = 0.28$, $t(116) = 3.40$, $p < .05$ (see Table 2). There was also a main effect of MDD on self-reported PA, $\beta = -0.34$, $t(116) = 3.89$, $p < .05$, such that PA was lower among those with MDD, relative to those without. However, there was no main effect of PD on self-reported PA, $\beta = -0.01$, $t(116) = 0.10$, $ns$. Most importantly, MDD moderated the relationship between self- and informant-reported PA, $\beta = 0.31$, $t(116) = 2.24$, $p < .05$. Follow-up analyses indicated that informant-reports positively predicted self-reports among those with MDD, $\beta = 0.63$, $t(116) = 3.50$, $p < .05$, but not among those without, $\beta = 0.19$, $t(116) = 1.62$, $ns$ (see Figure 1a). The relationship between self- and informant-reports of PA was not moderated by PD, $\beta = -0.18$, $ns$.

There were no mean-level differences between self- and informant-reports of PA when collapsed across diagnostic groups, $F (1, 111) = 0.34$, $ns$. Likewise, there was no two-way interaction of PD status x source of personality report, $F (1, 111) = 0.00$, $ns$, or MDD status x source of personality report, $F (1, 111) = 0.72$, $ns$, on PA.
3.3 **Self-Informant Agreement on Negative Affectivity**

There was a significant positive relationship between self- and informant-reported NA, $\beta = 0.35$, $t(116) = 4.42$, $p < .05$. There was also a main effect of PD on self-reported NA, $\beta = 0.30$, $t(116) = 3.89$, $p < .05$, and MDD on self-reported NA, $\beta = 0.28$, $t(116) = 3.50$, $p < .05$, such that NA was higher among those with PD and MDD, relative to those without. The association between self- and informant-reported NA was not moderated by MDD status $\beta = -0.14$, $t(116) = -1.15$, $ns$, or PD status, $\beta = 0.09$, $t(116) = 0.76$, $ns$ (see Table 3).

There were also no mean-level differences between self- and informant-reports of NA when collapsed across diagnostic groups, $F(1, 111) = 0.46$, $ns$. In addition, there was no PD status x source of personality report interaction, $F(1, 111) = 3.07$, $ns$, or MDD status x source of personality report on NA, $F(1, 111) = .28$, $ns$.

3.4 **Self-Informant Agreement on Anxiety Sensitivity**

There was a significant positive relationship between informant- and self-reported anxiety sensitivity, $\beta = 0.26$, $t(114) = 3.30$, $p < .05$, and a main effect of PD on self-reported anxiety sensitivity, $\beta = 0.41$, $t(114) = 5.02$, $p < .05$ (see Table 4). Individuals with PD reported higher levels of anxiety sensitivity than those without. Likewise, there was a main effect of MDD on self-reported anxiety sensitivity, such that individuals with MDD reported higher levels of anxiety sensitivity than those without, $\beta = .17$, $t(114) = 2.10$, $p < .05$. The relation between self- and informant-reported was moderated by PD status, $\beta = 0.27$, $t(114) = 2.12$, $p < .05$.

Follow-up analysis indicated that informant-reports positively predicted self-reports of anxiety sensitivity among those with PD, $\beta = 0.52$, $t(114) = 4.60$, $p < .05$, but not among those without, $\beta = .26$, $t(114) = 0.66$, $ns$ (see Figure 1b). Agreement on anxiety sensitivity was not moderated by MDD, $\beta = .05$, $ns$. 
Finally, there were no mean-level differences between self- and informant-reports of anxiety sensitivity when collapsed across diagnostic groups, $F(1, 109) = 1.67, ns$. There was also no two-way interaction of MDD status x source of personality report, $F(1, 109) = 0.10, ns$. However, there was an interaction of PD status x source of personality report, $F(1, 109) = 4.54, p < .05$. Follow-up comparisons revealed mean-level differences between self- and informant-reported anxiety sensitivity among those without PD, $F(1, 73) = 14.70, p < .05$, such that informant-ratings of anxiety sensitivity were higher ($M = 47.13, SD = 29.76$) than self-ratings of anxiety sensitivity among those without PD ($M = 32.72, SD = 21.04$). There were no mean-level differences between self- and informant-reports of anxiety sensitivity among those with PD, $F(1, 40) = 0.10, ns$ (see Figure 2).
4. DISCUSSION

The present study investigated the relationship between self- and informant-ratings of personality traits, and whether this relationship differed as a function of whether the person being rated had PD and/or MDD. Self-informant agreement was examined on anxiety sensitivity, and indices of PA and NA. There were several noteworthy findings. Results overall suggest that self-informant agreement on personality traits among those with PD and/or MDD is comparable to, and for some traits better than, agreement among healthy controls. In particular, there was a moderate positive relationship between self- and informant-reports of NA across all participants. However, diagnosis moderated agreement between self- and informant-reports of PA and anxiety sensitivity. Below we discuss the results for each of the personality domains.

4.1 Positive Affectivity

The present study found that depression moderated self-informant agreement on PA, such that informant-reports of PA were not associated with self-reports of PA among those without MDD, but were positively associated for those with MDD. There also were no mean-level differences between self- and informant-reports of PA, regardless of diagnosis – suggesting no systematic reporting bias in individuals with MDD. Consistent with a wealth of previous literature (Clark & Watson, 1991; Shankman & Klein, 2003; Shankman et al., 2013; Watson, Clark & Carey, 1988), PA was lower (according to both informants and probands) among those with MDD than those without. The moderating effect of depression may therefore indicate that deficits in PA are especially noticeable or salient to informants.

The heightened saliency of PA to informants of those with depression may be related to the nature of the behavioral correlates of PA. More specifically, previous studies have found that the behavioral correlates of PA are visible social behaviors, such as laughing and being talkative.
in the presence of others (Funder & Colvin, 1988; Funder & Dobroth, 1987; Watson, Hubbard & Wiese, 2000). It may be that the failure or absence of these social behaviors is particularly attention grabbing to others. Consequently, informants may be acutely aware of deficits in PA, which may enhance self-informant agreement on ratings of the trait among individuals with depression.

Alternatively, the moderating effect of MDD on self-informant agreement may be due to differences in the consistency of PA exhibited by those with MDD, relative to those without a history of MDD. It has been suggested that self-informant agreement is superior for those traits self-rated as highly consistent, relative to those self-rated as highly inconsistent (Bem & Allen, 1974; Funder & Dobroth, 1987). Individuals without a history of MDD may exhibit more variability in PA throughout life (and in their interactions with informants) than those with MDD. This tendency to exhibit greater fluctuations in PA over the lifespan could lead to inconsistent reporting by informants. Conversely, individuals with MDD may exhibit consistently low PA, which may enhance the ratability and inter-rater reliability of PA for those MDD.

4.2 **Anxiety Sensitivity**

Interestingly, the anxiety sensitivity/PD findings were quite akin to the PA/MDD findings. PD moderated the relationship between self- and informant-reports of anxiety sensitivity, a trait that is particularly relevant to the development of PD (McNally, 2002; Schmidt, Lerew & Jackson, 1997; Schmidt, Lerew & Joiner, 1998). More specifically, there was a positive relationship between self- and informant-reports of anxiety sensitivity among those with PD, whereas this relationship was not significant for those without PD. Given that anxiety sensitivity was higher among those with PD, than those without (according to both probands and
informants), these finding may indicate that anxiety sensitivity is a trait that is highly perceptible to others when heightened.

Traits have been found to vary in perceived visibility to informants based on how often there are opportunities to perceive trait confirming or disconfirming behaviors (Funder & Colvin, 1988; Funder & Dobroth, 1987). Among those with PD, there may be more frequent opportunities to observe the behavioral correlates of anxiety sensitivity. For example, an individual with PD may verbally or physically express to others distress over their bodily sensations (e.g., expressing concern that heart racing is due to a heart attack, or getting visibly upset because of shortness of breath). However, individuals without PD are not likely to express this level of distress about benign physical symptoms, leaving informants of those without PD, unaware of their respective proband’s level of anxiety sensitivity. That is, anxiety sensitivity may “not come up” for non-PD participants leaving the informant unsure as to the proband’s levels of the trait.

Consistent with this proposed explanation, informant-ratings of anxiety sensitivity were significantly higher than self-ratings of anxiety sensitivity on average among those without PD, and there were no mean-level differences between self- and informant-reports among those with PD. If informants of those without PD were indeed unaware of their respective proband’s level of anxiety sensitivity, they may have overestimated the degree of anxiety sensitivity experienced by their proband. Conversely, informants of those with PD may have been more knowledgeable about their respective proband’s level of anxiety sensitivity, and thus consistently more accurate about their respective proband’s level of anxiety sensitivity.
4.3 **Negative Affectivity**

Unlike PA and anxiety sensitivity, self-informant agreement on NA was not moderated by diagnosis, although there was a significant positive association between self- and informant-reports of NA across the entire sample. Self-reported NA was higher among those with either PD or MDD, than healthy controls, and there were no mean-level differences between self- and informant-reports of NA across diagnostic groups, again suggesting that there was no systematic reporting bias among individuals with PD or MDD. Thus, despite the role of heightened NA in the development of anxiety and depression (Kendler, Gatz, Gardner & Pedersen, 2006; Krueger, 1999; Wetter & Hankin, 2009), the agreement between self- and informant-reports of personality may not differ for those with internalizing psychopathology (or at least MDD and PD), relative to those without. Although speculative, it is possible that NA is not relatively more noticeable to informants of those with internalizing psychopathology, because of the heterogeneous nature of the behavioral correlates of NA. That is, the behavioral correlates of NA may vary so much (e.g., crying, yelling, avoidance, rumination) that they are not specifically salient to any one diagnostic group.

Finally, there was no interactive effect of PD and MDD on self-informant agreement for NA, PA or anxiety sensitivity. There are several possible explanations for this lack of effect of comorbidity. First, the present study may not have had adequate power to detect this higher order (PD x MDD) interaction. Second, this may suggest that noticeability of a trait to informants is not influenced by the degree or severity of the internalizing symptoms experienced by the proband. That is, although anxiety sensitivity could be more salient to informants of those with PD, the co-occurrence of depressive symptoms with PD symptoms may not necessarily enhance
this effect. Likewise, the presence of PD symptoms may not improve self-informant agreement on PA for those with comorbid PD and MDD.

4.4 **Conclusions and Implications**

In sum, the present study found the concordance between self- and informant-reports of PA to be superior for those with MDD, relative to those without MDD, whereas concordance between self- and informant-reports of anxiety sensitivity was superior for those with PD, relative to those without PD. There was no interactive effect of comorbid anxiety and depression on the relationship between self- and informant-reports of anxiety sensitivity, PA, or NA. There were also no mean-level differences between self- and informant-reports of personality among those with a diagnosis, across traits.

It is important to note that self-informant agreement for all traits among those with a diagnosis was moderate at best, even when statistically significant. Thus, self- and informant-reports do not capture entirely redundant information. As mentioned earlier, there is a growing literature to suggest that self- and informant-reports may each independently contribute to the predictive utility of personality assessment when the reports do not entirely converge (Klein, 2003). Thus, it may be most beneficial to collect self- and informant-reports when agreement is low, and potentially redundant to collect both reports if agreement is high. Taken together, the present findings indicate that it indeed may be valuable to collect self- and informant-reports for those with anxiety and depression when possible. Given the differential agreement exhibited across groups, this may be a particularly important factor to consider when conducting between-groups research designs in which PA or anxiety sensitivity are used as predictor variables.

Given that there were no mean-level differences between self- and informant-reports among those with a diagnosis, self-reported personality may not have been biased by the
presence of an anxiety and/or depressive disorder (Bagby et al., 1998). However, it is also important to acknowledge that reliability of ratings does not necessarily indicate validity (Cronbach & Meehl, 1955). Therefore, agreement between self- and informant-reports of personality could indicate that both sources are biased by the psychopathology of the proband.

Although some have argued that informant-reports of personality are more objective and reliable than self-reports of personality among those with psychopathology (Funder & West, 2003; Pilgrim & Mann, 1990; Yang, 1999), there is evidence to suggest that informant-reports may also be influenced by current mood and anxiety disorder symptoms of the proband. For example, an investigation by Case et al. (2007) found that self- and informant-reports of personality pathology changed after recovery from a depressive episode. Therefore, it may be that neither the self- nor informant-reports are indicative of the proband’s premorbid (or perhaps ‘true’) personality. Future investigations should further evaluate this possibility by comparing the external validity of self- and informant-reports of personality across diagnostic groups.

The present study had several limitations worth considering. First, information was not obtained about the relationship of the informant to the proband, the informants’ history of psychopathology, or demographic information. Any of the aforementioned factors could have potentially influenced self-informant agreement. Second, as discussed above, a small sample size in each of the four diagnostic groups may have made it difficult to detect the interactive effect of PD and MDD on self-informant agreement. However, the current investigation had several methodological strengths, such as a clinical sample, and the lack of reliance on a single indicator of PA and NA (but rather latent factors which would reduce measurement noise [Elliot & Thrash, 2002]).
In conclusion, results from this investigation have important implications for future studies that use personality traits to predict an individual’s risk for anxiety and/or depression, or prognosis among those with internalizing psychopathology. Given the differential self-informant agreement across diagnostic groups, future investigations should examine whether the incremental utility of self- and informant-reports of personality also varies by diagnostic group.
REFERENCES


Krueger, R. F. (1999). Personality traits in late adolescence predict mental disorders in


TABLE I
RESULTS OF THE EXPLORATORY FACTOR ANALYSIS OF
THE GTS, EPQ, ASI-R, BIS/BAS, AND TEPS

<table>
<thead>
<tr>
<th></th>
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<th>Factor 2 (PA)</th>
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</thead>
<tbody>
<tr>
<td>GTS Negative Emotionality</td>
<td>.91</td>
<td>-.22</td>
</tr>
<tr>
<td>EPQ Neuroticism</td>
<td>.90</td>
<td>-.22</td>
</tr>
<tr>
<td>BIS/BAS Behavioral Inhibition</td>
<td>.79</td>
<td>-.01</td>
</tr>
<tr>
<td>ASI-R Anxiety Sensitivity</td>
<td>.80</td>
<td>-.10</td>
</tr>
<tr>
<td>TEPS Reward Processing</td>
<td>-.12</td>
<td>.81</td>
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<tr>
<td>BIS/BAS Behavioral Activation</td>
<td>.14</td>
<td>.72</td>
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<tr>
<td>GTS Positive Emotionality</td>
<td>-.41</td>
<td>.79</td>
</tr>
<tr>
<td>EPQ Extraversion</td>
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<td>.82</td>
</tr>
<tr>
<td>GTS Inf Negative Emotionality</td>
<td>.90</td>
<td>-.11</td>
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<tr>
<td>EPQ Inf Neuroticism</td>
<td>.90</td>
<td>-.17</td>
</tr>
<tr>
<td>BIS/BAS Inf Behavioral Inhibition</td>
<td>.71</td>
<td>-.19</td>
</tr>
<tr>
<td>ASI-R Inf Anxiety Sensitivity</td>
<td>.75</td>
<td>.00</td>
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<tr>
<td>TEPS Inf Reward Processing</td>
<td>.00</td>
<td>.74</td>
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<tr>
<td>BIS/BAS Inf Behavioral Activation</td>
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<td>.87</td>
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<tr>
<td>GTS Inf Positive Emotionality</td>
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<td>.76</td>
</tr>
<tr>
<td>Inf EPQ Extraversion</td>
<td>-.27</td>
<td>.73</td>
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*Note. Factor loadings > .70 are in boldface; Inf = Informant-reported.*
TABLE II.

Hierarchical Linear Regression Analyses Examining Rank-Order Agreement Between Self- and Informant-Reports of PA

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>t</th>
<th>R</th>
<th>ΔR²</th>
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<tr>
<td>Age</td>
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<td>-1.87</td>
<td></td>
<td></td>
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<tr>
<td>Gender</td>
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<tr>
<td>Days Spanned</td>
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<td>.09</td>
<td></td>
<td></td>
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<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA Inf</td>
<td>.28*</td>
<td>3.39</td>
<td></td>
<td></td>
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<tr>
<td>PD</td>
<td>-.01</td>
<td>-.09</td>
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<td></td>
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<tr>
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<td>-.34*</td>
<td>-3.89</td>
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<td>Step 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PD X PA Inf</td>
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<td>-1.48</td>
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<tr>
<td>MDD X PA Inf</td>
<td>.31*</td>
<td>2.24</td>
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</table>

Note. PD = panic disorder; MDD = major depressive disorder; PA = positive affectivity; PA Inf = informant-reported PA; Days spanned = number of days spanned in between the administration of self- and informant-reports.

*p < .05
TABLE III.
HIERARCHICAL LINEAR REGRESSION ANALYSES EXAMINING RANK-ORDER AGREEMENT BETWEEN SELF- AND INFORMANT-REPORTS OF NA

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>t</th>
<th>R</th>
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<tr>
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<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
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<td>-.65</td>
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<tr>
<td>Days Spanned</td>
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<td>1.56</td>
<td></td>
<td></td>
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<tr>
<td>Step 2</td>
<td>.69</td>
<td>.46*</td>
<td></td>
<td></td>
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<tr>
<td>NA Inf</td>
<td>.35*</td>
<td>4.42</td>
<td></td>
<td></td>
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<tr>
<td>PD</td>
<td>.30*</td>
<td>3.88</td>
<td></td>
<td></td>
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<tr>
<td>MDD</td>
<td>.28*</td>
<td>3.50</td>
<td></td>
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<tr>
<td>Step 3</td>
<td>.70</td>
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<tr>
<td>PD X NA Inf</td>
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<td>.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MDD X NA Inf</td>
<td>-.14</td>
<td>-1.15</td>
<td></td>
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</tbody>
</table>

Note. PD = panic disorder; MDD = major depressive disorder; NA = negative affectivity; NA Inf = informant-reported NA; Days spanned = number of days spanned in between the administration of self- and informant-reports.

*p < .05
TABLE IV.

HIERARCHICAL LINEAR REGRESSION ANALYSES EXAMINING RANK-ORDER AGREEMENT BETWEEN SELF- AND INFORMANT-REPORTS OF ASI-R

<table>
<thead>
<tr>
<th>Step</th>
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<th>t</th>
<th>R</th>
<th>$\Delta R^2$</th>
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<td>.07*</td>
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<td>Gender</td>
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<td>-1.06</td>
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<td>Days Spanned</td>
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<td>1.48</td>
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<td>Step 2</td>
<td>.65</td>
<td>.35*</td>
<td>.35*</td>
<td></td>
</tr>
<tr>
<td>ASI-R Inf</td>
<td>.26*</td>
<td>3.29</td>
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<td>PD</td>
<td>.41*</td>
<td>5.02</td>
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<td>MDD</td>
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<td>Step 3</td>
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<td>.05*</td>
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<td>.27*</td>
<td>2.12</td>
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<td>MDD X ASI-R Inf</td>
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<td>.38</td>
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</table>

Note. PD = panic disorder; MDD = major depressive disorder; ASI-R = Anxiety Sensitivity Index-Revised; ASI-R Inf = Informant-reported ASI-R; Days spanned = number of days spanned in between the administration of self- and informant-reports.

*p < .05
Figure 1a. The moderating effect of major depressive disorder on PA agreement.

Figure 1b. The moderating effect of panic disorder on ASI agreement.
Figure 2. The moderating effect of panic disorder on mean-level differences between self- and informant-reports of anxiety sensitivity.
*p < .05
APPENDIX
UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Continuing Review

May 16, 2014

Stewart Shankman, Ph.D.
Psychology
912 S. Wood St., 4th Fl., M/C 285
Chicago, IL 60612
Phone: (312) 355-3812 / Fax: (312) 413-4122

RE: Protocol # 2005-0626
“Emotional Processing and Physiology”

Dear Dr. Shankman:

Please note, your research training will expire on 06/12/2014 and the research training will expire for Brady D. Nelson on 07/06/2014 and on 07/30/2014 for Dr. James Stevenson. Please note, each person must complete a minimum of two hours of continuing education prior to the expiration date in order to continue to participate in the conduct of the research. You may refer each person to the OPRS website, where continuing education offerings are available: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/2-2-2/ce_requirements.shtml

Your Continuing Review was reviewed and approved by Members of IRB #3 by the Expedited review process on May 8, 2014. You may now continue your research.

Please note the following information about your approved research protocol:

Approved Subject Enrollment #: 800 (555 Subjects enrolled to date)
Additional Determinations for Research Involving Minors: The Board determined that this research satisfies 45CFR46.404, research not involving greater than minimal risk. Therefore, in accordance with 45CFR46.408, the IRB determined that only one parent's/legal guardian's permission/signature is needed. Wards of the State may not be enrolled unless the IRB grants
specific approval and assures inclusion of additional protections in the research required under 45CFR46.409. If you wish to enroll Wards of the State contact OPRS and refer to the tip sheet.

Performance Sites: UIC
Sponsor: NARSAD (Nat'l Alliance for Research on Schizophrenia and Depression), Office of Social Science Research (OSSR), NIMH - National Institute of Mental Health, Department of Psychology

PAF#: 2008-00188, Not available, Not available,2008-05183
Grant/Contract No: Not available, Not available, Not available, 1R21MH080689-01A2
Grant/Contract Title: Neurobehavioral processes that are common and/or specific to major depression and anxiety: an fMRI study, Not available, Not available,
Anticipating reward & threat: A test of biobehavioral processes in MDD vs anxiety

Research Protocol(s):
   a) Emotional Processing and Physiology Version 8, 12/13/2011

Recruitment Material(s): All retired as part of CR 2014 as per PI’s request

Informed Consent(s):
   a) Emotional processing-Group PSY100.NG, August 2009, Version #3, 08/04/2009
   b) Emotional Processing, Informant, January 2014, Version 4, 01/21/2014
   c) Waiver of Informed Consent granted under 45 CFR 46.116(d) only for recontacting previously enrolled subjects.

Parental Permission(s):
   a) A waiver of parental permission has been granted under 45 CFR 46.116(d) and 45 CFR 46.408(c); however, as per UIC Psychology Subject Pool policy, as least one parent must
sign the Blanket Parental Permission document prior to the minor subject’s participation in the UIC Psychology Subject Pool.

Your research continues to meet the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific categories:

(4) Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving X-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications.)

(7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

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<td>05/05/2014</td>
<td>Continuing Review</td>
<td>Expedited</td>
<td>05/08/2014</td>
<td>Approved</td>
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Please remember to:

→ Use your research protocol number (2005-0626) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure, "UIC Investigator Responsibilities, Protection of Human Research Subjects" ([http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf](http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf))

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 355-2939. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Jewell Hamilton, MSW
IRB Coordinator, IRB # 3
Office for the Protection of Research Subjects

Enclosure(s):

1. Informed Consent Document(s):
   b) Emotional Processing, Informant, January 2014, Version 4, 01/21/2014

cc: Michael E. Ragozzino, Psychology, M/C 285
OVCR Administration, M/C 672
CURRICULUM VITA
Lynne Lieberman

Chicago Laboratory of Emotion and Physiology
University of Illinois at Chicago
1007 West Harrison St. Chicago, IL 60612
Phone: 347-675-2869
Email: lnlieberman@gmail.com

Education
Fall 2013-Present
Ph.D., Clinical Psychology
University of Illinois at Chicago
Advisor: Dr. Stewart Shankman

2007-2011
B.A., Psychology, Stony Brook University
Cumulative G.P.A. 3.95; Psychology G.P.A 4.00
Senior Honors Thesis: Comparing the Efficacy of Two Unconditioned Stimuli in Fear Conditioning (under the supervision of Dr. Greg Hajcak)

Honors and Awards
July 2014
ERP Boot Camp Scholarship, University of California, Davis

June 2011-June 2013
NIH Postbaccalaureate Intramural Research Training Award

May 2011
Summa Cum Laude

2011
Phi Beta Kappa

Spring 2011
Provost’s Award for Academic Excellence, Stony Brook University

Spring 2011
Undergraduate Recognition Award for Outstanding Accomplishment, Stony Brook University

August 2011
Undergraduate Researcher of the Month, Stony Brook University

June-August 2010
Undergraduate Research and Creative Activities (URECA) Summer Program participant (recipient of $3,500 stipend to support my participation in summer research), Stony Brook University

Spring 2010-May 2011
Student in the Psychology Department Honors Program, Stony Brook University

2008
Psi Chi

Fall 2008-May 2011
Dean’s List, Stony Brook University

Fall 2007-May 2011
New York State Academic Scholarship

Manuscripts


Conference Posters and Presentations
Lieberman, L., Gorka, S.M., Sarapas, C., Shankman, S.A. *Cognitive Flexibility Mediates the Relation between Intolerance of Uncertainty and Safety Signal Responding in those with Panic Disorder.* Poster presented at the 35th annual Conference for the Anxiety and Depression Association of America, Miami, FL.


Lieberman, L., Mateus, C., & Grillon, C. (2012). *Contrasting Fear and Anxiety during Anticipation of Predictable and Unpredictable Aversive Stimuli in Generalized Anxiety Disorder*
and Social Anxiety Disorder. Poster, presented at the 32\textsuperscript{nd} Annual Conference for the Anxiety Disorders Association of America.


Research Experience
Chicago Laboratory of Emotion and Physiology, \textit{University of Illinois at Chicago}, 2013 – Present
Graduate research assistant under the supervision of Stewart Shankman, Ph.D., August 2013–Present
- Assist with an NIMH R01 funded study examining whether specific psychophysiological processes predict risk for internalizing symptoms. Responsibilities for this study include collection of EEG, EMG, EKG and neuropsychological data, as well as the pre-processing of EEG and EMG data.

Section on Neurobiology of Fear and Anxiety, \textit{National Institute of Mental Health}
Postbaccalaureate Trainee under the supervision of Christian Grillon, Ph.D., June 2011–June 2013
- Project coordinator for a study using magnetoencephalography (MEG) to examine the impact Alprazolam has on the interplay of cognition and anxiety. Responsibilities for this study included patient recruitment, assisting with preparing the patient for the MEG (i.e., placement of fiducials, shock electrodes, and EKG electrodes), and administration of behavioral tasks.
- Project coordinator for an investigational drug study examining the impact of a CRH antagonist on fear and anxiety in healthy volunteers. Responsibilities for this study
included patient recruitment and assisting with implementing the psychophysiological protocol (i.e., EMG data collection during a threat of shock paradigm).

- Lead patients with Social Anxiety Disorder (SAD), and Generalized Anxiety Disorder (GAD) through a variety of psychophysiological protocols examining the interaction between working memory and anxiety. Responsibilities for this study include collection of physiological data, particularly the eyeblink startle reflex, and administration of the Wechsler Abbreviated Scale of Intelligence (WASI).

Cognitive and Affective Psychophysiology Lab, Stony Brook University Psychology Department
Research assistant under the supervision of Greg Hajcak, Ph.D., May 2009-May 2011

- Study coordinator for a project using psychophysiological measures (i.e., the startle reflex, EKG and skin conductance) to investigate emotional processing abnormalities in a sample of 150 psychiatric outpatients with a range of mood and anxiety disorders. Responsibilities for this position included participant recruitment and scheduling, training research assistants, implementing the psychophysiological protocol, and physiological data cleaning and preparation.

- Assisted with the administration of a fear-conditioning task in a sample of approximately 70 adolescents and young adults from the community.

- Completed senior honors thesis “Comparing the Efficacy of Two Unconditioned Stimuli in Fear Conditioning”.

Mood and Personality Lab, Psychiatry and Behavioral Science Department, Stony Brook University
Research assistant under the supervision of Roman Kotov, Ph.D., May 2009-May 2011

- Screened and scheduled participants for a two-year externally-funded study aimed at developing a dimensional model of mood and anxiety disorders.

- Conducted structured clinical interviews (IMAS: Interview for Mood and Anxiety Symptoms) with psychiatric outpatients.

Personality, Emotion and Behavioral Lab, Stony Brook University Psychology Department
Research assistant under the supervision of E. David Klonsky, Ph.D., January 2008-May 2009 (approximately 9 hours/week)

- Ran participants through a variety of behavioral tasks for a longitudinal study examining the cross-sectional correlates (behavioral, clinical, and personality), and potential prospective predictors of non-suicidal self-injury (NSSI).

- Led participants through a frustrating mood induction and self-administered shock protocol for a study interested in examining the physiological and affective experience of NSSI.

Clinical Experience
• Lead intake interviews for individuals seeking therapy at the in-house mental health clinic, OAPS, at UIC.
• Provide evidence-based therapy to clients at OAPS
• Conduct diagnostic assessments with clients at OAPS

Teaching Experience
Fall 2013
Teaching Assistant for Introduction to Psychology
• Lead weekly discussion sections to review course material.
• Provided guidance for students midterm and final papers
• Graded midterm and final papers

Fall 2008
Teaching Assistant for Statistical Methods in Psychology
• Selected for this position for academic excellence in this course
• Answered students’ questions about assignments
• Assisted with creating problems for homework assignments

Spring 2009
Teaching Assistant for Survey in Abnormal and Clinical Psychology
• Selected for this position by Dr. Marvin Goldfried (Spring 2009 course instructor) after receiving an A in the course with Dr. Hajcak
• Held weekly office hours and answered student questions about course material

Relevant Computer Skills
• PSY-Lab, Presentation, ActiveView, E-Prime, SYSTAT, SPSS, Neuroscan, Brain Vision Analyzer