Fall 2011

A lower order structural examination of the neuroticism/negative emotionality domain: relations with internalizing symptoms and selected clinical traits

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A LOWER ORDER STRUCTURAL EXAMINATION OF THE NEUROTICISM/NEGATIVE EMOTIONALITY DOMAIN: RELATIONS WITH INTERNALIZING SYMPTOMS AND SELECTED CLINICAL TRAITS

by

Kristin Elisabeth Naragon Gainey

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Psychology
in the Graduate College of
The University of Iowa

December 2011

Thesis Supervisor: Professor Emeritus David Watson

ABSTRACT

The study of how personality traits relate to psychopathology has flourished in the past three decades, with strong evidence for systematic links between personality and psychological disorders. Great progress has been made in our understanding of the associations between broad traits and the mood and anxiety disorders (or *internalizing disorders*). In particular, it is clear that the broad trait neuroticism/negative emotionality (N/NE; stress reactivity and a tendency to experience negative emotions) is moderately to strongly associated with all of the internalizing disorders, both concurrently and longitudinally. However, researchers have noted the relative dearth of studies that examine associations with more narrow facet-level traits.

The current study examined the relations of N/NE facets with six of the internalizing disorders (i.e., depression, GAD, PTSD, social anxiety, panic, and OCD). The above symptoms were expected to load on to two higher order factors (fear and distress). Based on pilot analyses, a five-factor model for N/NE was hypothesized, consisting of sadness, anxiety, angry hostility, mistrust, and dependency. In addition, stress vulnerability marked the shared variance among these facets. I also examined associations between the disorders and four clinical traits (i.e., anxiety sensitivity, experiential avoidance, perfectionism, and intolerance of uncertainty) that are related to N/NE. Finally, I analyzed the associations of the N/NE facets and clinical traits with heterogeneous symptom dimensions within PTSD and OCD. Self-report and clinical interview data were collected from a college student sample (N = 373) and a psychiatric outpatient sample (N = 252; an additional 44 patients completed self-report measures only), with multiple measures of each internalizing disorder and personality trait described above.

Structural equation modeling was used to remove shared variance among the six disorders and among the traits, allowing for the examination of relations across the

unique variances of each construct. The hypothesized N/NE model provided a good fit to the data in both samples, as did the hypothesized psychopathology structure in the patient sample. However, markers of depression, panic, PTSD, and GAD were indistinguishable in the student sample and were therefore collapsed into a single factor. The results of the current study delineated unique patterns of association for each of the internalizing symptoms (as well as symptom dimensions within OCD and PTSD) in reference to the N/NE facets and clinical traits, highlighting shared and specific trait contributors. There was also evidence that all four clinical traits (as well as their subscales) are not redundant with N/NE and are differentially associated with the internalizing psychopathology examined here.

The results of the current study helped clarify personality-psychopathology relations within a large network of traits and symptoms, while also controlling for the extensive overlap among these constructs. As such, implications for taxonomy, differential assessment, and structural models in these domains are discussed. Future research should focus on expanding this model to other traits and disorders, utilizing other methods of assessment such as informant data, and striving to delineate underlying mediating factors that may account for the pattern of associations found between traits and symptoms in the current study.

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Graduate College
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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

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ACKNOWLEDGMENTS

I would like to thank a number of people who have helped make the completion of this dissertation possible. First, I am very grateful for the mentorship of David Watson, my advisor, who has provided me with an ideal balance of thoughtful guidance and freedom to work independently. His instruction and feedback have been invaluable to me in each step of this dissertation, and I appreciate his focus on detail while simultaneously working within larger conceptual issues. David has provided the guidance and resources that were necessary throughout my research career at the University of Iowa, and his contribution to this project and my graduate education is immense. Lee Anna Clark has also been a great mentor to me, and I have benefited significantly from attending her lab meetings and from her thorough, thoughtful comments regarding my dissertation and previous research projects. She has particularly helped me think through broader theoretical issues relevant to my research. I am grateful for her generosity in allowing me to use her lab space to collect data for this project.

I would also like to thank the other three members of my dissertation committee for their important contributions. Kristian Markon has provided analytical guidance on this and numerous previous projects, and my dissertation was developed in part through several conversations with him about personality and psychopathology associations. Mike O'Hara has served on my research advisory committee since my first year, and his perspective and feedback have helped shape my research trajectory since that time. I completed a course on structural equation modeling taught by Jennifer Glanville, and her excellent instruction gave me the tools to conduct the analyses in this dissertation. She provided analytical guidance throughout this project, helping to troubleshoot difficulties that arose.

I could not have successfully collected data for this project without the help of several colleagues and research assistants. Fellow graduate students Sara Stasik and Josh

Gootzeit helped conduct the semi-structured clinical interviews for this study, as did advanced undergraduates Stephanie Larew and Dustin Getta. Thanks to their hard work, the interviews were completed with a very high degree of reliability. I also appreciate the contributions and dedication of my research assistants – Andi Weber, Katie Wilhelm, Chris Betsworth, Sara Nightingale, and Jingwen Jin – in recruiting participants and collecting and entering data. In addition, I gratefully acknowledge several sources of external funding for this project, having received grants from the American Psychological Association, Society for a Science of Clinical Psychology, and University of Iowa Executive Council of Graduate and Professional Students. Finally, I would like to thank Chris Gainey for his consistent help and emotional support throughout this process— I couldn't ask for a better companion through graduate school and look forward to beginning our professional lives together.

ABSTRACT

The study of how personality traits relate to psychopathology has flourished in the past three decades, with strong evidence for systematic links between personality and psychological disorders. Great progress has been made in our understanding of the associations between broad traits and the mood and anxiety disorders (or *internalizing disorders*). In particular, it is clear that the broad trait neuroticism/negative emotionality (N/NE; stress reactivity and a tendency to experience negative emotions) is moderately to strongly associated with all of the internalizing disorders, both concurrently and longitudinally. However, researchers have noted the relative dearth of studies that examine associations with more narrow facet-level traits.

The current study examined the relations of N/NE facets with six of the internalizing disorders (i.e., depression, GAD, PTSD, social anxiety, panic, and OCD). The above symptoms were expected to load on to two higher order factors (fear and distress). Based on pilot analyses, a five-factor model for N/NE was hypothesized, consisting of sadness, anxiety, angry hostility, mistrust, and dependency. In addition, stress vulnerability marked the shared variance among these facets. I also examined associations between the disorders and four clinical traits (i.e., anxiety sensitivity, experiential avoidance, perfectionism, and intolerance of uncertainty) that are related to N/NE. Finally, I analyzed the associations of the N/NE facets and clinical traits with heterogeneous symptom dimensions within PTSD and OCD. Self-report and clinical interview data were collected from a college student sample ($N = 373$) and a psychiatric outpatient sample ($N = 252$; an additional 44 patients completed self-report measures only), with multiple measures of each internalizing disorder and personality trait described above.

Structural equation modeling was used to remove shared variance among the six disorders and among the traits, allowing for the examination of relations across the

unique variances of each construct. The hypothesized N/NE model provided a good fit to the data in both samples, as did the hypothesized psychopathology structure in the patient sample. However, markers of depression, panic, PTSD, and GAD were indistinguishable in the student sample and were therefore collapsed into a single factor. The results of the current study delineated unique patterns of association for each of the internalizing symptoms (as well as symptom dimensions within OCD and PTSD) in reference to the N/NE facets and clinical traits, highlighting shared and specific trait contributors. There was also evidence that all four clinical traits (as well as their subscales) are not redundant with N/NE and are differentially associated with the internalizing psychopathology examined here.

The results of the current study helped clarify personality-psychopathology relations within a large network of traits and symptoms, while also controlling for the extensive overlap among these constructs. As such, implications for taxonomy, differential assessment, and structural models in these domains are discussed. Future research should focus on expanding this model to other traits and disorders, utilizing other methods of assessment such as informant data, and striving to delineate underlying mediating factors that may account for the pattern of associations found between traits and symptoms in the current study.

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INTRODUCTION

The study of how personality traits relate to psychopathology has flourished in the past three decades, with strong evidence for systematic links between the two fields. Personality traits are of interest in understanding the characteristics and etiology of psychological disorders because traits have been shown to be heritable, relatively stable over time, and can predict and explain behaviors (Krueger, McGue, & Iacono, 2001). Much research in this area has focused on depression and the anxiety disorders (also known as the *internalizing disorders*; Krueger, 1999), in part because of their prevalence in the general population: one large population study reported lifetime prevalence rates of 16.6% for major depression and 28.8% for any anxiety disorder (Kessler et al., 2005). In addition to the suffering of individuals with these disorders, they also incur a significant societal burden, with an estimated annual cost of $70 billion for depression (Greenberg, Leong, Birnbaum, & Robinson, 2003) and $42 billion for anxiety disorders (Greenberg et al., 1999) that account for lost productivity, treatment expenses, and indirect consequences of these disorders.

Personality-psychopathology relations have been particularly helpful in elucidating patterns of comorbidity, wherein comorbidity may be defined as the co-occurrence of two or more disorders in an individual. Depression and the anxiety disorders have notably high rates of comorbidity (see Mineka, Watson, & Clark, 1998 for a review), both with one another (co-occurrence rates = 56% to 58%; Clark, 1989; Kessler et al., 1996) and within the anxiety disorders (33% diagnosed with one lifetime anxiety disorder also have at least one other; Kessler, 1995). Because personality traits may serve as vulnerability factors or may be a consequence of the underlying cause of a disorder, personality traits can elucidate sources of comorbidity and basic issues of etiology for these disorders (e.g., Krueger, Caspi, Moffitt, Silva, & McGee, 1996; Krueger & Markon, 2006; Krueger et al., 2001; Watson, Gamez, & Simms, 2005).

There is ample evidence that the structure of personality is hierarchical, where broader traits (higher order traits) can be broken into more narrow components (lower order traits or facets; see Markon, Krueger, & Watson, 2005). This hierarchy constitutes the structure of personality, and the field has reached a general consensus as to its contents at the higher order levels. However, there is little agreement about content at the lower order levels of the hierarchy or how lower order traits relate to internalizing psychopathology (e.g., Gamez, Watson, & Doebbeling, 2007; Norton, Sexton, Walker, & Norton, 2005; Tackett, Quilty, Sellbom, Rector, & Bagby, 2008), limiting the precision of analyses and conclusions regarding personality-psychopathology relations.

The current study seeks to examine the associations of lower order personality traits to several of the internalizing disorders: namely, major depression, generalized anxiety disorder (GAD), social anxiety disorder, panic disorder, posttraumatic stress disorder (PTSD), and obsessive-compulsive disorder (OCD). Specific phobia was excluded due to weak associations with personality traits (e.g., Watson et al., 2005), and agoraphobia due to its conceptualization as a syndrome resulting from panic symptoms and frequent inclusion in panic disorder diagnoses (see Watson, 2005). Similarly, dysthymic disorder was not included because of particularly high comorbidity rates with depression and inconsistencies in diagnosing the disorder (see Watson, 2009a). Finally, the bipolar disorders were excluded due to their very low base rates (Watson, 2005) and sparse research on their relations to personality traits (see Tackett et al., 2008).

The focus of this study within the personality hierarchy is the lower order structure of neuroticism/negative emotionality (N/NE; the tendency to experience negative emotions and high stress reactivity) because this domain consistently shows strong associations with the internalizing disorders (e.g., Mineka et al., 1998; Watson et al., 2005; Weinstock & Whisman, 2006). In addition to exploring the facets of N/NE, I will also examine several traits that originated in the clinical literature (“clinical traits’’)

and are moderately correlated with N/NE: maladaptive perfectionism, anxiety sensitivity, intolerance of uncertainty, and experiential avoidance.

After providing background regarding structural models of internalizing disorders and personality-psychopathology associations, I review existing models of the structure of N/NE and present several analyses, resulting in a proposed comprehensive structure for this domain. I also review the literature relating facets of N/NE and the four clinical traits of interest to the above internalizing disorders, highlighting specific and general patterns of associations.

Personality-Psychopathology Relations

Structural Models of the Internalizing Disorders

A desire to characterize and understand the extensive comorbidity among depression and the anxiety disorders led to numerous structural models in which disorders are parsed into 1) shared components that contribute to comorbidity, and 2) specific components that differentiate disorders. Although originally focused on shared and specific symptoms, these structural models are relevant to—and augmented interest in—personality-psychopathology relations, due to the general applicability of the framework and close associations between affective symptoms and some personality traits. The two primary affective states in these models are negative affect and positive affect, which are related to trait negative affect (or negative emotionality; a tendency to experience negative emotions such as fear, sadness, and anger) and trait positive affect (or positive emotionality; a tendency to experience positive emotions such as joy and enthusiasm) (Watson, 2000). These, in turn, show close links to the personality traits neuroticism and extraversion, respectively (e.g., Watson & Clark, 1992). Thus, symptom structures are connected to longer-standing personality traits, and recent models have sought to integrate additional personality traits (primarily clinical traits) into this basic framework (e.g., Kotov, Watson, Robles, & Schmidt, 2007; Norton & Mehta, 2007;

Sexton, Norton, Walker, & Norton, 2003; Tackett et al., 2008). For a more detailed review of these structural models, please see Mineka et al. (1998) and Watson (2009a).

Two Factor Affective Model and Tripartite Model

These early models were based on Tellegen's (1985) work identifying the two primary affective dimensions (i.e., negative emotionality and positive emotionality) and their relevance to psychopathology. Watson, Clark, and Carey (1988) proposed that negative emotionality is a shared feature of both depression and anxiety, whereas low positive emotionality is a specific correlate of depression. Clark and Watson (1991) expanded this model with the additional hypothesis that physiological hyperarousal (e.g., heart racing, shortness of breath, light-headed, etc.) is a specific and distinguishing characteristic of anxiety. Thus, in the tripartite model, negative emotionality contributes to the comorbidity between depression and anxiety, whereas positive emotionality and physiological hyperarousal serve to distinguish the two syndromes. In addition, Barlow and colleagues developed a similar model in which each of these symptoms is tied to a basic emotion: anxiety corresponds to shared negative emotionality, fear corresponds to hyperarousal, and depression corresponds to low positive emotionality (Barlow, Chorpita, & Turovsky, 1996).

Hierarchical Model of Anxiety Disorders

Though aspects of the above three factor models have received extensive support (see Mineka et al., 1998), Barlow and colleagues reported evidence that the anxiety disorders are heterogeneous and their specific symptoms cannot be characterized sufficiently by the physiological hyperarousal dimension (Brown, Chorpita, & Barlow, 1998; Zinbarg & Barlow, 1996). Thus, the hierarchical model of anxiety disorders asserted that depression and *each* of the anxiety disorders may be parsed into a unique component and a component that is common to all of them (i.e., negative emotionality/general distress). Although the unique component of each of the anxiety

disorders had not yet been determined, Brown et al. (1998) found that physiological hyperarousal is specific to panic disorder, as opposed to the anxiety disorders as a whole.

Integrative Hierarchical Model

Mineka and colleagues (1998) synthesized empirically supported features of the tripartite model and the hierarchical model of the anxiety disorders, while also proposing several additions that are relevant to this review. First, they introduced a quantitative element into the model by specifying that the size of the general and specific components varies across disorders. For instance, depression and GAD are strongly linked to negative emotionality, whereas disorders such as social anxiety disorder and OCD show a substantially weaker relationship (e.g., Brown et al., 1998; Watson et al., 2005). Second, they suggested that symptom specificity should be viewed in relative, rather than absolute, terms. For instance, while low positive emotionality is relatively specific to depression, it is also associated with social anxiety disorder (e.g., Brown et al., 1998; Naragon-Gainey, Watson, & Markon, 2009) and schizophrenia (e.g., Watson et al., 1988). Taken together, each disorder may be characterized by a combination of general and specific components (most of which have not yet been articulated), wherein the magnitude of the association with each component can be specified.

Quantitative Analyses of Comorbidity Data

While the previous models were based on the identification of shared and specific features among the internalizing disorders, more recent efforts have directly analyzed comorbidity data under the assumption that comorbidity rates are likely to reflect shared etiological processes and characteristics. Based on diagnoses and underlying symptom dimensions, these phenotypic and genetic structural models have converged on a two factor structure of internalizing: 1) fear disorders and 2) distress disorders (also called anxious-misery disorders) (Cox, Clara, & Enns, 2002; Kendler, Prescott, Myers, & Neale,

2003; Krueger, 1999; Miller, Fogler, Wolf, Kaloupek, & Keane, 2008; Sellbom, Ben-Porath, & Bagby, 2008; Slade & Watson, 2006; Vollebergh et al., 2001; Watson, 2005).

In these models, the fear disorders consist of panic disorder, social anxiety disorder, agoraphobia, and specific phobia, whereas the distress disorders include depression, dysthymia, PTSD, and GAD. There are fewer data addressing OCD's location in this structure, with conflicting evidence regarding whether OCD is a fear disorder (Miller et al., 2008; Slade & Watson, 2006) or whether it does not belong with either the distress or fear disorders (Sellbom et al., 2008). Due to the "bottom-up" nature of these analyses, the Fear and Distress factors better capture the empirical covariation among the internalizing disorders than does the current *Diagnostic and Statistical Manual of Mental Disorders – IV* (*DSM-IV*; American Psychiatric Association, 2000) designation of mood and anxiety disorders. Although this structural framework highlights shared features within these two groups of disorders (i.e., fear and distress), as well as a higher order relation with N/NE (e.g., Krueger et al., 2001), it does not attempt to specify disorder-specific distinguishing characteristics.

Quadripartite Model

Watson (2009a) recently presented the quadripartite model, in which he emphasized the importance of symptom-based, rather than diagnosis-based, structural analyses. Watson summarized several problematic aspects of diagnoses, but the most central concern highlighted by the quadripartite model is that the *DSM-IV* structure of internalizing disorders does not adequately account for symptom heterogeneity within individual disorders. Watson (2009a) reviewed evidence for distinct symptom dimensions within PTSD, OCD, and depression, wherein symptoms within the same disorders relate differently to other disorders and to personality traits.

For PTSD, two four-factor structural models have received the most empirical support: 1) avoidance, numbing, intrusions/re-experiencing the trauma, and physiological

hyperarousal (King, Leskin, King, & Weathers, 1998), and 2) avoidance, intrusions, hyperarousal, and dysphoria (Simms, Watson, & Doebbeling, 2002). The avoidance and intrusions factors are identical in these two models, but Simms et al.'s hyperarousal factor contains only 2 of the 5 hyperarousal criteria (i.e., hypervigilance, exaggerated startle response), and the dysphoria factor includes the remaining (nonspecific) hyperarousal criteria (i.e., sleep disturbance, irritability, difficulty concentrating) and the numbing items. Four symptom dimensions within OCD are evident, consisting of symmetry/ordering, cleaning/contamination, obsessions/checking, and hoarding (see Mataix-Cols, Rosario-Campos, & Leckman, 2005, for a review). Finally, Watson and colleagues (2007, 2008) reported a multidimensional structure for depression, consisting of dysphoria, suicidality, lassitude, (low) well-being, insomnia, appetite loss, and appetite gain. It is beyond the scope of this review to summarize how these symptom dimensions are related to other disorders and traits, but relevant associations will be discussed throughout.

As with the integrative hierarchical model, the quadripartite model also takes a quantitative approach in that each symptom dimension may be characterized by its location within two dimensions: 1) its degree of specificity to a given disorder, and 2) the strength of its association with general distress/negative emotionality (Watson, 2009a). A 2 by 2 matrix may then be formed in which each symptom fits into one of four categories: 1) high distress symptoms with limited specificity (e.g., dysphoria); 2) high distress symptoms with greater specificity (e.g., suicidality); 3) low distress symptoms with greater specificity (e.g., appetite gain); 4) low distress symptoms with limited specificity (e.g., insomnia). In establishing the independence of these two variables, such a framework acknowledges that it is likely necessary to delineate multiple shared components beyond N/NE in order to model comorbidity adequately among these disorders.

Higher Order Personality-Psychopathology Relations

The above framework for structural models of internalizing disorders may be applied to personality-psychopathology research by studying patterns of relative specificity and nonspecificity in associations between disorders (as well as symptom dimensions within disorders) and personality traits. There is now a large body of literature relating the internalizing disorders to higher order personality traits, either using the Big Three or Big Five taxonomy. Only a brief review will be presented here, in which I focus on the six disorders that will be included in the current study (for more detailed reviews, see Bienvenu & Stein, 2003; Enns & Cox, 1997; Kotov, Gamez, Schmidt, & Watson, 2010; Malouff, Thorsteinsson, & Schutte, 2005; Watson et al., 1988).

Before I review these relations, it is necessary to provide an overview of the relevant higher order personality traits. The "Big Five" or "Five-Factor Model" is a well-replicated, hierarchical taxonomy of normal personality traits. First developed in the lexical tradition in 1936, it has since been studied widely in different cultures and with different ages (see John, Naumann, & Soto, 2008, for a review). The Big Five traits are as follows: neuroticism, extraversion (sociability, assertiveness, positive emotions), agreeableness (empathy, humility, trust), conscientiousness (persistence, neatness, planfulness), and openness (creativity, open-mindedness, intellectualism). The Big Three consists of negative emotionality, positive emotionality, and disinhibition vs. constraint. These traits are systematically related to the Big Five, in that negative emotionality and neuroticism are highly similar (referred to collectively as N/NE), positive emotionality is one component of extraversion (referred to collectively as extraversion/positive emotionality or E/PE), and disinhibition is related to low levels of agreeableness and conscientiousness (Markon et al., 2005). Openness does not have a corresponding trait in the Big Three taxonomy.

Depression

Symptoms of depression show strong concurrent relations with N/NE (most *r*s = .45 to .75; e.g., Brown et al., 1998; Chioqueta & Stiles, 2005; Watson et al., 1988; Watson et al., 2005). In a recent meta-analysis that included diagnostic interview data (but not self-report symptom measures) and made corrections for measure unreliability, the meta-analytic *r* was .47 (Kotov et al., 2010). In addition, numerous studies have noted a significant prospective relation between neuroticism and the development or course of depression (e.g**.,** Clayton, Ernst, & Angst, 1994; Duggan, Lee, & Murray, 1990; Kendler, Neale, Kessler, Heath, & Eaves, 1993).

Low levels of extraversion also have been reported for depression, although this finding is weaker and less consistent than the relation with N/NE (meta-analytic *r* = -.25; Kotov et al, 2010). Results for positive emotionality are more consistent, with most studies reporting a significant negative relation (*r* = -.35 to -.55; e.g., Brown et al., 1998; Clark & Watson, 1991; Naragon-Gainey et al., 2009; Watson et al., 2005; Watson et al., 1988). Thus, depression is most strongly related to the positive emotionality component of extraversion; the other content within extraversion weakens its overall association with depression (Naragon-Gainey et al., 2009). In addition, depressed individuals typically report lower levels of conscientiousness (meta-analytic *r* = -.36; Kotov et al., 2010). Finally, agreeableness, openness, and disinhibition do not appear to be related systematically to depression (Kotov et al., 2010).

Generalized Anxiety Disorder

Of all the anxiety disorders, GAD shows the strongest link to N/NE, comparable in magnitude to the correlation between N/NE and depression (most *r*s = .55 to.75; e.g., Bienvenu et al., 2004; Brown et al., 1998; Gamez et al., 2007; Watson et al., 2005; Weinstock & Whisman, 2006), although a recent meta-analysis reported a weaker correlation of .34 (Kotov et al., 2010). In a prospective, longitudinal study, levels of

neuroticism predicted the later development of GAD (Angst & Vollrath, 1991). GAD typically is not significantly related to E/PE and it does not show consistent associations with other higher order traits in several individual studies (e.g., Bienvenu et al., 2004; Brown et al., 1998; Watson et al., 2005). However, the Kotov et al. (2010) meta-analysis that included diagnostic data and corrections for unreliability found a moderate correlation with conscientiousness (r = -.29).

Panic Disorder

Panic disorder has a moderate to strong relation with N/NE (rs = .35 to .60; meta-analytic r = .45) (Bienvenu et al., 2004; Brown et al., 1998; Kotov, 2006; Kotov et al., 2007; Kotov et al., 2010; Watson et al., 2005; Watson et al., 1988; Weinstock & Whisman, 2006), though the relation is probably somewhat weaker than that of GAD and depression with N/NE. Prospectively, high levels of neuroticism were found to predict panic disorder 17 years later (Angst & Vollrath, 1991). Numerous studies do not suggest any other robust relations with the Big Five or Big Three (e.g., Bienvenu et al., 2004; Brown et al. 1998, Cuijpers, van Stratenc, & Donkerc, 2005; Watson et al., 1988), although the Kotov et al. (2010) meta-analysis found significant associations with extraversion (r = -.28) and conscientiousness (r = -.27).

Posttraumatic Stress Disorder

There is little research relating PTSD to higher order personality traits. Similar to panic disorder, PTSD has a moderate to strong relationship with N/NE (rs = .35 to .52, meta-analytic r = .49; Gamez et al., 2007; Kotov et al., 2010; Trull & Sher, 1994; Watson et al., 2005; Weinstock & Whisman, 2006). At the symptom level, N/NE is most strongly related to the dysphoria component of PTSD, with weaker links to other PTSD symptoms such as intrusions, hyperarousal, and avoidance (Watson, 2009a; Watson et al., 2005). There is also some evidence for negative relations with other traits: Trull and Sher (1994) reported low levels of extraversion, agreeableness and conscientiousness, and Watson

and colleagues (2005) found a significant (but weak) correlation with disinhibition. In the Kotov et al. (2010) meta-analysis, significant correlations were reported for extraversion (r = -.25) and conscientiousness (r = -.27), but not for agreeableness or disinhibition.

Social Anxiety Disorder

Social anxiety disorder has a more moderate association with N/NE (rs = .20 to.40; Bienvenu et al., 2004; Brown et al., 1998; Trull & Sher, 1994; Watson et al., 2005; Watson et al., 1988; Weinstock & Whisman, 2006), with a meta-analytic r of .41 (Kotov et al., 2010). Among the internalizing disorders, social anxiety disorder generally shows the strongest negative relation to extraversion, with moderate correlations (rs = -.35 to -.55; Bienvenu et al., 2004; Cuijpers et al., 2005; Kotov, 2006; Trull & Sher, 1994; Watson et al., 2005) and a meta-analytic r of -.37 (Kotov et al., 2010) . The negative association with positive emotionality is typically weaker but still significant (r = -.25 to -.35; Brown et al., 1998; Watson et al. 1998, Watson et al., 2005), and the relation remains significant after controlling for shared variance with higher order E/PE (Naragon-Gainey et al., 2009). In addition, Kotov et al. (2010) reported a moderate meta-analytic correlation with conscientiousness (r = -.34).

Obsessive-Compulsive Disorder

OCD also has a moderate relation with N/NE, with correlations of about .35 to .40 (Bienvenu et al., 2004; Brown et al., 1998; Kotov, 2006; Watson et al., 2005; Watson et al., 1988) and a meta-analytic r of .35 (Kotov et al., 2010). Similar to PTSD, the strength of the relation to N/NE varies by symptom dimension, with obsessive intrusions and checking showing the strongest associations to N/NE (Watson, 2009a; Watson et al., 2005). Kotov et al. (2010) also reported significant meta-analytic associations with extraversion (r = -.27) and conscientiousness (r = -.21)

Summary

Based on the above review, a pattern emerges in which N/NE is broadly related to all of the internalizing disorders, whereas only a few higher order traits show some evidence of relative specificity (i.e., E/PE and perhaps conscientiousness); agreeableness and openness appear to be largely irrelevant to these disorders. N/NE is most strongly related to depression and GAD, moderately to strongly related to panic disorder and PTSD, and more weakly related to social anxiety disorder and OCD. In contrast to N/NE, E/PE demonstrates some specificity: extraversion is most strongly (negatively) associated with social anxiety disorder, followed by depression. Conversely, low levels of positive emotionality are most important for depression, with a lesser relation to social anxiety disorder. Finally, there is some evidence that low conscientiousness may be particularly related to depression, and low conscientiousness and agreeableness may be related to PTSD. However, the Kotov et al. (2010) meta-analysis suggests that there is less specificity when limiting analyses to diagnostic cases vs. controls and after correcting for measure unreliability, as all six disorders were associated with high neuroticism, low extraversion, and low conscientiousness in their analyses.

Importance of Lower Order Relations

Great progress has been made in our understanding of how broad traits relate to the internalizing disorders, as outlined above; however, researchers have noted the importance and relative dearth of studies that examine associations with lower order personality traits (e.g., Gamez et al., 2007; Markon et al., 2005; Norton et al., 2005; Tackett et al., 2008; Taylor, 1998). Due to the hierarchical organization of personality, examination of trait relations with internalizing disorders at multiple levels of abstraction is crucial in order to determine the "potent variable," or the construct responsible for a given relation (Watson, Clark, & Harkness, 1994). By simultaneously studying N/NE and its facets can we assess whether (a) particular components of N/NE are driving its

association with depression, or (b) higher order N/NE is responsible for the relation. Several researchers have stressed the importance of identifying traits that may mediate the association between N/NE and individual disorders, as more precise and specific conclusions then can be drawn regarding personality-psychopathology relations and etiological sources (Claridge & Davis, 2001; Norton & Mehta, 2007).

The identification of traits that are relatively specific to individual disorders is currently an under developed component of structural models of internalizing disorders. Because lower order traits are by definition narrower in content than higher order traits, they may be good candidates for making fine distinctions among closely related constructs (see Paunonen, 1998, for a discussion of narrow versus broadband traits). Along these lines, Reynolds and Clark (2001) demonstrated that lower order traits accounted for more variance in individual personality disorders than did higher order domains. Turning to the internalizing disorders for an example, as mentioned earlier, there is evidence that low E/PE is relatively specific to both depression and social anxiety (e.g., Brown et al., 1997; Watson et al., 2005). However, when the facets of E/PE are modeled separately, they show a differential pattern of relations with the two types of symptoms; these specific relations can be clarified further in multivariate analyses that isolate each facet's unique variance. Multivariate analyses revealed that depression is specifically linked to low positive emotionality, whereas social anxiety is broadly related to all four E/PE facets (Naragon-Gainey et al., 2009). Relatedly, facet level analyses may reveal substantial associations between individual facets and disorders that would be masked by non-significant associations between these disorders and the corresponding higher order trait.

The preceding review of quantitative analyses of comorbidity data indicates that the structure of internalizing is hierarchical, just as personality structure is hierarchical. Therefore, it is important to examine simultaneously higher levels of abstraction (i.e., fear and distress disorders) and lower levels of abstraction (i.e., individual disorders and

symptom dimensions) in relation to personality traits. Multivariate hierarchical analyses can determine whether a trait is most accurately viewed as related to the shared variance among disorders, to the unique variance of an individual disorder, or to the unique variance of a symptom dimension within a disorder. Furthermore, as described in the quadripartite model, focusing on lower order symptom dimensions limits the impact of potential diagnostic misspecifications in the *DSM-IV* taxonomy and allows for more detailed, differentiated profiles of each disorder (Watson, 2009a).

In order to model the hierarchical structure of personality and internalizing disorders fully, multi-trait/multi-disorder methodologies that lend themselves to multivariate analyses are required. Several studies have used such a methodology when examining personality-internalizing associations (e.g., Kotov et al., 2007; Naragon-Gainey et al., 2009; Norton & Mehta, 2007; Norton et al., 2005; Sexton et al., 2003). Unfortunately, most studies thus far have focused on single trait-disorder relations that are difficult to interpret without a broader context, which may result in misleading or unfounded conclusions about the relative specificity of a trait-disorder association.

This point may be illustrated with an example from the health psychology literature. Drug use, preventative health behaviors, and putting oneself in risky traffic situations are all associated with conscientiousness. If one conducts multivariate analyses relating these behaviors to facets of conscientiousness, relative comparisons can be made and more specific conclusions can be drawn. In this case, multivariate analyses revealed that traditionalism is a relatively specific correlate of drug use, self-control is most strongly associated with traffic risk, and responsibility is most relevant to preventative health behaviors (Roberts, Chernyshenko, Stark, & Goldberg, 2005). Without the use of multivariate analyses, one may have erroneously concluded that conscientiousness facets are broadly or equally relevant to a given behavior. Likewise, without the inclusion of multiple health behaviors, one may have mistakenly surmised that, for example,

traditionalism is likely relevant to health behaviors in general, as opposed to being relatively specific to drug use.

Structure of N/NE

The current study focuses within the personality hierarchy on N/NE and its facets. This domain was selected for its clear importance to internalizing psychopathology and to numerous clinical traits that are relevant to the internalizing disorders (see "Clinical Traits" below). However, before examining the associations of N/NE facets with internalizing disorders, it is necessary to develop a clear and comprehensive structural model of the N/NE domain.

Definition of N/NE and Higher Order Structural Relations

The conceptualization of neuroticism as a normal personality trait can be traced back to Woodworth's Personal Data Sheet (1920), which was used to assess the emotional stability of soldiers during World War I. In the 1930s, neuroticism consistently emerged as a personality dimension in analyses of thousands of English personality-relevant adjectives (the "lexical approach"; John et al., 2008). Currently, neuroticism (or a related construct) may be found in nearly all personality inventories across different theoretical models, including the Big Five, the Big Three, and the Big Two of trait affect. As stated previously, most definitions of neuroticism center around the tendency to experience a variety of negative emotions, including sadness, fear, hostility, and guilt; stress reactivity is often a component of the definition as well (e.g., Clark, 1993; Costa & McCrae, 1992; Tellegen & Waller, 2008). This strong theoretical connection to affect is consistent with high correlations between neuroticism and trait negative affect (e.g., *r*s = .52 to .65; Watson & Clark, 1992), leading some to argue that a better label for the dimension is negative temperament (e.g., Clark, 1993) or negative emotionality (e.g., Tellegen & Waller, 2008). In this paper, the construct as a whole is referred to as N/NE to

include conceptions of the trait emerging from personality traditions and from temperament/affect traditions.

Although higher order personality domains were conceived originally as orthogonal, there are in fact some substantial intercorrelations among them (e.g., Costa & McCrae, 1992; see DeYoung, 2006, for a review and extension to informant data). Specifically, N/NE covaries with Big Five low agreeableness and low conscientiousness and (equivalently) Big Three disinhibition (e.g., Digman, 1997; DeYoung, 2006; Markon et al., 2005); Digman (1997) referred to the higher order factor formed by these three scales as *alpha*. Because of these patterns of covariation, the division of the content of alpha into domains varies slightly across personality models and approaches. In particular, several models merge some aspects of Big Five (low) agreeableness with N/NE (e.g., Clark, 1993; Jackson, Paunonen, & Tremblay, 2000; Lee & Ashton, 2004; Tellegen & Waller, 2008). It is not surprising or arbitrary that there is confusion as to the content of agreeableness and N/NE, as the two share a biological basis: a behavior genetics study found that the serotonin transporter gene accounts for 10% of the covariance between neuroticism and agreeableness. The overlap between these domains was primarily due to the facets Trust (from agreeableness) and Anger/Hostility (from neuroticism) (Jang et al., 2001). The close association of these two domains is evident in the following review of facet-level models of N/NE, as some models include material traditionally located in Big Five agreeableness.

Lower Order Models of N/NE

Below I review the lower order structure of N/NE in major personality and affective inventories, examining models from a variety of traditions (i.e., Big Five, Big Three, six factor models, and trait affectivity). The content of the facets is not always clear from their names and scales with the same name sometimes differ in content, so I briefly describe each of the relevant scales. In addition, when data are available, I report

associations with other personality inventories in order to locate each facet within a common space. Most often, the available data relate lower order scales to the Big Five using the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992) or the Abridged Big Five Dimensional Circumplex (AB5C; Hofstee, de Raad, & Goldberg, 1992), a circumplex approach to Big Five facets in which each facet is assigned an empirically derived primary and secondary domain association.

Big Five

The most frequently used faceted inventory of the Big Five is Costa and McCrae's NEO PI-R (1992). The Neuroticism domain is the sum of six facets: Depression (sadness, guilt, hopelessness), Anxiety (fear, worry, tension), Angry Hostility (anger, frustration, bitterness), Self-Consciousness (shame, embarrassment, social discomfort), Impulsiveness (difficulty controlling cravings and urges, immoderation), and Vulnerability (stress reactivity). Factor analyses show that the Depression and Anxiety scales are most central to NEO PI-R Neuroticism (loadings = .80 to .85), with slightly lower but still strong loadings for Self-Consciousness, Angry Hostility, and Vulnerability (.62 to .74). Angry Hostility has a substantial secondary loading on Agreeableness (-.48 to -.52), whereas Impulsiveness's loadings split between Neuroticism (.35 to .49) and Conscientiousness (-.32 to -.45) (e.g., Costa & McCrae, 1992; Rossier, de Stadelhofen, & Berthaud, 2004). Within the AB5C framework, all six NEO PI-R facets have primary associations with the Neuroticism domain, although Impulsiveness again shows the weakest relation (Johnson, 1994, 2000).

Cattell's Sixteen Personality Factor Questionnaire (16PF) was developed originally in the 1940s and is now in its fifth edition (Cattell, Cattell, & Cattell, 1993). The five global factors of the 16PF correspond closely to the Big Five (Cattell, 1995), with the neuroticism-related scale named "Anxiety." Anxiety is a linear sum of four lower order scales: Emotional Stability (low stress reactivity, even-temperedness),

Vigilance (suspiciousness of others), Apprehension (low self-confidence, prone to guilt and worry), and Tension (easily irritated and annoyed). Emotional Stability (loading on N/NE factor = -.63) and Apprehension (loading = .73) are most strongly related to NEO PI Neuroticism, with a slightly weaker relation for Tension (loading = .47). In contrast, 16PF Vigilance splits between Extraversion and Agreeableness, and is more weakly related to Neuroticism (loading = .37) (Cattell, 1995; Gerbing & Tuley, 1991).

Similar to the 16PF, Jackson's (1994) Jackson Personality Inventory- Revised (JPI-R) was not specifically created to measure the Big Five, but some of its higher order factors (such as Emotionality, which corresponds to neuroticism) align with the Big Five (e.g., Doster et al., 2000; Jackson, 1994; Paunonen & Jackson, 1996). Emotionality consists of lower order scales assessing Anxiety (frequent worry, easily upset), Empathy (concern for others, values emotional connections), and Cooperativeness (high need to fit in, swayed by social expectations). Anxiety is a strong marker of higher order N/NE (factor loading on N/NE = .79; *r* with NEO PI Neuroticism = .67), whereas Empathy is weaker (loading = .58; *r* = .30) and also shows associations with Agreeableness (loading = .39; *r* = .20) and Extraversion (*r* = .34). Finally, Cooperativeness appears to be a non-specific blend of neuroticism, agreeableness, openness, and conscientiousness (Detwiler & Ramanaiah 1996; Paunonen & Jackson, 1996).

The Hogan Personality Inventory (HPI; Hogan & Hogan, 1995) is rooted in socioanalytic theory and is particularly focused on predicting occupational outcomes. The inventory includes seven higher order factors that correspond to the Big Five, except that extraversion and openness are each divided into two domains. The Adjustment domain, when reverse-keyed, corresponds to Big Five neuroticism, with correlations ranging from .66 to .72. However, HPI Ambition (related to Big Five extraversion) is also moderately correlated with neuroticism (*r*s = -.39 to -.53) (Hogan & Hogan, 2002). The lower order scales assigned to HPI Adjustment are Empathy (rarely irritated, doesn't complain), Not Anxious (relaxed, infrequent worry), No Guilt (comfortable with self, few regrets, feel

fortunate), Calmness (low stress reactivity), Even-Temperedness (seldom mad, keep temper in check), No Somatic Complaints (few physical symptoms), Trusting (trust others, believe in goodness of others), and Good Attachment (positive relationships with one's parents). Across two analyses projecting the HPI scales onto AB5C facets, the only scales that demonstrate a primary relation to Big Five neuroticism are Not Anxious, No Guilt, and Calmness. Most of the other Adjustment scales are primarily related to agreeableness. In addition, some of the scales from HPI Ambition also show close links to neuroticism, such as No Depression and Self-Confidence (Johnson, 1994, 2000).

The most recent faceted Big Five measure is Simms' Faceted Inventory of the Five Factor Model (FI-FFM; 2009), which was created with data-driven reduction methods to address some of the psychometric shortcomings of other faceted measures (e.g., low internal consistency for some facets). The Neuroticism domain consists of Anxiety (worry, stress reactivity, tension), Depression (sadness, hopelessness), Anger Proneness (anger, frustration), Somatic Complaints (physical symptoms of high negative affect), and Envy (jealousy, sense of unfairness) facets. Anxiety and Depression are most strongly related to NEO PI-R Neuroticism and BFI Neuroticism (*r*s = .64 to .82), whereas the other three are more moderately related to N/NE (*r*s = .48 to .63). In addition, Anger Proneness was moderately correlated with NEO PI-R and BFI Agreeableness (*r*s = -.42 to -.51); Envy was more weakly related to this domain (*r*s = -.26 to -.32). It also should be noted that a Dependency facet was proposed, characterized by a reliance on others for help, approval, and decision-making. However, this facet was dropped from the inventory because of poor convergent and discriminant validity (i.e., *r* with BFI Neuroticism = .31, *r* with BFI Conscientiousness = -.33, and *r* with BFI Openness = -.32) (Simms, 2009).

Big Three

Tellegen's Multidimensional Personality Questionnaire (MPQ; in press) and Clark's Schedule for Nonadaptive and Adaptive Personality (SNAP; 1993) are two of the

most commonly used Big Three measures that include lower order scales. Compared to the Big Five conception of neuroticism as primarily related to the experience of stress and negative emotions, this domain in the Big Three includes content relevant to Big Five (low) Agreeableness as well, such as aggression.

The Negative Emotionality (NEM) higher order factor of the MPQ consists of Stress Reaction (a broad scale reflecting a tendency to experience negative emotions), Alienation (tendency to feel betrayed, mistreated, and victimized), and Aggression (tendency to be physically aggressive, vindictive, and to enjoy causing others pain) (Tellegen, in press). In a study relating MPQ scales to NEO PI facets, Church (1994) found that MPQ Stress Reaction is strongly related to NEO PI Neuroticism (r = .76) and its facets (rs = .43 to .69), with the exception of Impulsiveness (r = .33). In contrast, MPQ Aggression was most strongly related to NEO PI Agreeableness (r = -.48); its only connection to the Neuroticism domain was via the Hostility facet (r = .45). Finally, MPQ Alienation appears to be a blend of NEO PI Neuroticism and Agreeableness, with moderate correlations with these domains (rs = .38 and -.41, respectively). A similar pattern of results was found when these scales were factor analyzed with markers of the Big Five (Markon et al., 2005). Thus, Stress Reaction appears to tap the core of neuroticism, whereas the other two scales overlap with agreeableness.

In contrast to the MPQ, the SNAP was developed to measure maladaptive personality traits particularly relevant to personality disorders. The SNAP contains scales that measure higher order Negative Temperament, as well as six relevant lower order scales. The lower order Negative Temperament scales are Mistrust (suspicion, cynicism, alienation), Manipulativeness (willingness to use others for personal gain), Aggression (anger, physical aggression), Self-Harm (low self-esteem, self-destructive tendencies), Eccentric Perceptions (odd or unusual perceptions, thoughts, and beliefs), and Dependency (tendency to seek approval and direction from others).

Negative Temperament is most strongly related to Big Five neuroticism (*r*s = .67 to .74, factor loading = .84) whereas Mistrust, Self-Harm, and Dependency all had more moderate associations (*r*s = .28 to .52, factor loadings = .40 to .50). Aggression and Manipulativeness showed the closest links to agreeableness (*r*s = -.36 to -.59, factor loadings = .71 and .59, respectively), and Eccentric Perceptions split among the factors (Kotov, 2006; Markon et al., 2005). When multiple regression was used to predict the SNAP scales from the NEO PI-R facets, only Negative Temperament was broadly and strongly related to the Neuroticism facets (R^2 = .75). Angry Hostility was a significant predictor of Aggression, Depression of Self-Harm, and Self-Consciousness of Dependency. However, Mistrust and Manipulativeness were primarily related to Agreeableness, and the Big Five predicted little of the variance in Eccentric Perceptions (R^2 = .17) (Reynolds & Clark, 2001).

Six Factor Models

I review two six-factor personality models; both models include the Big Five (or a slight rotation of some domains) but also propose a distinct sixth factor. The Six Factor Personality Questionnaire (6FPQ; Jackson et al., 2000) was developed as the result of a search for factors beyond the Big Five in Jackson's Personality Research Form (1984) (Jackson, Paunonen, Fraboni, & Goffin, 1996). Four of the 6FPQ factors are very similar to Big Five domains, but Big Five Conscientiousness was divided into Methodicalness and Industriousness facets in the 6FPQ (Jackson, Ashton, & Tomes, 1996). The 6FPQ Independence domain (reverse-keyed) theoretically corresponds to Big Five neuroticism. However, it correlates relatively weakly with NEO PI-R Neuroticism (*r* = -.22), showing an equivalent correlation with Extraversion (*r* = -.25) (Jackson & Tremblay, 2002). The Independence domain consists of three lower order scales: Autonomy (enjoys being unattached to other people, non-conforming, dislikes restraints), Individualism (unconcerned with others' approval, does not follow social norms) and Self-Reliance

(does not seek support or guidance, self-sufficient, confident). When the 6FPQ was factor-analyzed with the NEO PI-R, the three Independence scales were moderate markers of Neuroticism (loadings = .51 to .62), but also had substantial secondary loadings on Agreeableness and Extraversion (Jackson et al., 1996). Hence, Independence seems to be a rotation of Big Five neuroticism towards the agreeableness axis.

The HEXACO Personality Inventory (HEXACO-PI) was based on analyses indicating that when six factors are extracted from personality terms, a honesty-humility factor emerges in addition to the Big Five (Lee & Ashton, 2004). The authors argue that their axis placement is more closely aligned to factor extraction in lexical analyses than is the traditional rotation of the Big Five; because of this rotation, their Emotionality factor differs in content from Big Five neuroticism (r = .51; Lee, Ogunfowora, & Ashton, 2005). In particular, Emotionality includes sensitivity vs. toughness and lacks the irritability vs. patience content of Big Five neuroticism; as a result, HEXACO Emotionality is positively related to Big Five agreeableness (r = .38; Lee et al., 2005). HEXACO Emotionality includes facets assessing Fearfulness (avoids and fears physical harm), Anxiety (worry, stress reactivity), Dependence (need for emotional support), and Sentimentality (empathetic, strong emotional bonds). Data regarding the relation of individual Emotionality facets with Big Five domains were not available.

Trait Affect

The Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson & Clark, 1999) measures specific affects at both the state and trait level. It has scales assessing four types of negative affect: Fear (e.g., jittery, afraid, nervous), Sadness (e.g., sad, downhearted, lonely), Hostility (e.g., angry, irritable, loathing), and Guilt (e.g., ashamed, angry at self, blameworthy). When factor analyzed with markers of the Big Five, Fear, Guilt, and Sadness are strong and specific markers of neuroticism (factor loadings = .75 to .79). However, the Hostility scale splits between neuroticism and

agreeableness (loadings = .52 and -.63, respectively) (Watson & Clark, 1999). Fewer data are available regarding the relations of other measures of trait affect to the Big Five, but both the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971) and Multiple Affect Adjective Checklist – Revised (MAACL-R; Zuckerman & Lubin, 1985) contain scales assessing anxiety/fear, depression, and hostility. Finally, the Differential Emotion Scale – IV (DES-IV; Izard, Libero, Putnam, & Haynes, 1993) has numerous scales that are relevant to N/NE: Sadness, Anger, Disgust, Contempt, Fear, Shame, and Inner-Directed Hostility.

Synthesis of N/NE Models

Several trends may be identified across most or all of the N/NE models reviewed above. First, with the exception of the 6FPQ, every model has a facet related to anxiety/fear. Although anxiety and fear are theoretically distinguishable, they are often combined when assessing personality traits in the above models. Second, numerous models contain a depression/sadness facet, including the NEO PI-R, FI-FFM, PANAS-X, MAACL-R, POMS, and DES-IV. Third, scales assessing stress reactivity or vulnerability are found in the 16PF, NEO PI-R, HPI, MPQ, and SNAP inventories. Note that in some inventories, a single scale combines aspects of fear/anxiety, depression/sadness, and/or stress reactivity (i.e., 16PF, JPI-R, MPQ, SNAP, HEXACO PI), as the first two constructs have a close empirical relation, and the third assesses the perceived/experienced likelihood that negative affect will be triggered under stressful circumstances. Finally, despite its substantial secondary loading in the Big Five agreeableness domain, a hostility/anger/aggression facet is present in each model except the JPI-R, 6FPQ, and HEXACO PI. Based on their inclusion in diverse models of N/NE, these four components – referred to here as anxiety, sadness, angry hostility, and stress vulnerability – seem central to the construct.

The nature of the relations among these N/NE components has been clarified by a behavior genetic study (Jang, Livesley, Angleitner, Riemann, & Vernon, 2002) and a factor analytic study (DeYoung, Quilty, & Peterson, 2007) that have located two primary components within the neuroticism domain. The first component was marked primarily by anxiety and sadness (referred to as *withdrawal*; DeYoung et al., 2007), and a second component was marked primarily by anger and hostility, but also included impulse control problems and emotional lability (*volatility*; DeYoung et al., 2007). Measures of stress vulnerability load on both factors, indicating that stress vulnerability is a broad, non-specific component of N/NE that describes the elicitation of negative affect (DeYoung et al., 2007).

Several other N/NE facets appear in two or more models of the domain. Two such facets have traditionally been located in the Big Five agreeableness domain, rather than neuroticism: empathy and mistrust/suspiciousness/cynicism. Empathy scales are included in the N/NE domain of the JPI-R and HEXACO-PI, whereas mistrust scales are found in the 16PF, HPI, MPQ, and SNAP. In addition, numerous models contain content relevant to dependency (e.g., SNAP Dependency, FI-FFM Dependency), approval-seeking (e.g., JPI-R Cooperativeness, 6FPQ Individualism), and need for emotional support (e.g., HEXACO-PI Dependence, 6FPQ Self-Reliance). Dependency is best seen as a multidimensional construct, with one recent study finding two correlated factors: passive dependency (submissiveness, low self-confidence, need for approval) and active emotional dependency (emotional neediness). Although both factors are related to N/NE, most measures of (pathological) dependency assess the passive component (Morgan & Clark, 2010).

Thus, in synthesizing the N/NE models as exemplified by major personality inventories, seven common facets can be identified: anxiety, sadness, angry hostility, stress vulnerability, empathy, mistrust, and dependency. Note that many inventories include unique N/NE facets (e.g., NEO PI-R Impulsiveness, FI-FFM Envy, SNAP

Eccentric Perceptions, HPI Good Attachment, DES-IV Shame). Although some of these may be important and relevant N/NE facets, they will not be included in a comprehensive trait scheme due to their more idiosyncratic association with specific N/NE inventories.

Illustrative Analyses Using the Eugene-Springfield Data

To provide an empirical test of the above seven-faceted model of N/NE, data from the Eugene-Springfield Community Sample were analyzed. This sample (N = 757) was recruited in 1993, and participants agreed to complete questionnaires for the subsequent 5 to 10 years. They ranged in age from 22 to 90 years, and 56.9% were female (Goldberg, 2008). Of the measures described above, the participants completed the NEO PI-R, 16PF, 6FPQ, MPQ, HEXACO PI, HPI, JPI-R, and the international personality item pool (IPIP) version of the AB5C scales (Goldberg, 2009). Potential markers for each of the seven hypothesized facets were identified, even if they were found in domains other than N/NE. In addition, because the inclusion of the NEO PI-R Impulsiveness facet in the N/NE domain has been questioned (see Johnson & Ostendorf, 1993), this facet (referred to as *Immoderation* for the sake of precision) also was modeled so that its relation with other N/NE facets could be examined to determine whether it should be retained in the N/NE model. Finally, the relations of depressive symptoms (Center for Epidemiologic Studies Depression Scale or CES-D, collected in 1997; Radloff, 1977) and obsessive-compulsive symptoms (Obsessive-Compulsive Inventory – Revised or OCI-R, collected in 1999**;** Foa et al., 2002) to these facets were analyzed in order to determine the relevance of individual N/NE facets to internalizing psychopathology (other internalizing symptoms were not available in this dataset).

Exploratory Factor Analysis of N/NE Structure

Please see Table A1 for a list of hypothesized markers of each facet and the years in which they were collected in the study (note that the Immoderation facet only had two available markers). The scales were submitted to a principal factor analysis and eight

factors were extracted. When these factors were rotated obliquely, all of the hypothesized facets emerged except Stress Vulnerability; the scales for this hypothesized facet loaded primarily on Sadness or Anxiety, and the eighth factor was uninterpretable. Based on this finding and the results of DeYoung et al. (2007), I hypothesize that stress vulnerability may not emerge as a separate facet because it taps the shared variance among the N/NE facets. Thus, the stress vulnerability scales were removed from the factor analysis and instead a unit-weighted Stress Vulnerability composite was created.

The hypothesized markers for the remaining seven facets were then factor analyzed. When seven factors were extracted and obliquely rotated, a factor corresponding to each hypothesized facet was evident, although there were a few discrepancies from the hypothesized markers (see Table A2 for factor loadings). The first factor to emerge was Sadness; note that the NEO PI-R Anxiety scale had its primary loading on this facet, with a secondary loading on the Anxiety factor, indicating that this scale may be broader than anxiety/fear. The second factor was Angry Hostility, the third factor was Empathy, the fourth factor was Anxiety, and the fifth factor was Mistrust. Dependency was the sixth factor; however, HEXACO Dependence had its primary loading on Empathy, rather than on the Dependency facet as expected. This discrepancy may be partly due to the fact that most of the available markers of Dependency centered around a desire for approval and to fit in, as opposed to the need for emotional support assessed by HEXACO Dependence. Finally, the seventh factor to emerge was Immoderation; perhaps because the factor was not strongly defined, its markers also had significant secondary loadings on Sadness and Angry Hostility.

Table A3 shows the intercorrelations among the N/NE facets and the Stress Vulnerability composite, as well as mean correlations with each facet. Consistent with the previous review, Anxiety, Sadness, and Stress Vulnerability had the strongest mean intercorrelations with N/NE facets and are therefore most central to the construct (*r*s = .50, .46, and .52, respectively). In particular, the Stress Vulnerability composite was very

highly correlated with Anxiety, Sadness, and Hostility (*r*s = .72 to .73), demonstrating the variance it shares with the core emotions relevant to N/NE. Angry Hostility, Mistrust, and Dependency had more moderate mean correlations (*r*s = .31 to .34). Finally, Empathy and Immoderation were only weakly related to the other N/NE facets and were tangential to the overall construct (*r*s = .24 and .18, respectively).

Correlations with the NEO PI-R domains (see Table A4) are consistent with above pattern. Namely, Sadness, Anxiety, Angry Hostility, and Stress Vulnerability were most strongly correlated with Neuroticism (*r*s = .68 to .89). Anxiety and Stress Vulnerability did not have any substantial correlations with other domains. In contrast, Angry Hostility also had a strong negative correlation with Agreeableness (*r* = -.59) and Sadness had weaker negative correlations with Extraversion and Conscientiousness (both *r*s = -.39). Dependency's relation with Neuroticism was specific, but the magnitude was weaker (*r* = .40), whereas Mistrust was more strongly correlated with Neuroticism (*r* = .59) but also had substantial correlations with Extraversion (*r* = -.37) and Agreeableness (*r* = -.45). Lastly, Immoderation and Empathy were not primarily related to Neuroticism: Immoderation was most strongly related to Conscientiousness (*r* = -.53) and Empathy was a blend of Agreeableness, Extraversion, and Openness.

Associations with Symptoms

Table A5 displays correlations of depressive and obsessive-compulsive symptoms with the seven N/NE facets and the Stress Vulnerability composite. Both these symptoms were moderately correlated with Sadness, Anxiety, Stress Vulnerability, Angry Hostility, and Mistrust. However, Sadness was more strongly related to depression (*r* = .59) than OCD (*r* = .47), whereas Mistrust and Dependency were more strongly related to OCD (*r*s = .47 and .30, respectively) than to depression (*r*s = .36 and .18, respectively). Empathy and Immoderation were both weakly correlated with these

symptoms (*r*s = .03 to .20). Thus, these data provide evidence that the N/NE facets vary in their strength of associations, both when comparing within and between disorders.

A more differentiated pattern of associations emerges in simultaneous multiple regressions predicting each symptom type (see Table A6). Namely, Sadness was the only predictor of depressive symptoms after controlling for shared variance among the N/NE facets. In contrast, Mistrust and Anxiety were the strongest predictors of OCD symptoms; Dependency and Immoderation were also significant predictors. Empathy showed evidence of a suppressor effect, as the zero-order correlation with OCD symptoms was non-significant (*r* = .03) but the association became significant in the negative direction after controlling for shared variance among facets (β = -.12). Thus, based on these multivariate analyses, depressive symptoms are strongly and specifically related to Sadness, whereas OCD symptoms show weaker but broader associations with N/NE facets.

Summary and Hypothesized Structure for the Current Study

The results of the above qualitative and quantitative analyses of the lower order structure of N/NE suggest that anxiety, sadness, and angry hostility are central facets of N/NE (mean intercorrelations = .38 to .50). They show a specific primary relation to N/NE (despite some secondary loadings on other domains) and are associated with depressive and OCD symptoms. While stress vulnerability is also a core feature of N/NE, it appears most closely aligned with higher order N/NE. Therefore, it is best modeled as a marker of shared variance among the facets, rather than as a lower order component. Mistrust and dependency are not as strongly and specifically associated with N/NE, but they are more closely related to this domain than to other domains (*r*s = .59 and .40, respectively) and have moderate correlations with N/NE facets (mean *r*s = .34 and .31, respectively) and with internalizing symptoms. It should be noted that the dependency

measures available for the above analyses were narrower than this hypothesized facet, focusing on the approval-seeking component; the current study will examine a broader dependency construct that includes need for approval, yielding to others, and low self-confidence (see "Self-Report Instruments: Personality Measures" for a description of these measures).

In contrast to mistrust and dependency, empathy and immoderation are theoretically and empirically most strongly related to other domains, show relatively weak associations with higher order N/NE (*r*s = .28 and .33, respectively) and N/NE facets (*r*s = .24 and .18, respectively), and are not strongly related to depressive or OCD symptoms. Thus, these two facets will be dropped from the proposed model of N/NE. The final model for the current study will therefore consist of sadness, anxiety, angry hostility, mistrust, and dependency, with stress vulnerability marking the shared variance among them.

Relations of N/NE Facets to Internalizing Psychopathology

There has been little research on facet level relations between personality and the internalizing disorders, and most existing research has focused on depression. Furthermore, the vast majority of these studies used the NEO PI-R as the sole measure of N/NE facets, with only a few studies using a different measure (i.e., SNAP). Therefore, it is important to note that the following conclusions may not be generalizable if the N/NE structure of these measures is at all misspecified or inadequately measured. For instance, the above analyses of the Eugene-Springfield data set indicate that the NEO PI-R Anxiety facet loads primarily on measures of sadness/depression, rather than anxiety/fear (see Table A2).

Depression

Studies have found consistent evidence for strong relations between numerous facets of N/NE and depression. In terms of concurrent relations with depressive

symptoms, Bagby and colleagues (Bagby, Joffe, Parker, Kalemba, & Harkness, 1995) reported moderate correlations with NEO PI-R facets Depression, Anxiety, and Self-Consciousness (*r*s = .50 to .60), with a slightly lower correlation for Vulnerability (*r* = .45). Elevated *T*-scores (*T*s = 62 to 74) for those diagnosed with current depression on facets Depression, Anxiety, Angry Hostility, Self-Consciousness, and Vulnerability also have been reported (Harkness, Bagby, Joffe, & Levitt, 2002**;** Rector, Hood, Richter, & Bagby, 2002). Bienvenu and colleagues (2004) found that, relative to a control group without a history of depression or anxiety disorders, a community sample with a lifetime history of depression scored significantly higher on all facets of neuroticism. However, *T*-scores were not elevated relative to norms (*T*s = 51 to 56), perhaps because diagnoses were lifetime rather than current, limiting the contribution of state effects. Three studies have examined the relations of SNAP scales with depression, finding that depression is moderately related to Negative Temperament (*d* = .63; *r*s = .38 to .61) and Self-Harm (*d* = .96; *r*s = .41 to .59) (Gamez et al., 2007[1]; Kotov, 2006; Morey et al., 2003). In addition, Mistrust also was moderately correlated with depressive symptoms (*r* = .31 to .51; Clark, Vittingl, Kraft, & Jarrett, 2003; Gamez et al., 2007; Kotov, 2006).

These studies indicate that, at the zero-order level, depression is associated with numerous facets of N/NE, particularly those that share a large amount of variance with higher order N/NE (i.e., Depression, Anxiety, Negative Temperament). Several studies have examined these relations while controlling for shared variance among the personality facets. In a stepwise hierarchical regression with depressive symptoms following treatment as the criterion, baseline Depression (final β = .25) and Anxiety (final β = .27) were significant predictors in a group of depressed patients, after controlling for baseline depressive symptoms (Costa, Bagby, Herbst, & McCrae, 2005). Chioqueta and Stiles (2005) found that Depression (final β = .66) and Angry Hostility (β = .13) were both significant predictors of current depressive symptoms in a group of students. In a study using st+ructural equation modeling in an adolescent sample, only the

Depression facet predicted additional variance in depressive symptoms, beyond shared variance among the N/NE facets (Uliaszek et al., 2009). Lastly, of the SNAP scales, Self-Harm remained a significant predictor of depressive symptoms in two samples (βs = .16 to .19), as did Mistrust in one sample (β = .18; Kotov, 2006). Thus, greater levels of specificity emerge in multivariate analyses wherein Self-Harm and (not surprisingly) the Depression facet are most strongly related to depression.[2]

Obsessive-Compulsive Disorder

A smaller body of literature on the relations of OCD to N/NE facets has accumulated in the past decade. Similar to depression, OCD is related to higher levels of Anxiety and Depression, (*T*s = 60 to 70), and generally has a lesser (though still elevated) relation to Self-Consciousness and Vulnerability (Bienvenu et al., 2004; Rector et al., 2002; Rees, Anderson, & Egan, 2005). In addition, Samuels and colleagues (2000) reported elevated scores relative to a nonpsychiatric control sample on all six facets of Neuroticism, adding Impulsivity and Angry Hostility; however, T-scores were not reported. In interpreting these data, it is important to note that two of these studies had very small sample sizes of less than 25 (Bienvenu et al., 2004; Rees et al., 2005). Finally, OCD symptoms were weakly to moderately related to SNAP N/NE facets, with inconsistent results regarding specific facet associations across two studies (e.g., elevated vs. lowered levels of mistrust) (Kotov, 2006; Wu, Clark, & Watson, 2006).

Other Anxiety Disorders

To my knowledge, only a few studies have examined how panic disorder, social anxiety disorder, and GAD relate to the facets of N/NE, whereas one study has included PTSD. Bienvenu and colleagues (2004) reported elevated scores (as compared to controls without internalizing disorders) on Depression, Angry Hostility, Anxiety, and Vulnerability for panic disorder; those with social anxiety disorder were elevated on these facets, as well as Self-Consciousness. Participants diagnosed with GAD had elevated

scores on Depression, Anxiety, Self-Consciousness, and Vulnerability relative to controls. However, all T-scores were only slightly above the normative mean (*T*s = 55 to 60), and sample sizes for all three disorders were small (*n* = 31 for GAD, 43 for panic disorder, and 89 for social anxiety disorder).

Two studies reported fairly weak correlations with N/NE facets for panic disorder and social anxiety disorder, wherein both disorders showed a significant relation to Negative Temperament (*r*s = .16 to .47), and social anxiety disorder also had a weak to moderate relation with Self-Harm (*r*s = .19 to .44; Gamez et al., 2007; Kotov, 2006). Kotov (2006) reported that after controlling for higher order N/NE, social anxiety's partial correlations with Mistrust and Self-Harm remained significant (partial *r*s = .14 to .29). However, none of the above facets were significant predictors of social anxiety or of panic when included with other traits (Kotov, 2006). GAD had moderate correlations with Negative Temperament, Mistrust, Aggression, and Self-Harm (*r*s = .20 to .31), as did PTSD, which was also related to Eccentric Perceptions (*r*s = .25 to .35; Gamez et al., 2007).

Summary and Limitations of Current Literature

Given the very small size of this literature, strong conclusions cannot be drawn. In addition, multiple significant limitations apply, such as the inclusion of only two measures of N/NE facets (with the majority using the NEO PI-R), attenuated correlations due to the use of diagnostic categories in Gamez et al. (2007), very small sample sizes for some disorders (i.e., OCD and GAD in Bienvenu et al., 2004 and Rees et al., 2005), discrepancies in the use of current versus lifetime diagnoses/symptoms, and few multivariate analyses for disorders other than depression. The available data suggest that the NEO PI-R facets Depression, Anxiety, Self-Consciousness, and Vulnerability, as well as SNAP Negative Temperament, are broadly related to these disorders, albeit to varying degrees depending on the disorder. NEO PI-R Impulsivity does not appear to be relevant

to these disorders. Facets such as SNAP Mistrust, SNAP Self-Harm, and NEO PI-R Angry Hostility may show some evidence of relative specificity to a particular disorder; however, there is not much support for differential patterns of relations between N/NE facets and disorders at the zero-order level.

In contrast, multivariate analyses that control for variance shared with higher order N/NE did provide evidence for greater specificity in reference to depression (i.e., the unique variance of the Depression facet clearly was most relevant); very few multivariate data are available for the other disorders. Thus, it may be the case that multivariate analyses controlling for shared variance among N/NE facets would reveal more differentiated associations with internalizing disorders. In addition, it is essential that the N/NE facets be modeled in a comprehensive manner that is not limited by the idiosyncrasies of a single instrument's model and measurement.

Clinical Traits

Clinical traits are dispositional constructs that were developed in the psychopathology, rather than personality, literature. These lower order traits are hypothesized to be particularly relevant to one or more psychological disorders, often as vulnerability factors. Because clinical traits are dimensional, they can be studied in both normal and clinical populations (Watson, Kotov, & Gamez, 2006). Although some are not conceptualized as personality traits *per se*, their relative stability and dispositional nature make them appropriate for inclusion here. The clinical traits of interest for this review are maladaptive perfectionism, anxiety sensitivity, intolerance of uncertainty, and experiential avoidance. These traits were selected based on the following criteria: 1) broad current theoretical interest in their relations to the internalizing disorders; 2) moderate correlations with N/NE; 3) empirical associations with several of the internalizing disorders, as described below; 4) each of the six disorders of interest has a substantial or primary association with at least one of the clinical traits.

Definitions and Associations with Other Traits

Maladaptive Perfectionism

Generally speaking, perfectionism is characterized by the setting of excessively high standards of performance. In addition, many definitions of perfectionism include a tendency towards negative emotional responses that follow the failure to meet one's standards (Alden, Ryder, & Mellings, 2002); this tendency shows a close empirical association with self-criticism (e.g., Clara, Cox, & Enns, 2007; Dunkley, Zuroff, & Blankstein, 2003; Powers, Zuroff, & Topciu, 2004). There is now a consensus, based on factor analyses of numerous measures, that perfectionism broadly consists of two primary components: (1) Maladaptive Perfectionism/Evaluative Concerns/Self-Critical Perfectionism, and (2) Adaptive Perfectionism/Personal Standards/Achievement Striving (e.g., Clara et al., 2007; Dunkley et al., 2003; Enns & Cox, 2002; Powers et al., 2004**;** Rice, Ashby, & Slaney, 2007). Only maladaptive perfectionism appears to be related to psychopathology, so the following review focuses on this component.

The most commonly used measures of this trait are Concern Over Mistakes (COM; setting high standards that are accompanied by critical evaluations) and Doubt About Actions (DA; doubts about one's ability and the quality of one's performance) — two scales from the Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990). The Socially Prescribed Perfectionism scale (SPP; belief that other people have excessively high expectations of you) from the Hewitt and Flett Multidimensional Personality Scale (HFMPS; Hewitt & Flett, 1991) is also frequently used to measure maladaptive perfectionism.

The strongest correlate of maladaptive perfectionism is N/NE, with correlations ranging from approximately .30 to .60, depending on the measure and subscale (Enns & Cox, 1999; Enns & Cox, 2002; Enns, Cox, & Clara, 2005; Clara et al., 2007; Hill, McIntire, & Bacharach, 1997; Parker & Stumpf, 1995; Rice et al., 2007). Specific NEO

PI-R Neuroticism facets that relate to maladaptive perfectionism are Anxiety, Angry Hostility, Depression, Vulnerability, and Self-Consciousness, although the Depression facet was the only significant predictor of maladaptive perfectionism in a multiple regression (Hill et al., 1997). There is also some evidence for inverse relations with extraversion (particularly Positive Emotions), agreeableness, and conscientiousness (Enns & Cox, 1999; Hill et al., 1997; Rice et al., 2007). Thus, maladaptive perfectionism is most closely related to N/NE (and particularly its depression component), but also shows some weaker associations with extraversion, agreeableness, and conscientiousness.

Anxiety Sensitivity

Anxiety sensitivity describes individual differences in the fear of anxiety symptoms, due to a belief that these symptoms are likely to have harmful consequences (Reiss & McNally, 1985). Anxiety sensitivity was initially proposed as a vulnerability factor for the development of panic disorder. It is conceptually distinct from anxiety itself and instead involves one's response to anxiety symptoms, or "fear of fear." Although originally postulated to be a unidimensional construct, factor analyses revealed a multidimensional structure consisting of fear of physical sensations of anxiety, fear of mental incapacitation or cognitive dyscontrol (i.e., fears of losing one's mind), and fear of public observation of anxiety (referred to in this review as physical, cognitive, and social concerns, respectively) (Zinbarg, Mohlman, & Hong, 1999). Thus, the current consensus is that anxiety sensitivity is structured hierarchically, with the higher order trait breaking down into the three lower order dimensions described above (*r*s = .33 to .61) (e.g., Rodriguez, Bruce, Pagano, Spencer, & Keller, 2004; Zinbarg, Barlow, & Brown, 1997). Although there are several recent measures of anxiety sensitivity that were created to provide better facet-level assessment, the original Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992) is still most frequently used.

Studies using a variety of measures of anxiety sensitivity have indicated that this trait is moderately correlated with N/NE (*r*s = .30 to .50; Arrindell, 1993; Cox, Borger, Taylor, Fuentes, & Ross, 1999; Kotov, 2006; Lilienfeld, 1997, 1999; Lilienfeld & Penna, 2001; Norton, Cox, Hewitt, & McLeod, 1997), and also has moderate correlations with the N/NE facets Anxiety, Depression, Self-Consciousness, Stress Reactivity, and Alienation (Cox et al., 1999; Lilienfeld, 1997, 1999; Lilienfeld & Penna, 2001). Thus, anxiety sensitivity shows a clear and moderate association with N/NE and is broadly related to its facets.

E/PE has a weaker correlation with anxiety sensitivity of roughly -.20 in several studies (Cox et al., 1999; Kotov, 2006; Lilienfeld & Penna, 2001; Norton et al., 1997), although others have failed to find a significant relation (Arrindell, 1993; Lilienfeld, 1997, 1999). Anxiety sensitivity is generally more strongly correlated with the sociability component of extraversion than with positive emotionality, and the E/PE facets Assertiveness and Gregariousness seem to be the most important components in this relation (Cox et al., 1999; Lilienfeld, 1997, 1999; Lilienfeld & Penna, 2001). Finally, relations with (low) conscientiousness, (low) agreeableness, and disinhibition are weak or nonsignificant (Cox et al., 1999; Lilienfeld, 1999, Lilienfeld & Penna, 2001; Norton et al., 1997). Taken together, anxiety sensitivity may be considered primarily a facet of N/NE, but it also includes an interpersonal component from the extraversion domain (Cox et al., 1999). Personality correlates of the components of anxiety sensitivity have not been studied, but one would suspect that they may be differentially related to the Big Five (e.g., social concerns likely is more strongly related to extraversion than is physical or cognitive concerns).

Intolerance of Uncertainty

Intolerance of uncertainty is defined as “a relatively broad construct representing cognitive, emotional, and behavioral reactions to uncertainty in everyday life situations”

(Freeston, Rheaume, Letarte, Dugas, & Ladouceur, 1994, p. 792). As the name of the construct implies, those with high levels of intolerance of uncertainty respond with discomfort and anxiety to uncertain situations. Although originally conceptualized as a broad but unidimensional construct, inconsistent factor structures have been reported (see Gosselin et al., 2008). A recent structural analysis uncovered four dimensions of intolerance of uncertainty in the Intolerance of Uncertainty Scale (IUS; Freeston et al., 1994): need for predictability, inaction due to uncertainty, distress due to uncertainty, and inflexible beliefs regarding uncertainty (Berenbaum, Bredemeier, & Thompson, 2008). Intolerance of uncertainty has been studied most extensively in regard to worry and GAD, and is seen as an integral part of cognitive models of GAD (e.g., Dugas, Gagnon, Ladouceur, & Freeston, 1998). The IUS is the most commonly used measure of intolerance of uncertainty, but a short-form also has been developed that has less item redundancy and a more stable two-factor structure, consisting of prospective anxiety and inhibitory anxiety (Carleton, Norton, & Asmundson, 2007). In addition, a multidimensional measure of intolerance of uncertainty was created recently (Intolerance of Uncertainty Inventory; Gosselin et al., 2008); however, it was developed in French and has not yet been validated in English.

Only a handful of studies have addressed how intolerance of uncertainty fits into higher order personality structures, with no facet-level data. Intolerance of uncertainty is strongly related to N/NE, with correlations ranging from .53 to .67 (Berenbaum et al., 2008; Boelen & Reijntjes, 2009; de Bruin, Rassin, & Muris, 2007; Norton et al., 2005; Sexton et al., 2003), whereas associations with E/PE are much weaker (*r*s = -.19 and -.33; Berenbaum et al., 2008; Norton et al., 2005). Furthermore, a multivariate analysis indicated that only N/NE remained strongly related to intolerance of uncertainty, after controlling for shared variance with E/PE (Norton & Mehta, 2007). One study has examined the other three Big Five traits, reporting a weak correlation with openness (*r* =

-.17) and non-significant correlations with agreeableness and conscientiousness (Berenbaum et al., 2008). Based on this limited research, intolerance of uncertainty appears to be best characterized as a facet of N/NE.

Experiential Avoidance

Experiential avoidance may be defined as the tendency to negatively evaluate, control, and avoid unwanted thoughts, feelings, and sensations[3] (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Experiential avoidance is related to but distinct from emotion dysregulation, which is a broader construct that includes poor understanding of one's emotions, non-acceptance of unwanted emotions, and the use of inflexible and ineffective strategies to modulate emotions (Gratz & Roemer, 2004). There is evidence that although experiential avoidance may decrease distress in the short-term, it has the paradoxical effect of increasing these same unwanted thoughts and emotions over time (e.g., Hayes et al., 1996; Hayes, Strosahl, & Wilson, 1999).

At this point, the only published general measure of experiential avoidance is the Action and Acceptance Questionnaire (AAQ; Hayes et al., 2004); 16 and 9 item versions of this measure are currently used. There is some concern about the AAQ's relatively low internal consistency (approximately .70) and (relatedly) content that appears to be multidimensional (Chawla & Ostafin, 2007). Recently, a multidimensional measure of experiential avoidance was developed to address these concerns (Gamez, 2009; see "Self-Report Measures: Personality").

Perhaps in part because it was not originally conceptualized as a trait, there is almost no research on how experiential avoidance relates to other personality traits. However, Gamez (2009) studied these associations, using both his new measure of experiential avoidance (the Multidimensional Experiential Avoidance Questionnaire; MEAQ) and the AAQ in student and psychiatric patient samples. Correlations between N/NE and experiential avoidance were moderate to strong, ranging from .44 to .54 for the

MEAQ total score and .56 to .79 for the AAQ. In terms of the other Big Five domains, the MEAQ had a moderate association with E/PE (*r*s = -.27 to -.54), conscientiousness (*r*s = -.34 to -.46), and openness (*r*s = -.22 to -.38). Overall, the Big Five accounted for 32 to 43 percent of the variance in the MEAQ. Despite a fairly strong correlation with N/NE, there was some evidence that experiential avoidance can be reliably distinguished from N/NE: exploratory factor analyses of experiential avoidance, neuroticism, depression, and negative emotionality largely conformed to the expected two-factor structure, although some of the MEAQ scales split across the two factors. For the AAQ, a clear two-factor structure was found in the student sample, but not the patients (Gamez, 2009). Thus, experiential avoidance appears to be related primarily to N/NE, although it shows moderate relations with other Big Five traits. There is also preliminary evidence that N/NE and experiential avoidance are distinguishable constructs, but more research is needed to address this issue. In addition, no information is currently available regarding facet level relations with N/NE.

Relations to Internalizing Psychopathology

Maladaptive Perfectionism

Of the internalizing disorders reviewed here, depression and social anxiety disorder show the strongest links to maladaptive perfectionism. Patients diagnosed with depression have significantly higher mean maladaptive perfectionism scores than do controls without any diagnoses (*d*s = .39 to 1.57; Hewitt & Flett, 1991; Sassaroli et al., 2008). Similarly, when depressive symptoms are measured, correlations with maladaptive perfectionism range from .31 to .61 (Clara et al., 2007; Enns & Cox, 1999; Enns & Cox, 2002; Enns & Cox, 2005; Hewitt & Flett, 1991; Kotov, 2006; Minarik & Ahrens, 1996). After partialling out shared variance with neuroticism, these correlations remained significant (Enns & Cox, 1999; Kotov, 2006). Finally, numerous studies have found that maladaptive perfectionism is a significant predictor of depression in multiple regressions

(βs = .19 to .31), often after controlling for neuroticism and other related constructs (Hewitt & Flett, 1991; Kawamura, Hunt, Frost, & DiBartolo, 2001; Minarik & Ahrens, 1996; Rice et al., 2007), although one reported that maladaptive perfectionism did not contribute additional variance (Kotov, 2006).

Maladaptive perfectionism is also moderately to strongly correlated with dimensional social anxiety symptom measures (*r*s = .23 to .60; Juster et al., 1996; Kotov, 2006; Rosser, Issakidis, & Peters, 2003; Saboonchi & Lundh, 1997; Saboonchi, Lundh, & Ost, 1999; Shahar & Gilboa-Shechtman, 2007), with most partial correlations controlling for N/NE or depressive symptoms remaining significant (Juster et al., 1996; Kotov, 2006; Rosser et al., 2003). Higher mean levels of maladaptive perfectionism are present in those diagnosed with social anxiety disorder as compared to normal controls (*d*s = .53 to 1.47; Antony, Purdon, Huta, & Swinson, 1998; Lundh & Ost, 1996; Juster et al., 1996; Saboonchi et al., 1999). However, in multivariate analyses controlling for depression, evidence for the predictive power of maladaptive perfectionism for social anxiety disorder is mixed (Kotov, 2006; Rosser et al., 2003; Shahar & Gilboa-Shechtman, 2007). Finally, maladaptive perfectionism was more strongly related to the generalized subtype of social anxiety disorder (i.e., social anxiety in interactional, as opposed to performance, situations) in one multivariate analysis (Norton, Buhr, Cox, Norton, & Walker, 2000).

There is less research regarding how GAD relates to this trait, but existing studies suggest that GAD symptoms and worry are also strongly related to maladaptive perfectionism scales (*r*s = .39 to .62, mean = .49; Boelen & Reijntjes, 2009; Buhr & Dugas, 2006; Santanello & Gardner, 2007; Stöber & Joormann, 2001a), with elevated scores compared to normal controls (*d* = .67; Sica et al., 2004). Partial correlations between GAD and maladaptive perfectionism, controlling for other internalizing symptoms, remain significant (*r*s = .18 to .50, mean = .32; Santanello & Gardner, 2007; Stöber & Joormann, 2001a). In addition, Buhr and Dugas (2006) reported that a measure

of maladaptive perfectionism predicted worry (β = .16) beyond other components of perfectionism.

Numerous theorists have drawn conceptual connections between OCD symptoms and perfectionism since the early 20th century, in that OCD symptoms often entail a need for the flawless or precise execution of thoughts or behaviors (see Frost & DiBartolo, 2002). Symptoms of OCD correlate moderately with maladaptive perfectionism scales (*r*s = .19 to .56; Boelen & Reijntjes, 2009; Kotov, 2006; Rheaume, Freeston, Dugas, Letarte, & Ladouceur, 1995), with some correlations remaining significant after partialling out N/NE (Kotov, 2006). Symptoms involving mental rituals and doubting (such as checking and pathological impulses) correlate more strongly with maladaptive perfectionism (*r*s = .25 to .56; mean = .37), whereas rituals involving washing or cleaning have somewhat weaker associations (*r*s = .20 to .33; mean =.25) (Frost et al., 1990; Rice & Pence, 2006; Suzuki, 2005; Yorulmaz, Kuranci, & Tekok-Kilic, 2006). Patients diagnosed with OCD score higher on measures of maladaptive perfectionism than do normal controls (*d*s = .63 to 1.78), with particularly strong relations to the Doubts About Actions scale (Antony et al., 1998; Frost & Steketee, 1997; Sassaroli et al., 2008).

In terms of incremental validity beyond N/NE and depression, Kotov (2006) reported mixed results for OCD: maladaptive perfectionism did not predict OCD symptoms beyond N/NE in a clinical sample, but did in a sample of students. In another study, maladaptive perfectionism was not a significant predictor of a factor consisting primarily of OCD symptoms, after controlling for depressive symptoms (Kawamura et al., 2001). However, the OCD factor also had moderate loadings from measures of AS and agoraphobic symptoms; therefore, it is difficult to interpret this finding. Overall, OCD symptoms (and particularly checking and doubting symptoms) appear to be moderately related to maladaptive perfectionism, but more multivariate studies that control for N/NE are needed to establish incremental validity.

Panic shows the weakest zero-order relation with maladaptive perfectionism, although patients with panic disorder (with or without agoraphobia) still had significantly higher scores than normal controls (*d*s = .27 to 1.0; Antony et al., 1998; Frost & Steketee, 1997; Saboonchi et al., 1999). Kotov (2006) reported correlations ranging from .20 to .23 between panic symptoms and maladaptive perfectionism in samples of students and patients. However, correlations were no longer significant after controlling for N/NE, and maladaptive perfectionism was not a significant predictor of panic in regression analyses.

Finally, only one study has examined relations with PTSD, limiting our ability to draw conclusions. A factor consisting primarily of PTSD symptoms correlated .34 with maladaptive perfectionism scales, but maladaptive perfectionism was not a significant predictor of this factor in a hierarchical regression that controlled for depression (Kawamura et al., 2001).

Anxiety Sensitivity

Because a meta-analysis of the relations of anxiety sensitivity with the internalizing disorders (and corresponding symptom dimensions) was recently performed by Naragon-Gainey (2010), I focus on these analyses in this review. The meta-analysis used diagnostic and correlational data to conduct both zero-order and multivariate analyses. Of the disorders of interest for the current study, Naragon-Gainey (2010) found that panic disorder, PTSD, and GAD were most strongly related to higher order anxiety sensitivity (ρs = .60, .54, and .58 respectively). Based on the lower order analyses, panic was most closely related to both the physical and cognitive components of anxiety sensitivity (ρs = .52 and .50, respectively), whereas PTSD was most strongly related to the cognitive component of anxiety sensitivity (ρ = .54). Further, symptom-level analyses showed that the hyperarousal symptoms of PTSD were strongly correlated with higher order anxiety sensitivity (ρ = .61), as well as with physical and cognitive concerns. However, re-experiencing and avoidance/numbing dimensions of PTSD also were

substantially related to anxiety sensitivity (ρs = .45 to .49). Lastly, GAD was related broadly to all three anxiety sensitivity components (ρs = .47 to .56).

Naragon-Gainey (2010) reported that depression, social anxiety, and OCD were more moderately related to anxiety sensitivity (ρs = .46 to .49), wherein depression was specifically related to cognitive concerns (ρ = .53) and social anxiety to social concerns (ρ = .70). For OCD, researchers have theorized that elevated levels of anxiety sensitivity (and cognitive concerns in particular) may be related to the characteristic belief that anxiety-provoking thoughts are threatening and need to be eliminated through rituals or other means (see Calamari, Rector, Woodard, Cohen, & Chik, 2008). However, this meta-analysis did not support a strong relation between OCD and overall anxiety sensitivity or any of its components, although anxiety sensitivity was elevated relative to normative levels. All symptom dimensions within OCD were relatively weakly related to anxiety sensitivity, but checking had the strongest association (ρ = .52), consistent with the fact that checking symptoms are associated with greater distress and comorbid psychopathology than other OCD dimensions (Watson, 2009a; Watson et al., 2005).

Path analyses were also conducted in the meta-analysis, examining relations between higher order anxiety sensitivity and the unique variance of each internalizing disorder, after controlling for variance accounted for by the higher order Distress and Fear factors described previously (see “Quantitative Analyses of Comorbidity Data”); note that OCD was not included in these analyses due to its ambiguous location in this framework. Fit indices suggested that relations with anxiety sensitivity are maximally informative at the level of individual disorders rather than the higher order level (i.e., fear and distress disorders), as anxiety sensitivity relations varied substantially for disorders within the same hierarchical grouping. Furthermore, the correlations between anxiety sensitivity and the unique variance of each internalizing symptom were all significant and strong in magnitude, suggesting that no disorder is related to anxiety sensitivity solely due to comorbidity with other disorders that are strongly associated with anxiety

sensitivity. For anxiety sensitivity-disorder relations, multivariate results were consistent with the zero-order analyses: after controlling for shared higher order variance, panic, PTSD, and GAD were most strongly related to anxiety sensitivity, whereas social anxiety and depression had a more moderate relation.

Although this meta-analysis did not control for shared variance with higher order N/NE and other Big Five traits, studies have found that anxiety sensitivity has incremental validity for predicting most mood and anxiety disorders, including panic disorder (e.g., Cox, Enns, Walker, Kjernisted, & Pidlubny, 2001; Kotov et al., 2007), depression (Kotov, 2006; Reardon & Williams, 2007), social anxiety disorder (Kotov et al., 2007; Norton et al., 1997), and PTSD (Collimore, McCabe, Carleton, & Asmundson, 2008; Vujanovic, Zvolensky, & Bernstein, 2008). Evidence for GAD is mixed (Kotov et al., 2007; Norton et al., 2005; Sexton et al., 2003), and anxiety sensitivity does not appear to predict variance beyond N/NE for OCD (Kotov et al., 2007; Norton et al., 2005).

Intolerance of Uncertainty

The majority of research on intolerance of uncertainty has focused on the magnitude and specificity of its relation with GAD and worry. Intolerance of uncertainty consistently shows a strong association with GAD symptoms (*r*s = .56 to .70, mean = .63; e.g. Berenbaum et al., 2008; Buhr & Dugas, 2002; Buhr & Dugas, 2006, de Bruin et al., 2007; Dugas et al., 2001; Gosselin et al., 2008; Sexton et al., 2003), and large effect sizes for those diagnosed with GAD compared to normal controls (*d*s = .82 to 1.95, mean = 1.35; Holaway, Heimberg, & Coles, 2006; Ladouceur et al., 1999; Sica et al., 2004) and to patients with other anxiety disorders (*d* = .70; Ladouceur et al., 1999). Furthermore, this relation remains in multivariate analyses, including partial correlations controlling for N/NE, depression, or perfectionism (*r*s = .32 to .42, mean = .36; Buhr & Dugas, 2002; Buhr & Dugas, 2006; Dugas et al., 2007) and in regression and path analyses controlling for relevant constructs (e.g., Buhr & Dugas, 2002; Buhr & Dugas, 2006; de Bruin,et al.,

2007; Khawaja & Chapman, 2007: Norton et al., 2005; Norton & Mehta, 2007; Sexton et al., 2003).

Intolerance of uncertainty also is important in many theories of OCD, in which it is theorized to contribute to doubt and difficulty making decisions. As such, it was included (along with perfectionism) as one of six primary cognitive components by the Obsessive Compulsive Cognitions Working Group (1997). OCD symptoms are less strongly correlated with intolerance of uncertainty than is GAD/worry, but the links are still substantial, with correlations ranging from .38 to .67 (mean = .42; e.g., Abramowitz & Deacon, 2006; Boelen & Reijntjes, 2009; Dugas et al., 2001; Norton et al., 2005; Sexton et al., 2003) and large effect sizes compared to normal controls (*d*s = 1.0 and 1.24; Holaway et al., 2006; Tolin, Abramowitz, Brigidi, & Foa, 2003).

At the symptom dimension level, checking, ordering, and doubting/obsessing are more strongly related to intolerance of uncertainty than are other symptoms such as washing and hoarding (Abramowitz & Deacon, 2006; Holaway et al., 2005; Tolin et al., 2003). Few studies have conducted multivariate analyses controlling for N/NE or depression and worry, with some finding non-significant relations (Norton & Mehta, 2007; Norton et al., 2005; Sexton et al., 2005) and one regression yielding a moderate relation (Steketee, Frost, & Cohen, 1998). It is noteworthy that one study that included symptom dimensions found that only the checking and repeating compulsion symptoms of OCD predicted intolerance of uncertainty in a regression (Tolin et al., 2003). Thus, more multivariate analyses should be conducted at the symptom level to help clarify which symptoms are most relevant to intolerance of uncertainty.

Depression and the other anxiety disorders have received less attention in regard to intolerance of uncertainty. Zero-order correlations indicate that depression is moderately to strongly related to intolerance of uncertainty (*r*s =.39 to .59, mean = .50; e.g., Berenbaum et al., 2008; Buhr & Dugas, 2002; Boelen & Reijntjes, 2009; Butzer & Kuiper, 2006; Miranda, Fontes, & Marroquin, 2008; Steketee et al., 1998); however, it is

not clear whether the relation remains in multivariate analyses, given mixed results (Norton & Mehta, 2007; Norton et al., 2005). Limited evidence suggests that intolerance of uncertainty may be important in social anxiety, with a strong correlation of .70 in one study (Boelen & Reijntjes, 2009) and a significant contribution in multivariate studies after controlling for N/NE and other related personality constructs (Boelen & Reijntjes, 2009; Norton & Mehta, 2007). The few studies on intolerance of uncertainty and panic show a weak zero-order association (*r*s = .12 to .47, mean = .31; Berenbaum et al., 2008; Dugas et al., 2001; Dugas, Marchand, & Ladouceur, 2005; Sexton et al., 2003), with the correlations dropping to non-significance in path analyses (Sexton et al., 2003; Norton et al., 2005). Lastly, PTSD diagnostic status was moderately correlated with intolerance of uncertainty (*r* = .32; Smith, 2007), but a longitudinal study found that baseline intolerance of uncertainty was not significantly correlated with PTSD symptoms 8 months later (*r* = .12; Farach, Mennin, Smith, & Mandelbaum, 2008).

Experiential Avoidance

PTSD has received the most attention in relation to experiential avoidance, with a moderate correlation typically reported (*r*s = .26 to .49). Further, when individual symptom dimensions within PTSD are examined, experiential avoidance appears to be equally related to all of them (Hayes et al., 2004; Marx & Sloan, 2005; Morina, Stangier, & Risch; 2008; Plumb, Orsillo, Luterek, 2004; Tull, Gratz, Salters, & Roemer, 2004; Tull & Roemer, 2003). Experiential avoidance predicts PTSD symptoms beyond relevant factors such as initial PTSD severity and trauma severity, both concurrently (βs = .36 to .37; Plumb et al., 2004) and prospectively (βs = .31 to .35; Marx & Sloan, 2005). In a longitudinal study of victims exposed to the 9/11 terrorist attacks, experiential avoidance mediated the association between pre-attack GAD symptoms and PTSD symptoms one year later (Farach et al., 2008). Finally, there is also a link between trauma exposure (e.g., sexual abuse) and greater levels of experiential avoidance (Batten, Follette, & Aban,

2001). Experiential avoidance predicts psychological distress following trauma (Polusny, Rosenthal, Aban, & Follette, 2004), with one study finding evidence that experiential avoidance mediates the longitudinal association between traumatic exposure and distress, after controlling for initial PTSD symptoms (Marx & Sloan, 2002).

While experiential avoidance is clearly related to trauma exposure and PTSD, researchers have also noted that experiential avoidance appears to be most strongly associated with general psychological distress/dysphoria in multivariate analyses, as opposed to PTSD specifically (e.g., Plumb et al., 2004; Tull et al., 2004). In fact, experiential avoidance is moderately to strongly correlated with symptoms of depression (*r*s = .36 to .72, mean *r* = .56; Gamez, 2009; Hayes et al., 2004; Santanello & Gardner, 2007; Tull & Gratz, 2008); partial correlations controlling for N/NE remained moderately strong (*r*s = .32 to .40; Gamez, 2009). There is also preliminary evidence that experiential avoidance is specifically related to depression, after controlling for shared variance with anxiety symptoms, AS, and goal-directed behavior (Tull & Gratz, 2008), as well as with anxiety symptoms, rumination, and cognitive/behavioral avoidance (Cribb, Moulds, & Carter, 2006). Thus, it is important that future studies control for dysphoria/depression to see if PTSD (and other disorders) are uniquely related to experiential avoidance, independent of its prominent dysphoria component (see Watson, 2009a).

Several biological challenge experiments (e.g., breathing carbon dioxide-enriched air or hyperventilation, which induces panic symptoms in some people) form the primary evidence base for a relation between panic disorder and experiential avoidance. Specifically, among healthy participants, those that had higher levels of experiential avoidance reported more panic symptoms and greater distress following the biological challenge. Interestingly, high experiential avoidance participants typically did not show greater physiological reactivity, but only differed from low experiential avoidance participants on subjective measures of panic and anxiety (Feldner, Zvolensky, Eifert, & Spira, 2003; Karekla, Forsyth, & Kelly, 2004; Spira, Zvolensky, Eifert, & Feldner, 2004).

Supporting the above studies, participants with panic disorder or a history of panic attacks also scored higher on measures relevant to experiential avoidance than did control subjects (*d*s = .88 and .49, respectively), even after controlling for depressive symptoms (Baker, Holloway, Thomas, Thomas, & Owens, 2004; Tull & Roemer, 2007). Thus, based on experimental and correlational data, experiential avoidance seems to be related to panic symptoms and panic disorder.

Borkovec and colleagues hypothesized that worry functions to avoid unwanted emotions and sensations, and this theory has received extensive empirical support (see Borkovec, Alcaine, & Behar, 2004; Roemer, Salters, Raffa, & Orsillo, 2005). Given that this avoidance is similar in nature to experiential avoidance, it seems plausible that worry and GAD may be related to experiential avoidance also. However, there are few empirical studies that use measures of experiential avoidance to investigate this association. Similar to PTSD, depression, and panic, GAD shows moderate correlations with experiential avoidance (*r*s = .35 to .57, mean = .45; Roemer et al., 2005; Santanello & Gardner, 2007). In addition, this association remains significant after controlling for depression and social anxiety (partial *r* = .26), and experiential avoidance statistically mediated the longitudinal association between GAD symptoms and worry one year later (Farach et al., 2008). Overall, there is preliminary support for an association between GAD and experiential avoidance, but more studies are required.

There is little research to date on associations of experiential avoidance with OCD and social anxiety. Gamez (2009) found a moderate correlation with OCD symptoms (*r*s = .38 in students and patient samples) that remained significant after controlling for N/NE (*r*s = .26 to .29). However, another study found little evidence of an association between the two constructs, particularly after controlling for general distress and obsessive beliefs (Abramowitz, Lackey, & Wheaton, 2009). Two studies reported correlations with social anxiety that differed substantially in magnitude, making it difficult to determine the magnitude of the true relation (*r*s = .25 and .55; Hayes et al., 2004; Santanello &

Gardner, 2007). In addition to these few studies, there is evidence that social anxiety and OCD are associated with certain components of emotion dysregulation (such as thought suppression), suggesting that these disorders may also be related to EA (Salters-Pedneault, Tull, & Roemer, 2004), although perhaps more weakly than depression, panic, and PTSD.

Summary

Based on the above review, the most evidence exists for the following robust relations: maladaptive perfectionism is closely related to depression, social anxiety, and perhaps OCD and GAD; anxiety sensitivity is most strongly linked with panic, PTSD, and GAD; intolerance of uncertainty has the closest connection with GAD and OCD, and perhaps with depression; and experiential avoidance appears to have the strongest relations with PTSD, depression, panic, and perhaps GAD. However, with several exceptions, there are too few data for the other disorder-trait relations to know whether a robust association exists or not. In particular, additional multivariate analyses with multiple disorders and multiple traits (including N/NE) are needed to clarify patterns of specific and shared relations between these clinical traits and the internalizing disorders.

Current Study

The primary purpose of the current study is to examine how a comprehensive model of the N/NE domain and selected clinical traits relates to internalizing disorders, in order to quantify patterns of shared and specific traits for each disorder. This study addresses the limitations of the current literature in several ways. First, a comprehensive model of N/NE is proposed that is based on a synthesis of personality models and preliminary empirical support. Each hypothesized N/NE facet has multiple markers that were selected due to their strong empirical association with the facet and with one another (see Table A7 for hypothesized indicators). Furthermore, confirmatory factor analyses control for the error component of each scale. Thus, the N/NE facets in this

study should be more reliable and broadly representative of the construct than would the facets of a single measure.

Second, multiple measures of each disorder were collected, providing more precise measurement of the disorders (see Table A7). In addition, the inclusion of symptom dimensions within disorders allows for even finer-grained analyses. Interview measures (both dimensional symptoms and dichotomous diagnoses) were also collected for each disorder, serving to complement the self-report data and provide more objective clinical assessment. However, because dimensional assessments with multiple response points yield more information and tend to be more reliable than dichotomous or trichotomous ratings (Watson, 2005), this study primarily takes a symptom-based, rather than categorical diagnostic, approach.

Third, I conduct hierarchical multivariate analyses that control for comorbidity among disorders, as well as shared variance among the personality traits. Much of the research reviewed earlier has focused on how one or two traits relate to one or two disorders, limiting our ability to synthesize and relate disparate and similar constructs. Given how closely related these traits are with one another and with internalizing disorders, as well as the extensive comorbidity among the internalizing disorders, it is imperative to provide a larger context of multiple hierarchical levels in which the magnitude of *specific* relations can be clearly ascertained. Finally, data were collected in two samples with different levels of psychopathology (i.e., college students and psychiatric patients), providing a strong test of replicability for personality-psychopathology relations.

METHOD

Participants

Participants consisted of two samples: college students at the University of Iowa (N = 374) and psychiatric outpatients (N =299). A subset of the patients completed self-report and interview measures (n = 255), whereas the remainder (n = 44) completed self-report measures only. All student participants completed self-report and interview measures.

University of Iowa elementary psychology students over age 18 were recruited through the research participant pool website. The study was described on the website as examining associations between personality, depression, and anxiety symptoms.

Psychiatric outpatients, defined broadly as anyone currently receiving treatment for a psychological problem, were eligible if they were over 18 years old, spoke English fluently, and had not been diagnosed with dementia, mental retardation, or current acute psychosis. They were recruited from several sources: (1) fliers posted and/or distributed in the waiting rooms of the adult psychiatry/counseling clinics at the University of Iowa Hospitals and Clinics (UIHC), the Mid-Eastern Iowa Community Mental Health Center (CMHC), the Seashore Psychology Clinic, University Counseling Services (UCS), Anderson, Arnold, and Partners, Marchman Psychology Associates, and the Mid-Eastern Council on Chemical Abuse (MECCA); (2) fliers posted at public community notice boards (e.g., at Hy-Vee and Paul's); (3) the Noon News newsletter at UIHC; (4) mass emails sent to University of Iowa staff, faculty, and graduate students; and, (5) word of mouth from other participants.

The student sample had a mean reported age of 18.95 years (SD = 1.53, range = 18 to 32 years), and the majority were female (62.0%). Reported ethnicities were as follows: Caucasian (85.0%), Asian (8.0%), Black or African American (2.4%), multiracial (2.1%), American Indian or Alaska Native (0.3%), and Native Hawaiian or

Pacific Islander (0.3%). The remaining student participants (1.9%) did not report their ethnicity. Most participants in the patient sample were female (73.9%) and reported age ranged from 18 to 73 years (M = 36.73, SD = 12.19); five patient participants did not report their age. Eighty-nine percent of the patient participants identified as Caucasian, 4.7% as multiracial, 3.0% as Black or African American, and 1.3% as Asian. Two percent of the patient sample did not report their ethnicity.

Missing data were treated in the following manner: item-level conditional mean substitution was used if a given scale was more than 80% complete, and scale-level multiple imputation was used to complete other missing data. Missing interview data were not imputed or substituted, as there are fewer items and less redundancy built into the interview assessments. One student participant and 3 patient participants omitted more than 40% of the items overall; their data were removed, resulting in final sample sizes of 373 students and 296 patients (252 patients with both self-report and interview measures, 44 patients with self-report measures only).

Procedure

Participants came to our laboratory in groups of three to six individuals and completed questionnaires, as well as a brief individual clinical interview that was completed in a private room. Student participants did the questionnaires online on our lab computers, whereas patient participants filled out a pen-and-pencil version of the questionnaire. Total completion time was about 1.5 to 2 hours. Students received two course research exposure credits for their participation in the study, and patients received $30 compensation. In addition, interested patients who could not or did not want to come to our laboratory were offered the option of completing the self-report questionnaire at their homes (either online or with a mail-in packet) and were compensated $20.

All interviewers (graduate students and advanced undergraduate research assistants) underwent extensive training, consisting of weekly training sessions for a

month prior to the study. Before beginning to interview participants, interviewers provided evidence of competency by 1) correctly answering 85% or more of the questions on an 18-item short-answer exam that focused on the *DSM-IV* criteria for each disorder included in the study; and, 2) correctly assigning diagnoses and dimensional ratings for 15 or more of the 18 disorders/symptoms in a mock interview with me. Interviews in the study were audiotaped (if the participant consented) for quality-control purposes, and interrater reliability was assessed periodically by having a second interviewer code approximately 20% of the recorded interviews (selected at random). Interviews were conducted individually in a private office, after an RA had consented the participant and answered any questions. During the consent process, participants were told that they would be asked questions about psychological symptoms and that they would be given a sheet with mental health resources they may contact if the study raised any concerns for them. If suicidality was endorsed during the SCID major depressive episode interview, participants were encouraged to talk to their mental health provider if they had one or to seek out help from the treatment options sheet if they did not.

Measures

Self-Report Instruments

Personality Measures

Anxiety Sensitivity Index – 3 (ASI-3; Taylor et al., 2007). This recent measure of anxiety sensitivity was created to provide better coverage of the three anxiety sensitivity facets (i.e., physical, cognitive, and social concerns) than does the original ASI. It consists of 18 statements (6 for each facet) that are rated on a 5-point Likert scale. The ASI-3 had good factorial validity across multiple samples, with each of the three facets forming a distinct factor. In contrast to the ASI, the subscales of the ASI-3 showed moderate internal consistency across seven samples, ranging from .73 to .91, and the

correlations among the subscales range from .26 to .63. Finally, the scales distinguished among diagnostic groups in a manner consistent with previous research (e.g., physical concerns correlated most strongly with panic symptoms, social concerns correlated most strongly with social anxiety) (Taylor et al., 2007). Data regarding test-retest reliability were not available. Permission was granted from the authors to use the ASI-3 in the current study, and both the ASI-3 total score and ASI-3 subscales were examined.

Big Five Inventory (BFI; John & Srivastava, 1999). The BFI consists of 44 short phrases that are rated on a 5-point Likert scale and that correspond to one of the "Big Five" domains. The BFI scales have moderate internal consistency (alphas = .75 to .90) and strong convergent and discriminant validity with other measures of the Big Five, as well as with peer ratings of the Big Five. In addition, the BFI has demonstrated good retest reliability, with mean r = .85 after a three-month interval across several samples (John & Srivastava, 1999). This measure was used with the authors' permission.

Faceted Inventory of the Five Factor Model (FI-FFM; Simms, 2009). The FI-FFM is a factor analytically derived measure designed to assess lower order personality traits within the framework of the Five Factor Model. This study includes three Neuroticism facets (Anxiety, Depression, and Anger Proneness; 10 items each), as well as Trust vs. Cynicism (11 items) from the Agreeableness domain. The items are rated using a 5-point Likert format. The FI-FFM facets used in this study show good internal consistency (mean alpha = .83, ranging from .79 to .86) and expected patterns of discriminant and convergent validity with the BFI and other Five Factor measures of personality. Two-week test-retest reliability was acceptable, ranging from .74 to .82 (mean r = .77) for the scales included in this study (Simms, 2009). These scales were used with the author's permission.

Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). Only the Concern over Mistakes (COM; self-critical and catastrophic beliefs regarding making mistakes) and Doubts about Actions (DAA; doubts about one's ability to do things

"right") scales were used in this study, as they are most strongly related to internalizing psychopathology; they have 9 and 4 items, respectively. Each statement is rated on a 5-point Likert scale. The Concern over Mistakes and Doubts about Actions scales have acceptable internal consistency (alphas = .77 to .88 across several samples) and good discriminant validity and convergent validity with other measures of adaptive and maladaptive perfectionism (Frost et al., 1990). Information regarding test-retest reliability has not been reported. The FMPS scales were used with the authors' permission.

HEXACO Personality Inventory (HEXACO PI; Lee & Ashton, 2004). The Anxiety facet from the Emotionality domain was used in this study. The Anxiety scale contains 8 items that are rated on a 5-point Likert scale. It is internally consistent (alpha = .84), has a robust factor structure, and adequate convergent and discriminant validity with measures of the Big Five and a psychopathy scale (Lee & Ashton, 2004). Test-retest reliability has not been reported. This scale was used with the authors' permission.

International Personality Item Pool 16PF (IPIP-16PF; Goldberg, 2009). The Distrust scale was used in this study, with a 5-point Likert-type response scale. The Distrust scale is modeled after the 16PF Vigilance scale and consists of 10 items. The scale has acceptable levels of internal consistency (alpha = .80; Goldberg, 2009). Test-retest reliability and validity information are not available for this public domain scale (Goldberg, 2009).

Interpersonal Dependency Inventory (IDI; Hirschfeld et al., 1977). The IDI contains three dependency scales; because the Lack of Social Self-Confidence scale is a strong marker of passive dependency (see Morgan & Clark, 2010), it was selected for the current study. This scale contains 16 items that are rated on a 4-point Likert-type scale. Lack of Social Self-Confidence has acceptable internal consistency (alpha = .76 to .84 across three samples) and is stable over time (r = .85 over 17 weeks) (Bornstein, 1994). This scale also demonstrates good convergent and discriminant validity with other measures of dependency, neuroticism, depression, anxiety, and social desirability

(Bornstein, 1994). The IDI was developed by the National Institute of Mental Health and is a public domain measure (Bornstein, 2005).

Intolerance of Uncertainty Scale – 12 (IUS-12; Carleton et al., 2007). The IUS-12 is a 12-item short form of the original IUS (Freeston et al., 1994), and it was created to reduce the item redundancy in—and improve the factor structure of—the original measure. The IUS-12 correlates very highly with the original IUS (r = .96) and retains excellent internal consistency (alpha = .91). Although it can be scored to yield a total score, the IUS-12 has a two-factor structure, consisting of Prospective Anxiety (anxiety about uncertainty regarding future events; e.g. "Unforeseen events upset me greatly.") and Inhibitory Anxiety (uncertainty inhibiting action; e.g., "When I am uncertain I can't function very well."); however, the authors did not report the correlation between the factors, so it is unclear how independent they are. Similar to the IUS, the IUS-12 also shows the expected patterns of convergent and discriminant validity with measures of depression and anxiety (Carleton et al., 2007). Test-retest reliability has not been reported for the IUS-12. This measure was used with the permission of the authors.

Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gamez, 2009). The MEAQ contains six scales measuring different aspects of experiential avoidance; each item is answered using a 6-point Likert scale. For this study, the Distress Evaluation scale (13 items; negative attitudes towards distress) was included, as analyses indicate that it is most central to the construct and relevant to psychopathology. In addition, Distress Evaluation correlates moderately with the AAQ, which is by far the most common measure of experiential avoidance. However, the MEAQ improves on the AAQ's psychometric properties, with strong internal consistency for these scales (alphas = .84 and .87 in psychiatric patient and student samples, respectively). The MEAQ also has good convergent and discriminant validity with other measures of experiential avoidance, the Big Five, trait affect, and alexithymia scales (Gamez, 2009). Test-retest data have not been reported. This scale was used with the author's permission.

Multidimensional Personality Questionnaire-Brief Form (MPQ-BF; Patrick, Curtin, & Tellegen, 2002). The MPQ-BF is a factor analytically developed personality inventory that uses a true/false format and is a short form of the MPQ (Tellegen, in press). The Stress Reaction scale, consisting of 12 items, was selected for this study. This MPQ-BF scale demonstrates good internal consistency (alpha = .84) and is highly correlated with the original MPQ scale (r = .96). In addition, it shows the expected convergent and discriminant associations with traits such as negative emotionality, extraversion, and narcissism (Patrick et al., 2002). No information has been reported regarding test-retest reliability. The Stress Reaction scale was used with the permission of the University of Minnesota Press.

Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson & Clark, 1999). The PANAS-X is a self-report measure of specific types of affect; each mood term is rated on 5-point intensity scale anchors. The trait versions of three specific negative affect scales (Sadness, Fear, and Hostility), as well as general Negative Affect, were used in this study. The general Positive Affect was also included for purposes of discriminant validity. In total, 31 mood terms were rated. These scales have shown strong internal consistency in diverse samples (alphas = .79 to .92). The PANAS-X also has demonstrated good convergent and discriminant validity with other measures of affectivity, and adequate retest reliability after two months (r = .59; Watson & Clark, 1999). The PANAS-X was used with the permission of the authors.

Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992). The NEO PI-R measures personality domains and facets in the five factor model; respondents rate themselves using a 5-point Likert scale. This study included four of the Neuroticism facets (Depression, Anxiety, Angry Hostility, and Vulnerability), each of which has 8 items. These Neuroticism facets have acceptable internal consistency (alphas = .77 to .81) and the Neuroticism domain has good long-term retest reliability (r = .87 after six years). In addition, the facets show good convergent and discriminant validity with other lower

order personality measures, such as the Guilford-Zimmerman Temperament Survey (Costa & McCrae, 1992). Permission from Psychological Assessment Resources (PAR) was obtained to use the above scales in this study.

Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993). The SNAP was designed to assess personality pathology; this assessment battery included the Mistrust scale (19 items) and Dependency scale (18 items). Each item is answered using a true-false format. The SNAP scales for this study have shown good convergent and discriminant validity with other inventories of personality pathology (Clark, 1993). They also have moderate internal consistency in student and patient samples (alphas = .75 to .88 across multiple samples) as well as good test-retest reliability across one to two months (*r*s = .85 for Mistrust and .84 for Dependency) (Clark, 1993). These scales were used with the permission of the University of Minnesota Press.

Three Vector Dependency Inventory (3VDI; Pincus & Wilson, 2001). This measure is based on the interpersonal circumplex, with three scales assessing different types of dependency. The Submissive scale, which contains 9 items that measure the tendency to yield to others, is most closely related to passive dependency (Morgan & Clark, 2010) and was used in the current study. Each statement is rated using a 6-point Likert-type scale. The Submissive scale is internally consistent (alphas = .81 and .82 in two samples of college students) and the 3VDI has a robust three-factor structure (consisting of submissive dependence, love dependence, and exploitable dependence). In addition, the Submissive scale has shown good convergent and discriminant validity with measures of adult attachment and loneliness (Pincus & Wilson, 2001). Test-retest data were not available for this measure, and the authors granted permission for its use.

Psychopathology Measures

Albany Panic and Phobia Questionnaire (APPQ; Rapee, Craske, & Barlow, 1994/1995). The 10-item public domain Social Phobia scale from this measure was used

in the current study. Respondents use a nine-point rating scale to describe how much fear they would experience if they encountered various social situations. The Social Phobia scale is internally consistent (alpha = .91) and has good test-retest reliability (*r* = .84 over 11 weeks) (Rapee et al., 1994/1995). In addition, the Social Phobia scale shows expected patterns of convergent and discriminant validity with self-report and interview measures of social phobia, panic disorder, and agoraphobia (Brown, White, & Barlow, 2005; Rapee et al., 1994/1995). The APPQ Social Phobia scale was used with the authors' permission.

Fear Questionnaire (FQ; Marks & Mathews, 1979). The five-item Social Phobia subscale was used in this study. Avoidance of each social situation is rated on a 5-point Likert-type scale. The Social Phobia scale has acceptable internal consistency (alpha = .74; Oei, Moylan, & Evans, 1991) and adequate test-retest reliability in a clinical sample (*r* = .82 over 1 week; Marks & Mathews, 1979). The Social Phobia scale also has good convergent validity with diagnoses of social phobia, and strong discriminant validity with diagnoses of other anxiety disorders (Oei et al., 1991). The FQ is freely available for non-industry research use (Zimmerman, 2009).

Generalized Anxiety Disorder Questionnaire – IV (GAD-Q-IV; Newman et al., 2002). The GAD-Q-IV was designed originally to provide an analogue diagnosis of GAD, and therefore it closely follows the diagnostic criteria for the disorder. However, the 9 items also can be scored dimensionally, and this scoring will be used in the current study due to the greater information provided. The GAD-Q-IV includes questions assessing excessive worry, physical symptoms of GAD, and an 8-point rating of functional impairment and distress. This measure shows evidence of internal consistency (alpha = .75; Norton, 2006) and acceptable test-retest reliability over a two-week period (when diagnostic cut-offs were used, kappa = .64; Newman et al., 2002). The GAD-Q-IV also has the expected patterns of convergent and discriminant validity with symptom measures of GAD and other internalizing disorders (Newman et al., 2002). The GAD-Q-IV was used in the current study with the authors' permission.

Inventory of Depression and Anxiety Symptoms (IDAS; Watson et al., 2007). The IDAS is a factor analytically derived, multidimensional inventory that uses a 5-point Likert-type scale to assess symptoms over the past 2 weeks. This study included the following scales: Dysphoria (9 items), Social Anxiety (6 items), Traumatic Intrusions (4 items), and Anxious Mood (7 items). The Dysphoria scale consists of 10 items, but one of these items is identical to an item in the Anxious Mood scale, so it was removed from Dysphoria to maintain scale independence. These IDAS scales have strong internal consistency reliability, with coefficients alpha of .82 to .89 (Watson et al., 2007). The IDAS has shown good convergent and discriminant validity with diagnoses and self-report measures, as well as good short-term retest reliability in a psychiatric patient sample (Watson et al., 2007; Watson et al., 2008).

In addition to the above scales, four scales that have been developed recently also were used: Traumatic Avoidance (4 items), Washing/Cleaning (7 items), Checking (3 items), and Ordering (5 items). Alphas for these scales range from .81 to .87, and they have good convergent and discriminant validity with other established measures of PTSD and OCD (Watson, 2009b). Note that for the primary structural analyses in the current study, a unit-weighted OCD composite (Washing/Cleaning, Checking, Ordering) and unit-weighted PTSD composite (Traumatic Intrusions, Traumatic Avoidance) serve as indicators. This measure was used with the permission of the authors.

Iowa Traumatic Response Inventory (ITRI; Gootzeit & Watson, 2009a). This multidimensional inventory of PTSD symptoms, still in the early phases of development, consists of five scales: Intrusions, Avoidance, Dysphoria, Hyperarousal, and Dissociation. The ITRI currently consists of 36 items that are rated on a 5-point intensity scale over the past month. The scales show evidence of good internal consistency (alphas = .86 to .92) and adequate retest reliability (*r* over 2 weeks = .69 to .78). These scales also converge well with other measures of PTSD (i.e., PCL-C, IDAS Traumatic

Intrusions) and demonstrate discriminant validity with the non-PTSD IDAS scales (Gootzeit & Watson, 2009a). The ITRI was used with the authors' permission.

Mood and Anxiety Symptom Questionnaire (MASQ; Watson & Clark, 1991). The MASQ was developed as a test of the tripartite model; here, only the Anxious Arousal (17 items) and Anhedonic Depression – Loss of Interest (8 items; this scale is distinguished from Anhedonic Depression – Positive Affectivity) scales were used. Each phrase in the MASQ is rated based on the intensity of the symptom's occurrence over the past week, using a 5-point Likert-type scale. Designed to measure relatively specific symptoms of depression and anxious arousal/panic, these scales have strong internal consistency (alphas = .86 to .93 in student, psychiatric patient, and adult samples) and show good convergent and discriminant validity with other measures of depression and anxiety (Watson et al., 1995). Test-retest data have not been reported. The MASQ scales were used with the authors' permission.

Obsessive-Compulsive Inventory – Revised (OCI-R; Foa et al., 2002). This widely used measure of OCD symptoms produces a total score that is the sum of six subscales (Checking, Washing, Ordering, Hoarding, Obsessing, Neutralizing), each of which contain three items. Ratings are made on a five-point intensity scale. The OCI-R and its subscales have good internal consistency (alphas = .83 to .90) and good test-retest reliability among those with OCD and controls (*r*s = .57 to .91 over 1 to 2 weeks) (Foa et al., 2002). The OCI-R total score and subscales show good convergent validity with other measures of OCD symptoms; however, discriminant correlations with depression are high (*r*s = .58 to .70). The scales effectively distinguish those with a diagnosis of OCD from those with PTSD, social phobia, and normal controls (Foa et al., 2002). The OCI-R was used with the authors' permission.

Panic Attack Symptom Questionnaire (PASQ; Watson, 2000). The PASQ contains 13 questions that assess the symptom criteria for a panic attack in the *DSM-IV*. Ratings are made on a five-point intensity scale for symptoms that occurred over the past

month. The PASQ is internally consistent (alpha = .89; Kotov et al., 2007) and is strongly correlated with other measures of panic symptoms while showing discriminant validity with measures of neuroticism, anxiety sensitivity, and phobias (Longley, Watson, Noyes, & Yoder, 2006). Test-retest reliability has not been reported. This measure was used with the author's permission.

Personal Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is based on the diagnostic criteria for depression and was developed for use as a screener in primary care settings. The measure consists of 9 questions that use a 4-point frequency scale to rate symptoms over the past two weeks, with a final question regarding impairment due to these symptoms. The PHQ-9 has good internal consistency across two samples (alphas = .86 to .89) and short-term test-retest reliability was acceptable (r = .84 across two days) (Kroenke et al., 2001). In terms of validity, the PHQ-9 has good convergent validity with measures of quality of life and impairment, and discriminates well between those with and without major depression (Kroenke et al., 2001). However, more specific discriminant associations (e.g., with anxiety symptoms) were not reported. The PHQ-9 is a public domain measure (Spitzer, Williams, & Kroneke, 2009).

Personal Experiences Questionnaire (PEQ; Gootzeit & Watson, 2009b). The PEQ assesses lifetime history of traumatic events that could meet *DSM* Criterion A for a PTSD diagnosis, such as assault, robbery, military combat, and a natural disaster. In addition, it also includes items regarding when these events occurred and the respondent's reactions to them. The PEQ has a total of 13 items with a yes/no response format. The number of traumatic events and the severity of the most disturbing event are both significantly correlated with the PCL-C and ITRI (most rs = .20 to .30; Gootzeit & Watson, 2009b). This measure will not be used as an indicator of PTSD in multivariate analyses, but rather will serve to characterize the nature and severity of traumatic

experiences in these samples. The PEQ was used in this study with the authors' permission.

PTSD Checklist – Civilian Version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993). This frequently-used PTSD symptom measure has 17 items that assess symptoms as described in the *DSM-IV* criteria for PTSD. Subjects rate each symptom on a 5-point intensity scale based on their occurrence over the past month. The PCL-C has demonstrated evidence of strong internal consistency (alpha = .91) and good 7-day retest reliability (r = .87). The PCL-C converges well with interview and self-report measures of PTSD, while also showing acceptable discriminant relations with measures of depression, anxiety, and social phobia (Adkins, Weathers, McDevitt-Murphy, & Daniels, 2008). The total score will be used as a marker for PTSD in multivariate analyses in this study, but the symptom dimensions of dysphoria, hyperarousal, intrusions, and avoidance can also be scored (Simms et al., 2002) and will be examined. The PCL-C was created by the National Center for PTSD (NC-PTSD) and is freely available for use by qualified health professionals; my credentials were verified and permission was obtained from the NC-PTSD for the current study.

Schedule of Compulsions, Obsessions, and Pathological Impulses (SCOPI; Watson & Wu, 2005). The SCOPI is a multidimensional measure of OCD symptoms that was created using factor analysis. Four scales from the SCOPI were used in this study: Obsessive Checking (14 items), Obsessive Cleanliness (12 items), Compulsive Rituals (8 items), and Hoarding (5 items); the Pathological Impulses scale was not included due to its somewhat tangential relation to OCD. Each statement is rated on a five-point Likert scale. Coefficients alpha for these scales range from .82 to .93, and they have good two-month stability (mean r across four samples = .81) (Watson & Wu, 2005). The SCOPI scales show good convergence with the OCI-R subscales and other measures of OCD, and individuals diagnosed with OCD scored significantly higher on the SCOPI scales than did non-OCD psychiatric patients (Watson & Wu, 2005). Discriminant correlations

with depression and other measures of anxiety were not reported. The SCOPI was used with the authors' permission.

Worry Domains Questionnaire – Short Form (WDQ-SF; Stöber & Joormann, 2001b). The WDQ-SF samples two items from each of the five domains of worry (e.g., relationships, work, finances) assessed in the original WDQ (Tallis, Eysenck, & Mathews, 1992), where intensity of worry is rated on a five-point scale. The 10-item WDQ-SF is highly correlated with the original measure (r = .97) and is internally consistent (alpha = .88) (Stöber & Joormann, 2001b). The WDQ-SF shows the expected patterns of convergent and discrminant validity with measures of worry, depression, and trait anxiety (Nuevo, Losada, Marquez-Gonzalez, & Penacoba, 2009). Data regarding test-retest reliability for the WDQ-SF have not been reported. The WDQ-SF was used with the authors' permission for the current study.

Interview Instruments

Dimensional Measures

Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms (IDAS-CR; Watson et al., 2008). The IDAS-CR is an interview version of the IDAS, wherein a series of ratings are made that correspond to each of the eleven non-overlapping IDAS scales. The current study includes Dysphoria, Panic, Social Anxiety, and Traumatic Intrusions. Similar assessments were created for Traumatic Avoidance, Traumatic Hyperarousal, and Generalized Anxiety. For the primary structural analyses in the current study, Traumatic Intrusions, Traumatic Avoidance, and Traumatic Hyperarousal were combined into a unit-weighted composite. A three-point scale is used to rate each symptom dimension over the past 2 weeks as *absent, subthreshold,* or *present*. Symptom frequency and level of impairment both contribute to this rating. For each of the seven symptom dimensions, there is a standard initial probe as well as three to five follow-up questions. Clinicians also may ask additional questions as needed to gather

sufficient information to rate the symptoms. The IDAS-CR shows good convergent and discriminant validity with the IDAS and SCID diagnoses, as well as good interrater reliability using the audiotape method (intraclass correlations = .74 to .99, mean = .90 and median = .89) (Watson et al., 2008). The IDAS-CR was used with the authors' permission.

Personality, Cognitions, Consciousness, and Perceptions Interview (PCCP; Chmielewski & Watson, 2007). As with the IDAS-CR, the PCCP uses a 3-point rating system (*absent, subthreshold, present*) for each symptom, using a standard initial probe and three to five follow-up questions. Only the portions of the PCCP that assess OCD symptoms (i.e., Checking/Doubting, Cleaning/Washing, Intrusive Thoughts/Obsessions, Ordering/Rituals, Hoarding) were used in this study; these scales were combined into a unit-weighted composite for the primary structural analyses. The above PCCP scales have shown strong interrater reliability in past research (*ICC*s = .86 to .92; Chmielewski & Watson, 2007); convergent and discriminant data are not yet available. The PCCP was used with the authors' permission.

Diagnostic Measure

Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1997). The SCID is a semi-structured interview that provides *DSM-IV* diagnoses and is considered the gold standard for diagnosis in the United States. Using the SCID, good interrater reliability for a variety of disorders (overall kappa = .85) has been reported following comprehensive training of interviewers (Ventura, Liberman, Green, Shaner, & Mintz, 1998). Portions of the mood and anxiety disorders module were used in this study, assessing major depressive disorder, GAD, PTSD, OCD, social anxiety disorder, and panic disorder. Trichotomous screeners were used in structural analyses, due to greater information and variability relative to dichotomous diagnoses. The SCID is freely available for research use.

Data Analyses

Confirmatory Factor Analyses (CFA)

Given that both the N/NE structure and internalizing structure are based on *a priori* models, CFA is the appropriate analytic tool. Please see Table A7 for a list of the hypothesized indicators for each latent construct. Sample sizes such as those in the current study (i.e., 252 patients and 373 students) should be acceptable for CFA due to careful pre-structuring – based on empirical convergent and discriminant relations – of the latent variable indicators. A simulation study regarding sample size in CFA found that selecting reliable indicators for each latent construct reduces the error associated with smaller sample sizes (Jackson, 2001). Although "rules of thumb" for CFA sample size typically involve the ratio of the number of observations to free parameters, the simulation did not find evidence that this ratio influenced error in estimates (Jackson, 2001).

CFA's were conducted (described in detail below; see "N/NE Structure" and "Internalizing Psychopathology Structure") before proceeding to latent variables analyses in order to establish a sound measurement model (i.e., that each scale is a good indicator of the hypothesized factor and the factorial structure is correct). Thus, in addition to testing the structure of the observed indicators as shown in Table A7, hypothesized structures for the latent variables also were tested (i.e., all N/NE facets are hypothesized to load on a single N/NE factor; internalizing disorders are hypothesized to load on higher order fear and distress factors; see below for more detail). These analyses were conducted with MPlus 6.0 (Muthén & Muthén, 1998-2010). For all analyses that include the trichotomous symptom interview data, weighted least squares estimators with mean-adjusted Satorra-Benter chi-squares (referred to as WLSM estimators) were used in order to account for the categorical nature of these indicators as well as the skewed data (particularly for the internalizing symptoms)**.** In analyses with only dimensional

indicators, maximum likelihood estimators with mean and variance adjusted (MLMV) test statistics were used. No measurement errors were hypothesized to covary within each model. However, using modification indices as a guide, some scales sharing substantial method variance were allowed to correlate to determine whether accounting for this variance improved model fit to acceptable levels.

Fit for all structural analyses was assessed with a variety of statistics that (with the exception of model chi-square) are not dependent upon sample size; these indices are based on different criteria and thus complement one another when determining goodness of fit (Bollen, 1989). The fit indices include the model chi-square and a baseline fit index (i.e., the comparative fit index; CFI). In addition, several stand-alone indices were used: 1) root mean square error of approximation (RMSEA), and 2) weighted root mean squared residual (WRMR) with WLSM estimators, or standardized root mean squared residual (SRMR) with MLMV estimators. Interpretation of these indices is based on the guidelines set forth by Hu and Bentler (1999), Browne and Cudeck (1993), and Yu (2002). Specifically, Hu and Bentler suggested that CFI should be "close to" .95 or above for good fit; however, given debate regarding the best cut-off value and difficulties in generalizing cut-off values across datasets and models (see Marsh, Hau, & Wen, 2004), values greater than or equal to .90 are often considered acceptable in the personality/ psychopathology literature (e.g., Hopwood & Donnellan, 2010; Simms et al., 2002). Hu and Bentler (1999) proposed that RMSEA should be less than or equal to .06, whereas Browne and Cudeck (1993) suggested that values below .08 and above .10 reflect good fit and poor fit, respectively. SRMR values should be less than or equal to .08 (Hu & Bentler, 1999), although values up to .10 may indicate acceptable fit. Finally, WRMR should be close to or less than 1.0 for good fit (Yu, 2002).

When different psychopathology models were compared, a chi-square difference test was used for all nested models; a correction was applied to the test statistic to account for the Satorra-Bentler chi-squares used with WLSM estimators (see Muthén & Muthén,

1998-2010). Akaike information criterion (AIC) and Bayesian information criterion (BIC) could not be used because these likelihood-based indices are unavailable with WLSM estimators.

N/NE Structure

Table A7 shows that each of the five primary N/NE facets has at least three hypothesized markers (Anxiety has four markers, due to low loadings of the NEO PI-R Anxiety facet in the Eugene-Springfield dataset; see the top portion of Table A2); thus, this model is identified by Bollen's (1989) "Three-Indicator Rule." As reviewed previously, stress vulnerability appears to tap the higher order N/NE variance. Therefore, I tested this hypothesis by allowing the two stress vulnerability scales to load directly onto the higher order factor, as opposed to modeling them as a separate facet. I hypothesized that other five latent N/NE facets will load onto a single higher order N/NE factor.

Internalizing Psychopathology Structure

The hypothesized indicators for each of the six internalizing disorders may be found in Table A7. In terms of the higher order structure, a two-factor model— consisting of the fear and distress disorders— was hypothesized, based on previous research. It was anticipated that the Depression, PTSD, and GAD factors will load on a higher order Distress factor, whereas the Social Anxiety and Panic factors will load on a higher order Fear factor. Previous research is equivocal regarding the placement of OCD, but there is the most evidence for its placement within the Fear disorders (see Figure B1 for the structural model for the symptom latent variables). A one-factor internalizing model, in which all six of the disorders load on a single higher order factor, was also considered. In addition, if OCD did not load substantially onto higher order factors in the above models, models that excluded OCD would be considered. The above models are identified by either Bollen's (1989) "Two-Indicator Rule" or Reilly and O'Brien's (1996)

"Side-by-Side Rule." The Fear and Distress factors were allowed to covary in all of the two-factor models. The model that best fit the data then was used in all subsequent analyses.

Zero-Order Associations

Zero-order correlations were examined in order to inform the interpretation of the more complex latent variable analyses (e.g., suppressor effects can only be identified when zero-order relations are also available). Specifically, regression-based factor scores were calculated for N/NE facets, as well as for internalizing symptoms, using the structures determined in the preceding CFAs, and correlations then were computed among these factors. Correlations between symptom dimensions and N/NE facets also were examined for PTSD and OCD.

Zero-order correlations of the clinical traits with one another, with N/NE factor scores, with internalizing symptom factor scores, and with PTSD and OCD symptom factor scores were also computed. In addition, the five BFI scales were correlated with the N/NE facets and clinical traits to provide a higher order characterization of these facets and traits. By examining the correlations of the clinical traits with N/NE facets and the Big Five, one can ascertain whether individual clinical traits are best thought of as belonging to one of the N/NE facets, as a blend of N/NE facets, or as a blend of higher order traits. Due in part to the large number of variables, the focus of these correlational analyses is on robust patterns across samples and measures, as opposed to the significance of individual correlations.

Latent Variable Models

After establishing the fit of the measurement models (both for the observed indicators and higher order models), I conducted two sets of analyses involving the latent variables. As was the case for the CFAs, WLSM and MLMV estimators were used, along with the same fit indices. Due to the complexity of the models and the lack of an

applicable rule for determining identification, empirical checks for identification (i.e., determining whether different starting values result in identical parameter estimates) were conducted.

Relating N/NE Facets to Internalizing Psychopathology

Because I wanted to examine relations among the unique variance of each construct (i.e., controlling for comorbidity and higher order N/NE), the residual term of each N/NE facet was correlated with the residual term of each internalizing disorder, using the structural models described above. However, allowing simultaneous paths between each of the five N/NE facets and each of the six disorders would be overly complex in interpretation and presentation due to the number of paths. In the absence of clear *a priori* predictions about which paths should be freed, two *separate* analyses were conducted for the Fear disorders and the Distress disorders (assuming preceding analyses indicate that this two-factor structure best fits the data), both in relation to N/NE facets. Paths from each N/NE facet to each disorder were freed in these two analyses. Note that this approach controls for comorbidity in the same way as a single model that includes the Fear and Distress disorders: in each case, the residuals control for comorbidity within the Fear disorders and within the Distress disorders (but not between the Fear and Distress disorders). OCD's inclusion in these analyses depended on the results of the internalizing disorders CFA. Higher order N/NE was allowed to covary with Distress or Fear in each model. Please see Figure B2 for the hypothesized latent variable model for the Distress disorders (the Fear disorders model was structurally identical).

Relating Clinical Traits to Internalizing Psychopathology

Similarly, analyses were conducted to examine how the unique variance of the clinical traits relates to the unique variance of the internalizing factors. Because multiple measures of each clinical trait were not included, these analyses treat the clinical traits as observed, rather than latent, constructs. Only total scale scores were used for the clinical

traits, as including the subscales with the internalizing factors was overly complex. All clinical traits loaded onto a higher order N/NE factor, and shared variance among the clinical traits was marked by BFI Neuroticism and PANAS Negative Affect (two measures of higher order N/NE) to improve model identification. If my hypothesis is correct that stress vulnerability scales tap higher order N/NE measures, note that stress vulnerability scales also could be used to anchor the shared variance among clinical traits. However, the stress vulnerability scales do not have items assessing all of the facets of N/NE, and scales with more direct, comprehensive coverage of the different components of N/NE (i.e., BFI Neuroticism and PANAS Negative Affect) seemed a better choice for representing the shared variance of the clinical traits. Again, separate analyses will be conducted for the Fear and Distress disorders. Higher order N/NE and Fear or Distress will be permitted to covary. See Figure B3 for the Fear disorders-clinical traits model as an example of these analyses.

Heterogeneous Symptom Dimensions Within PTSD and OCD

Although examining personality trait associations with PTSD and OCD symptom dimensions was not a primary aim of this study and scales were not selected specifically with a particular structural model of these symptoms in mind, sufficient markers were available to model the Simms et al. (2002) model of PTSD (i.e., intrusions, avoidance, hyperarousal, and dysphoria). In addition, scales were available to assess five symptoms relevant to OCD: checking, cleaning, ordering, obsessing, and hoarding (this model is similar to the four-factor model reviewed by Mataix-Cols et al., 2005, but separates out checking and obsessing). These two models were fit to the data in both samples, and then the residuals of each symptom factor were correlated with a) the residual of the N/NE factors and b) the residuals of the clinical traits. The structural models for N/NE and the clinical traits were identical to those described in preceding analyses.

RESULTS

Preliminary Analyses

Descriptive Statistics

Means and standard deviations for all self-report measures are shown in Tables A8 (personality measures) and A9 (psychopathology measures). In addition, these tables present effect sizes (indexed by Cohen's *d*) comparing the student and patient means for each measure. In interpreting these effect sizes, I use Cohen's (1988) guidelines that small effect sizes range from |.20| to |.49|, medium effect sizes range from |.50| to |.79| and large effect sizes are equal to or greater than |.80|. The two samples differed significantly ($p < .01$) for all personality scale means, with the largest effect sizes for higher order N/NE and the sadness, anxiety, and stress vulnerability scales (*d*s = .88 to 1.37). Patients also reported more severe symptoms than did students ($p < .01$) on all measures of depression, GAD, PTSD, social anxiety, and panic. Effect sizes were greatest (*d*s = .96 to 1.48) for scales with a large component of general distress (i.e., depression and GAD measures). However, the two samples did not differ significantly on most measures of OCD symptoms, for which even significant effect sizes generally were small ($d < .28$) and there was only one medium effect size (*d* for OCI-R Obsessing = .70).

Table A10 shows the percentage of each sample that received SCID diagnoses for each disorder. In the patient sample, diagnostic rates ranged from 8.3% (OCD) to 37.3% (GAD). Depression and social phobia were also relatively prevalent (34.9% and 28.2%, respectively), whereas panic disorder (16.7%) and PTSD (13.5%) were less common. As expected, rates of diagnoses were much lower for students, ranging from 2.1% (OCD, PTSD) to 5.6% (social phobia).

The percentage of each sample that received an absent, subthreshold, and present rating for each of the SCID screeners and the symptom interview measures (IDAS-CR and PCCP) is presented in Tables A11 (patients) and A12 (students). In the patient

sample, 14.3% (OCD obsessions screener) to 63.9% (GAD screener) of the sample received a “present” rating for each of the SCID screeners. On the IDAS-CR and PCCP, 9.1% to 60.7% of the patients received “present” ratings on each symptom and 13.5% to 36.5% received “subthreshold” ratings. For the students (Table A12), frequencies of “present” ratings on the SCID screeners ranged from 2.4% (OCD obsessions screener) to 41.6% (social phobia screener; largely fear of public speaking). Five of the eight screeners were assessed as present in more than 10% of the student sample, and up to 19.3% received a subthreshold rating for individual screeners. Range of ratings was similar on the IDAS-CR and PCCP: 5.4% to 20.1% of the students received “present” ratings, and 5.6% to 36.7% received “subthreshold” ratings. “Present” ratings were most common for Dysphoria, Generalized Anxiety, and Intrusive Thoughts/Obsessions in the patient sample, and for Generalized Anxiety, Hoarding, Dysphoria, Ordering/Rituals, and Checking/Doubting in the student sample.

Table A13 shows the percentage of each sample that reported experiencing various traumatic events. Participants in the patient sample reported experiencing a mean of 3.87 traumatic events in their lifetime (*SD* = 2.13), and students reported a mean of 2.13 traumatic events (*SD* = 2.03). Patients endorsed greater frequencies of traumatic events than did students ($p < .001$) for all categories except serious accidents and military combat (see Table A13). Frequencies in the patient sample ranged from 2.0% of the sample for military combat to 76.3% for serious illness/injury. Though traumatic events were less common for the students, they also reported substantial exposure to traumatic events, ranging from 3.2% (military combat) to 50.1% (serious illness/injury). In addition, roughly half of the patients and one quarter of the students reported meeting Criterion A2 for a PTSD diagnosis (i.e., intense fear, helplessness, or horror) during the experience of at least one traumatic event.

Measure Reliability

Table A14 provides information relevant to internal consistency for the self-report measures: coefficients alpha, average interitem correlations (AIC), and the number of items in each scale. All scales had alphas greater than .70 in both samples, and the vast majority of the measures showed good to excellent internal consistency: Coefficient alpha was greater than or equal to 0.80 for 94% of the scales in the patient sample and 96% in the student sample. The AICs approached or exceeded .60 for numerous scales (e.g., PANAS-X Sadness, ASI-3 Cognitive Concerns, multiple PTSD and OCD symptom scales), suggesting considerable redundancy among the items in these scales.

Interrater reliability data for the interviewer measures, obtained when a second rater provided independent ratings for a subset of the recorded interviews, are presented in Tables A15 (SCID diagnoses) and A16 (SCID screeners and symptom interviews). All diagnoses had good to excellent reliability in both samples (κ = 0.83 to 1.00; mean = 0.95; Table A15) and screeners also showed acceptable reliability (*ICC* = 0.62 to 1.00; mean = 0.89; Table A16); only the PTSD screener (both samples) and OCD obsessions screener (patient sample) were below 0.80. Finally, the IDAS-CR and PCCP scales were highly reliable in both samples (ICC = 0.88 to 1.00; mean = 0.96; Table A16).

Associations of Clinical Traits with Big Five/Trait Affect

Correlations among the clinical traits are shown in Table A17. Correlations among the scales (excluding part-whole correlations between subscales and total scores) ranged from moderate to very strong (*r*s = .30 to .78). Most correlations fell between .35 and .60, indicating moderate associations for related but distinguishable traits. The total anxiety sensitivity score was fairly strongly correlated with most scales assessing maladaptive perfectionism and intolerance of uncertainty (*r*s = .43 to .61). In contrast, experiential avoidance (i.e., MEAQ Distress Evaluation) had the lowest correlations with

the other three traits (*r*s = .32 to .48). No other clear trends were discernible, as the other traits were moderately and similarly associated with one another.

Tables A18 and A19 display the correlations between the clinical traits and Big Five/trait affect in each sample. For all of the clinical traits and their subscales, N/NE is clearly the strongest and primary correlate (*r*s = .27 to .65), although it is noteworthy that these correlations are not so high as to suggest redundancy with N/NE. E/PE, conscientiousness, and agreeableness had largely significant but secondary associations with the clinical traits (*r*s = |.10| to |.41|). Correlations with Openness to Experience were nonsignificant for all traits except experiential avoidance.

The preceding analyses suggest that the clinical traits may be best seen as lower order traits within the N/NE dimension, but it is difficult to interpret the data due to the known moderate intercorrelations among the Big Five/trait affect domains (e.g., Digman, 1997; DeYoung, 2006). To test the above conclusion more formally, I conducted an exploratory factor analysis on the Big Five domains and trait affect, using a varimax rotation that orthogonalized each domain. The orthogonalized factor scores were then correlated with the clinical traits to give a clearer picture of whether the clinical traits are uniquely and specifically associated with N/NE. If this is the case, one would expect strong correlations with N/NE but a substantial drop in the magnitude of correlations with the other domains.

Parcels were created randomly from the five BFI scales, with the condition of at least 3 items per parcel; in addition, PANAS-X NA and PANAS-X PA were included in the factor analysis. As expected given the absence of pre-existing subscales and few items in each parcel, reliability was somewhat low for the parcels but still within reasonable limits (coefficients alpha = .52 to .82; across both samples, 21 of 26 values exceeded .60). Table A20 shows the standardized exploratory factor loadings for the BFI parcels and trait affect measures in each sample, after a varimax rotation; please note that

the sample sizes are slightly smaller in these analyses because several participants were excluded who were missing all or nearly all of the BFI items.

The correlations between the orthogonalized personality domains (using regression-based factor scores) and the clinical traits are presented in Tables A21 and A22. In general, the correlations with N/NE were similar to the zero-order correlations (*r*s = .29 to .58), whereas correlations with other domains were typically reduced (often dropping to non-significance; *r*s = .00 to -.35) as compared to zero-order correlations. However, some *relatively* strong secondary correlations remained in both samples, indicating that the clinical trait is uniquely associated with that domain. Specifically, ASI-3 Social Concerns retained a weak inverse correlation with E/PE (*r*s = -.19 and -.25), whereas ASI-3 Total and Cognitive Concerns were associated with low Agreeableness (*r*s = -.17 and -.22) and with low Conscientiousness (*r*s = -.17 to -.26). ASI-3 Physical Concerns was not significantly associated with the other domains across samples. Similar to anxiety sensitivity total and cognitive concerns, the maladaptive perfectionism and intolerance of uncertainty scales remained relatively broadly related to E/PE, Agreeableness, and Conscientiousness (most *r*s = -.15 to -.25). However, of the intolerance of uncertainty scales, only IUS-12 Inhibitory Anxiety was associated with Conscientiousness. Finally, Distress Evaluation was significantly (and weakly) associated with low extraversion and openness only (*r*s = -.13 to -.21).

Taken together, experiential avoidance and the physical concerns component of anxiety sensitivity seem to be more “pure” facets of N/NE than maladaptive perfectionism, intolerance of uncertainty, and the other anxiety sensitivity subscales and total score. Nonetheless, all of the clinical traits are primarily and specifically associated with N/NE, with much weaker associations with all other domains after accounting for shared variance among the Big Five.

N/NE Structure

Confirmatory Factor Analyses

Separate CFA analyses were conducted on each sample using the previously outlined model, in which scales loaded on five N/NE factors (i.e., Sadness, Anxiety, Angry Hostility, Dependency, Mistrust). In addition, the five N/NE factors loaded onto a single higher order factor (N/NE), and the two stress vulnerability scales loaded directly onto this higher order factor (see Table A23 for the indicators of each factor). This model fell just short of an acceptable fit to the data in both samples: $\chi^2(130) = 514.063$, CFI = .891, RMSEA = .100, and SRMR = .087 for patients; $\chi^2(130) = 712.976$, CFI = .854, RMSEA = .110, and SRMR = .086 for students. Modification indices indicated that model fit would improve by allowing the error terms among the three PANAS-X scales to correlate. Such a modification is justifiable theoretically, as the PANAS-X scales are the only scales that use single adjective items, which tend to have different psychometric and response properties than equivalent items using phrase or sentence structure (see Chmielewski & Watson, 2009). After allowing the error terms of the PANAS-X scales to correlate (all of which were significant at $p < .001$), fit improved to acceptable levels in both samples: $\chi^2(127) = 431.643$, CFI = .913, RMSEA = .090, and SRMR = .084 for patients; $\chi^2(127) = 480.653$, CFI = .912, RMSEA = .086, and SRMR = .079 for students. Thus, the error terms among the PANAS-X scales were allowed to covary in all subsequent analyses that include the N/NE factors.

Table A23 provides the standardized factor loadings and standard errors for this model. Each scale was a good indicator of its factor, with factor loadings ranging from .59 to .96 ($p < .001$) across both samples, and standard errors were within acceptable limits (.01 to .03). Furthermore, a single-factor structure for these constructs was supported, wherein Sadness, Anxiety, and Dependency loaded most strongly onto higher order N/NE (loadings = .80 to .91), and Angry Hostility and Mistrust were more weakly

associated with the higher order construct (loadings = .57 to .79). Both vulnerability scales were good markers of higher order N/NE (loadings = .74 to .88), and all standard errors were less than or equal to .04 for the latent variables.

Factorial Zero-Order Correlations

Correlations among N/NE Factors

Table A24 shows zero-order correlations among the N/NE factors, using regression-based factor scores from the above CFA's. Correlations were moderate to strong, ranging from .40 to .81 across both samples, suggesting differentiable but closely connected facets of higher order N/NE. Anxiety, Sadness, and Angry Hostility all were strongly related (*r*s = .59 to .81). In addition, Dependency was strongly correlated with Sadness and Anxiety (*r*s = .66 to .80), with weaker associations with Angry Hostility (*r*s = .41 in patients and .62 in students) and Mistrust (*r*s = .40 in patients and .48 in students). Finally, Mistrust had a strong association with Angry Hostility only (*r*s = .61 and .65); with the exception of the Mistrust-Sadness correlation in the students (*r* = .64), all others were more moderate (*r*s = .40 to .54).

Correlations with Big Five/Trait Affect

Correlations of the five N/NE factors and higher order N/NE with the Big Five and Trait Affect scales were examined to clarify how each N/NE facet fits into the larger personality hierarchy (Table A25). All five facets and higher order N/NE were moderately to strongly correlated with BFI Neuroticism (*r*s = .41 to .86) and with PANAS-X Negative Affect (*r*s = .49 to .79); these were the strongest correlates for most N/NE factors. Anxiety had no other substantial correlates in either sample, with the exception of Positive Affect in the student sample (*r* = -.44). Low Agreeableness was the defining feature of Angry Hostility (*r*s = -.71 in patients and -.66 in students) and

Mistrust (*r*s = -.64 in patients and -.67 in students); in the case of Mistrust, these correlations exceeded its correlations with Neuroticism or Negative Affect.

In contrast, Sadness and Dependency were a blend of several higher order traits: Sadness had moderate inverse correlations with Extraversion, Agreeableness, and Conscientiousness (*r*s = -.40 to -.50), as well as with Positive Affect (*r*s = -.56 in students and -.58 in patients). Of the N/NE factors, Dependency had the strongest correlation with low Extraversion (*r*s = -.62 in patients and -.58 in students), and was also characterized by low Positive Affect (*r*s = -.58 in patients and -.61 in students), low Conscientiousness (*r*s = -.44 in patients and -.46 in students), and low Openness (*r*s = -.30 in patients and -.26 in students). Similarly, although most strongly correlated with Neuroticism and Negative Emotionality, higher order N/NE had moderate correlations with all others traits (*r*s = -.44 to -.57) except Openness (*r*s = -.18 in patients and -.15 in students).

Table A26 shows the correlations between the orthogonalized Big Five/Trait Affect factor scores described previously and the N/NE facets, in order to remove shared variance among the higher order domains. Consistent with the zero-order analyses, Anxiety was very strongly and specifically associated with N/NE (*r* = .83 and .84); correlations with other domains were quite weak (*r*s = |.04| to |.25|). Angry Hostility was similarly and moderately correlated with N/NE and Agreeableness only (*r*s = |.47| to |.69|), and Mistrust was most strongly correlated with Agreeableness (*r*s = -.54 and -.58) and secondarily with N/NE only (*r*s = .37 and .47). These analyses also clarified the broad associations of Sadness, Dependency, and Higher Order N/NE with these domains. As expected, all three traits remained strongly associated with N/NE (*r*s = .55 to .81). Sadness was also moderately correlated with E/PE and Conscientiousness (*r*s = -.30 to -.37), whereas correlations with Agreeableness were weaker (*r*s = -.24 and -.26). Dependency retained a strong correlation with E/PE (*r*s = -.48 and -.53), as well as more moderate associations with Conscientiousness and Openness (*r*s = -.19 to -.35). Higher

order N/NE remained broadly associated with all secondary domains except Openness (*r*s = -.24 to -.36).

Thus, Anxiety appears to be the most "pure" construct in terms of higher order N/NE. Angry Hostility and Mistrust are a blend of low Agreeableness and low N/NE; in fact, Mistrust is best seen as a facet of Agreeableness with a large secondary association with N/NE. Sadness, Dependency, and higher order N/NE are more complex with numerous secondary associations. Secondary correlations with low E/PE and low Conscientiousness are strongest for Sadness and Dependency, whereas higher order N/NE also has a substantial correlation with low Agreeableness. In addition, Dependency is the only facet with a significant inverse association with Openness, after removing shared variance among the higher order domains.

Correlations with Clinical Traits

Correlations between the N/NE factors and clinical traits are shown in Tables A27 (patient sample) and A28 (student sample). Not surprisingly given the high correlations among the N/NE factors in the student sample (*r*s = .48 to .81; Table A24), each clinical trait tended to be similarly and moderately correlated with the N/NE factors, with the exception of lower correlations for Mistrust (*r*s = .30 to .48; Table A28). One of the few distinguishing trends was that the ASI-3 Physical Concerns subscale was more weakly correlated with the N/NE factors (*r*s = .30 to .49) than were the ASI-3 total, ASI-3 Cognitive Concerns, or ASI-3 Social Concerns (*r*s = .39 to .63).

The patient sample (Table A27) showed greater differentiation than the student sample. The anxiety sensitivity scales were most strongly correlated with Anxiety (*r*s = .40 to .55) and, to a lesser degree, Sadness (*r*s = .24 to .47), as well as Higher Order N/NE (*r*s = .31 to .51). As in the student sample, of the ASI-3 subscales, ASI-3 Physical Concerns had the weakest correlations with N/NE facets (*r*s = .21 to .40). Both maladaptive perfectionism scales had moderate correlations with Anxiety, Sadness,

Dependency, and Higher Order N/NE (*r*s = .50 to .62). A similar pattern was apparent for the intolerance of uncertainty scales, although Prospective Anxiety was relatively specific to Anxiety and Higher Order N/NE. Correlations between experiential avoidance (MEAQ Distress Evaluation) and the N/NE factors were weaker overall (*r*s = .32 to .47). Finally, the maladaptive perfectionism and intolerance of uncertainty scales were more strongly associated with Higher Order N/NE (*r*s = .54 to .67) than were anxiety sensitivity and experiential avoidance (*r*s = .31 to .52).

To further examine this issue, an exploratory factor analysis with an oblique rotation was performed on the N/NE facet scales (excluding the stress vulnerability scales, since these mark the higher order variance) and the four clinical trait total scores. If a clinical trait is a specific indicator of one of the N/NE facets, it should load strongly on that facet and weakly on the others. Results are presented for the patient sample only (Table A29), as the expected five-faceted solution was not recovered in the student sample in this analysis (rather, sadness and dependency formed a single factor, and the PANAS-X scales formed a method factor; the other three factors corresponded to anxiety, angry hostility, and mistrust minus the PANAS-X scales). In the patient sample, all four of the clinical traits loaded most strongly on Anxiety, although the magnitude varied widely. Anxiety sensitivity loaded very strongly on Anxiety (.76), with minimal secondary loadings (|.02| to |.20|; mean = |.11|) that were similar in magnitude to those of the scales selected as indicators of Anxiety. Intolerance of uncertainty and maladaptive perfectionism had weaker primary loadings on Anxiety (.63 and .47, respectively), with slightly stronger secondary loadings than anxiety sensitivity (|.03| to |.23|; mean = |.14|). Finally, experiential avoidance loaded most weakly on the Anxiety facet (.32) and had several secondary loadings, suggesting that it is not a good indicator of any of the N/NE facets, but may be more closely related to shared variance among them.

In conclusion, there is some evidence (evaluated most clearly in the patient sample) that anxiety sensitivity is a strong and specific indicator of the Anxiety facet,

whereas intolerance of uncertainty and maladaptive perfectionism are more weakly related but still relatively specific to this facet. It appears that experiential avoidance is not a specific indicator of any of the N/NE facets modeled in this study. All four clinical traits (particularly maladaptive perfectionism and intolerance of uncertainty) are fairly strongly associated with higher order N/NE, and are moderately associated with Anxiety and several of the other facets at the zero-order level.

Internalizing Psychopathology Structure

Confirmatory Factor Analyses

Lower Order Measurement Model

Prior to running the higher order measurement model (i.e., two-factor "Fear and Distress" vs. one-factor "Internalizing"), the lower order measurement model was examined to determine whether each of the six symptoms was adequately measured; see Table A30 for the indicators of each symptom factor. Fit for this model was borderline to adequate in the patient sample, and poor in the student sample (see Table A31, first entry). The residual variances of two scales (ITRI total and PCL-C total) were negative in the patient sample; however, these values were not significantly different from zero ($p >$ .05). In such a case and in the absence of other indications of gross misspecification, negative residual variances are likely due to sampling error and can be fixed to zero (Bollen, 1989). When these two residual variances were fixed to zero in the patient sample, the model ran smoothly (see Table A31, second entry for model fit); note that fixing the residual variances of these indicators to zero results in a factor loading of 1.0. These constraints were applied for all subsequent analyses in the patient sample only.

Modification indices indicated that the interview measures shared additional variance that was unaccounted for in the original model. Thus, the error terms of the interview measures within each factor were allowed to covary in both samples. This

modification improved model fit in both samples, wherein fit in the patient sample was very good (see Table A31, third entry). Fit in the student sample varied by fit index, with CFI within the range of excellent fit (.952), RMSEA within the acceptable range (.092), and WRMR very near the suggested cut-off of 1.0 (WRMR = 1.018). Several statisticians have noted that cut-offs for fit indices do not always generalize well to specific samples and are affected by factors such as sample size, estimator, and distribution (e.g., Hu & Bentler, 1999; Marsh et al., 2004). Given that two of the three indices suggested acceptable or better fit and WRMR was not substantially above the suggested cut-off, this model (with correlated error terms among interview measures in each factor) was considered to be an acceptable fit to the data in both samples.

Table A30 shows the standardized factor loadings and standard errors in each sample for the lower order measurement model. Factor loadings for each indicator ranged from .44 to 1.0 (as fixed in the patient sample for ITRI and PCL-C totals; $p < .001$ for all loadings), and most standard errors were less than or equal to .05. However, the standard errors for some of the SCID screeners exceeded .05, with the highest standard errors for the SCID screeners for OCD (SE = .07 to .11). While still acceptable, these standard errors are higher than would be ideal and indicate less measurement precision for these indicators.

Zero-order correlations among the symptom factors were computed to provide an assessment of the discriminant validity of the factors; see Table A32. Correlations in the patient sample suggested adequate discriminant validity, as correlations between factors ranged from .47 to .89, with only two correlations greater than .80 (Depression-GAD = .89; Depression-PTSD = .81) that indicate potential discriminant validity concerns. However, discriminant validity among the internalizing factors was clearly problematic in the student sample. Specifically, correlations among Depression, GAD, PTSD, and Panic were all so high as to suggest that these constructs are essentially identical in this sample (*r*s = .87 to .96; mean *r* = .94). Correlations of Social Anxiety and OCD with one

another and the other internalizing factors were more moderate (*r*s = .61 to .80), although still higher than in the patient sample. Because Depression, GAD, PTSD, and Panic were indistinguishable as assessed in the student sample, the indicators for these four factors in the student sample were collapsed into a single factor, labeled "Panicked Distress." The error terms of all interview indicators within Panicked Distress were allowed to correlate with one another. This model was an acceptable to borderline fit to the data (see Table A31, third entry in the student sample) and will be used in all subsequent relevant analyses in the students. The originally hypothesized six-factor model will be retained in the patient sample, as shown in Table A30.

Higher Order Models

I originally hypothesized a two-factor higher order model, with Depression, PTSD, and GAD loading on a higher order Distress factor and Social Anxiety, OCD, and Panic loading on higher order Fear. This model was a very good fit to the data in the patient sample (see Table A31). As shown in Table A33, lower order factor loadings were very similar to those in the lower order measurement model (Table A30). At the higher order level, factor loadings were strong on both Fear (loadings = .60 to .85) and Distress (.82 to .91). Although OCD's loading was the weakest (.60), this loading is still strong enough to suggest that OCD shares substantial variance with the fear disorders and is correctly placed.

The correlation between Fear and Distress was very high (r =.90), suggesting that a one-factor model should also be examined. Fit for the one-factor internalizing model in the patient sample is shown on the last entry on Table A31. Fit was very good, although very slightly poorer than fit for the two-factor model. A nested chi-square difference test (modified as described previously for WLSM estimators) indicated that the one-factor model resulted in a significant decrement in fit as compared to the two factor model ($\chi^2(1) = 53.78$, $p < .001$). Thus, in the patient sample, the originally hypothesized two-

factor model (Fear and Distress; shown in Table A33) is the best fit to the data and will be retained for subsequent analyses in this group.

Because the revised lower order model in the student sample includes only three factors (i.e., Panicked Distress, Social Anxiety, and OCD), there are too few markers to test a higher order two-factor model. Instead, a one-factor model was considered, in which Panicked Distress, Social Anxiety, and OCD all load onto a single higher order Internalizing factor. This model was a borderline acceptable fit to the data (see Table A31, last entry), with all factor loadings significant ($p < .001$) and fairly strong (loadings = .44 to .88; see Table A34). Factor loadings on Panicked Distress ranged from .50 to .86, so all of the PTSD, Depression, GAD, and Panic scales were good markers for this broad latent dimension. This factor seemed to be equally weighted towards depression, PTSD, and GAD (the three highest loadings –.85 to .86 – are from each of these symptoms), with panic somewhat secondary but still strongly represented (e.g., PASQ loading = .79). Most standard errors were .05 or less, with the exception of some of the SCID screeners. Loadings on higher order Internalizing were as follows: .94 for Panicked Distress, .76 for OCD, and .71 for Social Anxiety; standard errors were .03 to .04. Given the acceptable overall and component fit of this model, the one-factor internalizing model will be used for the student sample in subsequent symptom multivariate analyses.

Factorial Zero-Order Correlations

Correlations among Symptom Factors

Using the final models shown in Tables A33 and A34, regression-based factor scores for the symptom factors were computed and correlated within each sample. Table A35 shows the correlations in the patient sample. As expected, the three "distress disorders" (Depression, GAD, and PTSD) were strongly correlated with one another (*r*s = .79 to .88). Panic and Social Anxiety had slightly weaker correlations with one another

and the distress disorders (*r*s = .66 to .77). Lastly, OCD's correlations with other symptom factors were the weakest (*r*s = .48 to .58).

The student model for internalizing symptoms consisted of only three factors: Panicked Distress, Social Anxiety, and OCD. Panicked Distress was strongly correlated with OCD (*r* = .76) and Social Anxiety (*r* = .72), and the correlation between Social Anxiety and OCD was weaker (*r* = .61). These correlations show acceptable discriminant validity, but it is noteworthy that even after collapsing multiple symptoms into the Panicked Distress factor, correlations were still quite strong. It seems that the students simply had difficulty adequately differentiating their experiences with these internalizing symptoms.

Correlations with Big Five/Trait Affect

Table A36 displays the correlations between the higher and lower order symptom factor scores and Big Five/trait affect scales. In the patient sample, correlations were largely consistent with previous research. All symptoms were most strongly correlated with N/NE: GAD and Depression had particularly strong correlations with BFI Neuroticism (*r*s = .71 and .60, respectively), and all symptoms except OCD were strongly related to PANAS-X NA (*r*s = .66 to .81). Associations with Openness to Experience were nonsignificant, and correlations with other domains were mostly small to moderate. As expected, Extraversion was most strongly associated with Social Anxiety (*r* = -.50), and PA was most strongly associated with Depression (*r* = -.40). Finally, the higher order Distress and Fear factors were both strongly correlated with Neuroticism and NA only (*r*s = .62 to .83). Results were similar in the student sample, wherein Panicked Distress and the higher order Internalizing factor were most strongly correlated with N/NE (*r*s = .73 to .74), and Social Anxiety (*r*s = .51 to .62) and OCD (*r*s = .55 to .57) had weaker correlations. In addition, Extraversion was most closely related to Social Anxiety (*r* = -.55) in the student sample.

Correlations between the symptom factors and the orthogonalized Big Five/trait affect factors are shown in Table A37. Correlations with N/NE were largely unchanged from the previous analyses (*r*s = .35 to .74), and correlations with the secondary domains were generally smaller in magnitude (excluding nonsignificant correlations with Openness, most *r*s = -.15 to -.25). A specific and moderate inverse association between Social Anxiety and E/PE remained in both samples (*r*s = -.42 and -.47). In addition, Depression was moderately associated with Conscientiousness (*r* = -.31) but less substantially with E/PE (*r* = -.21). Higher order Distress, Fear, and Internalizing were equally associated with E/PE, Conscientiousness, and Agreeableness (*r*s = -.19 to -.29). Thus, with the exception of Social Anxiety and possibly Depression, there is little specificity in secondary associations with Big Five/trait affect domains, even after removing much of the shared variance among the domains.

Correlations with N/NE Factors and Clinical Traits

Table A38 shows the correlations between the symptom factor scores and the N/NE factor scores in both samples. In the patient sample, Depression had the strongest association with Sadness (*r* = .79), as well as large correlations with Anxiety (*r* = .63) and Dependency (*r* = .56). GAD was most strongly correlated with both Anxiety and Sadness (*r*s = .82 and .77, respectively), with a weaker correlation with Dependency (*r* = .59). Panic, Social Anxiety, and PTSD were also most strongly correlated with Sadness and Anxiety, although to a lesser degree (*r*s = .56 to .64). Higher Order N/NE largely mirrored this pattern in its association with the internalizing symptoms. In addition, Social Anxiety had a large association with Dependency (*r* = .69). OCD was more weakly associated with all five N/NE factors (*r*s = .28 to .40). Similar to all of the symptoms except OCD, higher order Distress and Fear showed the strongest associations with Anxiety and Sadness (*r*s = .71 to .78).

In the student sample, Panicked Distress and higher order Internalizing were strongly associated with all five N/NE facets, although correlations with Sadness, Anxiety, and Higher Order N/NE were the largest (*r*s = .76 to .82). Social Anxiety's correlations tended to be weaker (*r*s = .46 to .70), except for a strong correlation with Dependency (*r* = .70), and OCD's correlations were weaker still (*r*s = .47 to .62). In both samples, these symptoms do not show much specificity in regard to associations with N/NE factors at the zero-order level, as all (except OCD in the patients) are most strongly related to Sadness and Anxiety, moderately to Dependency, and less so to Mistrust and Angry Hostility. Social Anxiety and Dependency do appear to have a specific link, however.

The clinical traits also provide little differentiability in relation to the internalizing symptom factors (see Tables A39 and A40), with most correlations ranging from .40 to .70. The Physical Concerns subscale of the ASI-3 shows some specificity to Panic in the patient sample (*r* = .60), whereas the other anxiety sensitivity scales have broader correlates. In addition, the Doubts About Actions (FMPS) and Inhibitory Anxiety (IUS-12) scales seem to be more relevant to internalizing symptoms than are their counterpart scales, Concern Over Mistakes (FMPS) and Prospective Anxiety (IUS-12). Finally, MEAQ Distress Evaluation is more weakly associated with the internalizing symptoms (*r*s = .32 to .53) than are the other clinical traits.

Multivariate Associations Among Latent Variables

Internalizing Symptoms and N/NE Facets

In the patient sample, the two-factor Fear and Distress model (Table A33) and the N/NE model (Table A23) were combined in order to examine the unique associations of each symptom with each N/NE dimension; this was accomplished by correlating the residual terms of these constructs. As described previously, separate analyses were conducted for the Fear disorders and the Distress disorders, as a single model was overly

complex and unlikely to converge on a solution. The fit indices for these models are shown in Table A41, and they indicate acceptable fit overall, although the RMSEA for the Distress model is higher than is desirable (RMSEA = .107). In the Distress with N/NE facets model, correlations between Depression and Sadness and between GAD and Anxiety both slightly exceeded 1.0, suggesting that these constructs were not distinguishable as assessed in this sample. Therefore, these two correlations were set to 1.0 to reflect the fact that these constructs are identical in this sample. Higher Order N/NE was strongly correlated with but distinguishable from the Distress and Fear factors (*r*s = .86 and .74, respectively).

Table A42 presents the correlations between the residual terms of each symptom factor and each N/NE factor in the patient sample. Within the Distress symptoms, Depression was significantly (and, as noted, perfectly) associated with Sadness only. GAD had a perfect correlation with Anxiety and also a significant correlation with Sadness ($r = .43$; $p < .01$). PTSD was significantly associated with Anxiety ($r = .22$; $p < .05$) and Mistrust ($r = .28$; $p < .01$). Panic was strongly correlated with Anxiety only ($r = .66$; $p < .01$), whereas Social Anxiety had numerous significant correlates ($p < .01$): Anxiety ($r = .47$), Sadness ($r = .48$), Dependency ($r = .71$), and Mistrust ($r = .40$). OCD was uniquely associated with Mistrust ($r = .20$, $p < .05$) and demonstrated a negative suppressor association with Sadness ($r = -.35$; $p < .01$). Thus, each symptom had a distinct pattern of associations with the N/NE factors. Anxiety was most broadly related to these disorders, correlating perfectly with GAD, moderately with Panic and Social Anxiety, and weakly with PTSD. Sadness and Mistrust showed some specificity, as Sadness correlated perfectly with Depression and moderately with Social Anxiety and GAD (excluding the suppressor effect with OCD), whereas Mistrust was correlated moderately with PTSD and Social Anxiety and weakly with OCD. In contrast to these broader associations, Dependency was clearly specific to Social Anxiety. Finally, Angry

Hostility was not associated with any of the symptoms after controlling for shared variance, despite moderate zero-order correlations (see Table A38).

In the student sample, the three-factor internalizing symptoms model (i.e., Panicked Distress, Social Anxiety, and OCD; see Table A34) and the N/NE model (Table A23) were combined into a single model. This model was an adequate fit to the data, as shown in Table A41. The residual of Panicked Distress was significantly correlated ($p <$ .01) with the residuals of Anxiety ($r = .60$) and Sadness ($r = .64$), which seems consistent with the results from the patient sample for the four disorders that form Panicked Distress (Depression, GAD, PTSD, Panic). As was the case in the patient sample, Social Anxiety was associated with Anxiety and Dependency (rs = .28 and .56, respectively; $p < .01$); however, associations with Sadness and Mistrust were nonsignificant in the student sample. OCD again showed a significant suppressor relation with Sadness ($r = -.58$; $p <$ .01), as well as suppressor relation with Dependency ($r = -.20$; $p < .01$) and a positive association with Anxiety ($r = .20$; $p < .05$). Overall, Sadness and Anxiety were most relevant to these disorders in the student sample, and Dependency was specific to Social Anxiety.

Internalizing Symptoms and Clinical Traits

SEM Models

In the patient sample, two models were examined: one relating the distress symptoms to the four clinical traits and one relating the fear symptoms to the clinical traits. In the student sample, one model was examined that related the three internalizing symptoms to the clinical traits. As described previously, the clinical traits were represented as observed indicators using overall scale scores, and they were allowed to load onto a higher order N/NE factor marked by BFI Neuroticism and PANAS-X NA (see Figure B3 for the structural model). In the patient sample, the distress-clinical traits model was an acceptable fit to the data, and the fear-clinical traits model was a very good

fit to the data (see Table A41). The correlation between Fear and Higher Order N/NE was quite strong (r = .89), and the correlation between Distress and Higher Order N/NE exceeded unity (r = 1.01). Thus, particularly in the distress symptoms model, there is virtually no variance left in the residual terms, rendering the correlational analyses among the disorder and clinical trait residuals of questionable value.

This problem was especially evident in the results of the correlational analyses for the residual terms of the distress symptoms and clinical traits (see Table A43). All correlations were either significant suppressor effects (rs = -.44 to -.89) or nonsignificant. Thus, these results are not very informative or interpretable. Because there was more unique variance remaining in the analyses between the fear symptoms and clinical traits, these correlations were more interpretable (Table A39). Panic was specifically associated with Anxiety Sensitivity (r = .48; p < .01) and had a negative correlation with Experiential Avoidance (r = .31; p < .05). Both Social Anxiety and OCD were associated with Anxiety Sensitivity (rs = .22 and .20, respectively; p < .05) and Maladaptive Perfectionism (rs = .20 and .16, respectively; p < .05). Thus, among the Fear symptoms, all symptoms were associated with Anxiety Sensitivity, and Social Anxiety and OCD were also associated with Maladaptive Perfectionism.

In the student sample, Internalizing and Higher Order N/NE were perfectly correlated (r = 1.02), so again there was insufficient variance in the residual terms to interpret the correlational analyses in an informative manner. Table A43 shows that most correlations were inverse (i.e., r between Panicked Distress and Anxiety Sensitivity = -.40; p < .05) or nonsignficant; however, Social Anxiety and OCD were both positively correlated with Maladaptive Perfectionism (r = .21, p < .01 for Social Anxiety; r = .15, p < .05 for OCD), converging with the results from the patient sample.

Simultaneous Multiple Regressions

Because the above analyses examining the symptoms and clinical traits were minimally informative due to inadequate residual variance, simultaneous multiple regressions were conducted wherein each symptom factor was regressed onto the clinical traits. In addition, BFI Neuroticism and PANAS-X NA were included as predictors in order to assess the contribution of each clinical trait beyond shared variance with N/NE. Thus, the regressions control for shared variance among the clinical traits and with N/NE, but do not control for comorbidity among the symptoms (as did the SEM analyses). However, these simpler analyses have the advantage that it is feasible to include the clinical trait subscales to have a more nuanced understanding of the associations between symptoms and clinical traits. Maximum likelihood estimators with robust standard errors (MLR) were used for the regression analyses. MLR is preferable to WLSM because it is a more efficient estimator, but MLR could not be used in previous analyses because MLR requires numerical integration that is too computationally intensive for the more complex preceding analyses (Muthén & Muthén, 1998-2010).

The results of the regression analyses are shown in Tables A44 through A46; the importance of controlling for N/NE is evident, as at least one of the two N/NE scales was a significant unique predictor of all symptom factors, with the exception of OCD in the patient sample. In the patient sample (Table A44), Depression was characterized by high levels of ASI-3 Cognitive Concerns (β = .25; p < .01) and IUS-12 Inhibitory Anxiety (β = .17; p < .05), as well as lower levels of IUS-12 Prospective Anxiety (β = -.20; p < .05). GAD was associated with FMPS Doubts About Action (β = -.16; p < .05), as well as IUS-12 Inhibitory Anxiety (β = .13; p < .05), and PTSD was predicted by ASI-3 Cognitive Concerns only (β = .27; p < .01). Panicked Distress in the student sample (see Table A45) is essentially a combination of these results, with significant associations with ASI-3 Cognitive (β = .14; p < .05), FMPS Doubts About Actions (β = .12; p < .05),

and IUS-12 Inhibitory Anxiety (β = .11; p < .05). In addition, Panicked Distress was predicted by higher levels of MEAQ Distress Evaluation (β = .10; p < .01).

Turning to the fear symptoms in the patient sample (Table A46), Panic was strongly associated with ASI-3 Physical Concerns (β = .46; p < .01) and also had a significant inverse association with MEAQ Distress Evaluation (β = -.14; p < .01). Social Anxiety was associated with multiple clinical traits in the patient regression analyses: ASI-3 Social Concerns (β = .30; p < .01), FMPS Concern Over Mistakes (β = .12; p < .05), IUS-12 Inhibitory Anxiety (β = .36; p < .01), and MEAQ Distress Evaluation (β = .12; p < .05). It is noteworthy that most of these associations were replicated in the student sample (Table A45), with significant associations with ASI Social Concerns (β = .44; p < .01), FMPS Concern Over Mistakes (β = .14; p < .05), and MEAQ Distress Evaluation (β = .10; p < .05). There were also several suppressor effects for Social Anxiety that did not replicate across samples: low ASI-3 Cognitive Concerns in the students (β = -.18; p < .01) and low IUS-12 Prospective Anxiety in the patients (β = -.21; p < .01). In both samples, OCD was predicted by FMPS Doubts About Action (βs = .34 in students and .36 in patients; p < .01) and IUS-12 Prospective Anxiety (βs = .23 in students and .28 in patients; p < .01).

These analyses reveal a unique pattern for each of the symptoms in relation to the clinical traits and subscales, several of which were replicated across samples. ASI-3 Cognitive Concerns, FMPS Doubts About Action, and IUS-12 Inhibitory Anxiety were associated broadly with multiple symptoms, whereas ASI-3 Physical Concerns, ASI-3 Social Concerns, FMPS Concern Over Mistakes, IUS-12 Prospective Anxiety, and MEAQ Distress Evaluation showed greater specificity.

Analyses of Heterogeneous Symptom Dimensions

PTSD

Confirmatory Factor Analyses

A four-factor model of PTSD symptoms, consisting of intrusions, avoidance, hyperarousal, and dysphoria, was fit to both of the samples. Indicators for each of these four factors is shown in Table A47, and the symptom factors all load on a higher order PTSD factor. In addition, the IDAS-CR scales (the only interview measures in this model) were allowed to correlate across factors to account for method variance. Table A48 shows the fit of this model to the data: Fit in the patient sample was good overall, but RMSEA value (.106) was somewhat high. Students had a similar pattern of acceptable fit for the CFI and WRMR but a poor RMSEA value (.145). Given mixed evidence of fit for these models and high RMSEA's, the results of these analyses should be interpreted with caution and considered preliminary. As shown in Table A47, loadings were all strong and significant (.62 to .95; $p < .001$) with standard errors less than or equal to .05. The higher order PTSD factor was essentially equivalent to the Intrusions factor (loading = .97), but the other symptom factors also loaded strongly (.72 to .91), with Dysphoria most weakly related to higher order PTSD. The intercorrelations among the symptom factors (see Table A49) ranged from .60 to .88 in the patient sample and .77 to .90 in the student sample, suggesting some concerns with differentiability, particularly in the student sample. In both samples, the correlations of Intrusions with Avoidance and with Hyperarousal were especially high (r = .81 to .90).

Factorial Zero-Order Correlations

Correlations with N/NE Factors

Correlations between the PTSD symptom factor scores and the N/NE factor scores ranged from moderate to strong (rs = .32 to .80; $p < .001$), as shown in Table A50.

The strongest correlation in both samples was between Dysphoria and Sadness (*r*s = .80), and Dysphoria was also highly correlated with higher order N/NE (*r*s = .75 and .79). All four PTSD symptoms and higher order PTSD were most strongly related to Anxiety and Sadness (excluding Dysphoria-Sadness correlations, *r*s = .44 to .69). Angry Hostility and Dependency were most strongly related to Dysphoria (*r*s = .51 to .63). Mistrust was equally and moderately related to all four symptoms (*r*s = .45 to .56).

Correlations with Clinical Traits

Table A51 and A52 show the correlations between the PTSD symptom factors and the clinical traits. Among the ASI-3 scales, ASI-3 Cognitive Concerns was most closely related to all four PTSD symptom factors (*r*s = .49 to .63). The maladaptive perfectionism scales were more weakly associated with the PTSD symptom factors, with the exception of the Dysphoria-Doubts About Action correlation (*r*s = .55 and .56). Correlations between intolerance of uncertainty and the PTSD symptom factors tended to be strongest for the Hyperarousal and Dysphoria factors, particularly with IUS-12 Inhibitory Anxiety. Finally, MEAQ Distress Evaluation was equally and moderately associated with all PTSD factors (*r*s = .34 to .50).

Multivariate Associations Among Latent Variables

Associations with N/NE Factors

A model that includes the PTSD symptom factors and N/NE factors was an acceptable fit to the data according to CFI and WRMR, but RMSEA was again poor (.128 and .133; see Table A48). In both samples, the correlations between 1) Hyperarousal and Anxiety and 2) Dysphoria and Sadness exceeded 1.0 slightly, so these correlations were fixed to 1.0. Table A53 shows the correlations between the residual terms of each symptom factor and the residuals of the N/NE factors. Correlations between higher order PTSD and higher order N/NE were strong but indicated acceptable

discriminant validity (*r*s = .67 in patients and .79 in students). In both samples, Intrusions and Avoidance were either unrelated to the N/NE factors or had a negative (suppressor) association with these variables. The only exception was the positive correlation between Avoidance and Mistrust in the patient sample ($r = .39$; $p < .01$). Besides the perfect correlation with Anxiety, Hyperarousal was associated ($p < .01$) with higher levels of Angry Hostility ($r = .40$ in patients and .58 in students) and Mistrust ($r = .52$ in patients and .71 in students). Dysphoria was positively correlated with all five facets of N/NE in both samples, with correlations ranging from .32 to .70 ($p < .01$). Thus, it appears that PTSD's association with N/NE facets is primarily due to dysphoria symptoms, although Hyperarousal was also uniquely associated with several facets (Anxiety, Angry Hostility, and Mistrust).

Associations with Clinical Traits

A model was tested in which the residual of each PTSD factor was correlated with the residual of each clinical trait, wherein the clinical traits all load onto higher order N/NE (as in previous analyses). Fit for this model is shown in Table A48, with borderline to poor fit as in preceding models. However, the higher order PTSD and N/NE factors were strongly correlated (*r*s = .83 in patients and .91 in students), leaving little unique variance for each construct. Likely as a result of this situation, nearly all correlations in both samples were either negative (suppressor effects) or nonsignificant; these results are not shown as they convey little information beyond the fact that these constructs are very closely related. Instead, multiple regressions were conducted using each of the clinical traits and subscales as predictors of each PTSD symptom factor, controlling for higher order N/NE. As in the case of previous regression analyses, MLR estimators were used in these analyses.

Tables A54 and A55 show the results of the simultaneous regressions in the patient and student samples. PANAS-X NA was a significant predictor for each symptom dimension in both samples (βs = .22 to .74). In both samples, ASI-3 Physical Concerns

was associated with Hyperarousal (βs = .39 in patients and .19 in students; $p < .05$), whereas Cognitive Concerns was related to Avoidance and Dysphoria (βs = .17 to .27; $p < .05$). The Social Concerns scale was largely unrelated to these factors. The Doubt About Action scale was associated with Dysphoria in both samples (βs = .12 in patients and .13 in students; $p < .05$), whereas the intolerance of uncertainty scales did not show consistent associations with the PTSD scales across samples. Finally, experiential avoidance was predictive of PTSD Avoidance in both samples (βs = .19 in patients and .22 in students; $p < .01$), and was also associated with Intrusions and Dysphoria in the student sample (βs = .15 and .09, respectively; $p < .05$).

OCD

Confirmatory Factor Analyses

A five-factor model was fit to the data, with Checking, Ordering, Cleaning, Obsessing, and Hoarding all loading onto a higher order OCD factor; error terms among the PCCP interview measures were allowed to correlate. As shown in Table A48, this model was an acceptable fit to the data in the patient sample, whereas RMSEA (.123) and WRMR (1.026) were high in the student sample, indicating that the results in the student sample may not be trustworthy. Table A56 shows the factor analyses in both samples, again with strong loadings (.54 to .98; $p < .001$) and reasonable standard errors overall (however, SE's were somewhat high for the Obsessing factor: .06 to .08). The higher order OCD factor was marked primarily by Checking and Ordering (loadings = .81 to .92), with more moderate loadings for Cleaning, Obsessing, and Hoarding (loadings = .41 to .67). The factors had lower intercorrelations than previous symptom analyses, ranging from .20 to .74 in the patient sample and .39 to .78 in the student sample (Table A57). In general, Checking and Ordering tended to be most strongly correlated with the other factors.

Factorial Zero-Order Correlations

Correlations with N/NE Factors

Table A58 shows the correlations between the OCD symptom factor scores and the N/NE factor scores. With the exception of the Obsessing factor, all other correlations were relatively low in the patient sample (*r*s = .07 to .37), whereas correlations were generally higher in the student sample (*r*s = .28 to .60). In both samples, Obsessing was relatively strongly related to all N/NE facets, especially Anxiety and Sadness (*r*s = .54 to .57). Second to Obsessing, Checking was the next strongest correlate of the N/NE facets, particularly Anxiety (*r*s = .37 in patients and .60 in students).

Correlations with Clinical Traits

Correlations between the OCD factors and the clinical traits are presented in Tables A59 and A60. Correlations were generally moderate, with most between .30 and .60 ($p < .01$). Again, Obsessing and Checking had the strongest correlates, particularly with Doubts About Action ($r = .52$ to .60) and the Intolerance of Uncertainty scales ($r = .47$ to .54). No other trends were notable across samples.

Multivariate Associations Among Latent Variables

Associations with N/NE Factors

When the N/NE factors were included in a model with the OCD factors, the fit was acceptable in both samples (Table A48). The following correlations initially exceeded one and therefore were fixed to 1.0: Obsessing-Anxiety (patients) and Obsessing-Sadness (patients and students). Results are shown in Table A61. Consistent with the zero-order analyses, the Obsessing factor likely has a large component of general distress, as it was significantly correlated with all N/NE facets in both samples (*r*s = .27 to 1.0; $p < .01$). The only other positive association that was replicated across samples was for higher levels of mistrust in hoarding symptoms (*r*s = .28 in patients and .16 in

students; $p < .05$). Several significant suppressor effects were found in both samples: lower Sadness and Dependency in Ordering (r = -.22 to -.55; $p < .05$) and lower Sadness in Cleaning (r = -.30 in patients and -.43 in students; $p < .05$). Thus, symptoms of pure obsessions share the most unique variance with N/NE facets.

Associations with Clinical Traits

The model with OCD factors and clinical traits (loading onto higher order N/NE) was a borderline acceptable fit to the data (Table A48). In this simpler model (as compared to the internalizing symptoms and clinical traits model), all subscales of the clinical traits could be included. The correlations among residuals are shown in Tables A62 and A63. Again, Obsessing was significantly ($p < .05$) correlated with all clinical traits and subscales except for the Concern Over Mistakes scale in the student sample; ASI-3 Cognitive Concerns, Doubts About Actions, and Inhibitory Anxiety were especially strong (rs = .42 to .69). Among the anxiety sensitivity scales, the only replicated significant results were between ASI-3 Physical Concerns and Cleaning (rs = .33 in patients and .15 in students, $p < .05$). Doubts About Actions was significantly associated with Checking and Hoarding in both samples (r = .17 to .62; $p < .01$). Checking and Hoarding had several other significant correlates (i.e., Prospective Anxiety, ASI-3 scales) in the patient sample, but these were not replicated in the student sample. Ordering had only nonsignificant or suppressor associations with the clinical traits in both samples.

DISCUSSION

The primary goal of this study was to examine how facets of N/NE—based on a comprehensive structural model of the domain— and selected clinical traits relate to numerous internalizing disorders in samples of college students and psychiatric outpatients. Multiple measures of each construct were collected, and multivariate structural analyses allowed for a detailed examination of patterns of shared and relatively specific traits, after controlling for comorbidity and shared variance among these closely related constructs. In addition, analyses were conducted to characterize how these lower order traits fit into the larger personality hierarchy. Finally, I also examined the associations of the N/NE facets and clinical traits with heterogeneous symptom dimensions within PTSD and OCD.

Locating the Lower Order Traits Within the Personality Hierarchy

N/NE Facets

This study tested a comprehensive lower order model of the N/NE domain, based on the pilot analyses described previously, consisting of sadness, anxiety, angry hostility, mistrust, and dependency. In addition, stress vulnerability marked the shared variance among the facets. This model was a good fit to the data in both samples. Sadness, anxiety, dependency, and angry hostility were strongly intercorrelated and most central to higher order N/NE. In contrast, mistrust was most closely related to angry hostility. Finally, the stress vulnerability scales were good markers of the shared variance among the facets and may index the threshold at which one experiences various types of negative affect.

These analyses largely replicated the results of the pilot analyses; however, dependency was assessed more broadly in the current study to include approval-seeking,

low self-esteem, and difficulty making decisions on one's own. When assessed in this manner (as opposed to focusing on the approval-seeking component), dependency was more closely related to higher order N/NE and the other N/NE facets than it was in the pilot analyses. In particular, dependency and sadness were strongly associated in these analyses (*r*s = .76 and .80; Table A24). It is also noteworthy that although the N/NE facets were closely related to one another, they were clearly distinguishable, with most correlations between .60 and .75 (see Table A24). Taken together, the convergent support of this lower order N/NE model across two independent samples, as well as the pilot analyses, suggests that it may be a robust structure of the domain.

Figure B4 provides a schematic representation of the associations between the orthogonalized Big Five factors and the N/NE facets, illustrating the relative strength of associations after removing shared variance among the Big Five domains. N/NE had a primary, strong association with all five facets except mistrust, which was more moderately associated with N/NE. Anxiety may be thought of as a pure facet of N/NE, with no substantial correlations with other domains, whereas sadness and dependency are more complex due to several secondary associations. Specifically, sadness was moderately associated with low E/PE and conscientiousness, and weakly associated with low agreeableness. Dependency was strongly associated with low E/PE, moderately associated with low conscientiousness, and weakly associated with low openness. Thus, these two closely-related traits may be distinguished by low agreeableness for depression and low openness for dependency.

While most of these associations are consistent with the larger personality structure literature, it is somewhat surprising that dependency remained associated with low openness to experience, even after removing shared variance among the Big Five, as the N/NE domain is typically unrelated to openness to experience. However, several previous studies have also identified an inverse association between dependency and openness (e.g., Mongrain, 1993; Pincus & Gurtman, 1995); the NEO PI –R Openness

facets of Actions (interest and engagement in new activities) and Ideas (intellectual curiosity) are primarily responsible for the association. Thus, perhaps people with high levels of dependency tend to lack the self-confidence that would facilitate engaging in new behaviors and pursuing difficult intellectual pursuits.

Angry hostility had a moderate secondary association with low agreeableness, whereas mistrust was primarily associated with agreeableness and more weakly associated with N/NE (see Figure B4). Thus, it appears that these two facets are primarily responsible for the fairly strong association between N/NE and agreeableness at the domain level, consistent with previous phenotypic and genotypic evidence (e.g., Jang et al., 2001). These traits are both blends of high N/NE and low agreeableness, but are distinguished from one another by being tipped slightly towards one of the two domains. Angry hostility is clearly a core N/NE facet and belongs in structural N/NE models. It is interesting that mistrust was moderately related to the other N/NE facets and loaded substantially on the higher order factor (approximately .60), suggesting that mistrust should be considered for inclusion in N/NE models depending on its relevance to the criterion of interest. The current study indicates that mistrust is quite pertinent to some internalizing pathology, and likely is associated with other pathological outcomes as well.

Clinical Traits

As expected based on previous research, maladaptive perfectionism, anxiety sensitivity, intolerance of uncertainty, and experiential avoidance are all most closely associated with N/NE (particularly after controlling for shared variance among the Big Five) and appear to fall within this domain. However, it is noteworthy that they are less strongly correlated with this domain (zero-order *r*s = .27 to .63) than are the N/NE facets as modeled in this study (*r*s = .41 to .84); this is consistent with evidence reviewed previously that these traits have incremental validity beyond N/NE in relation to

constructs such as internalizing symptoms. In terms of associations with one another, the clinical traits were moderately to strongly correlated (most *r*s = .35 to .60)

Among the clinical traits examined here, experiential avoidance stands out as the purest marker of N/NE, with relatively weak zero-order correlations with the other domains. Other than N/NE, correlations with orthogonalized Big Five factors were marginally significant for E/PE and openness only. It is noteworthy that this is the only clinical trait examined in the current study that was specifically associated with openness; this makes sense, as experiential avoidance is characterized by an unwillingness to have certain internal experiences. A factor analysis of the clinical traits with the N/NE facets also showed that experiential avoidance is best seen as aligned with higher order N/NE, rather than any specific N/NE facets (although there is some evidence that experiential avoidance is more closely associated with anxiety than the other facets).

These results are broadly consistent with the only previous study examining experiential avoidance in relation to personality traits (Gamez, 2009), and the current study is the first to look at facet level associations. It is important to note that these results are based on one subscale of the MEAQ, a new measure of experiential avoidance that was designed in part to show better discriminant validity with N/NE than existing measures (as well as improved internal consistency). Although MEAQ Distress Evaluation correlates strongly with the AAQ (*r*s = .57 to .63; Gamez, 2009), these results may not generalize to the AAQ or other experiential avoidance measures. More study is needed of other components of experiential avoidance, such as distraction/suppression and distress intolerance.

Anxiety sensitivity varies by subscale as to how specific it is to the N/NE domain. Namely, in analyses with orthogonalized Big Five factors, the social concerns component retained a weak to moderate association with E/PE, which was also reflected in the correlation between the anxiety sensitivity total score and E/PE. Global anxiety sensitivity was weakly but significantly associated with low agreeableness and low

conscientiousness, with both associations driven by the cognitive concerns component. In contrast, the physical concerns scale appears to be specific to N/NE, with no replicated secondary loadings. These results are consistent with previous findings regarding global anxiety sensitivity in relation to personality traits, although this study extends the literature by examining the three anxiety sensitivity components and highlighting which specific components are responsible for which associations.

Turning to how anxiety sensitivity relates to N/NE facets, zero-order correlations indicate that these scales are broadly associated with all of the facets, consistent with previous research. However, the physical concerns component has a weaker association with N/NE and its facets than do the other anxiety sensitivity subscales. In addition, these scales appear to be somewhat more strongly associated with the anxiety and sadness facets. Factor analyses of the total anxiety sensitivity score with the other clinical traits and N/NE facets in the patient sample revealed that anxiety sensitivity is closely and specifically associated with the anxiety facet, as it is among the strongest markers for this component (loading = .76). While this does not necessarily imply that anxiety sensitivity is completely redundant with anxiety (and numerous studies have addressed this point; see McNally, 1999), these multivariate results suggest that associations with other N/NE facets are due to shared variance with anxiety and higher order N/NE.

Although most strongly associated with N/NE, the maladaptive perfectionism and intolerance of uncertainty scales had broad secondary associations with E/PE, conscientiousness, and agreeableness. These results are consistent with the literature on maladaptive perfectionism, but only a few studies have examined intolerance of uncertainty in the larger personality hierarchy, and none have included the prospective and inhibitory anxiety subscales. It is noteworthy that the inhibitory anxiety scale, but not prospective anxiety, was associated with low conscientiousness. Perhaps this is because inhibitory anxiety indexes the extent to which intolerance of anxiety interferes with action, and one component of conscientiousness is effectively accomplishing goals. The

current study also found more secondary loadings for intolerance of uncertainty than had previous research. At the N/NE facet level, both maladaptive perfectionism and intolerance of uncertainty loaded moderately on the anxiety facet, but also had numerous secondary loadings, suggesting a broad association with these facets.

Structure of Internalizing Symptoms

Differences Between Samples

In the current study, no single structure provided a good fit in both the student and patient samples. Specifically, the best-fitting model in the patient sample was the hypothesized model, in which depression, GAD, and PTSD load on Distress, and panic, social anxiety, and OCD load on Fear. In the student sample, however, depression, GAD, PTSD, and panic were indistinguishable (*r*s = .87 to .96), necessitating their combination into a single factor ("Panicked Distress") on which all four symptoms loaded strongly. Along with Social Anxiety and OCD, Panicked Distress loaded onto a single higher order Internalizing factor. This lack of a replicable symptom structure is a limitation that will be discussed further.

What might have contributed to these substantial differences across samples, particularly the unexpected discriminant validity problems in the student sample? Most research has found that while levels of psychopathology vary across clinical and nonclinical samples (such as college students), the structure of psychopathology is invariant (see O'Connor, 2002, for a meta-analysis). Furthermore, previous research on structural models of the mood and anxiety disorders have found that the structure in undergraduate student samples is similar to that of clinical and other types of non-clinical samples (e.g., Joiner, 1996; Naragon-Gainey et al., 2009; Watson et al., 2005, 2007, 2008). However, there is sometimes a tendency for stronger correlations among constructs in student samples relative to patient samples, as found in this study.

One possible explanation involves the base rates of symptoms in the student sample: if the students in the current study had unusually low rates of mood and anxiety symptoms (relative to other college samples), this may have led to difficulty identifying and distinguishing these symptoms, which in turn may have obscured the true underlying structure. This seems unlikely to be the case for two reasons. First, a recent national epidemiologic study of U.S. college students (Blanco et al., 2008) found base rates for these disorders that generally were similar to or lower than those in the current study. Specifically, Blanco and colleagues (2008) reported a rate of 1.95% for panic disorder (vs. 3.5% in the current study), 3.24% for social anxiety disorder (vs. 5.6%), and 1.64% for GAD (vs. 4.6%); data on other anxiety disorders were not available. Only depression was substantially more prevalent in the epidemiologic study (7.04%) than in the current study (3.8%). One unexpected finding in terms of prevalence rates is in the opposite direction: students reported comparable symptoms to the patients on the OCD self-report measures (Table A9), and to a lesser degree, OCD interview measures; it is difficult to know whether this was due to low levels of OCD symptoms in the patients or high levels in the students. Second, this study took a dimensional measurement approach, wherein all indicators of each disorder were dimensional (trichotomous SCID screeners and other dimensional measures were used), providing greater variance relative to dichotomous indicators. Thus, as shown in Tables A9 and A12, there was substantial variance in the student sample on the interview and self-report measures that served as indicators for each disorder in the structural models.

Perhaps a more likely explanation is that the students generally had difficulty making fine distinctions among the disorders and closely related personality traits; this is consistent with the fact that even the best-fitting psychopathology models in the student sample did not fit the data particularly well (see Table A31). For individuals with little psychopathology, their minimal experiences with these symptoms may have been inadequate to detect and rate them accurately. Even more probable is that the students

became burnt-out or bored with the long questionnaire with many similar questions, in a context with little incentive to work slowly and respond thoughtfully to each question. Anecdotally, the patients tended to work much more slowly (although this may be due to other reasons, such as reading level) and appeared more motivated to perform optimally. A somewhat hurried, cursory approach would result in inflated correlations among similar constructs, as was observed in the analyses throughout the current study (relative to the patients). Furthermore, it is logical that the students had the most difficulty separating out symptoms of the distress disorders, whereas social anxiety is situationally-bound and OCD symptoms are qualitatively distinct from the others due to specific associated behaviors. However, it is unclear why the students failed to distinguish panic symptoms, which are uniquely focused on interoceptive cues, from the more generalized distress disorders. Perhaps the extensive overlap between panic and the distress disorders was due to the component of hyperarousal present in PTSD and GAD as well.

Higher Order Structural Issues

Due to differences in the lower order symptom structure across samples, the samples had different higher order psychopathology structures as well. In the student sample, only a single-factor higher order symptom structure was possible because, after collapsing multiple factors into panicked distress, there were not sufficient markers left to model more than one higher order factor. In the patient sample, a two-factor model provided the best fit to the data as hypothesized, corresponding to fear and distress. However, it is important to note that these two factors were very strongly correlated (r = .90), and thus displayed very similar associations with the various personality traits in this study. Furthermore, the fit indices suggested that the one factor internalizing model also fit the data very well in the patient sample (see Table A31). This calls into question the utility of the two factor model, given that the higher order factors are virtually indistinguishable and such a model is less parsimonious than a one factor model.

Previous research has consistently found a strong correlation between fear and distress (*r*s = approximately .50 to .70), accounted for by the higher order internalizing factor, but these correlations are not so strong as to suggest unacceptable discriminant validity (e.g., Krueger, 1999; Miller et al., 2008; Sellbom et al., 2008; Watson, 2005).

One possible reason for weaker correlations between fear and distress in these earlier studies is that with the exception of Sellbom et al. (2008), they all used diagnoses as indicators, rather than dimensional symptom measures. Although the intercorrelation between the two factors in Sellbom et al. (2008) is not nearly as high (r = .57) as the current study, it is hard to compare with the current study because different fear disorders were included in the analyses. Most notably, because specific phobia has a small component of distress, it seems likely that the inclusion of specific phobia in Sellbom et al. (2008) and other studies lowered the fear-distress correlation relative to the current study. In addition, it may be possible that the structure as driven by DSM-IV diagnoses is somewhat different than the structure when assessed with a bottom-up approach using symptom dimensions. It is also interesting that Krueger (1999) found that although a two factor model best fit the entire epidemiologic sample, a single internalizing factor provided the best fit for the subset of people who were receiving psychiatric treatment. Further symptom-driven research is needed to clarify this structural issue, particularly as diagnoses will change somewhat in DSM-5.

Previous findings are mixed regarding OCD's placement in this structure (e.g., Miller et al., 2008; Sellbom et al., 2008; Slade & Watson, 2006). Consistent with Miller and colleagues (2008) and Slade and Watson (2006), the current study found that OCD belonged with the fear disorders in the patient sample, although it loaded more weakly (.60) than did social anxiety or panic. Similarly, in the student sample, OCD loaded strongly on the higher order internalizing factor. Thus, this study found support that OCD belongs with the internalizing disorders, and shares the most variance with the fear disorders.

Structural Issues for Heterogeneous Symptom Dimensions

Although examining the lower order symptom structure was not a primary aim in this study, sufficient markers were available to model the heterogeneous symptom dimensions within PTSD and OCD. The four-factor PTSD model, consisting of intrusions, avoidance, hyperarousal, and dysphoria was an acceptable to poor fit to the data, with particularly poor RMSEA values (.11 to .15). RMSEA considers model parsimony, whereas CFI and WRMR do not. Thus, it is possible that these models were overfit, as suggested by the very strong correlations among the factors (Table A49). In particular, intrusions and avoidance were very highly correlated in both samples (*r*s = .88 and .89), and hyperarousal was almost as strongly correlated with avoidance and intrusions (*r*s = .77 to .90). However, other studies (e.g., Elklit & Shevline, 2007; Palmieri, Weathers, Difede, & King, 2007) have found similarly strong intercorrelations but had better fit indices, including RMSEA. Of course, the factor intercorrelations depend on the indicators selected, and the symptom measures in the current study may not have been optimally specific to each symptom dimension. This is particularly likely for the PCL, which was not constructed to assess lower order symptoms.

Five symptom dimensions were modeled within OCD: cleaning, checking, ordering, obsessing, and hoarding. Similar to the PTSD symptom model, this model was a borderline acceptable fit to the data, with poorer fit in the student sample than the patients. Keeping this caveat in mind, checking and ordering were the strongest markers of the higher order factor in both samples. Consistent with previous research, intercorrelations among the OCD symptom dimensions were mostly relatively low (most *r*s = .20 to .60). In particular, hoarding seems more loosely associated with the other symptoms and had the weakest loading on the higher order factor.

Patterns of Shared and Specific Traits Across the Internalizing Symptoms

N/NE Facets

Higher Order Symptom Associations

At the zero-order level, the six symptoms included in this study largely shared a similar pattern of associations with the N/NE facets. Specifically, depression, GAD, PTSD, social anxiety, and PTSD all were moderately correlated with the N/NE facets, with the strongest associations with sadness and anxiety, and weaker associations with angry hostility and mistrust. Dependency was mostly moderately related to the disorders, except for a particularly strong association with social anxiety. As expected, depression was very highly associated with sadness, and GAD was strongly related to both anxiety and sadness. OCD was more weakly related to all of the N/NE facets (particularly in the patient sample), without a clear pattern that replicated across samples in terms of relatively strong correlates. These results are consistent with the few studies that have examined facet-level associations with the internalizing disorders, in that N/NE facets were typically broadly related to the internalizing disorders with little evidence of specificity (e.g., Bienvenu et al., 2004).

This study was the first to use SEM analyses of associations between the internalizing symptoms and the N/NE facets to control simultaneously for symptom and trait overlap. One finding that must be acknowledged is that depression was indistinguishable from the sadness facet, as was GAD from the anxiety facet. This likely is due in part to the simultaneous assessment of personality and symptoms, such that retrospective biases were likely to influence the personality ratings and bias them towards the participant's current mood state (although evidence suggests this bias is not large; e.g., Costa et al., 2005; Santor et al., 1997). Thus, these results highlight an important limitation of this study, wherein prospective, longitudinal assessment would have been

preferable. At the same time, it is important to note that sadness/depression and anxiety/GAD are intrinsically intertwined constructs and are difficult to distinguish, regardless of time of measurement.

Figure B5 provides a schematic representation of the results of the SEM analyses, illustrating strong, moderate, and weak associations of the N/NE facets with the internalizing symptoms. Consistent with the results of the pilot analyses in this study and with other studies (e.g., Uliaszek et al., 2009), depression was significantly (and perfectly) associated with sadness only. Likewise, panic was significantly and strongly associated with the anxiety facet only. Thus, depression's and panic's associations with higher order N/NE are mediated entirely through single facets. The other four disorders were significantly predicted by multiple N/NE facets. Specifically, GAD was very strongly associated with anxiety and moderately associated with sadness, and PTSD was moderately associated with mistrust and weakly with anxiety. Social anxiety was strongly associated with dependency and moderately associated with anxiety; additionally, sadness and mistrust were specifically and moderately associated with social anxiety in the patient sample only, yielding a broad personality profile for social anxiety. Lastly, OCD was associated with a replicable suppressor effect (low sadness), but no replicable positive associations. Consistent with the pilot study for the current research, OCD was uniquely (albeit weakly) associated with mistrust in the patient sample and anxiety in the student sample.

Taken together, these multivariate results indicate unique patterns of associations with the N/NE facets for each disorder, despite very little differentiation at the zero-order level. Looking across the N/NE facets, anxiety was most broadly related to the internalizing disorders (all except depression), sadness and mistrust were each associated with three disorders, dependency was specific to social anxiety, and angry hostility was not uniquely associated with any of the disorders. Given that mistrust was related to several disorders and is somewhat tangential to higher order N/NE, it may be a good

candidate for a construct that contributes to comorbidity beyond N/NE (see Watson, 2009, for a discussion of this idea).

These results have several implications for taxonomy, differential assessment, and treatment. In terms of taxonomy, the specific contribution of anxiety to all of the disorders except depression is consistent with the phenotypic similarity of the disorders currently classified as "anxiety disorders." However, perhaps in contrast to the implications of the current taxonomy, several of the anxiety disorders (i.e., GAD, social anxiety) also were specifically predicted by sadness. In particular, these results support the notion that GAD is isomorphic with very high levels of N/NE (e.g., Mineka et al., 1998; Watson et al., 2005). Clearly, the N/NE facets are not sufficient to delineate empirical disorder groupings, but they represent one lower order contributor to empirical covariation.

Second, this study found that angry hostility was not specifically associated with any of the disorders, even those that include irritability or anger as a possible diagnostic criterion or are empirically associated with it (i.e., depression, GAD, PTSD). These findings suggest that it may be most helpful to target anxiety or sadness in treatment, and that irritability/anger is likely to resolve along with these primary symptoms. Third, dependency (as assessed in the current study) was very strongly associated with—and specific to—social anxiety, contrary to some previous research (e.g., Gamez et al., 2007; Kotov, 2006). As assessed here, dependency primarily consists of low self-esteem, relying on others when making decisions, and approval-seeking. This combination appears to tap into something strong and specific to social anxiety, and should be considered in assessment and treatment.

Lower Order Symptom Associations

PTSD. At the zero-order level, all four PTSD symptom factors – intrusions, avoidance, hyperarousal, and dysphoria – were strongly associated with anxiety (particularly hyperarousal and dysphoria) and sadness (particularly dysphoria). Mistrust was moderately associated with all four symptom factors, whereas angry hostility and dependency were most strongly related to dysphoria. Consistent with previous work, dysphoria clearly shows the strongest association among the PTSD factors with higher order N/NE and sadness/depression (e.g., Watson, 2009).

The results of the SEM analyses are summarized in Figure B6. Likely because the PTSD symptom factors were very highly correlated in this sample, there are many non-replicable suppressor effects (particularly for intrusions and avoidance). In these analyses, hyperarousal was indistinguishable from the anxiety facet, as was dysphoria from sadness. Dysphoria was in fact significantly and positively associated with all five facets, though most strongly with anxiety and sadness. Thus, besides being strongly related to higher order N/NE, dysphoria is relatively broad and shares unique variance with each of the N/NE facets. Hyperarousal was also strongly associated with mistrust and angry hostility, whereas avoidance was associated with mistrust in one sample and intrusions did not have any positive correlations with the N/NE facets. Thus, it appears that PTSD's association with N/NE facets is primarily due to dysphoria symptoms, although hyperarousal was also uniquely associated with anxiety and facets related to low agreeableness (i.e., angry hostility and mistrust).

I should note that in the current study, dysphoria was measured with a combination of scales specific to PTSD measures and measures that were designed to assess general distress in the IDAS. The self-report measures all loaded equally strongly on the higher order dysphoria factor, but it is unclear whether the dysphoria symptoms within PTSD are identical to general distress or if they are overlapping but distinct

constructs. Although most of the PTSD dysphoria items overlap with general distress/depression, some do not, such as a sense of a foreshortened future and an inability to recall important parts of the trauma. Numerous recent studies have sought to understand better the nature of the dysphoria factor in PTSD, with one reporting that the dysphoria items were not more strongly correlated with general distress than were the other PTSD items (Marshall, Schell, & Miles, 2010). In the current study, dysphoria was not redundant with higher order N/NE, although it was strongly correlated (*r*s = .56 and .66), as one would expect. This is an important issue that remains to be resolved; its resolution will shed light on interpreting the associations of PTSD symptoms with N/NE facets, as well as larger issues regarding comorbidity.

OCD. Of the OCD symptoms, obsessing symptoms were clearly most strongly related to the N/NE facets in zero-order analyses in the patient sample, whereas obsessing and checking were comparably related to the facets in the student sample. In both samples, correlations were strongest with anxiety and sadness. The other symptom dimensions were much more weakly correlated with the facets. These results are consistent with previous evidence that OCD symptom dimensions are less related to N/NE than are most other mood and anxiety disorders, while also showing difference across OCD symptoms in relation to N/NE (Watson, 2009). Furthermore, the current study extends such findings to the facet level.

A summary of the SEM analyses of OCD symptom dimensions and N/NE facets is shown in Figure B7, again with many suppressor effects (mostly replicable) due to the small amount of shared variance between some of the OCD dimensions and N/NE. Obsessing was clearly most relevant to N/NE, with strong correlations with all five facets (and perfect correlations with anxiety and sadness); these results are consistent with the findings of Watson (2009) that obsessing has a large component of general distress. Thus, it seems that this symptom dimension is primarily responsible for OCD's association with

N/NE. These results are striking, particularly given that this dimension only had two indicators in the SEM analyses; further studies should be undertaken with more thorough measurement of the construct. The only other replicated positive association was a moderate correlation between mistrust and hoarding, which may be related to the limited insight that is common in hoarding (e.g., Frost, Tolin, & Maltby, 2010) and a sense that others are trying to get rid of belongings that are important to the hoarder. Anxiety was correlated with checking and cleaning in the student sample, angry hostility with hoarding in the student sample, and mistrust with ordering and cleaning in the patient sample. Thus, angry hostility and mistrust are relevant to several OCD symptom dimensions.

Clinical Traits

Higher Order Symptom Associations

Only a few trends were discernible in the zero-order correlations between the clinical traits and internalizing symptoms, as most of the traits were moderately correlated with most of the symptoms. First, the physical concerns component of anxiety sensitivity was relatively specific to panic. Second, the Doubts About Action maladaptive perfectionism scale was more strongly related to symptoms than was Concern Over Mistakes, and the Inhibitory Anxiety subscale of intolerance of uncertainty was more strongly related to symptoms than was the Prospective Anxiety subscale. Thus, there is evidence of differential associations when looking at various components of the clinical traits. Third, experiential avoidance was more weakly correlated with symptoms than were the other clinical traits. Although some of the internalizing symptoms had not previously been studied in relation to each clinical trait, the results of the current study suggest that these traits are fairly relevant to all of the internalizing disorders assessed here.

The SEM analyses relating the clinical traits to the internalizing symptoms were impeded by the fact that the shared variance among the clinical traits (referred to as N/NE) and the shared variance among the disorders were very strongly correlated. Specifically, N/NE correlated 1.01 with Distress in the patient sample, .89 with Fear in the patient sample, and 1.02 with Internalizing in the student sample. Thus, particularly for analyses where the correlation was perfect, there was essentially no unique variance left to correlate, resulting in a multitude of strong suppressor effects that are not particularly interpretable. However, social anxiety and OCD were associated with maladaptive perfectionism in both samples, and panic was associated with anxiety sensitivity in the patient sample. Note that the clinical traits were only moderately correlated with the unique variance of individual internalizing symptoms, as well as the shared variance among the symptoms (e.g., distress, fear, internalizing), at the zero-order level (*r*s = .40 to .70). Thus, this situation is specifically due to the fact that the shared variance among the clinical traits is identical to the shared variance among the disorders. Given that these traits were developed to have specific relevance to psychopathology (whereas N/NE facets were not), it makes sense that their overlapping variance would be highly pathological in nature. This situation may also have been exacerbated by the concurrent assessment of clinical traits and symptoms in this study.

Because the SEM analyses were not very informative, simultaneous multiple regressions were conducted wherein the clinical trait and N/NE scales were entered as predictors of each symptom; thus, these analyses do not control for comorbidity. Table A64 summarizes these results, showing shared and specific significant predictors for each symptom. These results are largely in agreement with the conclusions from the literature review of this study (see p. 49), as detailed below. Three scales were associated broadly with multiple symptoms and may be candidates for traits that confer vulnerability to the internalizing symptoms and contribute to comorbidity, beyond shared variance with N/NE.

First, the cognitive concerns component of anxiety sensitivity was associated with depression and PTSD, which is consistent with the Naragon-Gainey (2010) meta-analysis. Second, the Doubts About Action maladaptive perfectionism scale significantly predicted GAD and OCD, which is also consistent with previous literature and seems reasonable given the tendency to doubt whether one's actions were effective in both disorders. However, it is noteworthy that depression, which typically shows the strongest association with maladaptive perfectionism, was not predicted by either perfectionism scale in the current study. Perhaps the variance depression shared with anxiety sensitivity cognitive concerns overlapped considerably with the variance it shared with maladaptive perfectionism. Third, the Inhibitory Anxiety subscale of intolerance of uncertainty was associated with depression, GAD, and social anxiety. Previous research has firmly established that GAD is associated with intolerance of uncertainty; the current results add to the very small literature regarding depression's and social anxiety's associations with this clinical trait. Thus, fears that cognitive symptoms of anxiety portend losing one's mind, doubting one's ability to complete tasks well, and anxiety regarding uncertainty that interferes with effective actions all relate to multiple disorders and may contribute to comorbidity among them, beyond N/NE. It is noteworthy that these traits all share a connection with concerns about or perceived impairments in effective daily functioning as a result of worry or anxiety.

The remaining clinical traits showed greater specificity to certain symptoms. Consistent with previous research (e.g., Naragon-Gainey, 2010), the social concerns component of anxiety sensitivity was specific to social anxiety, whereas the physical concerns component was specific to panic. Social anxiety was also uniquely characterized by high levels of concerns about mistakes (a component of maladaptive perfectionism), as found in previous studies, and by experiential avoidance. It is interesting that experiential avoidance only predicted social anxiety, given that most research on this trait has centered on PTSD and depression, with some support for panic

and GAD in relation to experiential avoidance as well. This is likely due in part to the fact that the MEAQ Distress Evaluation scale does not tap the entire experiential avoidance construct. It is also plausible that the cognitive concerns component of anxiety sensitivity "stole" variance from experiential avoidance in relation to PTSD and depression, as these two constructs are closely related, although typically experiential avoidance mediates the association (e.g., Marx & Sloan, 2005; Tull & Gratz, 2008). Finally, prospective anxiety (worry about future events) from intolerance of uncertainty was specific to OCD, consistent with previous literature. Thus, as was the case for the N/NE facets, each symptom is characterized by a unique combination of shared and specific clinical traits.

Lower Order Symptom Associations

PTSD. Consistent with the higher order symptom analyses, the cognitive concerns subscale of anxiety sensitivity was closely related to all four of the PTSD factors in the zero-order correlational analyses. Intolerance of uncertainty (and particularly inhibitory anxiety) was most strongly correlated with hyperarousal and dysphoria, whereas experiential avoidance was similarly associated with all four symptom factors. Finally, maladaptive perfectionism was more weakly related to the PTSD symptoms, with the exception of a stronger association between Doubts About Action and dysphoria.

Similar to the preceding analyses of internalizing symptoms, the SEM analyses of the PTSD symptoms and clinical traits yielded nearly all suppressor effects or nonsignificant associations. Consequently, simultaneous regressions were conducted wherein each PTSD symptom factor was predicted by the clinical traits and N/NE scales, with a summary of the results shown in Table A65. Cognitive anxiety sensitivity was specifically predictive of all four PTSD symptoms factors in one or both samples, whereas the physical concerns component was specific to hyperarousal; these results are aligned with the Naragon-Gainey (2010) meta-analysis. In addition, experiential

avoidance was associated with avoidance in both samples, as well as with intrusions and dysphoria in one sample; these results run counter to prior suggestions that PTSD's link with experiential avoidance is via the dysphoria symptoms only (e.g., Plumb et al., 2004; Tull et al., 2004). The prospective anxiety component of intolerance of uncertainty was specific to hyperarousal, whereas the inhibitory anxiety component was specific to dysphoria. Finally, the Doubts About Action maladaptive perfectionism scale was also uniquely associated with dysphoria.

Taken together, dysphoria had a similar association with clinical traits as did depression, in that both were specifically associated with inhibitory anxiety and cognitive concerns from anxiety sensitivity. There is some degree of specificity to particular PTSD symptoms; not surprisingly given their high correlation, intrusions and avoidance have identical clinical trait predictors, whereas hyperarousal and dypshoria show greater differentiation. The cognitive concerns component of anxiety sensitivity seems to be central to each of the PTSD symptom factors and the higher order construct, whereas experiential avoidance is relevant to all symptom factors except hyperarousal.

OCD. Zero-order correlations between OCD symptom factors and the clinical traits were mostly moderate; obsessing and checking tended to have the strongest correlates, particularly with Doubts About Action and the intolerance of uncertainty scales. Given the weaker correlations among the OCD symptom factors and with the clinical traits relative to PTSD symptoms, SEM analyses were not problematic in this case and were interpretable. A summary of results is shown in Table A66; because several predictors that were weakly positively associated with an OCD symptom factor in the patient sample were negatively associated in the student sample (suppressor effect), only those predictors significant at $p < .01$ in one sample or $p < .05$ in both samples are shown.

Among the OCD symptom factors, obsessing is clearly most strongly and broadly associated with the clinical traits (all of the clinical traits were significant predictors), again illustrating the large component of general distress and pathology in the obsessing symptom factor. The two markers of the obsessing factor both focus on the presence of frequent intrusive, disturbing thoughts that the individual experiences as distressing and uncontrollable. Thus, those who have intrusive, disturbing thoughts but do not feel that they must get rid of them or are not very upset by them would not score high on this scale. Perhaps part of what is particularly pathological about obsessing symptoms is that they include attempts at suppression of the thoughts, which have been shown to increase the frequency of such thoughts, as well as to lead to greater depression (e.g., Wegner & Zanakos, 1994). In contrast, those whose OCD is primarily marked by rituals designed to decrease anxiety, with less focus on the presence of obsessive thoughts, may get less caught up in this pathological process. It would be interesting to measure thought suppression and assess whether it might mediate the association between obsessing and some of these clinical traits, particularly experiential avoidance and the cognitive component of anxiety sensitivity.

The only clinical trait in the regression analyses that was common to several OCD symptoms – as well as to higher order OCD in previous analyses – was the Doubts About Action scale of maladaptive perfectionism, which was significantly associated with checking, obsessing, and hoarding; this association is consistent with previous research. In addition, cleaning was associated with the physical concerns component of anxiety sensitivity and hoarding with the Concern Over Mistakes maladaptive perfectionism scale. None of the clinical traits were significant predictors of ordering. At the higher order level, prospective anxiety from intolerance of uncertainty was uniquely associated with OCD; these analyses suggest that this association was entirely due to the obsessing component. Thus, OCD symptoms show some differentiation in regard to unique

associations with clinical traits, but most of the "action" is due to the obsessing symptoms.

Limitations and Future Directions for Research

A number of limitations apply to this study. First, measurement of traits and symptoms was concurrent and cross-sectional, rather than prospective and longitudinal, likely leading to state biases and some confounding of these associated constructs. In order to evaluate the direction of causality and to distinguish personality traits from symptoms more clearly, longitudinal methodologies are necessary. It is plausible that if personality and psychopathology were not assessed concurrently, there would not have been a perfect association between some of the traits and some of the symptoms in the SEM analyses. Related to this first point, discriminant validity among constructs was somewhat poor in the student sample, most notably for several of the symptom factors that needed to be combined in a single overarching dimension. This resulted in different symptom structures between the student and patient samples, which meant that the subsequent analyses relating N/NE facets and clinical traits to symptoms were not comparable across samples. Additionally, while sample sizes were moderate and reasonable for the analyses conducted, they were not large and some sample-specific error is likely.

As is the case in any study, the results are dependent on the quality and validity of the measures selected for each construct. Although the current study aimed to minimize measure-specific error by carefully selecting each marker and including multiple indicators of each construct, only a subset of relevant measures were included and results may have differed with different measures. In addition, although many relevant disorders and traits were included, several potentially relevant constructs (particularly clinical traits or related symptoms) were not included due to time constraints. Finally, the analyses involving heterogeneous symptom dimensions in PTSD and OCD were post-hoc in

nature; thus, the measures used for each symptom dimension were not selected as carefully as would be ideal.

There are several areas of future research suggested by the current study. First, it will be important to expand such a model to include other disorders relevant to mood and anxiety pathology, such as borderline personality disorder, bipolar disorder, specific phobia, and agoraphobia. In addition, various clinical traits that are related but were not included in this study – such as rumination, thought suppression, and oddity – should be assessed in this same manner to determine the extent to which they might be redundant with the constructs in the current study. There was also evidence that one's perceived ability to function effectively cut across various traits; thus, psychosocial functioning should also be examined in future studies.

This study focused on N/NE facets and previous research has addressed how E/PE facets are associated with internalizing symptoms (Naragon-Gainey et al., 2009), but there is evidence that conscientiousness and agreeableness also are moderately associated with multiple internalizing disorders (see Tables A36 and A37; Bienvenu et al., 2004; Kotov et al., 2010). As such, it will be important to examine further the facet structure in these domains and to determine which facets are most relevant to each internalizing disorder.

The current study collected clinical interview data in an attempt to obtain a relatively objective assessment of the participants' symptoms, beyond solely relying on self-report questionnaires. Future studies should take this multimethod approach further by also collecting informant data on participants' personality traits. Such an approach would likely improve the differentiation between the personality and symptom constructs measured, and would also allow one to examine these associations from two complementary perspectives that provide different information (see Oltmanns & Turkheimer, 2006).

Given that the clinical traits and N/NE facets are closely related but not redundant with regard to internalizing symptoms, future work should seek to delineate underlying mediating factors that may account for this pattern of associations. Several traits studied here (i.e., cognitive concerns component of anxiety sensitivity, mistrust, and experiential avoidance) are broadly associated with multiple symptoms, independent of overlap with N/NE; these should be further studied as potential additional sources of comorbidity. Continued research in both higher and lower order psychopathology structure, particularly from a bottom-up, symptom focused perspective, will be essential to examining such issues.

Conclusion

The current study had multiple strengths, including two independent samples in which to test a priori models, several markers for each construct (including structured interview measures for symptoms), a large network of relevant traits and symptoms, and analyses that control for both comorbidity and shared trait variance. The results indicated unique patterns of association for each of the internalizing symptoms (as well as symptom dimensions within OCD and PTSD) in reference to the N/NE facets and clinical traits, highlighting shared and specific trait contributors. One important goal was to investigate whether the clinical traits contributed substantially beyond N/NE and its facets, and there was evidence that all four traits (as well as their subscales) are not redundant with N/NE and are differentially associated with internalizing psychopathology. Finally, the current study helped to clarify the structure and content of the N/NE domain, as well as the location of the N/NE facets and clinical traits in the personality hierarchy. Together, these results represent a step toward a more complete understanding of the structural associations of personality and psychopathology, delineating shared and specific relations.

NOTES

[1] Note that the Pearson correlations reported in Gamez et al. (2007) are between (dichotomous) diagnoses and continuous symptom measures, and are therefore likely attenuated.

[2] Given the closely-related content of some of the facets of neuroticism (particularly depression/sadness and anxiety) with actual symptoms of depression, researchers have explored whether this relation is simply due to a state effect, rather than an independent relation between personality and psychopathology. Summarizing briefly, it is clear that state effects play an important role in the magnitude of the relations between neuroticism and depression. However, there is also some evidence that, despite being weakened, these associations remain even in the reduction or absence of concurrent depression (e.g., Clark et al., 2003; Costa et al., 2005; Harkness et al., 2002; Santor, Bagby, & Joffe, 1997).

[3] It is noteworthy that EA stems from the behavioral analytic tradition; as such, it is conceptualized as a context-dependent functional response rather than a dimensional underlying trait (Hayes et al., 2004). However, by assessing how often a given a belief or behavior is "true" for an individual, the AAQ essentially measures EA as if it were a trait-like entity that generalizes across contexts, and it has been treated as such in recent empirical studies. In addition, it demonstrates reasonable four-month test-retest stability (r = .64; Hayes et al., 2004).

REFERENCES

Abramowitz, J. S., & Deacon, B. J. (2006). Psychometric properties and construct validity of the Obsessive-Compulsive Inventory – Revised: Replication and extension with a clinical sample. *Journal of Anxiety Disorders, 20,* 1016-1035.

Abramowitz, J. S., Lackey, G. R., & Wheaton, M. G. (2009). Obsessive-compulsive symptoms: The contribution of obsessional beliefs and experiential avoidance. *Journal of Anxiety Disorders, 23,* 160-166.

Adkins, J. W., Weathers, F. W., McDevitt-Murphy, M., & Daniels, J. B. (2008). Psychometric properties of seven self-report measures of posttraumatic stress disorder in college students with mixed civilian trauma exposure. *Journal of Anxiety Disorders, 22,* 1393-1402.

Alden, L. E., Ryder, A. G., & Mellings, T. M. B. (2002). In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, Research, and Treatment* (pp. 373-391). Washington, D. C.: American Psychological Association.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

Antony, M. M., Purdon, C. L., Huta, V., & Swinson, R. P. (1998). Dimensions of perfectionism across the anxiety disorders. *Behaviour Research and Therapy, 31,* 139-148.

Arrindell, W. A. (1993). The fear of fear concept: Evidence in favour of multidimensionality. *Behaviour Research and Therapy, 31,* 507-518.

Angst, J., & Vollrath, M. (1991). The natural history of anxiety disorders. *Acta Psychiatrica Scandinavica, 84,* 446-452.

Bagby, R. M., Joffe, R. T., Parker, J. D. A., Kalemba, V., & Harkness, K. L. (1995). Major depression and the five-factor model of personality. *Jouranl of Personality Disorders, 9,* 224-234.

Baker, R., Holloway, J., Thomas, P. W., Thomas, S., & Owens, M. (2004). Emotional processing and panic. *Behaviour Research and Therapy*, *11*, 1271–1287.

Barlow, D. H., Chorpita, B. F. & Turovsky, J. (1996). Fear, panic, anxiety and disorders of emotion. In D. A. Hope (Ed.), *Nebraska Symposium on Motivation*: *Vol. 43* (pp. 251-238). Lincoln: University of Nebraska Press.

Batten, S. V., Follette, V. M., & Aban, I. B. (2001). Experiential avoidance and high-risk sexual behavior in survivors of child sexual abuse. *Journal of Child Sexual Abuse, 10,* 101–120.

Berenbaum, H., Bredemeier, K., & Thompson, R. J. (2008). Intolerance of uncertainty: Exploring its dimensionality and associations with need for cognitive closure, psychopathology, and personality. *Journal of Anxiety Disorders, 22,* 117-125.

Bienvenu, O. J., Samuels, J. F., Costa, P. T., Reti, I. M., Eaton, W. W., & Nestadt, G. (2004). Anxiety and depressive disorders and the five-factor model of personality: A higher- and lower-order personality trait investigation in a community sample. *Depression and Anxiety, 20*, 92-97.

Bienvenu, O. J., & Stein, M. B. (2003). Personality and anxiety disorders: A review. *Journal of Personality Disorders, 17*, 139-151.

Blanco, C., Okuda, M., Wright, C., Hasin, D., Grant, B. F., Liu, S.-M., & Olfson, M. (2008). Mental health of college students and their non-college attending peers: Results from the National Epidemiologic Study on Alcohol and Related Conditions. *Archives of General Psychiatry, 65,* 1429-1437.

Boelen, P. A., & Reijntjes, A. (2009). Intolerance of uncertainty and social anxiety. *Journal of Anxiety Disorders, 23,* 130-135.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York: Wiley.

Borkovec, T. D., Alcaine, O. M., & Behar, E. (2004). Avoidance theory of worry and generalized anxiety disorder. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77–108). New York: Guilford Press.

Bornstein, R. F. (1994). Construct validity of the Interpersonal Dependency Inventory: 1977-1992. *Journal of Personality Disorders, 8,* 64-76.

Bornstein, R. F. (2005). The dependent patient: Diagnosis, assessment, and treatment. *Professional Psychology: Research and Practice, 36,* 82-89.

Brown, T. A., Chorpita, B. F. & Barlow, D. H. (1998). Structural relationships among dimensions of the *DSM-IV* anxiety and mood disorders and dimensions of negative affect, positive affect, and autonomic arousal. *Journal of Abnormal Psychology, 107*, 179-192.

Brown, T. A., White, K. S., & Barlow, D. H. (2005). A psychometric reanalysis of the Albany Panic and Phobia Questionnaire. *Behaviour Research and Therapy, 43,* 337-355.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-161). Newbury Park: Sage Publications.

Buhr, K., & Dugas, M. J. (2002). The Intolerance of Uncertainty Scale: psychometric properties of the English version. Behaviour Research and Therapy, 40, 931–945.

Buhr, K., & Dugas, M. J. (2006). Investigating the construct validity of intolerance of uncertainty and its unique relationship with worry. *Journal of Anxiety Disorders, 20,* 222-236.

Butzer, B., & Kuiper, N. A. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences, 41,* 167-176.

Calamari, J. E., Rector, N. A., Woodard, J. L., Cohen, R. J., & Chik, H. M. (2008). Anxiety sensitivity and obsessive compulsive disorder. *Assessment, 15,* 351-363.

Carleton, R. N., Norton, P. J., & Asmundson, G. J. G. (2007). Fearing the unknown: a short version of the intolerance of uncertainty scale. *Journal of Anxiety Disorders, 21*, 105–117.

Cattell, H. E. P. (1995). Some comments on a factor analysis of the 16PF and NEO Personality Inventory – Revised. *Psychological Reports, 77,* 1307-1311.

Cattell, R. B., Cattell, A. K., & Cattell, H. E. P. (1993). *16PF fifth edition questionnaire.* Champaign, IL: Institute for Personality and Ability Testing.

Chawla, N., & Ostafin, B. (2007). Experiential avoidance as a functional dimensional approach to psychopathology. *Journal of Clinical Psychology, 63,* 871-890.

Chioqueta, A. P., & Stiles, T. C. (2005). Personality traits and the development of depression, hopelessness, and suicide ideation. *Personality and Individual Differences, 38,* 1283-1291.

Chmielewski, M., & Watson, D. (2007, October). *Oddity: The third higher order factor of psychopathology*. Poster session presented at the annual meeting of the Society for Research in Psychopathology, Iowa City, IA.

Chmielewski, M., & Watson, D. (2009). What is being assessed and why it matters: The impact of transient error on trait research. *Journal of Personality and Social Psychology, 97,* 186-202.

Church, A. T. (1994). Relating the Tellegen and five-factor models of personality structure. *Journal of Personality and Social Psychology, 67,* 898-909.

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284-290.

Clara, I. P., Cox, B. J., & Enns, M. W. (2007). Assessing self-critical perfectionism in clinical depression. *Journal of Personality Assessment, 88,* 309-316.

Claridge, G., & Davis, C. (2001). What's the use of neuroticism? *Personality and Individual Differences, 31,* 383-400.

Clark, L. A. (1989). The anxiety and depressive disorders: Descriptive psychopathologyand differential diagnosis. In P. C. Kendall & D. Watson (Eds.), *Anxiety and depression: Distinctive and overlapping features* (pp 83-129). San Diego: Academic Press.

Clark, L. A. (1993). *The schedule for nonadaptive and adaptive personality: Manual for administration and scoring.* Minneapolis: University of Minnesota Press.

Clark, L. A., & Watson, D. (1990). *The General Temperament Survey.* Unpublished manuscript, University of Iowa, Iowa City.

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Evidence and taxonomic implications. *Journal of Abnormal Psychology, 100,* 316-336.

Clark, L. A., Vittengl, J., Kraft, D., & Jarrett, R. B. (2003). Separate personality traits from states to predict depression. *Journal of Personality Disorders, 17,* 152-172.

Clayton, P. J., Ernst, C., & Angst, J. (1994). Premorbid personality traits of men who develop unipolar or bipolar disorders. *European Archives of Psychiatry and Clinical Neuroscience, 243*, 340–346.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Collimore, K. C., McCabe, R. E., Carleton, R. N., & Asmundson, G. J. G. (2008). Media exposure and dimensions of anxiety sensitivity: Differential associations with PTSD symptom clusters. *Journal of Anxiety Disorders, 22,* 1021-1028.

Costa, P. T., Jr., Bagby, R. M., Herbst, J. H., & McCrae, R. R. (2005). Personality self-reports are concurrently reliable and valid during acute depressive episodes. *Journal of Affective Disorders, 89,* 45-55.

Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources, Inc.

Cox, B. J., Borger, S. C., Taylor, S., Fuentes, K., & Ross, L. M. (1999). Anxiety sensitivity and the five-factor model of personality. *Behaviour Research and Therapy, 37,* 633-641.

Cox, B. J., Clara, I. P. & Enns, M. W. (2002). Posttraumatic stress disorder and the structure ofcommon mental disorders. *Depression and Anxiety, 15*, 168–171.

Cox, B. J., Enns, M. W., Walker, J. R., Kjernisted, K., & Pidlubny, S. R. (2001). Psychological vulnerabilities in patients with major depression vs panic disorder. *Behaviour Research and Therapy, 39*, 567-573.

Cribb, G., Moulds, M. L., & Carter, S. (2006). Rumination and experiential avoidance in depression. *Behaviour Change, 23,* 165-176.

Cuijpers, P., van Stratenc, A., & Donkerc, M. (2005). Personality traits of patients with mood and anxiety disorders. *Psychiatry Research, 113,* 229-237.

De Bruin, G. O., Rassin, E., & Muris, P. (2007). The prediction of worry in non-clinical individuals: The role of intolerance of uncertainty, meta-worry, and neuroticism. *Journal of Psychopathology and Behavior Assessment, 29,* 93-100.

Detwiler, F. R. J., & Ramanaiah, N. V. (1996). Structure of the Jackson Personality Inventory from the perspective of the five-factor model. *Psychological Bulletin, 79,* 411-416.

DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology, 91,* 1138-1151.

DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology, 93,* 880-896.

Digman, J. M. (1997). Higher-order factors of the big five. *Journal of Personality and Social Psychology, 73*, 1246-1256.

Doster, J. A., Wilcox, S. E., Lambert, P. L., Rubino-Watkins, M. F., Goven, A. J., Moorefield, R., & Kofman, F. (2000). Stability and factor structure of the Jackson Personality Inventory – Revised. *Psychological Reports, 86,* 421-428.

Dugas, M. J., Gagnon, F., Ladouceur, R., & Freeston, H. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Therapy and Research, 36*, 215–226.

Dugas, M. J., Gosselin, P., & Ladouceur, R. (2001). Intolerance of uncertainty and worry: Investigating specificity in a nonclinical sample. *Cognitive Therapy and Research, 25,* 551–558.

Dugas, M. J., Marchand, A., & Ladouceur, R. (2005). Further validation of a cognitive-behavioral model of generalized anxiety disorder: Diagnostic and symptom specificity. *Journal of Anxiety Disorders, 19,* 329–343.

Dugas, M. J., Savard, P., Gaudet, A., Turcotte, J., Laugesen, N., Robichaud, M., Francis, K., & Koerner, N. (2007). Can the components of a cognitive model predict the severity of genearlized anxiety disorder? *Behavior Therapy, 38,* 169-178.

Duggan, C.F., Lee, A.S., & Murray, R.M. (1990). Does personality predict long-term outcome in depression? *British Journal of Psychiatry, 157*, 19–24.

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology, 84,* 234-252.

Elklit, A., & Shevlin, M. (2007). The structure of PTSD symptoms: A test of alternative models using confirmatory factor analysis. *British Journal of Clinical Psychology, 46,* 299-313.

Enns, M. W., & Cox, B. J. (1997). Personality dimensions and depression: Review and commentary. *The Canadian Journal of Psychiatry, 42,* 274-284.

Enns, M. W., & Cox, B. J. (1999). Perfectionism and depression symptom severity in major depressive disorder. *Behaviour Research and Therapy, 37,* 783-794.

Enns, M. W., & Cox, B. J. (2002).The nature and assessment of perfectionism: A critical analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, Research, and Treatment* (pp. 33-62). Washington, D. C.: American Psychological Association.

Enns, M. W., Cox, B. J., & Clara, I. P. (2005). Perfectionism and neuroticism: A longitudinal study of specific vulnerability and diathesis-stress models. *Cognitive Therapy and Research, 29,* 463-478.

Farach, F. J., Mennin, D. S., Smith, R. L., & Mandelbaum, M. (2008). The impact of pretrauma impact analogue GAD and posttraumatic emotional reactivity following exposure to the September 11 terrorist attacks: A longitudinal study. *Behavior Therapy, 39,*262-276.

Feldner, M. T., Zvolensky, M. J., Eifert, G. H., & Spira, A. P. (2003). Emotional avoidance: An experimental test of individual differences and response suppression using biological challenge. *Behavior Research and Therapy, 41*, 401– 411.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). *Structured Clinical Interview for DSM-IV Axis I Disorders—Patient Edition (SCID-I/P)*. New York: Biometrics Research, New York State Psychiatric Institute.

Foa, E. B., Huppert, J. D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G., & Salkovskis, P. M. (2002). The obsessive-compulsive inventory: Development and validation of a short version. *Psychological Assessment, 14,* 485-495.

Freeston, M. H., Rheaume, J., Letarte, H., Dugas, M. J., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences, 17*, 791–802.

Frost, R. O., & DiBartolo, P. M. (2002). Perfectionism, anxiety, and obsessive-compulsive disorder. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, Research, and Treatment* (pp. 341-371). Washington, D. C.: American Psychological Association.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 4,* 449-468.

Frost, R. O., & Steketee, G. (1997). Perfectionism in obsessive-compulsive disorder patients. *Behaviour Research and Therapy, 35,* 291-296.

Frost, R. O., Tolin, D. F., & Maltby, N. (2010). Insight-related challenges in the treatment of hoarding. *Cognitive and Behavioral Practice, 17,* 404-413.

Gamez, W. (2009). *Experiental avoidance: Associations with psychopathology and quality of life.* Unpublished doctoral dissertation, University of Iowa.

Gamez, W., Watson, D., & Doebbeling, B. N. (2007). Abnormal personality and the mood and anxiety disorders: Implications for structural models of anxiety and depression. *Journal of Anxiety Disorders, 21,* 526-539.

Gerbing, D. W., & Tuley, M. R. (1991). The 16PF related to the five-factor model of personality: Multiple-indicator measurement versus the a priori scales. *Multivariate Behavioral Research, 26,* 271-289.

Goldberg, L. R. (2008). The Eugene-Springfield community sample: Information available from the research participants. *Oregon Research Institute Technical Report, 48*(1).

Goldberg, L. R. (2009). *International Personality Item Pool: A Scientific Collaboratory for the Development of Advanced Measures of Personality Traits and Other Individual Differences*. Retrieved March 25, 2009, from http://ipip.ori.org/.

Gootzeit, J., & Watson, D. (2009). *Development and validation of the Iowa Traumatic Reponse Inventory.* Unpublished manuscript, University of Iowa.

Gootzeit, J. & Watson, D. (2009). *The Personal Experiences Questionnaire.* Unpublished traumatic events measure.

Gosselin, P., Ladouceur, R., Evers, A., Laverdière, A., Routhier, S., & Tremblay-Picard, M. (2008). Evaluation of intolerance of uncertainty: Development and validation of a new self-report measures. *Journal of Anxiety Disorders, 22,* 1427-1439.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 23*, 253–263.

Greenberg, P. E., Leong, S. A., Birnbaum, H. G., & Robinson, R. L. (2003). The economic burden of depression with painful symptoms. *Journal of Clinical Psychiatry, 64*, 17-23.

Greenberg, P. E., Sisitsky, T., Kessler, R. C., Finkelstein, S. N., Berndt, E. R., Davidson, J. R. T., Ballenger, J. C., & Fyer, A. J. (1999). The economic burden of anxiety disorders in the 1990s. *Journal of Clinical Psychiatry, 60*, 427-435.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* New York: Guilford Press.

Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., Polusny, M. A., Dykstra, T. A., Batten, S. V., Bergan, J., Stewart, S. H., Zvolensky, M. J., Eifert, G. H., Bond, F. W., Forsyth, J. P., Karekla, M., & McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*, 1152–1168.

Harkness, K. L., Bagby, R. M., Joffe, R. T., & Levitt, A. (2002). Major depression, chronic minor depression, and the five-factor model of personality. *European Journal of Personality, 16,* 271-281.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment and association with psychopathology. *Journal of Personality and Social Psychology, 60,* 456-470.

Hill, R. W., McIntire, K., & Bacharach, V. R. (1997). Perfectionism and the big five factors. *Journal of Social Behavior and Personality, 12,* 257-270.

Hirschfield, R. M. A., Klerman, G. L., Gough, H. G, Barrett, J., Korchin, S. J., & Chodoff, P. (1977). A measure of interpersonal dependency, *Journal of Personality Assessment, 41,* 610-618.

Hofstee, W. K. B., de Raad, B., & Goldberg, L. R. (1992). Integration of the big five and circumplex approaches to trait structure. *Journal of Personality and Social Psychology, 63,* 146-163.

Hogan, R., & Hogan, J. (1995). *Hogan personality inventory manual: Second edition.*Tulsa, OK: Hogan Assessment Systems.

Hogan, R., & Hogan, J. (2002). The Hogan Personality Inventory. In B. de Raad & M. Perugini (Eds.), *Big five assessment* (pp. 329-351). Kirkland, Washington: Hogrefe & Huber.

Holaway, R. M., Heimberg, R. G., & Coles, M. E. (2006). A comparison of intolerance of uncertainty in analogue obsessive-compulsive disorder and generalized anxiety disorder. *Journal of Anxiety Disorders, 20*, 158–174.

Hopwood, C., & Donnellan, B. (2010). How should the internal structure of personality inventories be evaluated? *Personality and Social Psychology Review, 14,* 332-346.

Hu, L., & Bentler, P. M. (1999).Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1-55.

Izard, C. E., Libero, D. Z., Putnam, P., & Haynes, O. M. (1993). Stability of emotion experiences and their relations to traits of personality. *Journal of Personality and Social Psychology, 64,* 847–860.

Jackson, D. L. (2001). Sample size and number of parameter estimates in maximum likelihood confirmatory factor analysis: A monte carlo investigation. *Structural Equation Modeling: A Multidisciplinary Journal, 8*, 205-223.

Jackson, D. N. (1994). *Jackson personality inventory – revised manual.* Port Huron, MI: Research Psychologists Press.

Jackson, D. N., Ashton, M. C., & Tomes, J. L. (1996). The six-factor model of personality: Facets from the big five. *Personality and Individual Differences, 21,* 391-402.

Jackson, D. N., Paunonen, S. V., Fraboni, M., & Goffin, R. D. (1996). A five-factor versus six-factor model of personality structure. *Personality and Individual Differences, 20,* 33-45.

Jackson, D. N., Paunonen, S. V., & Tremblay, P. F. (2000). *Six factor personality questionnaire manual*. Port Huron, MI: Sigma Assessment Systems.

Jackson, D. N., & Tremblay, P. F. (2002). The Six Factor Personality Questionnaire. In B. de Raad & M. Perugini (Eds.), *Big five assessment* (pp. 353-375). Kirkland, Washington: Hogrefe & Huber.

Jang, K. L., Livesley, W. J., Angleitner, A., Riemann, R., & Vernon, P. A. (2002). Genetic and environmental influences on the covariance of facets defining the domains of the five-factor model of personality. *Personality and Individual Differences, 33,* 83-101.

Jang, K. L., Livesley, W. J., Riemann, R., Vernon, P. A., Hu, S., Angleitner, A., Ando, J., Ono, Y., & Hamer, D. H. (2001). Covariance structure of neuroticism and agreeableness: A twin and molecular genetic analysis of the role of the serotonin transporter gene. *Journal of Personality and Social Psychology, 81,* 295–304.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114-158). New York: The Guilford Press.

John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102-138). New York: The Guilford Press.

Johnson, J. A. (1994). Clarification of factor five with the help of the AB5C model. *European Journal of Personality, 8,* 311-334.

Johnson, J. A. (2000). Predicting observers' ratings of the big five from the CPI, HPI, and NEO PI-R: A comparative validity study. *European Journal of Personality, 14,* 1-19.

Johnson, J. A., & Ostendorf, F. (1993). Clarification of the five-factor model with the abridged big five dimensional circumplex. *Journal of Personality and Social Psychology, 65,* 563-576.

Joiner, T. E., Jr. (1996). A confirmatory factor-analytic investigation of the tripartite model of depression and anxiety in college students. *Cognitive Therapy and Research, 20,* 521-539.

Juster, H. R., Heimberg, R. G., Frost, R. O., Holt, C. S., Mattia, J. I., & Faccenda, K. (1996). Social phobia and perfectionism. *Personality and Individual Differences, 21,* 403-410.

Karekla, M., Forsyth, J. P., & Kelly, M. M. (2004). Emotional avoidance and panicogenic responding to a biological challenge procedure. *Behavior Therapy, 35*, 725–46.

Kawamura, K. Y., Hunt, H. L., Frost, R. O., & DiBartolo, P. M. (2001). Perfectionism, anxiety, and depression: Are the relationships independent? *Cognitive Therapy and Research, 25,* 291-301.

Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1993). A longitudinal twin study of personality and major depression in women. *Archives of General Psychiatry, 50,* 853-862.

Kendler, K. S., Prescott, C. A., Myers, J. & Neale, M. C. (2003). The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. *Archives of General Psychiatry, 60*, 929–937.

Kessler, R. C. (1995). Epidemiology of psychiatric comorbidity. In M. T. Tsuang, M. Tohen, & G. E. P. Zahner (Eds.), *Textbook in psychiatric epidemiology* (pp. 179-197). New York: Wiley.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of *DSM-IV* disorders in the National Comorbiditiy Survey Replication. *Archives of General Psychiatry, 62,* 593-602.

Kessler R. C., Nelson, C. B., McGonagle, K. A., Liu, J., Swartz, M., & Blazer, D.G. (1996). Comorbidity of DSM-III-R major depressive disorder in the general population: Results from the US National Comorbidity Survey. *British Journal of Psychiatry,168*(Suppl. 30),17-30.

Khawaja, N. G., & Chapman, D. (2007). Cognitive predictors of worry in a non-clinical population. *Clinical Psychologist, 11,* 24-32.

King, D., Leskin, G., King, L., & Weathers, F. (1998). Confirmatory factor analysis of the clinician administered PTSD Scale: Evidence for the dimensionality of posttraumatic stress disorder. *Psychological Assessment, 10,* 90–96.

Kotov, R. I. (2006). *Extension of the hierarchical model of anxiety and depression to the personality domain.* Doctoral dissertation, University of Iowa.

Kotov, R., Gamez, W., Schmidt, F. L., & Watson, D. (2010). Linking "big" personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. *Psychological Bulletin, 136,* 768-821.

Kotov, R., Watson, D., Robles, J. P., & Schmidt, N. B. (2007). Personality traits and anxiety symptoms: The multilevel trait predictor model. *Behaviour Research and Therapy, 45,* 1485-1503.

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16,* 606-613.

Krueger, R. F. (1999). The structure of common mental disorders. *Archives of General Psychiatry, 56*, 921–926.

Krueger, R. F., Caspi, A., Moffitt, T. E., Silva, P. A., & McGee, R. (1996). Personality traits are differentially linked to mental disorders: A multitrait-multidiagnosis study of an adolescent birth cohort. *Journal of Abnormal Psychology, 105,* 299-312.

Krueger, R. F., & Markon, K. E. (2006). Reinterpreting comorbidity: A model-based approach to understanding and classifying psychopathology. *Annunal Review of Clinical Psychology, 2,* 11-33.

Krueger, R. F., McGue, M., & Iacono, W. G. (2001). The higher order structure of common DSM mental disorders: Internalization, externalization, and their connections to personality. *Personality and Individual Differences, 30,* 1245-1259.

Ladouceur, R., Dugas, M. J., Freeston, M. H., Rhéaume, J., Blais, F., Boisvert, J.-M., Gagnon, F., & Thibodeau, N. (1999). Specificity of generalized anxiety disorder symptoms and processes. *Behavior Therapy, 30,* 191–207.

Lee, K., & Ashton, A. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research, 39,* 329-358.

Lee, K., Ogunfowora, B., & Ashton, A. C. (2005). Personality traits beyond the big five: Are they within the HEXACO space? *Journal of Personality, 73,* 1437-1463.

Lilienfeld, S. O. (1997). The relation of anxiety sensitivity to higher and lower order personality dimensions: Implications for the etiology of panic attacks. *Journal of Abnormal Psychology, 106,* 539-544.

Lilienfeld, S. O. (1999). Anxiety sensitivity and the structure of personality. In S. Taylor (Ed.), *Anxiety Sensitivity: Theory, Research, and Treatment of the Fear of Anxiety* (pp. 149-182). New Jersey: Lawrence Erlbaum Associates, Inc.

Lilienfeld, S. O., & Penna, S. (2001). Anxiety sensitivity: Relations to psychopathy, DSM-IV personality disorder features, and personality traits. *Journal of Anxiety Disorders, 15,* 367-393.

Longley, S. L., Watson, D., & Noyes, R., Jr., & Yoder, K. (2006). Panic and phobic anxiety: Associations with neuroticism, physiological hyperarousal, anxiety sensitivity, and three phobias. *Journal of Anxiety Disorders, 20*, 718–739.

Lundh, L.-G., & Ost, L.-G. (1996). Stroop interference, self-focus and perfectionism in social phobics. *Personality and Individual Differences, 20,* 725-731.

Mataix-Cols, D., Rosarios-Campos, M. C., & Leckman, J. F. (2005). A multidimensional model of obsessive-compulsive disorder. *American Journal of Psychiatry, 162,* 228-238.

Malouff, J. M., Thorsteinsson, E. B., & Schutte, N. S. (2005). The relationship between the five-factor model of personality and symptoms of clinical disorders: A meta-analysis. *Journal of Psychopathology and Behavioural Assessment, 27,* 101-114.

Markon, K. E., Krueger, R. F., & Watson, D. (2005). Delineating the structure of normal and abnormal personality: An integrative hierarchical approach. *Journal of Personality and Social Psychology, 88*, 139-157.

Marks, I. M., & Mathews, A. M. (1979). Brief standard self-rating for phobic patients. *Behaviour Research and Therapy, 23,* 563-569.

Marsh, H.W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11,* 320-341.

Marshall, G. N., Schell, T. L., & Miles, J. N. V. (2010). All PTSD symptoms are highly associated with general distress: Ramifications for the dysphoria symptom cluster. *Journal of Abnormal Psychology, 119,* 126-135.

Marx, B. P., & Sloan, D. M. (2002). The role of emotion in the psychological functioning of adult survivors of childhood sexual abuse. *Behavior Therapy, 33,* 563–577.

Marx, B. P., & Sloan, D. M. (2005). Peritraumatic dissociation and experiental avoidance as predictors of posttraumatic stress symptomatology. *Behaviour Research and Therapy, 43,* 569-583.

McNair, D. M., Lorr, M., & Droppelman, L. F. (1971). *Manual for the Profile of Mood States*. San Diego, CA: Educational and Industrial Testing Service.

McNally, R. J. (1999). Theoretical approaches to the fear of anxiety. In S. Taylor (Ed.), *Anxiety Sensitivity: Theory, Research, and Treatment of the Fear of Anxiety* (pp. 3-16). Hillsdale, NJ: Erlbaum.

Miller, M. W., Fogler, J. M., Wolf, E. J., Kaloupek, D. G., & Keane, T. M. (2008). The internalizing and externalizing structure of psychiatric comorbidity in combat veterans. *Journal of Traumatic Stress, 21,* 58-65.

Minarik, M. L., & Ahrens, A. H. (1996). Relations of eating behavior and symptoms of depression and anxiety to the dimensions of perfectionism among undergraduate women. *Cognitive Therapy and Research, 20,* 155-169.

Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar mood disorders. *Annual Review of Psychology, 49,* 377-412.

Miranda, R., Fontes, M., & Marroquin, B. (2008). Cognitive content-specificity in future expectancies: Role of hopelessness and intolerance of uncertainty in depression and GAD symptoms. *Behaviour Research and Therapy, 46,* 1151-1159.

Morey, L. C., Warner, M. B., Shea, M. T., Gunderson, J. G., Sanislow, C. A., Grilo, C., Skodol, A. E., & McGlashen, T. H. (2003). The representation of four personality disorders by the Schedule for Nonadapative and Adaptive Personality dimensional model. *Psychological Assessment, 15*, 326-332.

Morgan, T. A., & Clark, L. A. (2010). Passive-submissive and active-emotional trait dependency: Evidence for a two-factor model. *Journal of Personality, 78,* 1325-1352.

Morina, N., Stangier, U., & Risch, A. K. (2008). Experiential avoidance in civilian war survivors with current versus recovered posttraumatic stress disorder: A pilot study. *Behaviour Change, 25,* 15-22.

Muthén, L.K. and Muthén, B.O. (1998-2010). *Mplus User's Guide*.(6th ed.). Los Angeles, CA: Muthén & Muthén.

Naragon-Gainey, K. (2010). Meta-analysis of the relations of anxiety sensitivity to the depressive and anxiety disorders. *Psychological Bulletin, 136,* 128-150.

Naragon-Gainey, K., Watson, D., & Markon, K. E. (2009). Differential Relations of Depression and Social Anxiety Symptoms to the Facets of Extraversion/Positive Emotionality. *Journal of Abnormal Psychology, 118,* 299-310.

Newman, M. G., Zuellig, A. R., Kachin, K. E., Constantino, M. J., Przeworski, A., Erickson, T., Cashman-McGrath, L. (2002). Preliminary reliability and validity of the GAD-Q-IV: A revised self-report diagnostic measure of generalized anxiety disorder. *Behavior Therapy, 33,* 215-233.

Norton, P. J. (2006). Diagnostic measures and underlying anxiety constructs: An analysis of correspondence. *Anxiety, Stress, and Coping, 19,* 227-239.

Norton, G. R., Buhr, K., Cox, B. J., Norton, P. J., & Walker, J. R. (2000). The role of depressive versus anxiety-related cognitive factors in social anxiety. *Personality and Individual Differences, 28,* 309-314.

Norton, G. R., Cox, B. J., Hewitt, P. L., & McLeod, L. (1997). Personality factors associated with generalized and non-generalized social anxiety. *Personality and Individual Differences, 22,* 655-660.

Norton, P. J., & Mehta, P. D. (2007). Hierarchical model of vulnerabilities for emotional disorders. *Cognitive Behaviour Therapy, 36,* 240-254.

Norton, P. J., Sexton, K. A., Walker, J. R., & Norton, G. R. (2005). Hierarchical model of vulnerabilities for anxiety: Replication and extension with a clinical sample. *Cognitive Behaviour Therapy, 34,* 50-63.

Nuevo, R., Losada, A., Marquez-Gonzalez, M., & Penacoba, C. (2009). Confirmatory factor analysis of the long and short forms of the Worry Domains Questionnaire. *European Journal of Psychological Assessment, 25,* 239-243.

Obsessive Compulsive Cognitions Working Group (OCCWG). (1997). Cognitive assessment of obsessive-compulsive disorder. *Behaviour Research and Therapy, 35*, 667–681.

Oei, T. P. S., Moylan, A., & Evans, L. (1991). Validity and clinical utility of the Fear Questionnaire for anxiety-disorder patients. *Psychological Assessment, 3,* 391-397.

Oltmanns, T. F., & Turkheimer, E. (2006). Perceptions of self and others regarding pathological personality traits. In R. F. Krueger & J. L. Tackett (Eds.), *Personality and Psychopathology* (pp. 71-111). New York: The Guilford Press.

O'Connor, B. P. (2002). The search for dimensional structure differences between normality and abnormality: a statistical review of published data on personality and psychopathology. Journal of Personality and Social Psychology, 83, 962-982.

Palmieri, P. A., Weathers, F. W., Difede, J., & King, D. W. (2007). Confirmatory factor analysis of the PTSD Checklist and the Clinician-Administered PTSD Scale in disaster workers exposed to the World Trade Center Ground Zero. *Journal of Abnormal Psychology, 116,* 329–341.

Parker, W. D., & Stumpf, H. (1995). An examination of the Multidimensional Perfectionism Scale with a sample of academically talented children. Jouranl of Psychoeducational Assessment, 13, 372-383.

Patrick, C. J., Curtin, J. J., & Tellegen, A. (2002). Development and validation of a brief form of the Multidimensional Personality Questionnaire. *Psychological Assessment, 14*(2), 150–163.

Paunonen, S. V. (1998). Hierarchical organization of personality and prediction of behavior. *Journal of Personality and Social Psychology, 74,* 538-556.

Paunonen, S. V., & Jackson, D. N. (1996). The Jackson Personality Inventory and the five-factor model of personality. *Journal of Research in Personality, 30,* 42-59.

Peterson, R. A., & Reiss, S. (1992). *Anxiety Sensitivity Index Revised Manual.* Worthington, OH: International Diagnostic Systems Publishing Corporation.

Pincus, A. L., & Gurtman, M. B. (1995). The three faces of interpersonal dependency: Structural analyses of self-report dependency measures. *Journal of Personality and Social Psychology, 69,* 744-758.

Pincus, A. L. & Wilson, K. R. (2001). Interpersonal variability in dependent personality. *Journal of Personality, 69,* 223-251.

Plumb, J. C., Orsillo, S. M., & Luterek, J. A. (2004). A preliminary test of the role of experiential avoidance in post-event functioning. *Journal of Behavior Therapy and Experimental Psychiatry, 35,* 245–257.

Polusny, M. A., Rosenthal., M. Z., Aban, I., & Follette, V. M. (2004). Experiential avoidance as a mediator of the effects of adolescent sexual victimization on negative adult outcomes. *Violence and Victims, 19*, 109–120.

Powers, T. A., Zuroff, D. C., & Topciu, R. A. (2004). Covert and overt expressions of self-criticism and perfectionism and their relation to depression. *European Journal of Personality, 18,* 61-72.

Radloff, L. (1977). A self-report depression scale for research in the general population. *Applied Psychological Measurements, 1*, 385-401.

Rapee, R. M., Craske, M. G., & Barlow, D. H. (1994/1995). Assessment instrument for panic disorder that includes fear of sensation-producing activities: The Albany Panic and Phobia Questionnaire. *Anxiety, 1,* 114–122.

Reardon, J. M., & Williams, N. L. (2007). The specificity of cognitive vulnerabilities to emotional disorders: Anxiety sensitivity, looming vulnerability and explanatory style. *Journal of Anxiety Disorders, 21,* 625-643.

Rector, N. A., Hood, K., Richter, M. A., & Bagby, R. M. (2002). Obsessive-compulsive disorder and the five-factor model of personality: Distinction and overlap with major depressive disorder. *Behaviour Research and Therapy, 40,* 1205-1219.

Rees, C. S., Anderson, R. A., & Egan, S. J. (2005). Applying the five-factor model of personality to the exploration of the construct of risk-taking in obsessive-compulsive disorder. *Behavioural and Cognitive Psychotherapy, 34,* 31-42.

Reilly, T., & O'Brien, R. M. (1996). Identification of confirmatory factor analysis models of arbitrary complexity: The side-by-side rule. *Sociological Methods and Research, 24,* 473-491.

Reiss, S., & McNally, R. (1985). Expectancy model of fear. In S. Reiss & R. R. Bootzin (Eds.), *Theoretical issues in behavior therapy* (pp. 107-121). New York: Academic Press.

Reynolds, S. K., & Clark, L. A. (2001). Predicting dimensions of personality disorder from domains and facets of the five-factor model. *Journal of Personality, 69,* 199-222.

Rheaume, J., Freeston, M. H., Dugas, M. J., Letarte, H., & Ladouceur, R. (1995). Perfectionism, responsibility and obsessive-compulsive symptoms. *Behaviour Research and Therapy, 33,* 785-794.

Rice, K. G., Ashby, J. S., & Slaney, R. B. (2007). Perfectionism and the five-factor model of personality. *Assessment, 14*, 385-398.

Rice, K. G., & Pence Jr., S. L. (2006). Perfectionism and obsessive-compulsive symptoms. *Journal of Psychopathology and Behavioral Assessment, 28,* 103-111.

Roberts, B. W., Chernyshenko, O. S., Stark, S., & Goldberg, L. R. (2005). The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires. *Personnel Psychology, 58,* 103-139.

Rodriguez, B. F., Bruce, S. E., Pagano, M. E., Spencer, M. A., & Keller, M. B. (2004). Factor structure and stability of the Anxiety Sensitivity Index in a longitudinal study of anxiety disorder patients. *Behaviour Research and Therapy, 42,* 79-91.

Roemer, L., Salters, K., Raffa, S. D., & Orsillo, S.M. (2005). Fear and avoidance of internal experiences in GAD: Preliminary tests of a conceptual model. *Cognitive Therapy and Research, 29,* 71–88.

Rosser, S., Issakidis, C., & Peters, L. (2003). Perfectionism and social phobia: Relationship between the constructs and impact on cognitive behavior therapy. *Cognitive Therapy and Research, 27,* 143-151.

Rossier, J., de Stadelhofen, F. M., & Berthoud, S. (2004). The hierarchical structures of the NEO PI-R and the 16 PF 5. *European Journal of Psychological Assessment, 20,* 27-38.

Saboonchi, F., & Lundh, L.-G. (1997). Perfectionism, self-consciousness and anxiety. *Personality and Individual Differences, 22*, 921-928.

Saboonchi, F., Lundh, L.-G., & Ost, L.-G. (1999). Perfectionism and self-consciousness in social phobia and panic disorder with agoraphobia. *Behaviour Research and Therapy, 37,* 799-808.

Salters-Pedneault, K., Tull, M.T., & Roemer, L. (2004). The role of avoidance of emotional material in the anxiety disorders. *Applied and Preventive Psychology, 11*, 95–114.

Samuels, J., Nestadt, G., Bienvenu, O. J., Costa, P. T., Riddle, M. A., Liang, K.-Y., Hoehn-Saric, R., Grados, M. A., & Cullen, B. A. M. (2000). Personality disorders and normal personality dimensions in obsessive-compulsive disorder. *British Journal of Psychiatry, 177,* 457-462.

Santanello, A. W., & Gardner, F. L. (2007). The role of experiential avoidance in the relationship between maladaptive perfectionism and worry. *Cognitive Therapy and Research, 30,* 319-332.

Santor, D. A., Bagby, R. M., & Joffe, R. T. (1997). Evaluating stability and change in personality and depression. *Journal of Personality & Social Psychology, 73*, 1354-1362.

Sassaroli, S., Romero Lauro, L. J., Ruggiero, G. M., Mauri, M. C., Vinai, P., & Frost, R. (2008). Perfectionism in depression, obsessive-compulsive disorder, and eating disorders. *Behaviour Research and Therapy, 46,* 757-765.

Sellbom, M., Ben-Porath, Y. S., & Bagby, R. M. (2008). On the hierarchical structure of mood and anxiety disorders: Confirmatory evidence and elaboration of a model of temperament markers. *Journal of Abnormal Psychology, 117,* 576-590.

Sexton, K. A., Norton, P. J., Walker, J. R., & Norton, G. R. (2003). A hierarchical model of generalized and specific vulnerabilities in anxiety. *Cognitive Behaviour Therapy, 32*, 1–13.

Shahar, G., & Gilboa-Shechtman, E. (2007). Depressive personality styles and social anxiety in young adults. *Journal of Cognitive Psychotherapy: An International Quarterly, 21,* 275-284.

Sica, C., Coradeschi, D., Sanavio, E., Dorz, S., Marchisi, D., & Novara, C. (2004). A study of the psychometric properties of the Obsessive Beliefs Inventory and Interpretations of Instrusions Inventory on clinical Italian individuals. *Journal of Anxiety Disorders, 18,* 291-307.

Simms, E. E. (2009). *Assessment of the facets of the five factor model: Further development and validation of a new personality measure*. Unpublished doctoral dissertation, University of Iowa.

Simms, L. J., Watson, D., & Doebbeling, B. N. (2002). Confirmatory factor analyses of posttraumatic stress symptoms in deployed and nondeployed veterans of the Gulf war. *Journal of Abnormal Psychology, 111,* 637–647.

Slade, T., & Watson, D. (2006). The structure of common *DSM-IV* and ICD-10 mental disorders in the Australian general population. *Psychological Medicine, 36,* 1593-1600.

Smith, J. K. (2007). *Issues in PTSD Assessment: Exploring intolerance of uncertainty and field dependence among PTSD veterans.* Unpublished doctoral dissertation, Long Island University.

Spira, A. P., Zvolensky, M. J., Eifert, G. H., & Feldner, M. T. (2004). Avoidance-oriented coping as a predictor of anxiety-based physical stress: A test using biological challenge. *Journal of Anxiety Disorders, 18,* 309–323.

Spitzer, R. L., Williams, J. B. W., & Kroneke, K. (2009). *Instruction Manual: Instructions for Patient Health Questionnaire (PHQ) and GAD-7 Measures.* Retrieved March 25, 2009, from http://www.phqscreeners.com/instructions/instructions.pdf.

Steketee, G., Frost, R. O., & Cohen, I. (1998). Beliefs in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 12*, 525–537.

Stöber, J., & Joormann, J. (2001a).Worry, procrastination, and perfectionism: Differentiating amount of worry, pathological worry, anxiety, and depression. *Cognitive Therapy and Research, 25,* 49–60.

Stöber, J., & Joormann, J. (2001b). A short form of the Worry Domains Questionnaire: Construction and factorial validation. *Personality and Individual Differences, 31,* 591-598.

Suzuki, T. (2005). Relationship between two aspects of perfectionism and obsessive-compulsive symptoms. *Psychological Reports, 96,* 299-305.

Tackett, J. L., Quilty, L. C., Sellbom, M., Rector, N., & Bagby, R. M. (2008). Additional evidence for a quantitative hierarchical model of mood and anxiety disorders for DSM-V: The context of personality structure. *Journal of Abnormal Psychology, 117*, 812-825.

Tallis, F., Eynsenck, M. W., & Mathews, A. (1992). A questionnaire for the measurement of nonpathological worry. *Personality and Individual Differences, 13,* 161-168.

Taylor, S. (1998). The hierarchic structure of fears. *Behaviour Research and Therapy, 36,* 205-214.

Taylor, S., Zvolensky, M. J., Cox, B. J., Deacon, B., Heimberg, R. G., Ledley, D. R., Abramowitz, J. S., Holaway, R. M., Sandin, B., Stewart, S. H., Coles, M., Eng, W., Daly, E. S., Arrindell, W. A., Bouvard, M., & Cardenas, S. J. (2007). Robust dimensions of anxiety sensitivity: Development and initial validation of the Anxiety Sensitivity Index – 3. *Psychological Assessment, 19,* 176-188.

Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and the anxiety disorders* (pp. 681-706). Hillsdale, NJ: Erlbaum.

Tellegen, A. (in press). *MPQ (Multidimensional Personality Questionnaire): Manual for administration, scoring, and interpretation.* Minneapolis, MN: University of Minnesota Press.

Tellegen, A., & Waller, N. G. (2008). Exploring personality through test construction: Development of the Multidimensional Personality Questionnaire. In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.), *The SAGE handbook of personality theory and assessment, Vol. 2: Personality measurement and testing* (pp. 261-292). Thousand Oaks, CA: Sage Publications, Inc.

Tolin, D. F., Abramowitz, J. S., Brigidi, B. D., & Foa, E. B. (2003). Intolerance of uncertainty in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 17*, 233–242.

Trull, T. J., & Sher, K. J. (1994). Relationship between the five-factor model of personality and Axis I disorders in a nonclinical sample. *Journal of Abnormal Psychology, 103,* 350-360.

Tull, M. T., & Gratz, K. L. (2008). Further examination of the relationship between anxiety sensitivity and depression: The mediating role of experiential avoidance and difficulties engaging in goal-directed behavior when distressed. *Journal of Anxiety Disorders, 22,* 199-210.

Tull, M. T., Gratz, K. L., Salters, K., & Roemer, L. (2004). The role of experiential avoidance in posttraumatic stress symptoms and symptoms of depression, anxiety, and somatization. *Journal of Nervous and Mental Disease, 192*, 754–761.

Tull, M. T., & Roemer, L. (2003). Alternative explanations of emotional numbing of posttraumatic stress disorder: An examination of hyperarousal and experiential avoidance. *Journal of Psychopathology* & *Behavioral Assessment*, *25*, 147–154.

Tull, M. T., & Roemer, L. (2007). Emotion regulation difficulties associated with the experience of uncued panic attacks: evidence of experiential avoidance, emotional non-acceptance, and decreased emotional clarity. *Behavior Therapy, 38*, 378–391.

Uliaszek, A. A., Hauner, K. K. Y., Zinbarg, R. E., Craske, M. G., Mineka, S., Griffith, J. W., & Rose, R. D. (2009). An examination of content overlap with disorder-specific predictions in the associations of neuroticism with anxiety and depression. *Journal of Research in Personality, 43,* 785-794.

Ventura, J., Liberman, R., Green, M., Shaner, A., & Mintz, J. (1998). Training and quality assurance with the Structured Clinical Interview for DSM-IV (SCID-I/P). *Psychiatry Research, 79*, 163–173.

Vollebergh, W. A., Iedema, J., Bijl, R. V., de Graaf, R., Smit, F. & Ormel, J. (2001). The structure and stability of common mental disorders : the NEMESIS study. *Archives of General Psychiatry, 58,* 597–603.

Vunjanovic, A. A., Zvolensky, M. J., & Bernstein, A. (2008). Incremental associations between facets of anxiety sensitivity and posttraumatic stress and panic symptoms among trauma-exposed adults. *Cognitive Behaviour Therapy, 37,* 76-89.

Watson, D. (2000). *Mood and temperament.* New York: Guilford Press.

Watson, D. (2000). *Panic Attack Symptoms Questionnaire*. Unpublished physiological hyperarousal measure.

Watson, D. (2005). Rethinking the mood and anxiety disorders: A quantitative hierarchical model for *DSM-V*. *Journal of Abnormal Psychology, 114,* 522-536.

Watson, D. (2009a). Differentiating the mood and anxiety disorders: A quadripartite model. *Annual Review of Clinical Psychology, 5,* 221-247.

Watson, D. (2009b). *The IDAS-2: Expanded Assessment of Anxiety Symptoms*. Manuscript in preparation.

Watson, D., & Clark, L. A. (1991). *The Mood Anxiety and Symptom Questionnaire.* Unpublished manuscript, Iowa City: University of Iowa.

Watson, D., & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60,* 441-476.

Watson, D., & Clark, L. A. (1993). Behavioral disinhibition versus constraint: A dispositional perspective. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 506-527). New York: Prentice-Hall.

Watson, D., & Clark, L.A. (1999). *The PANAS-X: Manual for the Positive and Negative Affect Schedule- Expanded Form.* Unpublished manuscript, University of Iowa, Iowa City, IA.

Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97*, 346-353.

Watson, D., Clark, L. A., & Harkness, A. R. (1994). Structures of personality and their relevance to psychopathology. *Journal of Abnormal Psychology, 103,* 18-31.

Watson, D., Clark, L. A., Weber, K., Assenheimer, J. S., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: II. Exploring the symptom structure of anxiety and depression in student, adult, and patient samples. *Journal of Abnormal Psychology, 104,* 15-25.

Watson, D., Gamez, W., & Simms, L. J. (2005). Basic dimensions of temperament and their relation to anxiety and depression: A symptom-based perspective. *Journal of Research in Personality, 39*, 46-66.

Watson, D., Kotov, R., & Gamez, W. (2006). Basic dimensions of temperament in relation to personality and psychopathology. In R. F. Krueger & J. L. Tackett (Eds.), *Personality and psychopathology* (pp. 7-38). New York: Guilford Press.

Watson, D., O'Hara, M. W., Chmielewski, M., McDade-Montez, E. A., Koffel, E., Naragon, K., & Stuart, S. (2008). Further validation of the IDAS: Evidence of convergent, discriminant, criterion, and incremental validity. *Psychological Assessment, 20,* 248-259.

Watson, D., O'Hara, M. W., Simms, L. J., Kotov, R., Chmielewski, M., McDade-Montez, E., Gamez, W., & Stuart, S. (2007). Development and validation of the Inventory of Depression and Anxiety Symptoms (IDAS). *Psychological Assessment, 19,* 253-268.

Watson, D., Weber, K., Assenheimer, J. S., Clark, L. A., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model. I. Evaluating the convergent and discriminant validity of anxiety and depression symptom scales. *Journal of Abnormal Psychology, 104,* 3–14.

Watson, D., & Wu, K. D. (2005). Development and validation of the Schedule of Compulsions, Obsessions, and Pathological Impulses (SCOPI). *Assessment, 12,* 50-65.

Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility.* Paper presented at the annual meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

Wegner, D. M., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality, 62*, 615-635.

Weinstock, L. M., & Whisman, M. A. (2006). Neuroticism as a common feature of the depressive and anxiety disorders: A test of the revised integrative hierarchical model in a national sample. *Journal of Abnormal Psychology, 115,* 68-74.

Woodworth, R. S. (1920). *The personal data sheet.* Chicago: Stoelting.

Wu, K. D., Clark, L. A., & Watson, D. (2006). Relations between obsessive-compulsive disorder and personality: Beyond Axis I-Axis II comorbidity. *Journal of Anxiety Disorders, 20,* 695-717.

Yorulmaz, O., Kuranci, A. N., & Tekok-Kilic, A. (2006). What are the roles of perfectionism and responsibility in checking and cleaning compulsions? *Journal of Anxiety Disorders, 20,* 321-327.

Yu, C.Y. (2002). *Evaluating cutoff criteria of model fit indices for latent variable models with binary and continuous outcomes.* Doctoral dissertation, University of California, Los Angeles.

Zimmerman, M. (2009). *Outcome Tracker: A Web-Based System to Monitor Depression and Anxiety.* Retrieved March 25, 2009, from http://www.outcometracker.org/library/FQ.pdf.

Zinbarg, R. E., & Barlow, D. H. (1996). Structure of anxiety and the anxiety disorders: A hierarchical model. *Journal of Abnormal Psychology, 105,* 181–193.

Zinbarg, R. E., Barlow, D. H., & Brown, T. A. (1997). Hierarchical structure and general factor saturation of the Anxiety Sensitivity Index: Evidence and implications. *Psychological Assessment, 9,* 277-284.

Zinbarg, R. E., Mohlman, J., & Hong, N. M. (1999). Dimensions of anxiety sensitivity. In S. Taylor (Ed.), *Anxiety Sensitivity: Theory, Research, and Treatment of the Fear of Anxiety* (pp. 83-114). New Jersey: Lawrence Erlbaum Associates, Inc.

Zuckerman, M., & Lubin, B. (1985). *Manual for the Multiple Affect Adjective Checklist Revised*. San Diego, CA: Educational and Industrial Testing Services.

APPENDIX A

TABLES

Table A1. Hypothesized Markers for Each N/NE Facet in the Eugene-Springfield Dataset

Facet	Markers (year of completion in the study)
Stress Vulnerability	16PF Emotional Stability (1996); AB5C-IPIP Stability (unknown); HPI Calmness (1997); MPQ Stress Reaction (1999); NEO PI-R Vulnerability (1994)
Anxiety	16PF Apprehension (1996); HEXACO Anxiety (2003); HEXACO Fearfulness (2003); HPI Not Anxious (1997); JPI-R Anxiety (1999); NEO PI-R Anxiety (1994)
Sadness	AB5C-IPIP Happiness (unknown); HPI No Depression (1997); HPI Self-Confidence (1997); PANAS-X Sadness* (unknown); NEO PI-R Depression (1994)
Hostility	16PF Tension (1996); AB5C-IPIP Calmness (unknown); HPI Even-Tempered (1997); MPQ Aggression (1999); NEO PI-R Angry Hostility (1994)
Mistrust	16PF Vigilance (1996); HPI Trusting (1997); MPQ Alienation (1999); NEO PI-R Trust (1994)
Approval-Seeking	6FPQ Individualism (1999); 6FPQ Self-Reliance (1999); HEXACO Dependence (2003); JPI-R Cooperativeness (1999)
Empathy	AB5C-IPIP Empathy (unknown); HEXACO Sentimentality (2003); JPI-R Empathy (1999); NEO PI-R Tender-Mindedness (1994)
Immoderation	AB5C-IPIP Moderation (unknown); NEO PI-R Impulsiveness (1994)

Note. * Because there were few clear markers of the Sadness facet, the PANAS-X Sadness scale was assembled from adjective ratings in the dataset and included in subsequent analyses.

Table A2. Promax-Rotated Factor Loadings of Scales Relevant to N/NE

Scale	Factor Loading						
	1	2	3	4	5	6	7
HEXACO Anxiety	**.68**	.00	.14	.16	-.03	.04	-.02
HPI Not Anxious	**-.59**	-.27	-.19	.11	.02	.08	.12
JPI-R Anxiety	**.58**	.12	**.36**	-.07	.05	.06	.02
HEXACO Fearfulness	**.57**	-.03	-.10	-.14	.10	.02	-.05
16PF Apprehension	**.49**	.22	-.08	.20	-.03	.08	.09
HPI No Depression	.03	**-.77**	.01	.00	.02	.10	-.12
NEO PI-R Depression	-.05	**.76**	.05	.11	.08	.11	.05
AB5C-IPIP Happiness	-.18	**--.71**	-.04	-.10	-.03	.05	-.05
PANAS-X Sadness	-.10	**.68**	.05	.04	.01	.01	-.01
HPI Self-Confidence	**-.30**	**-.59**	.26	.08	.01	.13	-.22
NEO PI-R Anxiety	**.39**	**.47**	.08	.03	.04	.12	-.15
AB5C-IPIP Calmness	-.09	-.03	**-.82**	.02	-.03	.02	-.05
NEO PI-R Angry Hostility	-.05	.06	**.78**	.12	-.03	.09	.04
HPI Even-Tempered	-.02	-.16	**-.66**	.12	.06	-.04	-.08
MPQ Aggression	-.10	-.16	**.60**	.11	.12	-.18	.12
16PF Tension	.22	-.11	**.54**	.07	-.07	-.17	.08
16PF Vigilance	-.03	-.06	.10	**.74**	-.06	.00	.01
HPI Trusting	-.04	-.03	-.06	**-.61**	-.05	.13	-.02
MPQ Alienation	-.03	.11	-.08	**.58**	-.05	.12	-.07
NEO PI-R Trust	.10	-.29	-.22	**-.43**	-.02	.10	.13
6PF Individualism	.09	-.02	-.15	.12	**-.76**	.04	.07
JPI-R Cooperativeness	.17	.07	-.12	.04	**.69**	-.06	.01
6PF Self-Reliance	-.04	.02	.13	-.07	**-.43**	-.26	-.05
JPI-R Empathy	.06	.04	.05	-.07	.06	**.74**	.03
HEXACO Sentimentality	.16	-.19	.00	.08	.05	**.66**	.07
AB5C-IPIP Empathy	-.14	-.02	-.03	-.03	-.12	**.65**	-.13
NEO PI-R Tender-Minded	-.02	.11	-.27	-.02	-.03	**.48**	.12
HEXACO Dependence	.16	-.07	.06	.05	**.31**	**.41**	.04
NEO PI-R Impulsiveness	-.12	.23	**.41**	-.07	-.01	-.13	**.53**
AB5C-IPIP Moderation	.05	**-.44**	**-.30**	.01	.04	.00	**-.53**

Note. $N = 348$. Loadings greater than |.30| are shown in boldface

Table A3. Correlations Among N/NE Factor Scores and Stress Vulnerability Composite

	1	2	3	4	5	6	7	8
1. Anxiety	.--							
2. Sadness	**.62**	.--						
3. Hostility	**.42**	**.62**	.--					
4. Mistrust	**.36**	**.59**	**.59**	.--				
5. Dependency	**.62**	**.30**	.19	.13	.--			
6. Empathy	**.45**	.14	.01	-.15	**.37**	.--		
7. Immoderation	.29	.23	.08	.05	.15	.27	.--	
8. Stress Vuln. Comp.	**.72**	**.73**	**.73**	**.50**	**.46**	.27	.21	.--
Mean *r*	.**50**	**.46**	**.38**	**.34**	**.31**	.24	.18	**.52**

Note. $N = 348$. Correlations ≥ .30 are shown in boldface. All correlations greater than |.13| are significant at $p < .01$.

Table A4. Correlations of NEO PI-R Domains with N/NE Factor Scores and Stress Vulnerability Composite

	N	E	A	C	O
Sadness	**.89**	**-.39**	-.23	**-.39**	-.05
Stress Vuln. Comp.	**.81**	-.23	-.19	-.29	-.12
Hostility	**.72**	-.13	**-.59**	-.20	-.02
Anxiety	**.68**	-.16	.06	-.14	-.14
Mistrust	**.59**	**-.37**	**-.45**	-.15	-.20
Dependency	**.40**	.11	.01	.01	-.22
Immoderation	**.33**	.06	.13	**-.53**	.10
Empathy	.28	**.32**	**.43**	-.05	**.34**

Note. $N = 348$. N = Neuroticism; E = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness; Stress Vuln. Comp. = Stress Vulnerability Composite. Correlations greater than |.30| are shown in boldface. All correlations greater than |.13| are significant at $p < .01$.

Table A5. Correlations Between Internalizing Symptoms and N/NE Facets

	CES-D	OCI-R
Sadness	**.59**	**.47**
Anxiety	**.39**	**.44**
Stress Vulnerability Composite	**.39**	**.41**
Mistrust	**.36**	**.47**
Hostility	**.32**	**.36**
Dependency	.18	**.30**
Immoderation	.19	.20
Empathy	.15	.03

Note. $N = 331$ for OCI-R correlations and 348 for CES-D correlations. Correlations ≥ .30 are shown in boldface. Correlations greater than |.14| are significant at $p < .01$. Underlined coefficients denote a significant difference between symptom correlations for a given facet, $p < .01$. R between CES-D and OCI-R = .36.

Table A6. Multiple Regressions Using N/NE Facets to Predict Symptoms

	CES-D			OCI-R		
Factor	β	*t*	*p*	β	*t*	*p*
Sadness	.59	8.28	.00	.14	1.82	.07
Anxiety	.02	0.27	.79	.18	2.19	.03
Stress Vuln. Comp.	-.06	-0.72	.47	.05	0.51	.61
Hostility	-.06	-0.84	.40	-.03	-0.44	.66
Mistrust	.08	1.38	.17	.27	4.21	.00
Dependency	-.03	-0.46	.64	.12	2.04	.04
Empathy	.09	1.66	.10	-.12	-2.20	.03
Immoderation	.04	0.96	.34	.10	2.14	.03

Note. $N = 331$ for OCI-R and 348 for CES-D. R^2 for CES-D = .36; R^2 for OCI-R = .33.

Table A7. Hypothesized Indicators for Each Latent Variable

Construct	Markers
N/NE Facets	
Sadness	PANAS-X Sadness; NEO PI-R Depression; FI-FFM Depression
Anxiety	PANAS-X Fear; FI-FFM Anxiety; NEO PI-R Anxiety; HEXACO PI Anxiety
Angry Hostility	PANAS-X Hostility; NEO PI-R Angry Hostility; FI-FFM Anger Proneness
Dependency	SNAP Dependency; 3VDI Submissiveness; IDI Lack of Self-Confidence
Mistrust	SNAP Mistrust; FI-FFM Trust vs. Cynicism; IPIP 16PF Distrust
Stress Vuln.	NEO PI-R Vulnerability; MPQ-BF Stress Reaction
Psychopathology	
Depression	IDAS Dysphoria; PHQ-9; MASQ Anhedonic Depression- Loss of Interest; SCID Depression screeners (Low Mood and Anhedonia); IDAS-CR Dysphoria
Panic	MASQ Anxious Arousal; PASQ; SCID Panic Disorder screener; IDAS-CR Panic
Social Anxiety	IDAS Social Anxiety; FQ Social Phobia; APPQ Social Phobia; SCID Social Phobia screener; IDAS-CR Social Anxiety
PTSD	IDAS PTSD composite*; PCL-C; ITRI; SCID PTSD screener; IDAS-CR PTSD composite*
OCD	IDAS OCD composite*; OCI-R; SCOPI; SCID OCD screeners (Obsessions and Compulsions); PCCP composite*
GAD	IDAS Anxious Mood; GAD-Q-IV; WDQ – SF; SCID GAD screener; IDAS-CR Generalized Anxiety

Note. APPQ = Albany Panic and Phobia Questionnaire; CES-D = Center for Epidemiologic Studies Depression Scale; FI-FFM = Faceted Inventory of the Five Factor

Table A7. Continued

Model; FQ = Fear Questionnaire; GAD-Q-IV = GAD Questionnaire for *DSM-IV*; HEXACO PI = HEXACO Personality Inventory; IDAS = Inventory of Depression and Anxiety Symptoms; IDAS-CR = Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; IDI = Interpersonal Dependency Inventory; IPIP-16PF = International Personality Item Pool version of the 16 Personality Faction Questionnaire; ITRI = Iowa Traumatic Response Inventory; MASQ = Mood and Anxiety Symptoms Questionnaire; MPQ- BF = Multidimensional Personality Questionnaire – Brief Form; NEO PI-R = Revised NEO Personality Inventory; OCI-R = Obsessive-Compulsive Inventory – Revised; PANAS-X = Positive and Negative Affect Schedule – Expanded Form; PASQ = Panic Attack Symptoms Questionnaire; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview; PCL-C = PTSD Checklist – Civilian version; PHQ-9 = Personal Health Questionnaire-9; SCID = Structured Clinical Interview for DSM-IV Disorders; SCOPI = Schedule of Compulsions, Obsessions, and Pathological Impulses; SNAP = Schedule for Nonadaptive and Adaptive Personality; WDQ- SF = Worry Domains Questionnaire – Short Form; 3VDI = 3-Vector Dependency Inventory; Stress Vuln. = Stress Vulnerability.
*These scales are unit-weighted composites of the scales from each measure or interview that are relevant to the symptoms, as described in the "Measures" section.

Table A8. Descriptive Statistics for Self-Report Personality Measures

	Patient		Student		
Measure	*M*	*SD*	*M*	*SD*	Cohen's *d*
ASI-3					
Total	40.69	15.26	29.13	11.32	**0.86**
Physical Concerns	11.75	5.95	8.51	3.96	**0.64**
Cognitive Concerns	12.47	6.36	8.27	4.12	**0.78**
Social Concerns	16.47	5.89	12.35	5.06	**0.75**
BFI					
Neuroticism	28.04	6.63	19.98	6.37	**1.24**
Extraversion	24.33	8.06	27.86	6.00	**-0.50**
Conscientiousness	30.71	6.76	32.75	5.13	-0.34
Agreeableness	33.59	6.21	34.75	5.61	-0.20
Openness	36.74	7.43	34.49	6.33	0.33
FI-FFM					
Anxiety	36.19	7.23	27.60	7.52	**1.16**
Depression	32.74	9.44	22.24	7.90	**1.21**
Anger Proneness	28.87	9.14	22.32	7.45	**0.79**
Trust vs. Cynicism	33.81	8.84	35.88	7.72	-0.25
FMPS					
Concern Over Mistakes	27.07	9.24	21.96	7.76	**0.60**
Doubts About Action	10.45	4.09	8.57	3.43	**0.50**
HEXACO PI Anxiety	29.31	5.68	23.40	5.91	**1.02**
IPIP 16PF Distrust	27.28	8.80	23.80	7.47	0.43
IDI Lack of Soc. Self-Confidence	33.09	8.08	26.81	6.18	**0.87**

Table A8. Continued

Measure	Patient		Student		Cohen's *d*
	M	*SD*	*M*	*SD*	
IUS-12					
Total	31.55	11.17	22.41	8.75	**0.91**
Prospective Anxiety	19.79	6.78	14.07	5.44	**0.93**
Inhibitory Anxiety	11.76	5.11	8.34	3.81	**0.76**
MEAQ Distress Evaluation	45.36	15.04	38.21	13.08	**0.51**
MPQ-BF Stress Reaction	7.82	3.28	3.12	3.57	**1.37**
PANAS-X					
Sadness	14.22	5.48	9.13	4.11	**1.05**
Fear	13.88	5.85	10.13	4.05	**0.75**
Hostility	13.36	5.07	9.82	4.03	**0.77**
Negative Affect	25.47	8.74	17.42	6.61	**1.04**
Positive Affect	28.92	7.72	34.02	8.22	**-0.64**
NEO PI-R					
Depression	27.33	7.37	19.51	6.25	**1.14**
Anxiety	27.15	6.49	21.34	5.59	**0.96**
Angry Hostility	24.17	6.71	19.62	5.48	**0.74**
Vulnerability	22.66	6.14	17.60	4.88	**0.91**
SNAP					
Mistrust	7.27	5.33	5.39	4.61	0.38
Dependency	5.74	4.04	4.80	3.63	0.24
3VDI Submissive	30.78	9.45	23.44	8.12	**0.83**

Note. $N = 296$ patients, 373 students. Medium effect sizes ($d = |.50|$ to $|.79|$) are bolded; large effect sizes ($d \geq |.80|$) are bolded and underlined. Effect sizes $\geq |.20|$ are significant at $p < .01$. ASI-3 = Anxiety Sensitivity Inventory – 3; BFI = Big Five Inventory; FI-FFM = Faceted Inventory of the Five Factor Model; FMPS = Frost Multidimensional

Table A8. Continued

Perfectionism Scales; HEXACO PI = HEXACO Personality Inventory; IDI = Interpersonal Dependency Inventory; IPIP 16PF = International Personality Item Pool version of the 16 Personality Faction Questionnaire; IUS-12 = Intolerance of Uncertainty Scale – 12; MEAQ = Multidimensional Experiential Avoidance Questionnaire; MPQ- BF = Multidimensional Personality Questionnaire – Brief Form; NEO PI-R = Revised NEO Personality Inventory; PANAS-X = Positive and Negative Affect Schedule – Expanded Form; SNAP = Schedule for Nonadaptive and Adaptive Personality; 3VDI = 3-Vector Dependency Inventory.

Table A9. Descriptive Statistics for Self-Report Psychopathology Measures

	Patient		Student		
Measure	*M*	*SD*	*M*	*SD*	Cohen's *d*
APPQ Social Phobia	35.11	15.98	26.82	13.11	**0.57**
FQ Social Phobia	21.14	9.05	13.69	7.13	**0.91**
GAD-Q-IV	18.75	8.16	7.60	6.81	**1.48**
IDAS					
Dysphoria*	24.02	7.60	16.30	5.56	**1.16**
Social Anxiety	13.54	6.24	9.95	4.53	**0.66**
Traumatic Intrusions	8.35	4.07	5.74	2.67	**0.76**
Traumatic Avoidance	9.30	4.46	6.72	3.39	**0.65**
PTSD composite	17.65	7.94	12.46	5.60	**0.76**
Anxious Mood	21.09	7.29	14.06	5.75	**1.07**
Washing/Cleaning	9.79	4.45	10.13	4.38	-0.08
Checking	5.53	2.80	5.27	2.54	0.10
Ordering	8.27	4.36	7.58	3.33	0.18
OCD composite	23.58	9.64	22.98	8.64	0.07
ITRI					
Total	75.93	28.92	52.14	20.34	**0.95**
Intrusions	14.55	7.60	9.76	4.89	**0.75**
Avoidance	16.27	8.56	11.68	6.09	**0.62**
Dysphoria	23.31	8.69	14.02	6.23	**1.23**
Hyperarousal	12.48	5.62	9.24	3.60	**0.69**
Dissociation	9.32	5.03	7.44	3.31	0.44
MASQ					
Anxious Arousal	28.66	11.85	21.84	8.58	**0.67**
Anhedonic Depression	20.14	8.14	12.54	5.51	**1.09**

Table A9. Continued

Measure	Patient		Student		Cohen's *d*
	M	*SD*	*M*	*SD*	
OCI-R					
Total	30.10	11.35	26.99	10.92	0.28
Checking	4.64	2.59	4.57	2.46	0.03
Washing	3.89	1.82	4.19	2.24	-0.15
Ordering	5.42	3.11	5.04	2.49	0.13
Hoarding	5.68	3.29	4.65	2.26	0.36
Obsessing	6.38	3.40	4.34	2.31	**0.70**
Neutralizing	4.10	2.23	4.19	2.11	-0.04
PASQ	25.88	9.87	19.68	6.98	**0.73**
PHQ-9	11.13	6.67	3.99	4.92	**1.22**
PCL-C					
Total	39.39	15.17	25.98	11.60	**0.99**
Dysphoria	19.86	7.35	12.75	5.88	**1.07**
Hyperarousal	4.45	2.47	2.93	1.52	**0.74**
Intrusions	10.61	5.53	7.29	3.80	**0.70**
Avoidance	4.47	2.51	3.02	1.77	**0.67**
SCOPI					
Total	82.86	27.48	77.48	25.69	0.20
Obsessive Checking	30.54	12.65	27.48	11.39	0.25
Obsessive Cleanliness	25.55	8.09	25.78	8.16	-0.03
Compulsive Rituals	15.45	8.43	14.31	7.24	0.15
Hoarding	11.31	5.90	9.91	4.70	0.26
WDQ-SF	31.05	9.94	22.29	8.27	**0.96**

Note. $N = 296$ patients, 373 students. Medium effect sizes ($d = |.50|$ to $|.79|$) are bolded; large effect sizes ($d \geq |.80|$) are bolded and underlined. Effect sizes $\geq |.20|$ are significant

Table A9. Continued

at $p < .01$. APPQ = Albany Panic and Phobia Questionnaire; FQ = Fear Questionnaire; GAD-Q-IV = GAD Questionnaire for *DSM-IV*; IDAS = Inventory of Depression and Anxiety Symptoms; ITRI = Iowa Traumatic Response Inventory; MASQ = Mood and Anxiety Symptoms Questionnaire; OCI-R = Obsessive-Compulsive Inventory – Revised; PASQ = Panic Attack Symptoms Questionnaire; PCL-C = PTSD Checklist – Civilian version; PHQ-9 = Personal Health Questionnaire-9; SCOPI = Schedule of Compulsions, Obsessions, and Pathological Impulses; WDQ- SF = Worry Domains Questionnaire – Short Form.
***** One item was removed from the IDAS Dysphoria scale because it was identical to an item in IDAS Anxious Mood.

Table A10. SCID-IV Diagnostic Rates

	Patients		Students	
	N	%	*N*	%
Depression	88	34.9	14	3.8
Panic disorder	42	16.7	13	3.5
Social phobia	71	28.2	21	5.6
OCD	21	8.3	8	2.1
PTSD	34	13.5	8	2.1
GAD	94	37.3	17	4.6

Note. $N = 252$ patients, 373 students. SCID-IV = Structured Clinical Interview for DSM-IV Disorders.

Table A11. Frequencies of Ratings (%) for SCID-IV Screeners and Symptom Interview Measures: Patient Sample

Measure	Absent	Subthreshold	Present
SCID-IV Screeners			
Depression (Low Mood)	27.4	34.5	38.1
Depression (Anhedonia)	40.5	22.2	37.3
Panic disorder	61.2	1.5	37.3
Social phobia	48.0	0.0	52.0
OCD (Obsessions)	85.3	0.4	14.3
OCD (Compulsions)	75.8	2.0	22.2
PTSD	63.5	1.6	34.9
GAD	27.4	8.7	63.9
IDAS-CR			
Dysphoria	11.5	43.7	44.8
Panic	50.0	21.4	28.6
Social Anxiety	32.9	36.5	30.6
Traumatic Intrusions	46.4	32.9	20.7
Traumatic Avoidance	50.0	29.0	21.0
Traumatic Hyperarousal	64.3	18.2	17.5
Generalized Anxiety	20.2	19.1	60.7
PCCP			
Checking/Doubting	54.0	25.8	20.2

Table A11. Continued

Measure	Absent	Subthreshold	Present
Cleaning/Washing	77.4	13.5	9.1
Intrusive Thoughts/Obsessions	44.8	14.3	40.9
Ordering/Rituals	61.5	17.9	20.6
Hoarding	52.8	20.2	27.0

Note. $N = 252$. SCID-IV = Structured Clinical Interview for DSM-IV Disorders; IDAS-CR = Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview.

Table A12. Frequencies of Ratings (%) for SCID-IV Screeners and Symptom Interview Measures: Student Sample

Measure	Absent	Subthreshold	Present
SCID-IV Screeners			
Depression (Low Mood)	75.6	19.3	5.1
Depression (Anhedonia)	87.4	7.8	4.8
Panic disorder	89.0	0.0	11.0
Social phobia	56.3	2.1	41.6
OCD (Obsessions)	96.8	0.8	2.4
OCD (Compulsions)	81.8	1.6	16.6
PTSD	87.1	0.3	12.6
GAD	63.0	17.7	19.3
IDAS-CR			
Dysphoria	54.7	33.5	11.8
Panic	80.7	10.4	8.9
Social Anxiety	58.7	33.2	8.1
Traumatic Intrusions	67.9	17.4	5.6
Traumatic Avoidance	74.8	18.8	6.4
Traumatic Hyperarousal	89.0	5.6	5.4
Generalized Anxiety	46.4	33.5	20.1
PCCP			
Checking/Doubting	52.3	36.7	11.0

Table A12. Continued

Measure	Absent	Subthreshold	Present
Cleaning/Washing	75.3	15.3	9.4
Intrusive Thoughts/Obsessions	82.3	7.8	9.9
Ordering/Rituals	71.8	16.4	11.8
Hoarding	66.7	18.0	15.3

Note. $N = 373$. SCID-IV = Structured Clinical Interview for DSM-IV Disorders; IDAS-CR = Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview.

Table A13. Frequencies and Characteristics of Traumatic Events Experienced

	Patients		Students	
	N	%	*N*	%
Serious illness/injury	226*	76.3	187	50.1
Physical assault/attack/abuse	161*	54.4	73	19.6
Sexual assault/abuse	110*	37.1	43	11.5
Robbery/mugging/violent crime	61*	20.6	25	6.7
Natural disaster	131*	44.3	92	24.7
Serious accident	116	39.2	128	34.3
Sudden, unexpected death of family/close friend	184*	62.1	178	47.7
Military combat	6	2.0	12	3.2
Other traumatic event	140*	47.3	65	17.4
Worst event:				
> 1 year ago	204*	68.9	149	39.9
Meets Criterion A2	158*	53.4	96	25.7
Sense of unreality	195*	65.9	159	42.6

Note. $N = 296$ patients, 373 students. * indicates a significant difference ($p < .001$) in frequencies of traumatic events between samples, as assessed with chi-square tests of association.

Table A14. Coefficients Alpha, Average Interitem Correlations, and Number of Items for Self-Report Scales

	Patient		Student		
Measure	α	AIC	α	AIC	# of Items
APPQ Social Phobia	0.88	0.42	0.90	0.47	10
ASI-3					
Total	0.92	0.39	0.92	0.39	18
Physical Concerns	0.88	0.55	0.86	0.51	6
Cognitive Concerns	0.91	0.63	0.91	0.63	6
Social Concerns	0.81	0.42	0.82	0.43	6
BFI					
Neuroticism	0.84	0.40	0.86	0.43	8
Extraversion	0.90	0.53	0.85	0.41	8
Conscientiousness	0.81	0.32	0.77	0.27	9
Agreeableness	0.79	0.29	0.83	0.35	9
Openness	0.83	0.33	0.80	0.29	10
FI-FFM					
Anxiety	0.83	0.33	0.85	0.36	10
Depression	0.90	0.47	0.89	0.45	10
Anger Proneness	0.90	0.47	0.89	0.45	10
Trust vs. Cynicism	0.91	0.48	0.89	0.42	11
FMPS					
Concern Over Mistakes	0.89	0.47	0.90	0.50	9
Doubts About Action	0.79	0.48	0.75	0.43	4
FQ Social Phobia	0.77	0.40	0.81	0.46	5
GAD-Q-IV	0.83	0.35	0.83	0.35	9
HEXACO PI Anxiety	0.76	0.28	0.77	0.30	8
IPIP 16PF Distrust	0.91	0.50	0.90	0.47	10
IDAS					
Dysphoria*	0.88	0.45	0.85	0.39	9
Social Anxiety	0.88	0.55	0.88	0.55	6
Traumatic Intrusions	0.83	0.55	0.83	0.55	4
Traumatic Avoidance	0.89	0.67	0.88	0.65	4
Anxious Mood	0.92	0.62	0.91	0.59	7
Washing/Cleaning	0.88	0.51	0.87	0.49	7
Checking	0.86	0.67	0.83	0.62	3
Ordering	0.88	0.59	0.83	0.49	5

Table A14. Continued

Measure	Patient α	Patient AIC	Student α	Student AIC	# of Items
IDAS, continued					
OCD composite	0.91	0.40	0.91	0.40	15
PTSD composite	0.91	0.56	0.90	0.53	8
IDI Lack of Soc. Self-Confidence	0.84	0.25	0.81	0.21	16
ITRI					
Total	0.96	0.40	0.96	0.40	36
Intrusions	0.92	0.62	0.93	0.64	7
Avoidance	0.93	0.64	0.94	0.66	8
Dysphoria	0.91	0.56	0.91	0.56	8
Hyperarousal	0.84	0.43	0.84	0.43	7
IUS-12					
Total	0.92	0.49	0.92	0.49	12
Prospective Anxiety	0.87	0.49	0.87	0.49	7
Inhibitory Anxiety	0.87	0.57	0.89	0.62	5
MASQ					
Anxious Arousal	0.91	0.37	0.94	0.48	17
Anhedonic Depression	0.89	0.50	0.89	0.50	8
MEAQ Distress Evaluation	0.93	0.51	0.92	0.47	13
MPQ-BF Stress Reaction	0.82	0.28	0.90	0.43	12
NEO PI-R					
Depression	0.86	0.43	0.82	0.36	8
Anxiety	0.82	0.36	0.78	0.31	8
Angry Hostility	0.83	0.38	0.76	0.28	8
Vulnerability	0.82	0.36	0.77	0.30	8
OCI-R					
Total	0.89	0.31	0.93	0.42	18
Checking	0.85	0.65	0.88	0.71	3
Washing	0.81	0.59	0.85	0.65	3
Ordering	0.89	0.73	0.85	0.65	3
Hoarding	0.89	0.73	0.79	0.56	3
Obsessing	0.86	0.67	0.85	0.65	3
Neutralizing	0.77	0.53	0.80	0.57	3

Table A14. Continued

Measure	Patient		Student		# of Items
	α	AIC	α	AIC	
PANAS-X					
Sadness	0.90	0.64	0.89	0.62	5
Fear	0.89	0.57	0.87	0.53	6
Hostility	0.86	0.51	0.88	0.55	6
Negative Affect	0.89	0.45	0.91	0.50	10
Positive Affect	0.89	0.45	0.92	0.53	10
PASQ	0.89	0.38	0.88	0.36	13
PCL-C					
Total	0.92	0.40	0.95	0.53	17
Dysphoria	0.84	0.40	0.90	0.53	8
Hyperarousal	0.79	0.65	0.80	0.67	2
Intrusions	0.90	0.64	0.92	0.70	5
Avoidance	0.87	0.77	0.91	0.83	2
PHQ-9	0.87	0.43	0.91	0.53	9
SCOPI					
Total	0.95	0.33	0.95	0.33	39
Obsessive Checking	0.92	0.45	0.92	0.45	14
Obsessive Cleanliness	0.86	0.34	0.87	0.36	12
Compulsive Rituals	0.94	0.66	0.92	0.59	8
Hoarding	0.92	0.70	0.87	0.57	5
SNAP					
Mistrust	0.90	0.32	0.88	0.28	19
Dependency	0.84	0.23	0.80	0.18	18
WDQ-SF	0.89	0.45	0.89	0.45	10
3VDI Submissive	0.85	0.39	0.84	0.37	9

Note. AIC = average interitem correlation; APPQ = Albany Panic and Phobia Questionnaire; FI-FFM = Faceted Inventory of the Five Factor Model; FQ = Fear Questionnaire; GAD-Q-IV = GAD Questionnaire for *DSM-IV*; HEXACO PI = HEXACO Personality Inventory; IDAS = Inventory of Depression and Anxiety Symptoms; IDI = Interpersonal Dependency Inventory; IPIP-16PF = International Personality Item Pool version of the 16 Personality Faction Questionnaire; ITRI = Iowa Traumatic Response Inventory; MASQ = Mood and Anxiety Symptoms Questionnaire; MPQ- BF = Multidimensional Personality Questionnaire – Brief Form; NEO PI-R = Revised NEO Personality Inventory; OCI-R = Obsessive-Compulsive Inventory – Revised;

Table A14. Continued

PANAS-X = Positive and Negative Affect Schedule – Expanded Form; PASQ = Panic Attack Symptoms Questionnaire; PCL-C = PTSD Checklist – Civilian version; PHQ-9 = Personal Health Questionnaire-9; SCOPI = Schedule of Compulsions, Obsessions, and Pathological Impulses; SNAP = Schedule for Nonadaptive and Adaptive Personality; WDQ- SF = Worry Domains Questionnaire – Short Form; 3VDI = 3-Vector Dependency Inventory.
* These scales have been modified and contain fewer items than the original scales.

Table A15. Interrater Reliability (κ) for SCID-IV Diagnoses

Disorder	Patient	Student
Depression	0.92	1.00
Panic disorder	0.83	1.00
Social phobia	0.96	1.00
OCD	0.83	1.00
PTSD	1.00	1.00
GAD	1.00	0.85

Note. N = 51 patients, 72 students. SCID-IV = Structured Clinical Interview for DSM-IV Disorders.

Table A16. Interrater Reliability (ICC) for SCID-IV Screeners and Symptom Interviews

Measure	Patient	Student
SCID-IV Screeners		
Depression (Low Mood)	0.96	0.92
Depression (Anhedonia)	0.98	0.98
Panic	0.96	1.00
Social phobia	0.96	0.89
OCD (Obsessions)	0.71	1.00
OCD (Compulsions)	0.83	0.87
PTSD	0.76	0.62
GAD	0.90	0.89
IDAS-CR		
Dysphoria	0.94	0.96
Traumatic Intrusions	1.00	0.88
Traumatic Avoidance	0.93	0.98
Traumatic Hyperarousal	0.98	0.96
Social Anxiety	1.00	0.99
Panic	0.97	0.98
Generalized Anxiety	0.98	0.95
PCCP		
Checking/Doubting	0.96	0.91
Cleaning/Washing	0.98	0.96
Intrusive Thoughts/Obsessions	0.96	0.96
Ordering/Rituals	0.92	0.92
Hoarding	0.97	0.94

Table A16. Continued

Note. *N* = 51 patients, 72 students. ICC = intraclass correlation; SCID-IV = Structured Clinical Interview for DSM-IV Disorders; IDAS-CR =Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview.

Table A17. Correlations among Clinical Traits

	1	2	3	4	5	6	7	8	9	10
1. ASI-3 Total	.--	**.86**	**.87**	**.86**	.43	**.52**	**.59**	**.53**	**.59**	.46
2. ASI-3 Physical	**.82**	.--	**.71**	**.57**	.30	.37	.44	.39	.46	.36
3. ASI-3 Cognitive	**.85**	**.51**	.--	**.58**	.33	.48	**.51**	.43	**.55**	.38
4. ASI-3 Social	**.85**	**.55**	**.60**	.--	.46	.48	**.55**	**.52**	**.52**	.44
5. FMPS COM	**.52**	.33	.48	**.53**	.--	**.72**	.43	.42	.38	.35
6. FMPS DAA	**.52**	.33	.47	**.50**	**.60**	.--	.45	.40	.47	.35
7. IUS-12 Total	**.61**	.46	**.53**	**.54**	**.55**	**.53**	.--	**.96**	**.92**	.43
8. IUS-12 Prosp.	**.58**	.46	.47	**.52**	**.54**	.46	**.95**	.--	**.78**	.39
9. IUS-12 Inhibit.	**.57**	.39	**.54**	.49	.48	**.55**	**.92**	**.76**	.--	.43
10. MEAQ DE	.40	.32	.35	.33	.37	.34	.49	.45	.48	.--

Note. $N = 296$ patients (below the diagonal) and 373 students (above the diagonal). All correlations are significant at $p < .01$. Correlations greater than or equal to |.50| are shown in boldface. ASI-3 = Anxiety Sensitivity Index-3; FMPS = Frost Multidimensional Perfectionism Scales; COM = Concern Over Mistakes; DAA = Doubts About Action; IUS-12 = Intolerance of Uncertainty Scale-12; Prosp. = Prospective Anxiety; Inhibit. = Inhibitory Anxiety; MEAQ DE = Multidimensional Experiential Avoidance Questionnaire Distress Evaluation.

Table A18. Correlations between Clinical Traits and Big Five/Trait Affect: Patient Sample

	N	E	C	A	O	NA	PA
Anxiety Sensitivity Index-3							
Total	**.47**	-.20	-.26	-.21	.00	**.57**	-.09
Physical	.27	-.10	-.15	-.15	-.07	.37	-.02
Cognitive	**.45**	-.15	-.28	-.24	.03	**.56**	-.11
Social	**.45**	-.25	-.23	-.13	.04	**.51**	-.10
Frost Multidimensional Perfectionism Scales							
COM	**.48**	-.22	-.24	-.26	.00	**.52**	-.21
DAA	**.52**	-.21	**-.41**	-.22	.11	**.56**	-.27
Intolerance of Uncertainty Scale-12							
Total	**.58**	-.25	-.24	-.32	-.07	**.63**	-.19
Prosp. Anxiety	**.53**	-.16	-.15	-.32	-.06	**.55**	-.13
Inhibit. Anxiety	**.57**	-.33	-.32	-.27	-.08	**.65**	-.25
Multidimensional Experiential Avoidance Questionnaire							
Distress Eval.	**.46**	-.23	-.16	-.22	-.25	**.47**	-.28

Note. $N = 296$. All correlations greater than |.14| are significant at $p < .01$. Correlations greater than or equal to |.40| are shown in boldface. N = Big Five Inventory (BFI) Neuroticism; E = BFI Extraversion; C = BFI Conscientiousness; A = BFI Agreeableness; O = BFI Openness; NA = Expanded Form of the Positive and Negative Affect Schedule (PANAS-X) Negative Affect; PA = PANAS-X Positive Affect; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory; Eval. = Evaluation.

Table A19. Correlations between Clinical Traits and Big Five/Trait Affect: Student Sample

	N	E	C	A	O	NA	PA
Anxiety Sensitivity Index-3							
Total	**.57**	-.30	-.32	-.38	-.08	**.59**	-.31
Physical	**.44**	-.15	-.23	-.29	-.06	**.50**	-.20
Cognitive	**.49**	-.25	-.34	-.36	-.06	**.56**	-.27
Social	**.53**	-.34	-.26	-.33	-.07	**.48**	-.32
Frost Multidimensional Perfectionism Scales							
COM	**.42**	-.31	-.16	-.35	-.07	.31	-.30
DAA	**.50**	-.39	-.32	-.38	-.11	**.42**	**-.40**
Intolerance of Uncertainty Scale-12							
Total	**.54**	-.33	.21	-.37	-.07	**.53**	-.29
Prosp. Anxiety	**.48**	-.27	-.13	-.32	-.03	**.45**	-.23
Inhibit. Anxiety	**.57**	-.37	-.30	**-.40**	-.11	**.57**	-.34
Multidimensional Experiential Avoidance Questionnaire							
Distress Eval.	**.49**	-.27	-.20	-.23	-.20	**.40**	-.36

Note. $N = 373$. All correlations greater than |.13| are significant at $p < .01$. Correlations greater than or equal to |.40| are shown in boldface. N = Big Five Inventory (BFI) Neuroticism; E = BFI Extraversion; C = BFI Conscientiousness; A = BFI Agreeableness; O = BFI Openness; NA = Expanded Form of the Positive and Negative Affect Schedule (PANAS-X) Negative Affect; PA = PANAS-X Positive Affect; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory; Eval. = Evaluation.

Table A20. Standardized Factor Loadings for Exploratory Factor Analysis of Big Five Parcels and Trait Affect Scales (Varimax Rotation)

	N/NE	E/PE	C	A	O
Patients					
BFI N1	**.85**	-.21	-.15	-.13	.02
BFI N2	**.77**	-.09	-.14	-.21	-.06
PANAS-X NA	**.71**	-.12	-.21	-.24	.02
BFI E1	-.15	**.85**	.09	.01	.17
BFI E2	-.13	**.85**	.09	.19	.11
PANAS-X PA	-.18	**.47**	**.31**	.15	**.35**
BFI C1	-.13	.00	**.75**	.13	.00
BFI C2	-.28	.11	**.68**	-.02	-.07
BFI C3	-.04	.02	**.67**	.14	.09
BFI A1	-.16	.24	.09	**.70**	.12
BFI A2	**-.31**	-.03	.05	**.65**	.02
BFI A3	-.10	-.02	.15	**.63**	.24
BFI O1	.04	.20	.15	.15	**.77**
BFI O2	.06	.19	-.06	.11	**.77**
BFI O3	-.06	.00	-.04	.08	**.55**
Students					
BFI N1	**.80**	**-.31**	-.14	-.20	-.09
BFI N2	**.78**	-.23	-.18	-.13	-.16
PANAS-X NA	**.64**	-.07	-.19	-.24	.01
BFI E1	-.21	**.75**	.14	.13	.12
BFI E2	-.20	**.74**	.18	.26	.13
PANAS-X PA	**-.33**	**.43**	**.35**	.08	.27
BFI C1	-.13	.13	**.66**	.21	.08
BFI C3	-.11	.13	**.54**	.27	**.37**
BFI C2	-.24	.14	**.51**	.13	-.04

Table A20. Continued

	N/NE	E/PE	C	A	O
BFI A1	-.22	**.36**	.25	**.70**	.25
BFI A3	-.16	.13	.27	**.67**	.28
BFI A2	**-.43**	.13	.19	**.62**	.19
BFI O2	-.13	.16	-.06	.09	**.76**
BFI O1	-.15	.21	.22	.08	**.75**
BFI O3	.05	-.01	.05	.05	**.54**

Note. N = 291 patients, 367 students. Loadings greater than or equal to |.30| are shown in boldface. N/NE = neuroticism/negative emotionality; E/PE = extraversion/positive emotionality; C = conscientiousness; A = agreeableness; O = openness. BFI = Big Five Inventory. Numbered BFI scales indicate randomly-created parcels from the BFI scales.

Table A21. Correlations between Clinical Traits and Big Five/Trait Affect Orthogonalized Factor Scores: Patient Sample

	N/NE	E/PE	C	A	O
ASI-3					
Total	**.49**	-.11	-.17	-.13	.06
Physical	.29	-.03	-.09	-.11	-.02
Cognitive	**.47**	-.07	-.20	-.17	.08
Social	**.47**	-.19	-.15	-.04	.10
FMPS					
COM	**.48**	-.17	-.17	-.19	.02
DAA	**.51**	-.15	**-.35**	-.12	.12
IUS-12					
Total	**.58**	-.16	-.13	-.22	-.01
Prospective Anxiety	**.54**	-.08	-.05	-.25	.00
Inhibitory Anxiety	**.56**	-.24	-.23	-.16	-.02
MEAQ					
Distress Evaluation	**.46**	-.15	-.08	-.13	-.21

Note. $N = 291$. All correlations greater than |.15| are significant at $p < .01$. Correlations greater than or equal to |.30| are shown in boldface. N/NE = neuroticism/negative emotionality; E/PE = extraversion/positive emotionality; C = conscientiousness; A = agreeableness; O = openness; ASI-3 = Anxiety Sensitivity Index-3; FMPS = Frost Multidimensional Perfectionism Scales; COM = Concern Over Mistakes; DAA = Doubts About Action; IUS-12 = Intolerance of Uncertainty Scale-12.

Table A22. Correlations between Clinical Traits and Big Five/Trait Affect Orthogonalized Factor Scores: Student Sample

	N/NE	E/PE	C	A	O
ASI-3					
Total	**.57**	-.15	-.21	-.21	-.01
Physical	**.47**	-.02	-.15	-.17	-.02
Cognitive	**.49**	-.10	-.26	-.22	-.01
Social	**.51**	-.25	-.15	-.16	.01
FMPS					
COM	**.38**	-.24	-.06	-.24	-.01
DAA	**.44**	**-.30**	-.22	-.21	-.05
IUS-12					
Total	**.55**	-.21	-.09	-.22	.02
Prospective Anxiety	**.50**	-.17	-.02	-.19	.06
Inhibitory Anxiety	**.55**	-.24	-.19	-.23	-.05
MEAQ					
Distress Evaluation	**.49**	-.19	-.09	-.04	-.13

Note. $N = 367$. All correlations greater than |.13| are significant at $p < .01$. Correlations greater than or equal to |.30| are shown in boldface. N/NE = neuroticism/negative emotionality; E/PE = extraversion/positive emotionality; C = conscientiousness; A = agreeableness; O = openness; ASI-3 = Anxiety Sensitivity Index-3; FMPS = Frost Multidimensional Perfectionism Scales; COM = Concern Over Mistakes; DAA = Doubts About Action; IUS-12 = Intolerance of Uncertainty Scale-12.

Table A23. Higher and Lower Order Standardized Factor Loadings and Standard Errors for N/NE Confirmatory Factor Analyses

	Patient		Student	
	Loading	SE	Loading	SE
Anxiety				
FI-FFM Anxiety	.94	.01	.94	.01
NEO PI-R Anxiety	.89	.01	.85	.02
HEXACO PI Anxiety	.76	.02	.77	.02
PANAS-X Fear	.73	.02	.59	.03
Sadness				
FI-FFM Depression	.96	.01	.95	.01
NEO PI-R Depression	.90	.01	.89	.01
PANAS-X Sadness	.79	.02	.74	.03
Angry Hostility				
FI-FFM Anger Proneness	.94	.01	.92	.01
NEO PI-R Angry Hostility	.93	.01	.89	.02
PANAS-X Hostility	.79	.02	.65	.03
Dependency				
3VDI Submissive	.95	.01	.92	.03
IDI Lack of Soc. Self-Confidence	.87	.02	.80	.02
SNAP Dependency	.67	.03	.63	.03
Mistrust				
IPIP 16PF Distrust	.96	.01	.96	.02
FI-FFM Trust vs. Cynicism	-.90	.02	-.90	.02
SNAP Mistrust	.78	.02	.68	.03
Higher Order N/NE				
Sadness	.89	.02	.91	.01
Anxiety	.81	.02	.85	.02
Dependency	.80	.02	.80	.02
Angry Hostility	.66	.03	.79	.02
Mistrust	.57	.04	.62	.03
NEO PI-R Vulnerability	.88	.01	.81	.02
MPQ-BF Stress Reaction	.74	.03	.76	.02

Table A23. Continued

Note. $N = 296$ patients, 373 students. All loadings are significant at $p < .001$. Error terms among the PANAS-X scales were allowed to correlate. SE = standard error; FI-FFM = Faceted Inventory of the Five Factor Model; NEO PI-R = Revised NEO Personality Inventory; HEXACO PI = HEXACO Personality Inventory; PANAS-X = Positive and Negative Affect Schedule – Expanded Form; 3VDI = 3-Vector Dependency Inventory; IDI = Interpersonal Dependency Inventory; SNAP = Schedule for Nonadaptive and Adaptive Personality; IPIP 16PF = International Personality Item Pool version of the 16 Personality Faction Questionnaire; MPQ- BF = Multidimensional Personality Questionnaire – Brief Form.

Table A24. Zero-Order Correlations Among N/NE Factor Scores

	1	2	3	4	5
1. Anxiety	.--	**.81**	**.72**	**.73**	.52
2. Sadness	**.74**	.--	**.76**	**.80**	**.64**
3. Angry Hostility	**.62**	.59	.--	**.62**	**.65**
4. Dependency	**.66**	**.76**	.41	.--	.48
5. Mistrust	.46	.54	**.61**	.40	.--

Note. $N = 296$ patients (below the diagonal), 373 students (above the diagonal). All correlations are significant at $p < .001$. Correlations greater than or equal to .60 are shown in boldface. N/NE = neuroticism/negative emotionality.

Table A25. Zero-Order Correlations Between N/NE Factor Scores and Big Five/Trait Affect

	N	E	C	A	O	NA	PA
Patients							
Anxiety	**.82**	-.28	-.29	-.32	.01	**.79**	-.27
Sadness	**.72**	-.45	-.45	-.40	-.10	**.73**	**-.56**
Angry Hostility	**.69**	-.12	-.31	**-.71**	-.17	**.60**	-.27
Dependency	**.62**	**-.62**	-.44	-.22	-.30	**.59**	**-.58**
Mistrust	.41	-.26	-.18	**-.64**	-.19	**.54**	-.32
HO N/NE	**.82**	-.46	-.47	-.45	-.18	**.79**	**-.53**
Students							
Anxiety	**.84**	-.38	-.29	-.36	-.13	**.64**	-.44
Sadness	**.78**	-.49	-.42	-.50	-.08	**.64**	**-.58**
Angry Hostility	**.74**	-.38	-.42	**-.66**	-.12	**.63**	-.41
Dependency	**.72**	**-.58**	-.46	-.39	-.26	**.53**	**-.61**
Mistrust	**.53**	-.41	-.32	**-.67**	-.11	.49	-.41
HO N/NE	**.86**	**-.51**	-.44	**-.52**	-.15	**.69**	**-.57**

Note. N = 296 patients, 373 students. All correlations greater than |.13| (students) and greater than |.14| (patients) are significant at $p < .01$. Correlations greater than or equal to |.50| are shown in boldface. N/NE = neuroticism/negative emotionality; N = Big Five Inventory (BFI) Neuroticism; E = BFI Extraversion; C = BFI Conscientiousness; A = BFI Agreeableness; O = BFI Openness; NA = Expanded Form of the Positive and Negative Affect Schedule (PANAS-X) Negative Affect; PA = PANAS-X Positive Affect; HO = higher order.

Table A26. Correlations Between N/NE Factor Scores and Big Five/Trait Affect Orthogonalized Factor Scores

	N/NE	E/PE	C	A	O
Patients					
Anxiety	**.83**	-.18	-.18	-.19	.04
Sadness	**.68**	**-.37**	**-.36**	-.26	-.05
Angry Hostility	**.63**	.01	-.18	**-.62**	-.12
Dependency	**.55**	**-.53**	**-.35**	-.05	-.25
Mistrust	**.37**	-.18	-.09	**-.58**	-.12
HO N/NE	**.77**	**-.34**	**-.35**	-.29	-.13
Students					
Anxiety	**.84**	-.25	-.15	-.09	-.06
Sadness	**.74**	**-.37**	**-.30**	-.24	.01
Angry Hostility	**.69**	-.20	-.26	**-.47**	-.03
Dependency	**.62**	**-.48**	**-.32**	-.10	-.19
Mistrust	**.47**	-.28	-.19	**-.54**	.01
HO N/NE	**.81**	**-.36**	-.29	-.24	-.06

Note. $N = 291$ patients, 367 students. All correlations greater than |.14| (students) and greater than |.16| (patients) are significant at $p < .01$. Correlations greater than or equal to |.30| are shown in boldface. N/NE = neuroticism/negative emotionality; E/PE = extraversion/positive emotionality; C = conscientiousness; A = agreeableness; O = openness; HO N/NE = higher order N/NE.

Table A27. Zero-Order Correlations Between Clinical Traits and N/NE Factor Scores: Patient Sample

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust	HO N/NE
Anxiety Sensitivity Index-3						
Total	**.55**	.45	.31	.41	.34	**.51**
Physical	.40	.24	.21	.23	.22	.31
Cognitive	.47	.47	.35	.35	.38	.49
Social	**.53**	.41	.22	.45	.26	.47
Frost Multidimensional Perfectionism Scales						
COM	**.56**	**.61**	.37	**.50**	.36	**.61**
DAA	**.57**	**.58**	.34	**.56**	.32	**.62**
Intolerance of Uncertainty Scale-12						
Total	**.65**	**.54**	.44	**.56**	.46	**.63**
Prosp. Anxiety	**.60**	.46	.43	.43	.44	**.54**
Inhibit. Anxiety	**.63**	**.57**	.40	**.64**	.42	**.67**
Multidimensional Experiential Avoidance Questionnaire						
Distress Evaluation	.46	.46	.32	.47	.39	**.52**

Note. $N = 296$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.50| are shown in boldface. HO N/NE = higher order neuroticism/negative emotionality; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory.

Table A28. Zero-Order Correlations Between Clinical Traits and N/NE Factor Scores: Student Sample

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust	HO N/NE
Anxiety Sensitivity Index-3						
Total	**.58**	**.59**	**.53**	**.54**	.42	**.63**
Physical	.48	.44	.44	.39	.30	.49
Cognitive	.49	**.55**	**.51**	.47	.40	**.57**
Social	**.53**	**.53**	.43	**.52**	.39	**.56**
Frost Multidimensional Perfectionism Scales						
COM	.48	**.52**	.45	.44	.46	**.53**
DAA	**.55**	**.63**	**.50**	**.55**	.44	**.63**
Intolerance of Uncertainty Scale-12						
Total	**.57**	**.55**	**.50**	**.50**	.48	**.60**
Prosp. Anxiety	**.50**	.47	.44	.42	.45	**.52**
Inhibit. Anxiety	**.58**	**.60**	**.50**	**.56**	.46	**.64**
Multidimensional Experiential Avoidance Questionnaire						
Distress Evaluation	**.51**	.49	.40	.48	.39	**.54**

Note. $N = 373$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.50| are shown in boldface. HO N/NE = higher order neuroticism/negative emotionality; ASI-3 = Anxiety Sensitivity Index-3; FMPS = Frost Multidimensional Perfectionism Scales; COM = Concern Over Mistakes; DAA = Doubts About Action; IUS-12 = Intolerance of Uncertainty Scale-12; Prosp. = Prospective; Inhibit. = Inhibitory; MEAQ = Multidimensional Experiential Avoidance Questionnaire.

Table A29. Standardized Factor Loadings for Exploratory Factor Analysis (Promax Rotation) of N/NE Facet Scales and Clinical Traits in Patient Sample

Scale	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust
NEO PI-R Anxiety	**.77**	.07	.15	.03	-.15
ASI-3 Total	**.76**	-.02	**-.20**	-.02	.18
HEXACO PI Anxiety	**.73**	-.06	**.25**	-.05	-.08
PANAS-X Fear	**.72**	.18	-.08	-.08	.08
FI-FFM Anxiety	**.68**	.03	**.33**	.10	-.15
IUS-12 Total	**.63**	-.14	-.03	**.23**	**.20**
FMPS Total	**.47**	**.21**	-.08	.19	.06
MEAQ Distress Evaluation	**.32**	.03	-.07	.19	**.24**
PANAS-X Sadness	.00	**.86**	-.05	-.05	.09
FI-FFM Depression	.03	**.80**	.07	.11	.03
NEO PI-R Depression	.13	**.70**	.05	.16	-.06
NEO PI-R Angry Hostility	-.06	-.01	**.87**	-.01	.16
FI-FFM Anger Proneness	.03	-.04	**.86**	-.07	.08
PANAS-X Hostility	.10	.18	**.48**	-.14	**.35**
3VDI Submissive	-.06	.16	.05	**.84**	-.04
IDI Lack of Self-Conf.	.09	.06	-.07	**.78**	.06
SNAP Dependency	.06	-.10	.04	**.70**	-.02
IPIP 16PF Distrust	.00	-.03	.11	.02	**.86**
FI-FFM Trust vs. Cynicism	.05	.00	-.13	-.01	**-.83**
SNAP Mistrust	.15	.09	.01	.02	**.67**

Note. $N = 296$ patients. Loadings greater than or equal to |.20| are shown in boldface. Clinical traits are italicized. NEO PI-R = Revised NEO Personality Inventory; ASI-3 = Anxiety Sensitivity Index-3; HEXACO PI = HEXACO Personality Inventory; PANAS-X = Positive and Negative Affect Schedule – Expanded Form; FI-FFM = Faceted Inventory of the Five Factor Model; IUS-12 = Intolerance of Uncertainty Scale-12; FMPS = Frost Multidimensional Perfectionism Scales; MEAQ Distress Eval. = Multidimensional Experiential Avoidance Questionnaire; 3VDI = 3-Vector Dependency Inventory; IDI = Interpersonal Dependency Inventory; Self-Conf. = Self-Confidence; SNAP = Schedule for Nonadaptive and Adaptive Personality; IPIP 16PF = International Personality Item Pool version of the 16 Personality Faction Questionnaire.

Table A30. Standardized Factor Loadings and Standard Errors for Lower Order Psychopathology Structure Confirmatory Factor Analyses

	Patient		Student	
	Loading	SE	Loading	SE
Depression				
IDAS Dysphoria	.95	.02	.86	.02
PHQ-9	.92	.02	.78	.03
MASQ Anhedonic Depression	.87	.03	.76	.02
SCID screener (Low Mood)	.74	.04	.66	.04
SCID screener (Anhedonia)	.69	.05	.65	.05
IDAS-CR Dysphoria	.72	.04	.60	.04
Panic				
PASQ	.88	.04	.84	.02
MASQ Anxious Arousal	.86	.03	.68	.03
IDAS-CR Panic	.64	.06	.71	.04
SCID screener (Panic Attacks)	.59	.07	.68	.05
Social Anxiety				
IDAS Social Anxiety	.88	.03	.88	.03
IDAS-CR Social Anxiety	.82	.04	.75	.04
APPQ Social Phobia	.79	.04	.77	.04
SCID screener (Social Situations)	.77	.06	.54	.07
FQ Social Phobia	.72	.04	.64	.04
OCD				
OCI total	.97	.03	.86	.02
PCCP OCD composite	.88	.04	.81	.03
SCOPI total	.81	.04	.82	.02
IDAS OCD composite	.76	.04	.80	.02
SCID screener (Obsessions)	.68	.09	.44	.11
SCID screener (Compulsions)	.49	.08	.57	.07
PTSD				
ITRI total*	1.00	.—	.94	.02
PCL-C total*	1.00	.—	.88	.02
IDAS PTSD composite	.84	.03	.82	.02
IDAS-CR PTSD composite	.66	.05	.69	.04
SCID screener (Traumatic Event)	.54	.07	.59	.06

Table A30. Continued

	Patient		Student	
	Loading	SE	Loading	SE
GAD				
IDAS Anxious Mood	.89	.03	.84	.02
GAD-Q-IV	.87	.03	.86	.02
IDAS-CR Generalized Anxiety	.76	.05	.70	.04
WDQ-SF	.74	.04	.65	.03
SCID screener (Worry)	.49	.07	.53	.05

Note. $N = 252$ patients, 373 students. All loadings are significant at $p < .001$. Error terms of the interview scales within each factor were allowed to correlate. IDAS = Inventory of Depression and Anxiety Symptoms; PHQ-9 = Personal Health Questionnaire-9; MASQ = Mood and Anxiety Symptom Questionnaire; SCID = Structured Clinical Interview for *DSM-IV*; IDAS-CR = Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; PASQ = Panic Attack Symptom Questionnaire; APPQ = Albany Panic and Phobia Questionnaire; FQ = Fear Questionnaire; OCI = Obsessive-Compulsive Inventory; SCOPI = Schedule of Compulsions, Obsessions, and Pathological Impulses; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview; ITRI = Iowa Traumatic Response Inventory; PCL-C = PTSD Checklist-Civilian Version; GAD-Q-IV = Generalized Anxiety Disorder Questionnaire-IV; WDQ-SF = Worry Domains Questionnaire- Short Form.

***** In the patient sample only, the residual variances of these scales were fixed to 0, resulting in standardized factor loadings fixed to 1.0 and no estimates of standard errors.

Table A31. Fit Indices for Models of Psychopathology Structure

Model	χ^2 (df)	CFI	RMSEA	WRMR
Patients				
Lower order model: unmodified	1363.67 (419)	.941	.095	.942
Lower order model: fixed residual variances*	1359.40 (421)	.941	.094	.943
Lower order model: fixed residual variances, correlated interview error terms**	869.60 (411)	.971	.067	.737
Fear and Distress: fixed residual variances, correlated interview error terms	953.11 (419)	.967	.071	.809
Internalizing: fixed residual variances, correlated interview error terms	1108.16 (420)	.963	.075	.839
Students				
Lower order model: unmodified	2316.13 (419)	.930	.110	1.203
Lower order model: correlated interview error terms	1710.02 (409)	.952	.092	1.018
Lower order model: correlated interview error terms, collapsed "Panicked Distress" factor	1798.59 (391)	.948	.098	1.038
Internalizing: correlated interview error terms, collapsed "Panicked Distress" factor	1798.59 (391)	.948	.098	1.038

Note. N = 252 patients, 373 students. CFI = comparative fit index; RMSEA = root mean square error of approximation; WRMR = weighted root mean squared residual.
* Residual variances for ITRI total and PCL total were set to 0. ** Error terms for interviews within each factor were allowed to correlate.

Table A32. Zero-Order Correlations Among Symptom Factor Scores in Lower Order Measurement Model

	1	2	3	4	5	6
1. Depression	.--	.96	.95	.96	.74	.71
2. GAD	.89	.--	.87	.96	.78	.80
3. PTSD	.81	.78	.--	.91	.61	.71
4. Panic	.72	.77	.79	.--	.63	.74
5. Social Anxiety	.71	.73	.65	.63	.--	.61
6. OCD	.47	.50	.53	.60	.53	.--

Note. $N = 252$ patients (below the diagonal), 373 students (above the diagonal). All correlations are significant at $p < .001$.

Table A33. Standardized Factor Loadings and Standard Errors for Two-Factor Psychopathology Structure Confirmatory Factor Analyses: Patient Sample

	Loading	SE
Depression		
IDAS Dysphoria	.95	.02
PHQ-9	.92	.02
MASQ Anhedonic Depression	.86	.03
SCID screener (Low Mood)	.74	.04
SCID screener (Anhedonia)	.69	.05
IDAS-CR Dysphoria	.72	.05
Panic		
PASQ	.89	.04
MASQ Anxious Arousal	.86	.03
IDAS-CR Panic	.64	.06
SCID screener (Panic Attacks)	.59	.07
Social Anxiety		
IDAS Social Anxiety	.88	.03
IDAS-CR Social Anxiety	.82	.04
APPQ Social Phobia	.80	.04
SCID screener (Social Situations)	.77	.06
FQ Social Phobia	.72	.04
OCD		
OCI total	.97	.03
PCCP OCD composite	.88	.04
SCOPI total	.76	.04
IDAS OCD composite	.76	.04
SCID screener (Obsessions)	.68	.09
SCID screener (Compulsions)	.49	.08
PTSD		
ITRI total*	1.00	.—
PCL-C total*	1.00	.—
IDAS PTSD composite	.84	.03
IDAS-CR PTSD composite	.66	.05
SCID screener (Traumatic Event)	.55	.07

Table A33. Continued

	Loading	SE
GAD		
IDAS Anxious Mood	.90	.03
GAD-Q-IV	.87	.03
IDAS-CR Generalized Anxiety	.76	.05
WDQ-SF	.74	.04
SCID screener (Worry)	.49	.07
Distress		
GAD	.91	.02
Depression	.86	.03
PTSD	.82	.03
Fear		
Panic	.85	.04
Social Anxiety	.78	.04
OCD	.60	.05
r between Distress and Fear	.90	.03

Note. $N = 252$ patients. All loadings are significant at $p < .001$. Error terms of the interview scales within each factor were allowed to correlate. IDAS = Inventory of Depression and Anxiety Symptoms; PHQ-9 = Personal Health Questionnaire-9; MASQ = Mood and Anxiety Symptom Questionnaire; SCID = Structured Clinical Interview for *DSM-IV*; IDAS-CR = Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; PASQ = Panic Attack Symptom Questionnaire; APPQ = Albany Panic and Phobia Questionnaire; FQ = Fear Questionnaire; OCI = Obsessive-Compulsive Inventory; SCOPI = Schedule of Compulsions, Obsessions, and Pathological Impulses; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview; ITRI = Iowa Traumatic Response Inventory; PCL-C = PTSD Checklist-Civilian Version; GAD-Q-IV = Generalized Anxiety Disorder Questionnaire-IV; WDQ-SF = Worry Domains Questionnaire- Short Form.
* The residual variances of these scales were fixed to 0, resulting in standardized factor loadings fixed to 1.0 and no estimates of standard errors.

Table A34. Standardized Factor Loadings and Standard Errors for One-Factor Psychopathology Structure Confirmatory Factor Analyses: Student Sample

	Loading	SE
Panicked Distress		
ITRI total	.86	.02
IDAS Dysphoria	.85	.02
GAD-Q-IV	.85	.02
IDAS Anxious Mood	.83	.02
PCL-C total	.81	.02
PASQ	.79	.02
PHQ-9	.77	.02
MASQ Anhedonic Depression	.75	.02
IDAS PTSD composite	.75	.02
MASQ Anxious Arousal	.65	.03
IDAS-CR Generalized Anxiety	.65	.04
WDQ-SF	.64	.03
IDAS-CR Panic	.64	.05
SCID screener (Panic Attacks)	.63	.05
SCID screener (Low Mood)	.62	.04
SCID screener (Anhedonia)	.62	.05
IDAS-CR PTSD composite	.60	.04
IDAS-CR Dysphoria	.55	.04
SCID screener (Traumatic Event)	.51	.06
SCID screener (Worry)	.50	.05
Social Anxiety		
IDAS Social Anxiety	.88	.03
APPQ Social Phobia	.88	.04
IDAS-CR Social Anxiety	.75	.04
FQ Social Phobia	.64	.04
SCID screener (Social Situations)	.54	.07
OCD		
OCI total	.86	.02
SCOPI total	.82	.02
PCCP OCD composite	.81	.03
IDAS OCD composite	.80	.02
SCID screener (Compulsions)	.57	.07
SCID screener (Obsessions)	.44	.11

Table A34. Continued

	Loading	SE
Internalizing		
Panicked Distress	.94	.03
OCD	.76	.03
Social Anxiety	.71	.04

Note. $N = 373$ students. All loadings are significant at $p < .001$. Error terms of the interview scales within each factor were allowed to correlate. IDAS = Inventory of Depression and Anxiety Symptoms; PHQ-9 = Personal Health Questionnaire-9; MASQ = Mood and Anxiety Symptom Questionnaire; SCID = Structured Clinical Interview for *DSM-IV*; IDAS-CR = Clinician Rating Version of the Inventory of Depression and Anxiety Symptoms; PASQ = Panic Attack Symptom Questionnaire; APPQ = Albany Panic and Phobia Questionnaire; FQ = Fear Questionnaire; OCI = Obsessive-Compulsive Inventory; SCOPI = Schedule of Compulsions, Obsessions, and Pathological Impulses; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview; ITRI = Iowa Traumatic Response Inventory; PCL-C = PTSD Checklist-Civilian Version; GAD-Q-IV = Generalized Anxiety Disorder Questionnaire-IV; WDQ-SF = Worry Domains Questionnaire- Short Form.

Table A35. Zero-Order Correlations Among Symptom Factor Scores in Patient Sample

	1	2	3	4	5	6
1. Depression	.--					
2. GAD	.88	.--				
3. PTSD	.81	.79	.--			
4. Panic	.73	.77	.78	.--		
5. Social Anxiety	.70	.72	.66	.68	.--	
6. OCD	.48	.50	.53	.58	.52	.--

Note. $N = 252$ patients. All correlations are significant at $p < .001$.

Table A36. Zero-Order Correlations Between Symptom Factor Scores and Big Five/Trait Affect

	N	E	C	A	O	NA	PA
Patient Sample							
Depression	**.60**	-.29	-.39	-.34	-.05	**.75**	-.40
GAD	**.71**	-.27	-.34	-.32	.06	**.81**	-.28
PTSD	**.50**	-.21	-.29	-.30	-.01	**.73**	-.23
Panic	.49	-.19	-.25	-.28	.03	**.71**	-.17
Social Anxiety	**.53**	**-.50**	-.30	-.35	-.13	**.66**	-.33
OCD	.32	-.05	-.19	-.23	.12	.45	-.04
Distress	**.66**	-.29	-.36	-.35	.01	**.83**	-.31
Fear	**.62**	-.31	-.33	-.35	.00	**.80**	-.28
Student Sample							
Panicked Distress	**.73**	-.40	-.36	-.40	-.02	**.74**	-.44
Social Anxiety	**.62**	**-.55**	-.31	-.38	-.16	**.51**	-.45
OCD	**.55**	-.32	-.24	-.36	-.09	**.57**	-.28
Internalizing	**.73**	-.43	-.35	-.41	-.05	**.73**	-.44

Note. $N = 252$ patients, 373 students. All correlations greater than |.13| (students) and greater than |.15| (patients) are significant at $p < .01$. Correlations greater than or equal to |.50| are shown in boldface. N = Big Five Inventory (BFI) Neuroticism; E = BFI Extraversion; C = BFI Conscientiousness; A = BFI Agreeableness; O = BFI Openness; NA = Expanded Form of the Positive and Negative Affect Schedule (PANAS-X) Negative Affect; PA = PANAS-X Positive Affect.

Table A37. Correlations Between Symptom Factor Scores and Big Five/Trait Affect Orthogonalized Factor Scores

	N/NE	E/PE	C	A	O
Patients					
Depression	**.62**	-.21	**-.31**	-.24	.00
GAD	**.74**	-.17	-.24	-.22	.10
PTSD	**.55**	-.13	-.22	-.22	.04
Panic	**.54**	-.11	-.17	-.22	.08
Social Anxiety	**.50**	**-.42**	-.20	-.25	-.05
OCD	**.35**	.00	-.12	-.20	.17
Distress	**.69**	-.20	-.26	-.25	.06
Fear	**.64**	-.22	-.23	-.26	.06
Students					
Panicked Distress	**.74**	-.26	-.25	-.17	.07
Social Anxiety	**.55**	**-.47**	-.16	-.17	-.07
OCD	**.56**	-.19	-.13	-.20	-.03
Internalizing	**.73**	-.29	-.24	-.19	.04

Note. N = 248 patients, 367 students. All correlations greater than |.14| (students) and greater than |.16| (patients) are significant at $p < .01$. Correlations greater than or equal to |.30| are shown in boldface. N/NE = neuroticism/negative emotionality; E/PE = extraversion/positive emotionality; C = conscientiousness; A = agreeableness; O = openness.

Table A38. Zero-Order Correlations Between Symptom Factor Scores and N/NE Factor Scores

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust	HO N/NE
Patient Sample						
Depression	**.63**	**.79**	.47	**.56**	.48	**.74**
GAD	**.82**	**.77**	.52	**.59**	.51	**.79**
PTSD	**.59**	**.64**	.42	.46	.54	**.63**
Panic	**.63**	**.56**	.38	.43	.44	**.59**
Social Anxiety	**.62**	**.63**	.41	**.69**	.53	**.69**
OCD	.38	.33	.31	.28	.40	.38
Distress	**.76**	**.78**	.51	**.59**	**.55**	**.78**
Fear	**.73**	**.71**	.48	**.59**	**.55**	**.74**
Student Sample						
Panic. Distress	**.76**	**.80**	**.64**	**.66**	**.57**	**.82**
Social Anxiety	**.65**	**.66**	.52	**.70**	.46	**.70**
OCD	**.61**	.54	.53	**.47**	.49	**.62**
Internalizing	**.77**	**.79**	**.65**	**.68**	**.58**	**.82**

Note. $N = 252$ patients, 373 students. All correlations are significant at $p < .001$. Correlations greater than or equal to |.55| are shown in boldface. N/NE = Neuroticism/Negative Emotionality.

Table A39. Zero-Order Correlations Between Symptom Factor Scores and Clinical Traits: Patient Sample

	Depression	GAD	PTSD	Panic	Soc. Anx.	OCD	Distress	Fear
Anxiety Sensitivity Index-3								
Total	**.53**	**.58**	**.57**	**.68**	**.59**	**.51**	**.63**	**.69**
Physical	.31	.39	.41	**.60**	.40	.40	.44	**.52**
Cognitive	**.58**	**.56**	**.59**	**.57**	**.51**	.44	**.62**	**.63**
Social	.42	**.51**	.42	**.54**	**.57**	.45	**.53**	**.59**
Frost Multidimensional Perfectionism Scales								
COM	.49	**.54**	.38	.47	**.51**	.42	**.55**	**.53**
DAA	**.56**	**.60**	**.50**	**.52**	**.54**	**.53**	**.62**	**.61**
Intolerance of Uncertainty Scale-12								
Total	**.52**	**.60**	.49	**.53**	**.57**	**.51**	**.62**	**.60**
Prosp. Anx.	.42	**.50**	.39	.45	.46	.49	**.53**	**.50**
Inhibit. Anx.	**.58**	**.63**	**.54**	**.55**	**.61**	.46	**.65**	**.64**
Multidimensional Experiential Avoidance Questionnaire								
Distress Eval.	.44	.48	.41	.34	.45	.32	.46	.48

Note. $N = 252$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.50| are shown in boldface. Soc. Anx. = Social Anxiety; Intern. = Internalizing; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory; Eval. = Evaluation.

Table A40. Zero-Order Correlations Between Symptom Factor Scores and Clinical Traits: Student Sample

	Panicked Distress	Social Anxiety	OCD	Internalizing
Anxiety Sensitivity Index-3				
Total	**.70**	**.54**	**.62**	**.71**
Physical	**.57**	.36	**.51**	**.57**
Cognitive	**.64**	.39	**.56**	**.64**
Social	**.60**	**.62**	**.52**	**.63**
Frost Multidimensional Perfectionism Scales				
COM	.46	**.50**	.45	**.50**
DAA	**.58**	**.53**	**.59**	**.61**
Intolerance of Uncertainty Scale-12				
Total	**.65**	**.50**	**.58**	**.66**
Prosp. Anxiety	**.58**	.45	**.54**	**.59**
Inhibit. Anxiety	**.67**	**.51**	**.56**	**.68**
Multidimensional Experiential Avoidance Questionnaire				
Distress Evaluation	**.53**	.44	.42	**.53**

Note. $N = 373$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.50| are shown in boldface. Soc. Anx. = Social Anxiety; Intern. = Internalizing; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory.

Table A41. Fit Indices for Structural Equation Models Relating Internalizing Symptoms to Personality Traits

Model	χ^2 (df)	CFI	RMSEA	WRMR
Patients				
Distress with N/NE Facets*	2211.955 (499)	.919	.107	.819
Fear with N/NE Facets	1493.191 (463)	.932	.094	.823
Distress with Clinical Traits	685.858 (190)	.952	.102	.699
Fear with Clinical Traits	353.427 (168)	.974	.066	.655
Students				
Internalizing with N/NE Facets	4902.110 (1063)	.940	.098	1.023
Internalizing with Clinical Traits	2440.635 (573)	.951	.093	.983

Note. N = 252 patients, 373 students. CFI = comparative fit index; RMSEA = root mean square error of approximation; WRMR = weighted root mean squared residual.
*The correlations of Depression with Sadness and GAD with Anxiety were both constrained to 1.0 (see text).

Table A42. Correlations Between Internalizing Symptoms and N/NE Facets in SEM Models

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust
Patients					
Distress					
Depression	-.17	1.00**	-.18	.03	-.13
GAD	1.00**	.43**	.01	.06	.06
PTSD	.22*	.16	-.04	-.08	.28**
Fear					
Panic	.66**	.07	-.08	-.04	.14
Social Anxiety	.47**	.48**	.07	.71**	.40**
OCD	.07	-.35**	.05	-.12	.20*
Students					
Panicked Distress	.60**	.64**	-.11	-.04	.10
Social Anxiety	.28**	.21	-.10	.56**	.08
OCD	.20*	-.58**	-.05	-.20**	.10

Note. $N = 252$ patients, 373 students. * $p < .05$. ** $p < .01$. r between Distress and Higher Order N/NE = .86; r between Fear and Higher Order N/NE = .74; r between Internalizing and Higher Order N/NE (students) = .92. Separate analyses were conducted for Distress and for Fear disorders in the patient sample.

Table A43. Correlations Between Internalizing Symptoms and Clinical Traits in SEM Models

	Anxiety Sensitivity	Maladaptive Perfectionism	Intolerance of Uncertainty	Experiential Avoidance
Patients				
Distress				
Depression	-.44**	-.56**	-.89**	-.26
GAD	-.45*	-.34	-.75**	-.28
PTSD	-.07	-.44**	-.55*	-.15
Fear				
Panic	.48**	-.10	-.24	-.31*
Social Anxiety	.22*	.20*	.09	.12
OCD	.20**	.16*	.12	-.07
Students				
Panicked Distress	-.40*	-.24	-.26	-.17
Social Anxiety	-.06	.21**	-.06	.07
OCD	.01	.15*	.01	-.09

Note. N = 252 patients, 373 students. * $p < .05$. ** $p < .01$. r between Distress and N/NE = 1.01; r between Fear and N/NE = .89; r between Internalizing and Higher Order N/NE (students) = 1.02. Separate analyses were conducted for Distress and for Fear disorders in the patient sample.

Table A44. Simultaneous Standardized Regression Coefficients (β) of Distress Symptoms on Clinical Traits, Controlling for N/NE: Patient Sample

	Depression	GAD	PTSD
Anxiety Sensitivity Index-3			
Physical	-.03	.03	.10
Cognitive	.25**	.03	.27**
Social	-.09	.03	-.06
Frost Multidimensional Perfectionism Scales			
Concern Over Mistakes	.04	.07	-.10
Doubts About Action	.11	.10*	.10
Intolerance of Uncertainty Scale-12			
Prospective Anxiety	-.16*	-.10	-.12
Inhibitory Anxiety	.17*	.13*	.11
Multidimensional Experiential Avoidance Questionnaire			
Distress Evaluation	.09	.04	.07
Neuroticism/Negative Emotionality			
BFI Neuroticism	.09	.29**	-.10
PANAS-X NA	.45**	.44**	.62**

Note. $N = 252$ patients. * $p < .05$. ** $p < .01$. BFI = Big Five Inventory; PANAS-X NA = Positive and Negative Affect Schedule— Expanded Form Negative Affectivity.

Table A45. Simultaneous Standardized Regression Coefficients (β) of Internalizing Symptoms on Clinical Traits, Controlling for N/NE: Student Sample

	Panicked Distress	Social Anxiety	OCD
Anxiety Sensitivity Index-3			
Physical	.06	-.09	.11
Cognitive	.14*	-.18**	.10
Social	.03	.44**	.02
Frost Multidimensional Perfectionism Scales			
Concern Over Mistakes	-.01	.14*	-.03
Doubts About Action	.12**	.10	.34**
Intolerance of Uncertainty Scale-12			
Prospective Anxiety	.08	-.09	.23**
Inhibitory Anxiety	.11*	.13	-.03
Multidimensional Experiential Avoidance Questionnaire			
Distress Evaluation	.10**	.10*	.05
Neuroticism/Negative Emotionality			
BFI Neuroticism	.21**	.26**	.06
PANAS-X NA	.31**	.09	.15*

Note. N = 373 students. * $p < .05$. ** $p < .01$. BFI = Big Five Inventory; PANAS-X NA = Positive and Negative Affect Schedule— Expanded Form Negative Affectivity.

Table A46. Simultaneous Standardized Regression Coefficients (β) of Fear Symptoms on Clinical Traits, Controlling for N/NE: Patient Sample

	Panic	Social Anxiety	OCD
Anxiety Sensitivity Index-3			
Physical	.46**	.03	.10
Cognitive	.07	-.05	.05
Social	.01	.30**	.07
Frost Multidimensional Perfectionism Scales			
Concern Over Mistakes	.04	.12*	-.01
Doubts About Action	.05	.07	.36**
Intolerance of Uncertainty Scale-12			
Prospective Anxiety	-.13	-.21**	.28**
Inhibitory Anxiety	.12	.36**	-.05
Multidimensional Experiential Avoidance Questionnaire			
Distress Evaluation	-.14**	.12*	.02
Neuroticism/Negative Emotionality			
BFI Neuroticism	-.06	-.02	-.15
PANAS-X NA	.52**	.22**	.10

Note. $N = 252$ patients. * $p < .05$. ** $p < .01$. BFI = Big Five Inventory; PANAS-X NA = Positive and Negative Affect Schedule— Expanded Form Negative Affectivity.

Table A47. Higher and Lower Order Standardized Factor Loadings and Standard Errors for PTSD Confirmatory Factor Analyses

	Patient		Student	
	Loading	SE	Loading	SE
Intrusions				
ITRI Intrusions	.95	.02	.92	.01
PCL-C Intrusions	.92	.02	.88	.02
IDAS Traumatic Intrusions	.86	.02	.86	.01
IDAS-CR Traumatic Intrusions	.74	.04	.62	.04
Avoidance				
ITRI Avoidance	.94	.02	.89	.02
PCL-C Avoidance	.87	.03	.86	.02
IDAS Traumatic Avoidance	.88	.03	.80	.02
IDAS-CR Traumatic Avoidance	.75	.04	.68	.04
Hyperarousal				
ITRI Hyperarousal	.72	.04	.76	.02
PCL-C Hyperarousal	.70	.04	.74	.03
IDAS-CR Traumatic Hyperarousal	.71	.05	.63	.05
Dysphoria				
ITRI Dysphoria	.95	.02	.91	.02
PCL-C Dysphoria	.93	.03	.87	.02
IDAS Dysphoria	.93	.03	.83	.02
IDAS-CR Dysphoria	.63	.05	.58	.05
Higher Order PTSD				
Intrusions	.97	.02	.98	.01
Avoidance	.91	.02	.92	.02
Hyperarousal	.84	.04	.92	.02
Dysphoria	.72	.04	.84	.02

Note. N = 252 patients, 373 students. All loadings are significant at $p < .001$. Error terms among the IDAS-CR (interview) scales were allowed to correlate. SE = standard error; ITRI = Iowa Traumatic Response Inventory; PCL-C = PTSD Checklist- Civilian Version; IDAS = Inventory of Depression and Anxiety Symptoms; IDAS-CR = Clinician-Rated Version of the Inventory of Depression and Anxiety Symptoms.

Table A48. Fit Indices for Structural Equation Models of PTSD and OCD

Model	χ^2 (df)	CFI	RMSEA	WRMR
Patients				
PTSD symptoms only	306.646 (80)	.958	.106	.539
PTSD with N/NE facets	2497.166 (458)	.901	.133	.849
PTSD with clinical traits	1062.667 (162)	.893	.149	.810
OCD symptoms only	297.086 (104)	.958	.086	.694
OCD with N/NE facets	1831.976 (514)	.898	.101	.887
OCD with clinical traits	1056.785 (269)	.907	.108	.835
Students				
PTSD symptoms only	707.308 (80)	.938	.145	.888
PTSD with N/NE facets	3244.215 (458)	.918	.128	1.001
PTSD with clinical traits	1153.628 (162)	.940	.128	.883
OCD symptoms only	693.256 (104)	.920	.123	1.026
OCD with N/NE facets	2388.181 (512)	.928	.099	.958
OCD with clinical traits	1600.173 (268)	.920	.115	.979

Note. N = 252 patients, 373 students. Error terms among the interview scales were allowed to correlate. CFI = comparative fit index; RMSEA = root mean square error of approximation; WRMR = weighted root mean squared residual.

Table A49. Zero-Order Correlations Among PTSD Symptom Factors

	1	2	3	4
1. Intrusions	.--	.89	.90	.82
2. Avoidance	.88	.--	.84	.77
3. Hyperarousal	.81	.77	.--	.77
4. Dysphoria	.69	.65	.60	.--

Note. $N = 252$ patients (below the diagonal), 373 students (above the diagonal). All correlations are significant at $p < .001$.

Table A50. Zero-Order Correlations Between PTSD Symptom Factor Scores and N/NE Factor Scores

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust	HO N/NE
Patient Sample						
Intrusions	.48	.48	.32	.35	.45	.49
Avoidance	.44	.49	.32	.36	.48	.49
Hyperarousal	**.60**	**.52**	.42	.38	**.51**	**.56**
Dysphoria	**.64**	**.80**	**.51**	**.55**	**.53**	**.75**
Higher Order PTSD	**.51**	**.53**	.35	.38	.49	**.53**
Student Sample						
Intrusions	.**57**	**.62**	**.50**	.47	.46	**.63**
Avoidance	**.53**	**.59**	.46	.45	.45	.**59**
Hyperarousal	**.60**	**.65**	**.54**	**.50**	**.51**	**.66**
Dysphoria	**.69**	**.80**	**.63**	**.63**	**.56**	**.79**
Higher Order PTSD	.**59**	**.65**	**.52**	**.50**	.49	**.65**

Note. N = 252 patients, 373 students. All correlations are significant at $p < .001$. Correlations greater than or equal to |.50| are shown in boldface. N/NE = Neuroticism/Negative Emotionality.

Table A51. Zero-Order Correlations Between PTSD Symptom Factor Scores and Clinical Traits: Patient Sample

	Intrusions	Avoidance	Hyperarousal	Dysphoria	HO PTSD
Anxiety Sensitivity Index-3					
Total	**.47**	.44	**.56**	**.53**	**.50**
Physical	.35	.31	**.46**	.30	.36
Cognitive	**.49**	**.45**	**.54**	**.60**	**.51**
Social	.34	.35	.39	.41	.37
Frost Multidimensional Perfectionism Scales					
COM	.25	.27	.33	.48	.29
DAA	.37	.37	.44	**.56**	.41
Intolerance of Uncertainty Scale-12					
Total	.37	.35	**.46**	**.52**	.40
Prosp. Anxiety	.29	.27	.38	.42	.31
Inhibit. Anxiety	.42	.40	**.49**	**.58**	.44
Multidimensional Experiential Avoidance Questionnaire					
Distress Evaluation	.34	.39	.39	.43	.38

Note. $N = 252$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.45| are shown in boldface. HO = higher order; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory.

Table A52. Zero-Order Correlations Between PTSD Symptom Factor Scores and Clinical Traits: Student Sample

	Intrusions	Avoidance	Hyperarousal	Dysphoria	HO PTSD
Anxiety Sensitivity Index-3					
Total	**.59**	.54	**.65**	**.66**	**.61**
Physical	.51	.44	**.56**	.52	.51
Cognitive	**.58**	.53	**.63**	**.65**	**.60**
Social	.46	.43	.51	**.55**	.48
Frost Multidimensional Perfectionism Scales					
COM	.34	.35	.35	.42	.36
DAA	.46	.44	.48	**.55**	.48
Intolerance of Uncertainty Scale-12					
Total	.52	.50	**.57**	**.62**	**.55**
Prosp. Anxiety	.44	.44	.49	.54	.47
Inhibit. Anxiety	**.56**	.52	**.59**	**.65**	**.58**
Multidimensional Experiential Avoidance Questionnaire					
Distress Evaluation	.46	.47	.46	.50	.48

Note. $N = 373$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.55| are shown in boldface. HO = higher order; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory.

Table A53. Correlations Between PTSD Symptom Dimensions and N/NE Facets in SEM Models

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust
Patients					
Intrusions	.05	-.16	-.31*	-.27	.21
Avoidance	-.03	.04	-.21	-.14	.39**
Hyperarousal	1.00**	.17	.40**	.01	.52**
Dysphoria	.73**	1.00**	.43**	.37**	.40**
Students					
Intrusions	-.11	-.14	-.33	-.59**	-.17
Avoidance	-.05	-.05	-.33**	-.30**	.03
Hyperarousal	1.00**	-.38	.58**	-.22	.71**
Dysphoria	.70**	1.00**	.47**	.32**	.44**

Note. $N = 252$ patients, 373 students. * $p < .05$. ** $p < .01$. r between PTSD and Higher Order N/NE = .67 in patients and .79 in students.

Table A54. Simultaneous Standardized Regression Coefficients (β) of PTSD Symptoms on Clinical Traits, Controlling for N/NE: Patient Sample

	Intrusions	Avoidance	Hyperarousal	Dysphoria
Anxiety Sensitivity Index-3				
Physical	.11	.03	.39**	-.08
Cognitive	.24**	.17*	.13	.27**
Social	-.03	.04	-.17*	-.09
Frost Multidimensional Perfectionism Scales				
Concern Over Mistakes	-.17*	-.11	-.09	.07
Doubts About Action	.05	.07	.06	.12*
Intolerance of Uncertainty Scale-12				
Prospective Anxiety	-.11	-.15	.01	-.15*
Inhibitory Anxiety	.10	.07	.05	.16**
Multidimensional Experiential Avoidance Questionnaire				
Distress Evaluation	.06	.19**	-.06	.04
Neuroticism/Negative Emotionality				
BFI Neuroticism	-.12	-.08	-.12	.09
PANAS-X NA	.55**	.22**	.74**	.50**

Note. N = 252 patients. * $p < .05$. ** $p < .01$. BFI = Big Five Inventory; PANAS-X NA = Positive and Negative Affect Schedule— Expanded Form Negative Affectivity.

Table A55. Simultaneous Standardized Regression Coefficients (β) of PTSD Symptoms on Clinical Traits, Controlling for N/NE: Student Sample

	Intrusions	Avoidance	Hyperarousal	Dysphoria
Anxiety Sensitivity Index-3				
Physical	.11	-.03	.19*	-.06
Cognitive	.13	.18*	.17*	.23**
Social	-.06	-.03	.06	.01
Frost Multidimensional Perfectionism Scales				
Concern Over Mistakes	-.03	.03	-.08	-.01
Doubts About Action	.13	.08	.07	.13**
Intolerance of Uncertainty Scale-12				
Prospective Anxiety	-.05	.05	.13*	.06
Inhibitory Anxiety	.18*	.07	.02	.12
Multidimensional Experiential Avoidance Questionnaire				
Distress Evaluation	.15**	.22**	.04	.09*
Neuroticism/Negative Emotionality				
BFI Neuroticism	-.03	-.01	.07	.26**
PANAS-X NA	.40**	.31**	.41**	.26**

Note. N = 373 students. * $p < .05$. ** $p < .01$. BFI = Big Five Inventory; PANAS-X NA = Positive and Negative Affect Schedule— Expanded Form Negative Affectivity.

Table A56. Higher and Lower Order Standardized Factor Loadings and Standard Errors for OCD Confirmatory Factor Analyses

	Patient		Student	
	Loading	SE	Loading	SE
Checking				
SCOPI Obsessive Checking	.94	.02	.92	.02
OCI-R Checking	.86	.03	.84	.02
IDAS Checking	.80	.03	.80	.02
PCCP Checking/Doubting	.75	.04	.67	.04
Ordering				
IDAS Ordering	.90	.02	.86	.02
SCOPI Compulsive Rituals	.86	.03	.81	.03
OCI-R Ordering	.84	.03	.84	.02
PCCP Ordering/Rituals	.78	.04	.65	.05
Cleaning				
SCOPI Obsessive Cleanliness	.90	.03	.83	.02
OCI-R Washing	.85	.03	.91	.02
IDAS Washing/Cleaning	.84	.03	.80	.02
PCCP Cleaning/Washing	.77	.03	.67	.05
Obsessing				
OCI-R Obsessing	.91	.08	.92	.06
PCCP Intrus. Thoughts/Obsessions	.73	.07	.54	.06
Hoarding				
OCI-R Hoarding	.98	.04	.96	.03
SCOPI Hoarding	.95	.04	.92	.03
PCCP Hoarding	.83	.05	.63	.05
Higher Order OCD				
Checking	.91	.04	.92	.02
Ordering	.81	.04	.85	.03
Cleaning	.57	.05	.67	.04
Obsessing	.49	.07	.71	.06
Hoarding	.41	.07	.59	.05

Note. $N = 252$ patients, 373 students. All loadings are significant at $p < .001$. Error terms among the PCCP interview scales were allowed to correlate. SE = standard error;

Table A56. Continued

SCOPI = Schedule for Compulsions, Obsessions, and Pathological Impulses; OCI-R = Obsessive- Compulsive Inventory- Revised; IDAS = Inventory for Depression and Anxiety Symptoms; PCCP = Personality, Cognitions, Consciousness, and Perceptions Interview; Intrus. = Intrusive.

Table A57. Zero-Order Correlations Among OCD Symptom Factors

	1	2	3	4	5
1. Checking	.--	**.78**	**.61**	**.65**	**.54**
2. Ordering	**.74**	.--	**.57**	**.61**	**.50**
3. Cleaning	**.52**	.47	.--	.47	.39
4. Obsessing	.44	.40	.28	.--	.42
5. Hoarding	.37	.33	.24	.20	.--

Note. $N = 252$ patients (below the diagonal), 373 students (above the diagonal). All correlations are significant at $p < .001$. Correlations greater than or equal to .50 are shown in boldface.

Table A58. Zero-Order Correlations Between OCD Symptom Factor Scores and N/NE Factor Scores

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust	HO N/NE
Patient Sample						
Checking	.37	.27	.29	.26	.34	.34
Ordering	.22	.12	.23	.11	.30	.19
Cleaning	.13	.07	.16	.05	.24	.13
Obsessing	**.57**	**.57**	**.36**	**.46**	**.45**	**.58**
Hoarding	.19	.24	.20	.20	.27	.25
Higher Order OCD	.36	.26	.30	.24	.37	.34
Student Sample						
Checking	**.60**	**.50**	**.50**	**.45**	**.46**	**.58**
Ordering	**.52**	.44	**.46**	.38	.41	**.52**
Cleaning	.43	.30	.32	.28	.33	.38
Obsessing	**.54**	**.55**	**.49**	**.46**	**.45**	**.59**
Hoarding	.32	.30	.36	.31	.32	.36
Higher Order OCD	**.59**	**.51**	**.51**	**.45**	**.47**	**.59**

Note. $N = 252$ patients, 373 students. Correlations greater than or equal to |.16| in patients are significant at $p < .01$; all correlations in students are significant at $p < .001$. Correlations greater than or equal to |.45| are shown in boldface. N/NE = Neuroticism/Negative Emotionality.

Table A59. Zero-Order Correlations Between OCD Symptom Factor Scores and Clinical Traits: Patient Sample

	Checking	Ordering	Cleaning	Obsessing	Hoarding	HO OCD
Anxiety Sensitivity Index-3						
Total	**.49**	.35	.32	**.51**	.25	**.49**
Physical	.37	.31	.36	.29	.13	.39
Cognitive	.41	.27	.19	**.57**	.23	.41
Social	**.45**	.31	.25	.43	.26	.44
Frost Multidimensional Perfectionism Scales						
COM	.34	.26	.24	.39	.32	.36
DAA	**.53**	.34	.29	**.54**	.36	**.52**
Intolerance of Uncertainty Scale-12						
Total	**.46**	.38	.26	**.54**	.28	**.48**
Prosp. Anxiety	**.45**	.38	.30	**.48**	.25	**.47**
Inhibit. Anxiety	.41	.31	.18	**.54**	.27	.42
Multidimensional Experiential Avoidance Questionnaire						
Distress Evaluation	.28	.24	.19	.38	.15	.30

Note. $N = 252$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.45| are shown in boldface. HO = higher order; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory.

Table A60.Zero-Order Correlations Between OCD Symptom Factor Scores and Clinical Traits: Student Sample

	Checking	Ordering	Cleaning	Obsessing	Hoarding	HO OCD
Anxiety Sensitivity Index-3						
Total	**.54**	**.51**	**.50**	**.63**	.38	**.58**
Physical	.42	.43	.45	**.51**	.30	.47
Cognitive	.40	.45	.44	**.64**	.39	**.54**
Social	.47	.45	.41	.48	.31	**.50**
Frost Multidimensional Perfectionism Scales						
COM	.46	.42	.30	.35	.31	.46
DAA	**.60**	**.53**	.38	**.52**	.40	**.60**
Intolerance of Uncertainty Scale-12						
Total	**.58**	**.52**	.38	**.55**	.39	**.59**
Prosp. Anxiety	**.54**	**.51**	.34	.47	.36	**.55**
Inhibit. Anxiety	**.55**	.48	.39	**.58**	.37	**.56**
Multidimensional Experiential Avoidance Questionnaire						
Distress Evaluation	.39	.38	.29	.40	.24	.41

Note. $N = 373$. All correlations are significant at $p < .001$. Correlations greater than or equal to |.50| are shown in boldface. HO = higher order; COM = Concern Over Mistakes; DAA = Doubts About Action; Prosp. = Prospective; Inhibit. = Inhibitory.

Table A61. Correlations Between OCD Symptom Dimensions and N/NE Facets in SEM Models

	Anxiety	Sadness	Angry Hostility	Dependency	Mistrust
Patients					
Checking	.33	-.40	.11	.03	.33
Ordering	-.08	-.55**	.06	-.28*	.28*
Cleaning	-.07	-.30*	.06	-.18	.21*
Obsessing	1.00**	1.00**	.50**	.59**	.56**
Hoarding	.11	.23	.17	.16	.28**
Students					
Checking	.63**	-.42	.07	-.17	.22
Ordering	.24	-.45**	.07	-.22*	.11
Cleaning	.31**	-.43**	-.12	-.14*	.04
Obsessing	.81**	1.00**	.70**	.27**	.62**
Hoarding	.04	-.12	.22*	.06	.16*

Note. $N = 252$ patients, 373 students. * $p < .05$. ** $p < .01$. r between OCD and Higher Order N/NE = .40 in patients and .67 in students.

Table A62. Correlations Between OCD Symptoms and Clinical Traits in SEM Model: Patient Sample

	Checking	Ordering	Cleaning	Obsessing	Hoarding
Anxiety Sensitivity Index-3					
Physical	.41*	.20	.33**	.21*	.01
Cognitive	.24	-.01	.01	.64**	.12
Social	.50*	.08	.11	.48**	.19*
Frost Multidimensional Perfectionism Scales					
Concern Over Mistakes	.01	-.03	.11	.43**	.30**
Doubts About Action	.62**	.11	.17	.69**	.36**
Intolerance of Uncertainty Scale-12					
Prospective Anxiety	.41*	.24	.20	.53**	.19*
Inhibitory Anxiety	.17	.04	-.05	.66**	.22*
Multidimensional Experiential Avoidance Questionnaire					
Distress Evaluation	-.03	.06	.07	.41**	.06

Note. $N = 252$ patients. * $p < .05$. ** $p < .01$. r between OCD and Higher Order N/NE = .47.

Table A63. Correlations Between OCD Symptoms and Clinical Traits in SEM Model: Student Sample

	Checking	Ordering	Cleaning	Obsessing	Hoarding
Anxiety Sensitivity Index-3					
Physical	-.30**	-.05	.15*	.30**	-.07
Cognitive	-.28*	-.21*	.04	.61**	.05
Social	-.36**	-.18*	.13	.23*	-.09
Frost Multidimensional Perfectionism Scales					
Concern Over Mistakes	.15	.09	.00	.09	.09
Doubts About Action	.35**	.16	.05	.42**	.17**
Intolerance of Uncertainty Scale-12					
Prospective Anxiety	.18	.15	-.07	.25**	.09
Inhibitory Anxiety	-.03	-.14	-.08	.48**	.02
Multidimensional Experiential Avoidance Questionnaire					
Distress Evaluation	-.13	.00	-.02	.19*	-.06

Note. $N = 373$ students. * $p < .05$. ** $p < .01$. r between OCD and Higher Order N/NE = .78.

Table A64. Summary of Associations of Clinical Traits with Internalizing Symptoms in Simultaneous Multiple Regressions, Controlling for N/NE

Symptom	Shared Traits	Specific Traits
Depression	Anxiety Sensitivity (Cognitive) Intolerance of Uncertainty (Inhibitory)	None
GAD	Maladaptive Perfectionism (DAA) Intolerance of Uncertainty (Inhibitory)	None
PTSD	Anxiety Sensitivity (Cognitive)	None
Panic	None	Anxiety Sensitivity (Physical)
Social Anxiety	*Intolerance of Uncertainty (Inhibitory)*	Anxiety Sensitivity (Social) Maladaptive Perfectionism (COM) Experiential Avoidance
OCD	Maladaptive Perfectionism (DAA)	Intolerance of Uncertainty (Prospective)

Note. Shared traits indicate significant predictors for more than one symptom; specific traits indicate significant predictors for one symptom only. For social anxiety and OCD, italics indicate significant predictors in one sample only; other results are from patient sample only. Suppressor effects were omitted. DAA = Doubts About Action; COM = Concern Over Mistakes.

Table A65. Summary of Associations of Clinical Traits with PTSD Symptom Dimensions in Simultaneous Multiple Regressions, Controlling for N/NE

Symptom	Shared Traits	Specific Traits
Intrusions	*Anxiety Sensitivity (Cognitive)* *Experiential Avoidance*	None
Avoidance	Anxiety Sensitivity (Cognitive) Experiential Avoidance	None
Hyperarousal	*Anxiety Sensitivity (Cognitive)*	Anxiety Sensitivity (Physical) *Intolerance of Uncertainty (Prospective)*
Dysphoria	Anxiety Sensitivity (Cognitive) *Experiential Avoidance*	Maladaptive Perfectionism (DAA) *Intolerance of Uncertainty (Inhibitory)*

Note. Shared traits indicate significant predictors for more than one symptom; specific traits indicate significant predictors for one symptom only. Italics indicate significant predictors in one sample only. Suppressor effects were omitted. DAA = Doubts About Action.

Table A66. Summary of Associations of Clinical Traits with OCD Symptom Dimensions in SEM Model

Symptom	Shared Traits	Specific Traits
Checking	Maladaptive Perfectionism (DAA)	None
Ordering	None	None
Cleaning	None	Anxiety Sensitivity (Physical)
Obsessing	Maladaptive Perfectionism (DAA)	Anxiety Sensitivity (Physical) Anxiety Sensitivity (Cognitive) Anxiety Sensitivity (Social) *Maladaptive Perfectionism (COM)* Intolerance of Uncertainty (Prospective) Intolerance of Uncertainty (Inhibitory) Experiential Avoidance
Hoarding	Maladaptive Perfectionism (DAA)	*Maladaptive Perfectionism (COM)*

Note. Shared traits indicate significant predictors for more than two symptoms; specific traits indicate significant predictors for one or two symptoms. Italics indicate significant predictors ($p < .01$) in one sample only. Suppressor effects were omitted. DAA = Doubts About Action; COM = Concern Over Mistakes.

APPENDIX B

FIGURES

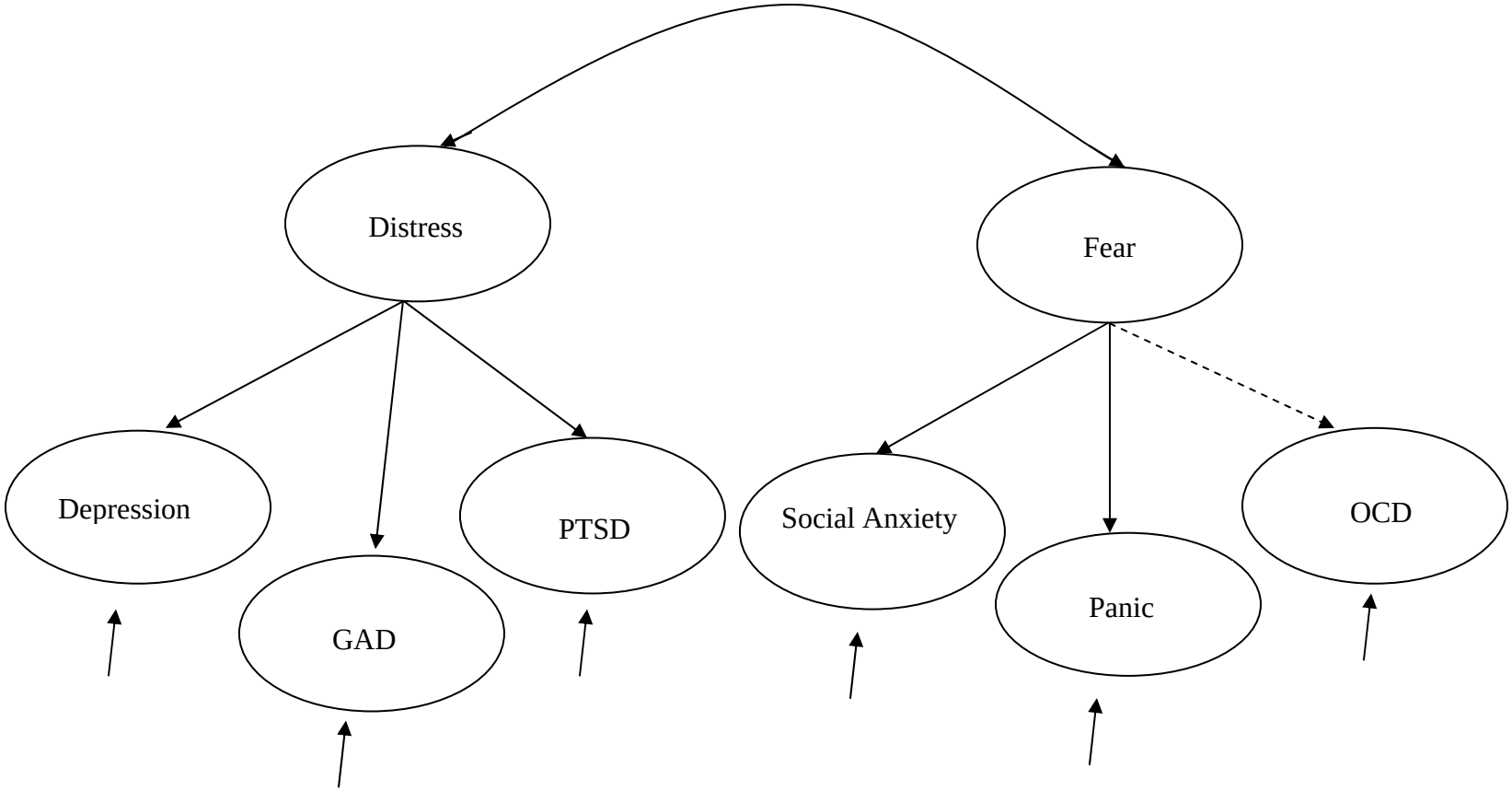

Figure B1. Hypothesized higher order factor structure for the internalizing disorders. Note that ovals indicate latent constructs and "floating" arrows indicate error terms. Single-headed arrows show paths for hypothesized factor loading and the double-headed arrow shows covariance paths. The dashed line indicates tentative placement within the structure based on limited and conflicting evidence.

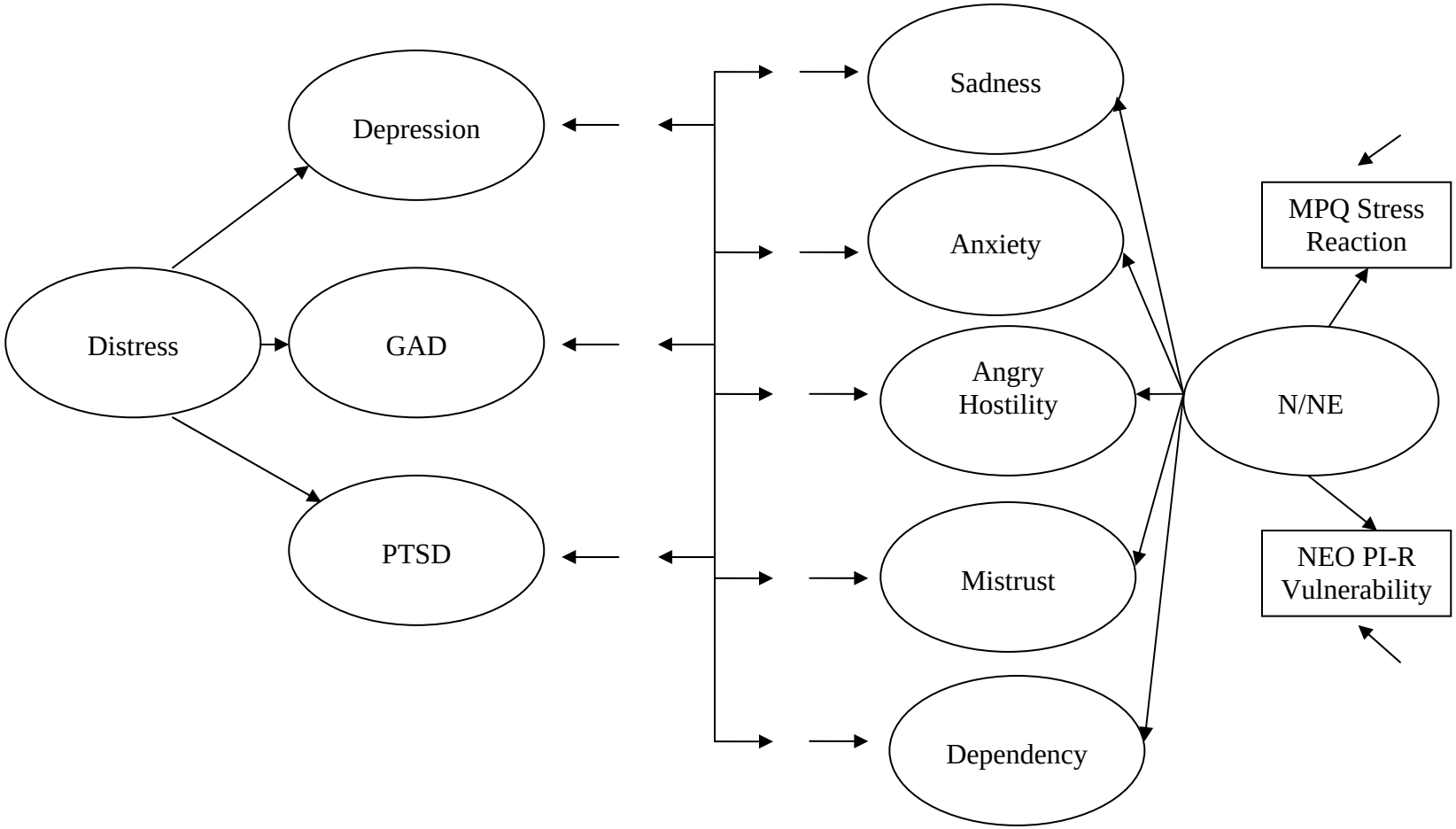

Figure B2. Hypothesized latent variable model relating the Distress disorders to N/NE facets. Note that ovals indicate latent constructs, rectangles indicate observed variables, and "floating" arrows indicate error terms. Single-headed arrows show factor loadings, and arrows with elbow connectors indicate the covariance between the unique components (i.e., error terms) of each of the N/NE facets and each of the Distress disorders. Note that the error terms do not covary *within* the same higher order factor. Distress and N/NE are allowed to covary (not shown in figure). MPQ = Multidimensional Personality Questionnaire; NEO PI-R = Revised NEO Personality Inventory; N/NE = neuroticism/negative emotionality.

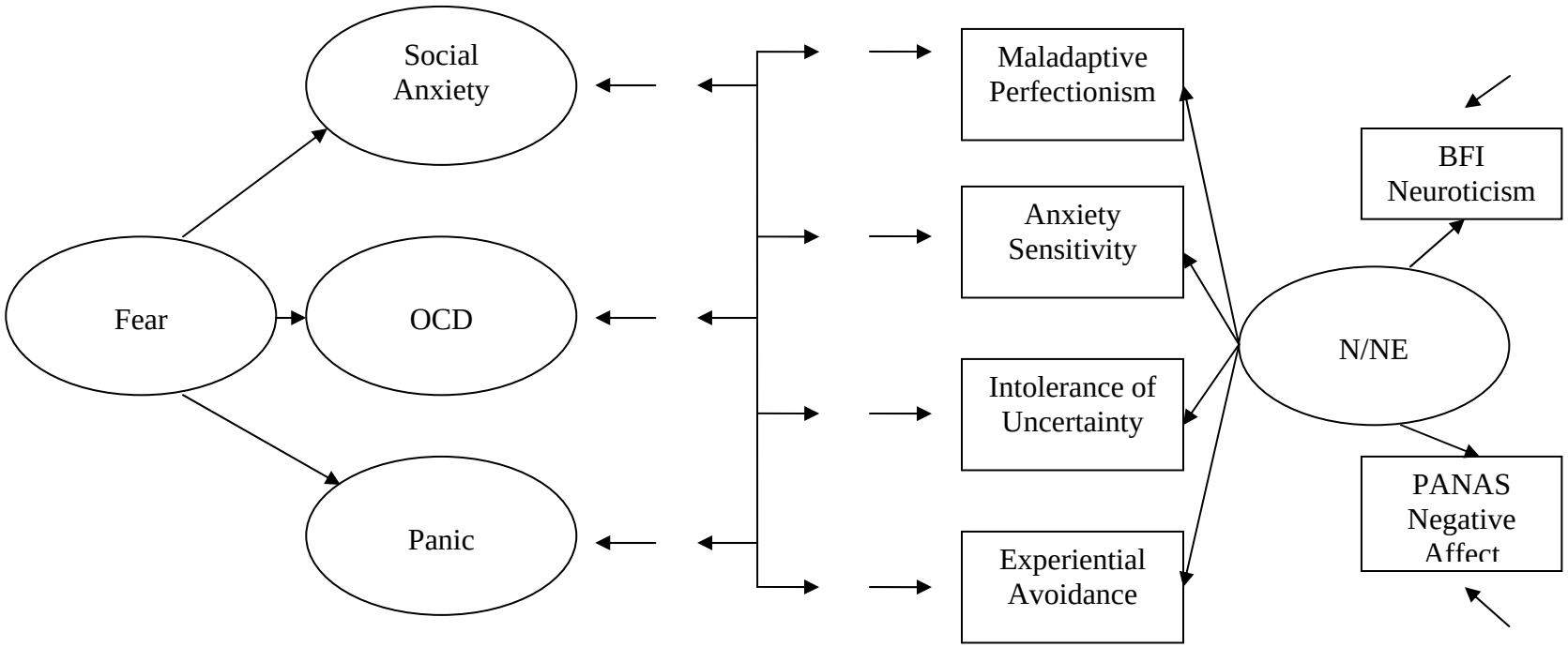

Figure B3. Hypothesized latent variable model relating the Fear disorders to clinical traits. Note that ovals indicate latent constructs, rectangles indicate observed variables, and "floating" arrows indicate error terms. Single headed-arrows show factor loadings, and arrows with elbow connectors indicate the covariance between the unique components (i.e., error terms) of each clinical trait and each Fear disorder. Note that the error terms do not covary *within* the same higher order factor. Fear and N/NE are allowed to covary (not shown in figure). BFI = Big Five Inventory; PANAS= Positive and Negative Affect Schedule; N/NE = neuroticism/negative emotionality.

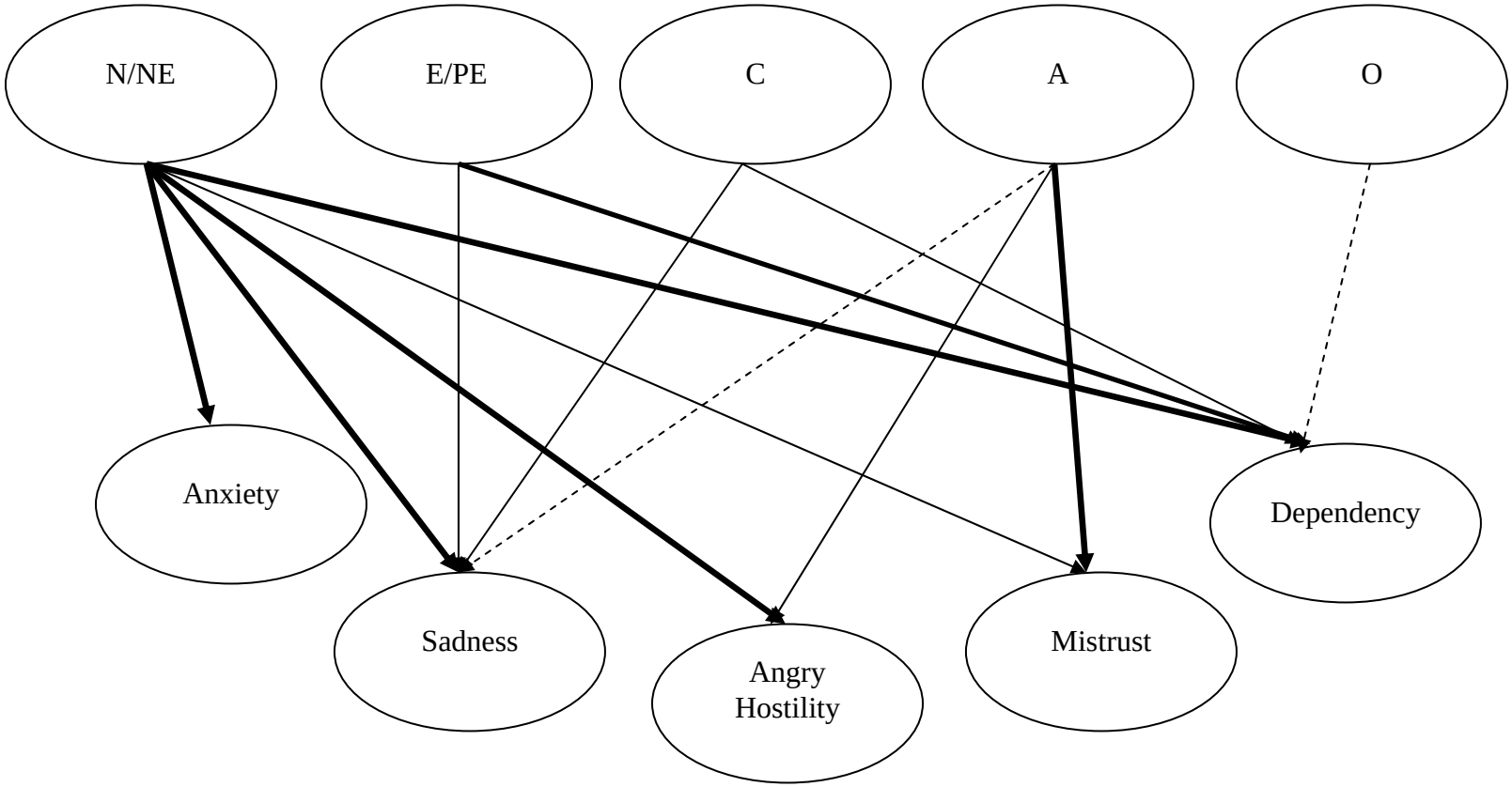

Figure B4. Schematic representation of significant associations of N/NE facets with Big Five/Trait Affect, based on correlations with orthogonalized Big Five factor scores. Heavy solid line indicates a strong, primary association (i.e., $r > .50$), thin solid line indicates a moderate association ($r = .25$ to $.50$), dashed line indicates a weaker association ($r < .25$). All associations with N/NE are positive; all associations with other higher order traits are negative. N/NE = neuroticism/negative emotionality; E/PE = extraversion/positive emotionality; C = conscientiousness; A = agreeableness; O = Openness.

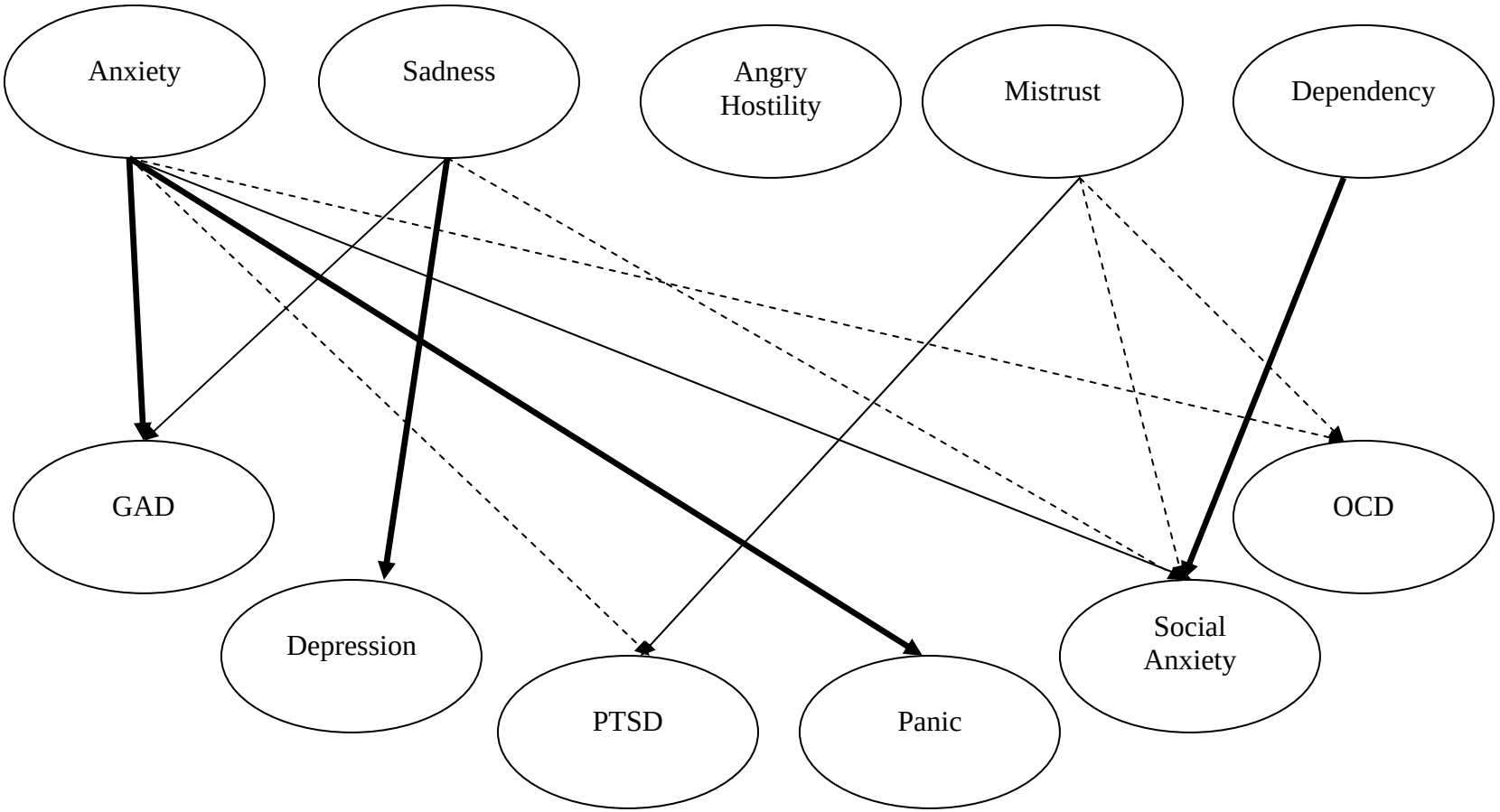

Figure B5. Schematic representation of significant multivariate associations of symptoms with N/NE facets. Heavy solid line indicates a strong, primary association (i.e., $r > .50$), thin solid line indicates a moderate association ($r = .25$ to $.50$), dashed line indicates a weaker association ($r < .20$ and/or only significant in one sample for social anxiety or OCD). Suppressor effects were omitted from the figure.

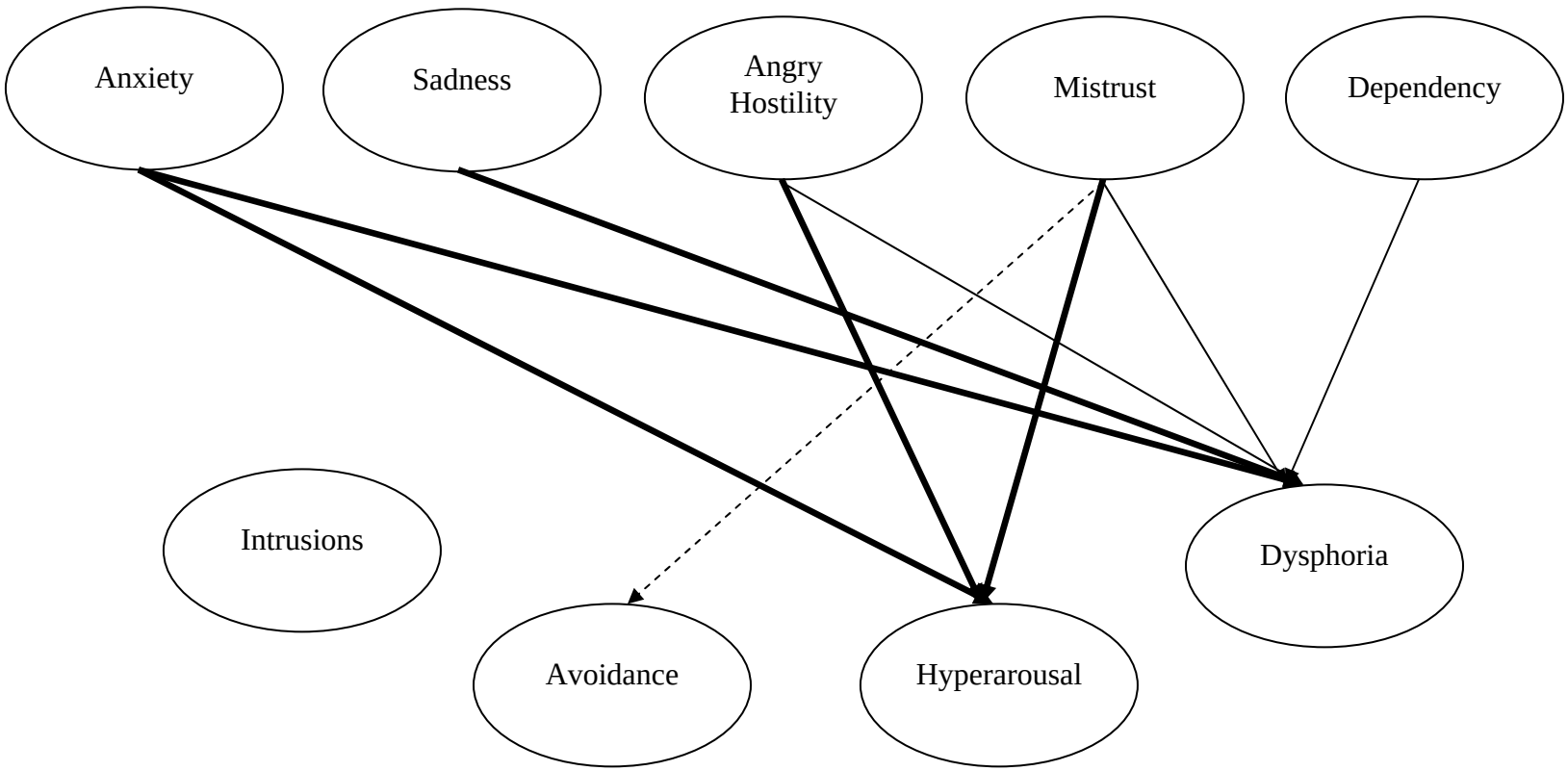

Figure B6. Schematic representation of significant multivariate associations of PTSD symptom dimensions with N/NE facets. Heavy solid line indicates a strong, primary association (i.e., $r > .50$), thin solid line indicates a moderate association ($r = .25$ to $.50$), dashed line indicates a weaker association (only significant in one sample, $p < .01$). Suppressor effects were omitted from the figure.

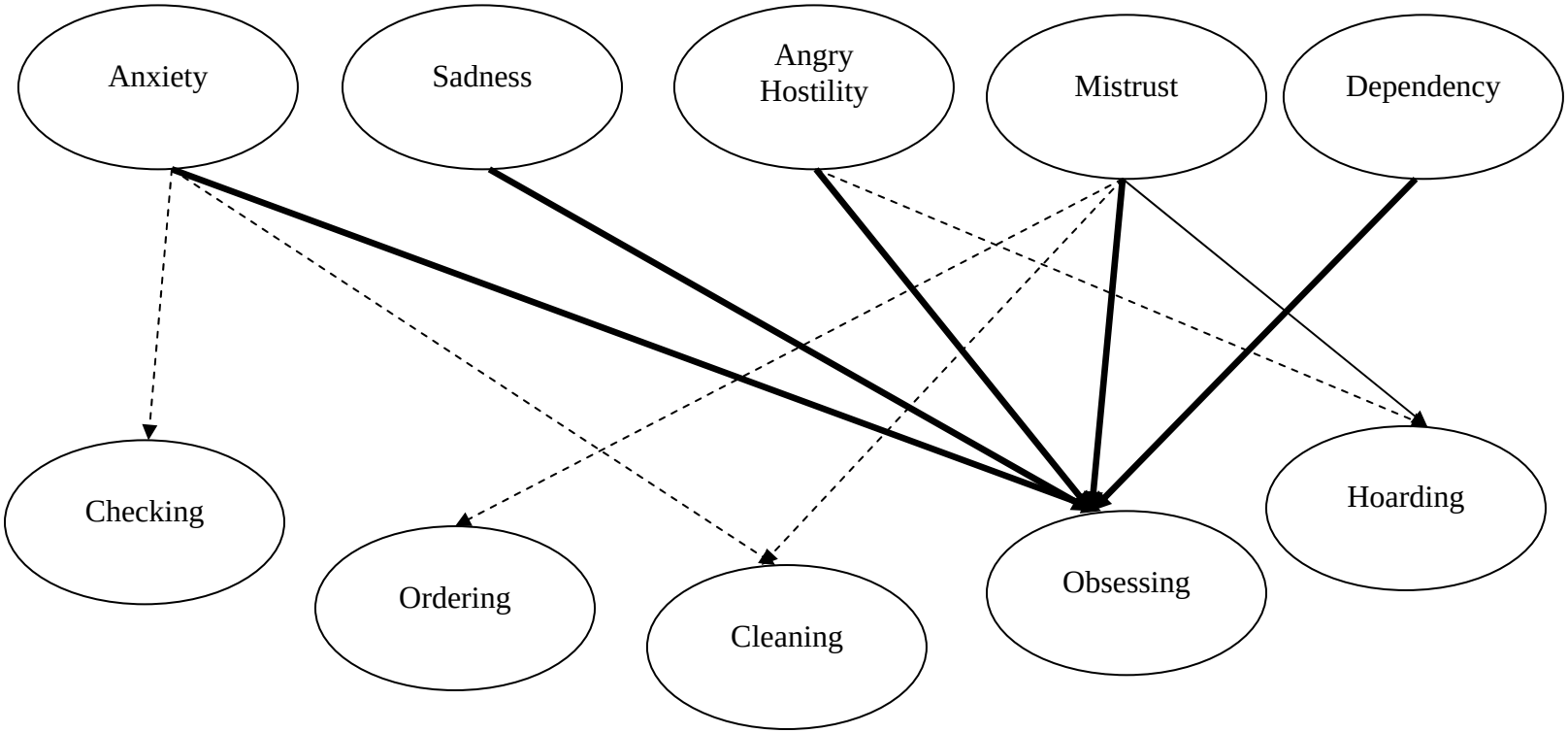

Figure B7. Schematic representation of significant multivariate associations of OCD symptom dimensions with N/NE facets. Heavy solid line indicates a strong, primary association (i.e., $r > .50$), thin solid line indicates a moderate association ($r = .25$ to $.50$), dashed line indicates a weak association (only significant in one sample). Suppressor effects were omitted from the figure.