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Making the connection between disordered personalities and interpersonal dysfunction: A relational study

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MAKING THE CONNECTION BETWEEN DISORDERED PERSONALITIES AND INTERPERSONAL DYSFUNCTION:A RELATIONAL STUDY

by

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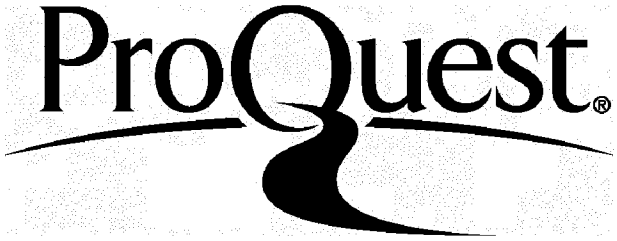

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ABSTRACT

The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) is a constantly evolving record of the conceptualization of mental problems. With each new edition, researchers seek to come ever closer to defining complex dysfunctional human behaviors as they occur in nature. Significant evidence suggests that the current conceptualization of personality disorders (PDs) as defined in the *DSM-5* is not adequately capturing these disorders, leading to inaccurate diagnosis and ineffective treatment outcomes. This evidence has led to the formation of a new diagnostic model of PDs which is outlined in Section III of the *DSM-5* under conditions requiring further study. Several measures have been developed to assess general personality dysfunction and dysfunctional personality traits as defined by the new model. Interpersonal dysfunction is suggested to play a substantial role in characterizing PDs, and the interpersonal circumplex provides a framework in which to locate specific interpersonal stressors inherent to abnormal personality.

Triangulating the constructs underlying personality problems with interpersonal dysfunction was the primary purpose of this study, allowing for a thorough investigation of proposed personality constructs and their interpersonal expression. General personality dysfunction, problematic personality traits, and interpersonal dysfunction were measured in a sample of college students and in a clinical sample of individuals in residential substance use treatment. Obtained data were analyzed in order to explore

relationships between the constructs and to provide preliminary evidence for the appropriateness of the proposed model of PDs. Overall, results provided support for the theory behind the proposed model and confirmed the majority of hypothesized relationships between maladaptive personality traits, general personality dysfunction, and interpersonal problems.

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CHAPTER ONE

INTRODUCTION

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM*-5; American Psychiatric Association, 2013) is the vessel through which mental health symptoms are diagnosed, treated, and understood (Trull & Durrett, 2005). However, a plethora of research evidence has demonstrated substantial flaws in the current diagnostic model of personality disorders (PDs) represented in the *DSM-5*. Recognition of these flaws has led to the rationale for exploring a new conceptualization that better captures PDs as they occur in reality. Originally, PDs were operationally defined in the third edition of the *DSM* (APA, 1980). The development of a multiaxial diagnostic system in *DSM-III*, including one axis devoted to PDs, resulted in an increase in PD research that had been previously lacking (Livesley & Jang, 2000). However, problems with the original diagnostic model of personality pathology stemming from a lack of analogy with nature have hindered research progress, and accurate knowledge about abnormal personality has suffered as a result. Further revisions of the *DSM* have come and gone with little improvement in our understanding of the etiology or definition of PDs (e.g., *DSM-III-R*, *DSM-IV*, and *DSM-IV-TR*). For example, the *DSM-IV-TR* (APA, 2000) identifies PDs as distinct clinical conditions. However, empirical evidence has not supported the distinction between these categorically defined syndromes. Although the original development of the concept of PDs represented a pivotal point in the history of

PD diagnosis (Livesley & Jang, 2000), progress made in the last 30 years has been tainted by the extensive problems with the structure and conceptual understanding of PDs that have failed to work themselves out over time (Krueger et al., 2011).

The general constructs underlying PDs have been loosely represented in the diagnostic nomenclature since the release of the *DSM-IV* (APA, 1994). General criteria in PD diagnoses have been defined as pervasive dysfunction characteristic of all personality disorders. Yet vague language has prevented a thorough understanding of the general criteria, and clinical utility has suffered as a result (Livesley, 1998). Researchers have expressed the importance of the general criteria as a critical component of PD diagnosis, and current efforts are being made toward empirically testing and accurately classifying these criteria. Livesley (1998) has suggested that the general criteria are based on a model of adaptive failure, in which people's personality structures prevent them from successfully achieving adaptive tasks in the realms of self and interpersonal functioning. While specific traits may represent particular types of personality pathology, general dysfunction in self and interpersonal areas is thought to underlie all types of PDs. With this definition, Livesley's (1998) research has provided an avenue for empirical validation of the general criteria.

Extensive criticism of the current PD diagnostic model has provided a rationale for the development of an updated model that accurately reflects personality constructs as they occur in nature. The most substantial criticisms include lack of empirical support for a categorical system (Livesley, 1998; Livesley, Schroeder, Jackson, & Jang, 1994; Westen & Shedler, 2000; Widiger, 1992; Widiger, 1993), comorbidity between PDs on Axis II (Grant, Stinson, Dawson, Chou, & Ruan, 2005; Watson & Sinha, 1998;

Zimmerman, Rothschild, & Chleminski, 2005), and comorbidity between Axis I and Axis II disorders (Lenzenweger, Lane, Loranger, & Kessler, 2007). Criticisms also include heterogeneity within PDs (Krueger & Eaton, 2010), unacceptable test-retest reliabilities (Grilo et al., 2004; Shea et al., 2002; Zimmerman, 1994), and the frequent use of the catch-all PD diagnosis, PD NOS (Verheul & Widiger, 2004). Leaders in the field have contended that "what we need at this stage is to pursue basic research on classification, unencumbered by the necessarily provisional entities of *DSM-IV*" (Krueger et al., 2011).

In reply to this need, the Personality and Personality Disorders Work Group has spent several years working on a new proposal for the conceptualization of PDs. This proposal was originally expected to be implemented in the *DSM-5*, which was released in May 2013. However, it was actually included as an alternative model in Section III of the *DSM-5* and will be the subject of extended research until an evidenced-based conceptualization of PDs and corresponding diagnostic system can be substantiated (APA, 2013). The proposal consists of a hybrid dimensional-categorical organization defined by several components. Six PD types have been retained from the *DSM-IV-TR*, and the definition of general criteria has been refined and expanded. Disordered traits are proposed as another aspect incorporated into the diagnosis of PDs and make up the specific criteria. Members of the Work Group propose that the new model will solve the main problems with PD diagnosis in the *DSM*. However, the preciseness of the new model will take time to be validated. Empirical research is needed to establish its accuracy and clinical utility, as no one can truly measure the new model's precision for delineating the natural boundaries of PDs until it has been thoroughly studied.

Assessment instruments are the tools for testing the validity of the proposed conceptualization, and several instruments have been identified as measures of the general constructs of PD. The General Assessment of Personality Disorder (GAPD; Livesley, 2006) and the Severity Indices for Personality Problems (SIPP-118; Verheul et al., 2008) have been used to corroborate a model of general personality dysfunction and have been validated to assess the general criteria as outlined in the new diagnostic model for PDs (Berghuis, Kamphuis, & Verheul, 2012). Research also suggests that the factor structure of these measures remains intact even when combining them with measures of specific personality traits, indicating that, as proposed in the new model, general personality dysfunction operates as a separate construct from specific traits (Berghuis et al., 2012). Interestingly, severity of general personality dysfunction as measured by the GAPD and the SIPP-118 has been found to be predictive of specific PD diagnoses (Morey et al., 2011), providing a possible link between the general and specific criteria.

Measures of specific PD constructs have also been developed. One such measure is the Dimensional Assessment of Personality Pathology – Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2009). Kushner, Quilty, Tackett, and Bagby (2011) investigated the factor structure of the DAPP-BQ and suggested that factors present at Level 6 are the most predictive of specific maladaptive personality traits. Others have explored the relationship of higher and lower order factors of the DAPP-BQ in relation to specific PDs and generally found that higher order DAPP-BQ factors are helpful in determining common personality pathology while lower order factors are more helpful in differentiating specific PD symptoms (Bagge & Trull, 2003; Pukrop et al., 2009). Finally, IRT analyses have revealed some information about the relationship between

DAPP-BQ scales of abnormal personality and other measures of normal personality, indicating that the DAPP-BQ generally measures extreme variation within the personality structure while measures of normal personality measure less severe personality traits (Samuel, Simms, Clark, Livesley, & Widiger, 2010).

Measuring the constructs underlying PDs provides essential information needed for understanding the role of general and specific personality mechanisms. Because interpersonal problems constitute a large part of the definition of PDs in the new model, it is also helpful to examine relationships among dysfunctional personality constructs within the context of interpersonal theory. Founders of interpersonal theory have proposed that maladaptive personalities are naturally expressed through interpersonal interactions (Sullivan, 1953). Interpersonal theory is a well-established and respected method useful for representing personality pathology as it is defined in the proposed model (Hopwood, Wright, Ansell, & Pincus, 2013). The central concept of interpersonal theory is the "interpersonal situation" which is comprised of three main components: agency and communion, dysregulation, and parataxic distortions. Essentially, interpersonal theory holds that when people with personality pathology encounter interpersonal situations, they tend to distort the interaction through misperceptions, feel threatened, and act defensively. Their basic needs of self-esteem and interpersonal security (represented by agency and communion) are not met, which leads to problems regulating self-perception, negative emotions, and behavior towards others. This series of events can evolve into chronic self and interpersonal problems consistent with the new model of PDs (Hopwood et al., 2013).

The interpersonal circumplex provides a tangible model based on interpersonal theory through which the proposed personality components can be explored. The interpersonal circumplex is comprised of two axes. The X axis represents interpersonal affiliation vs. aggression, and the Y axis represents dominance vs. submission (LaForge, Freedman, & Wiggins, 1985). Eight octants form the circular structure of the circumplex, with adjacent octants representing conceptually similar interpersonal patterns and opposite octants being least similar to each other. Using this framework, themes of interpersonal dysfunction have been identified for specific PDs within the current diagnostic conceptualization. However, it is important to investigate the new conceptualization of PDs within the interpersonal circumplex in order to gain greater understanding of the underlying constructs, work toward validating a model of PD diagnosis suitable for inclusion into Section II of future diagnostic manuals, and, ultimately, improve the efficiency of treatment provided for patients with PDs.

Literature Review

History of Personality Disorder Diagnosis

The categorical representation of PDs today, as outlined in *DSM-5,* has been developing for several decades through multiple revisions of the *DSM.* Establishing a fundamental understanding of the origins and subsequent development of PD diagnosis provides a historical reference point which may be helpful for deciphering conceptual changes pending for PDs in the near future.

DSM-III and Later Revisions

The release of the *DSM-III* in 1980 (APA, 1980) represented a pivotal point for the field of personality. The initial formulation of a multiaxial system, including one axis

devoted mainly to PDs, was founded in *DSM-III* and resulted in an explosion of advancement in PD research (Livesley & Jang, 2000). However, this important step toward progress for PDs served as "a blessing and a curse" (Krueger et al., 2011). *DSM-III* provided a blessing to the field of personality in that it standardized a common vocabulary about and operational definition of PDs. Establishing this original language among clinicians was the primary success of *DSM-III* (Krueger et al., 2011). However, in order for a diagnostic vocabulary and corresponding system to function and develop appropriately, the established system must be structurally valid and reliably assessed. Here lies the curse of the *DSM-III* (Krueger et al., 2011). The structure outlined in the manual provided an understanding of PDs that does not truly match reality, with imprecise criteria that made creating a valid conception of PDs an impossible task. These faulty representations of the constructs inherent to PDs as originally outlined have been passed down in later editions of the *DSM* and have stalled the development of the field. Clark & Harrison (2001) emphasized the severity of the current situation by demonstrating that assessment instruments supposedly measuring the same PDs exhibit low levels of agreement with each other.

Later revision to the *DSM-III* occurred in 1987 with the publication of the *DSM-III-R* (APA, 1987) and again in 1994 with publication of *DSM-IV* (APA, 1994). In 2000, the manual was revised yet again as *DSM-IV-TR* (APA, 2000). No major conceptual changes were made to PDs in these editions (Krueger et al., 2011); however, several criteria changes and deletions occurred. For example, revisions in *DSM-III-R* included requiring only a subset of diagnostic criteria for a diagnosis of PD instead of the entire criteria set (APA, 1987). The process of adding new categories and revising criteria sets

for PDs was implemented in an effort to fill in conceptual gaps and reduce structural problems (Frances, 1980; Gunderson, 1992; Millon, 1993; Widiger, Frances, Spitzer, & Williams, 1988). However, patching gaps could not significantly improve the system due to its faulty foundation. As a result of little conceptual change and little empirical validation, the progression for PDs has been stagnant, and natural delineations among PDs have been difficult to discover (Widiger & Trull, 2007).

In response to the inherent problems with the PD diagnostic system, the Personality and Personality Disorder Work Group was assigned the task of forming a more specific and evidence-based model of PDs (Hopwood et al., 2013). The Work Group proposed a new model for conceptualizing PDs, and an overhaul of the diagnostic system was anticipated to occur with the release of *DSM-5* in 2013. However, a relatively last-minute decision was made to postpone implementation of the proposed PD conceptualization. The American Psychiatric Association's Board of Trustees decided to retain the PD model from *DSM-IV* in *DSM-5* in order to conduct more research on the new model of PDs. The new model was printed in Section III of *DSM-5* as an alternative approach to the diagnosis of PDs. With further study, it is possible that the alternative approach may be implemented into future editions of the *DSM*. Until then, the current conceptualization of PDs in *DSM-5* remains unchanged.

General Criteria

The general criteria have been loosely known in history as the mechanisms underlying all personality problems. The concept of general criteria for PDs was originally introduced in *DSM-IV* with little empirical support (APA, 2011b). The definition of the general criteria in *DSM-IV* is vaguely worded and has not been

interpreted or measured reliably (Livesley, 1998). General personality dysfunction as defined by *DSM-IV-TR* (APA, 2000) is described as (a) manifestations in two functioning domains, (b) enduring inflexibility, (c) distress or impairment that is clinically significant, (d) stability over time, and primary diagnosis over other (e) psychiatric or (f) medical conditions. Livesley (1998) stated that the general criteria "lack a rationale that is based on an understanding of the functions of normal personality," and "are merely a catalogue of descriptive features" (p. 140). Without an accurate definition of the general criteria, history has shown difficulty explaining the conceptual differences between PDs and other mental disorders.

Perhaps the lack of empirical conceptualization of the general criteria stems from the focus on specific criteria for PDs. Historically, meeting a specific number of symptoms has been viewed by clinicians as enough to warrant a PD diagnosis (Livesley & Jang, 2000). However, the general criteria have been shown to be an important factor in accurate diagnosis and treatment of PDs. Bornstein (1998) reported that "the best predictor of the therapeutic outcome for PD patients is severity [of dysfunction] – not type – of personality pathology" (p. 337). Researchers have continued to express the importance of the general criteria as an imperative component to PD diagnosis despite little progression in its understanding. The importance of the general criteria was articulated well by Livesley & Jang (2000): "Specification of the universal or defining features of personality disorder is an important taxonomic task that will help to differentiate personality disorder from related diagnoses" (p. 139). In fact, some authors have proposed that precise identification and implementation of the general criteria for PDs may account for the comorbidity among disorders commonly observed in the *DSM-*

IV-TR classification system (Hopwood et al., 2011). It is possible that a reorganized understanding of the general criteria could solve several problems inherent in the current diagnostic system.

The beginning of an empirically validated definition of the general criteria was proposed by Livesley (1998). He proposed that clinicians generally endorse two markers inherent to PDs: problems with self/identity and interpersonal problems. Self and interpersonal dysfunctions have been proposed to represent the core features of PDs. Additionally, Livesley (1998) suggested that the core dysfunctions of PDs can be attributed to a failure to achieve adaptive solutions to major life tasks in the areas of self and interpersonal functioning. Examples of self dysfunction include diffuse self boundaries, lack of self clarity or certainty, labile self-concept, inconsistency and fragmentation, lack of autonomy and agency, and defective sense of self. Interpersonal dysfunction includes the failure to integrate information about a given person into an organized image of the whole person, leading to fragmented interpersonal representations and limited interpersonal constancy, and failure to solve interpersonal problems of intimacy, affiliation, cooperation, and prosocialization (Livesley, 1998). Livesley's (1998) adaptive failure model of PD represents a specific and empirically testable definition of the general criteria that has been missing in the diagnostic conceptualization up to this point.

The general personality functioning construct has been found to sit atop the hierarchical structure of PDs in the Dimensional Assessment of Personality Pathology – Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2009). A General Factor of Personality (GFP) was found to account for 33.9% of the variance in the four DAPP-BQ

first order factors and 32.7% of the variance in the 18 scales on the DAPP-BQ in a general population sample (Rushton, Irwing, & Booth, 2010). Similarly, the GFP accounted for 35.4% of the variance for the four first order factors in a twin sample and 34.3% of the first order factor variance in a clinical sample (Rushton et al., 2010). Researchers have hypothesized that the general functioning construct in personality originated from evolutionary selection in which adaptive traits facilitated performance in a variety of contexts, similar to the development of *g* in intelligence (Figueredo & Rushton, 2009). Morey et al. (2011) substantiate this hypothesis with the following research findings:

> Although our data indicate clear differences between individuals manifesting *DSM-IV* PDs and those without such disorders on a latent variable reflecting general personality pathology, we conceptualize it as a continuous dimension, analogous to intelligence, and that like the concept of mental retardation superimposed on this intelligence continuum, any threshold for diagnosis will be arbitrary, in that individuals slightly above and below this threshold can be quite similar. It appears that there is considerable variability in severity on the personality pathology dimension among the *DSM-IV* disorders, with some (e.g., paranoid, borderline) representing particularly severe variants, whereas others – in particular, PD-NOS, but also obsessive-compulsive – appreciably less severe…it will be important to examine other validators…for optimal placement of a diagnostic boundary. Regardless, increasing efforts to describe and understand this core dimension of personality pathology will provide critical information

about essential commonalities in these conditions, with significant implications for their etiology and treatment. (p. 352)

Problems with the Current Diagnostic System

It is imperative for an effective diagnostic system to contain structural validity, defined by Krueger et al. (2011) as "the way that a diagnostic system taken as a whole parses patients into diagnostic rubrics" (p. 186). As a result of little conceptual change in our understanding of PDs through the past few decades, the biggest problem currently facing the *DSM* is a striking lack of structural validity (Krueger et al., 2011). Assessment instruments designed to empirically delineate individual PDs cannot function reliably because of the inaccurate diagnostic format currently employed. The classification system of the *DSM* is subjective and lacks a cohesive rationale and structure (Livesley & Jang, 2000). The current state of PD diagnosis is based on "an arbitrary collection of diagnoses drawn from different traditions that function as heuristic devices for organizing clinical information into manageable clumps that support clinical decisions" (Livesley, 2011, p. 270). In many cases clinicians diagnose a client by matching him or her to their prototypic understanding of a certain disorder instead of conceptualizing the client based on his or her specific presentation (Livesley, 2011). Clinicians are attempting to force a square peg into a round hole. Additionally, clinical utility is severely lacking as evidenced by the development of "only a couple of evidence-based treatments for one of the 10 official disorders (borderline) since it was established in the *DSM-III* more than 30 years ago" (Hopwood et al., 2013, p. 288). Several practical problems add to the lack of validity in our current conceptualization of PDs, providing evidence for the need for reorganization of PD diagnosis in future editions of the *DSM*.

Lack of Empirical Support for Categories

The current diagnostic model for PDs used in the *DSM-5* includes a categorical system in which PDs are diagnosed based on the presence or absence of a specific number of dysfunctional symptoms (APA, 2013). The problem with this system is that research does not support the selected categories as representations of naturally occurring personality problems. The current categories represent a "lack of cogent theoretical or empirical rationale" and are no more than an "arbitrary list drawn from diverse theoretical positions" (Livesley, 1998, p. 138). Westen & Shedler (2000) point out a similar concern involving the narrowing of criteria sets for categorically based PDs. For example, six of the criteria for paranoid PD are multiple behaviors that underlie a single trait – chronic mistrust. They are redundant and unhelpful characteristics that tell us little about the client's emotions or personality. In fact, such narrow criteria sets for PDs render case formulation a very difficult task (Westen, 1998) and underline the lack of clinical utility for the current diagnostic system.

Not only does research disagree with the selected diagnostic categories and the unrepresentatively narrow criteria sets, but it also fails to support the categorical model in its entirety as a conceptual framework for PDs. Findings consistently demonstrate that PDs are organized on a dimensional continuum, not in discrete categories (Livesley et al., 1994; Widiger, 1992; Widiger, 1993). The pivotal finding that PDs are representations of extremes of the Five Factor Model of normal personality reinforces the support for a dimensional organization of PDs (Costa & Widiger, 1994). The concern regarding flaws in the overarching conceptual framework of PD diagnosis is one of the main arguments for a reorganization of PD diagnosis in upcoming diagnostic manuals.

Another concern affecting the validity of the current diagnostic system includes the assumption of stability in pathological personality traits over time. The notion of stability in normal personality has been validated through extensive research over many years (Costa & McCrae, 1986; Heatherton & Weinberger, 1994). As a result, theories about abnormal personality have been derived from this concept, suggesting that PDs reflect enduring stability similar to normal personality (Clark, Livesley, & Morey, 1997). PDs have been defined as stable, enduring conditions made up of extreme, inflexible traits in the conceptual framework of the *DSM-IV-TR* (APA, 2000). However, empirical data do not support this statement. Test-retest reliabilities for measures of pathological personality have averaged around .55 (Grilo et al., 2004; Shea et al., 2002; Zimmerman, 1994), indicating that characteristics of PDs are not as stable as normal personality.

Comorbidity Among Axis II Disorders

Another considerable criticism of the current *DSM* classification of PDs involves the extraordinarily high degree of comorbidity among the ten disorders (see Clark, 2007; Oldham, Skodol, Kellman, Hyler, & Rosnick, 1992). Researchers analyzed data from a substantial study involving over 43,000 participants (the National Epidemiologic Survey on Alcohol and Related Conditions, NESARC) and found that disorders within each of the three clusters are significantly related to one another and are also significantly associated with disorders in other clusters (Grant et al., 2005). For example, odds ratios indicated a significant relationship between avoidant PD and dependent PD (OR = 118.6), avoidant PD and paranoid PD (OR = 23.7), and avoidant PD and schizoid PD (OR = 17.4). Also identified were substantial associations between dependent PD and paranoid PD (OR = 33.8) and dependent PD and histrionic PD (OR = 37.7). Odds ratios

for associations between obsessive-compulsive PD and all other PDs ranged from 10.1-12.6 (except for antisocial, OR = 4.9). Histrionic and narcissistic PDs have been shown to co-occur 30.4% of the time (Watson & Sinha, 1998). In one study, 60.4% of people diagnosed with one PD also met the criteria for more than one PD (Zimmerman et al., 2005). Overlap between paranoid PD and other PDs has been reported in nearly all cases, and although obsessive compulsive PD appears to be the most independent PD, overlap has still been reported about 70% of cases (Widiger et al., 1991). Livesley (1998) reported that a typical response to these issues of comorbidity would be to change diagnostic criteria to better reflect the discriminative features of the disorders; however, he suggested that the problem with PD diagnosis is unlikely to be solved through usual corrective responses because of the foundational nature of the problem. The magnitude of comorbidity among PDs leads to viable speculation that PDs as outlined in our current system may not be distinct clinical conditions after all. It has been suggested that an underlying process common to all PDs is actually at work (Grant et al., 2005) and is not accurately represented in the current understanding of personality pathology.

Comorbidity Between Axis I and Axis II Disorders

The current categorical classification system employed by *DSM-5* outlines Axis I and Axis II disorders as distinctly separate groups (APA, 2013); however, research consistently shows that this distinct separation is actually not present between the two axes in reality. One study reported substantial comorbidity between PDs and Axis I disorders in general (median OR = 6.0), with 88% of these relationships reaching statistical significance (Lenzenweger et al., 2007). Cluster B PDs showed an especially high degree of comorbidity with Axis I disorders (OR = 6.4-10.2), and Cluster A (OR =

2.1-2.5) and Cluster C (OR = 2.6-4.1) showed somewhat less comorbidity with Axis I disorders. Specifically, Cluster B PDs demonstrated the strongest associations with dysthymic disorder, bipolar disorder, intermittent explosive disorder, and attention-deficit/hyperactivity disorder. When considering the diagnostic profile for each of these Axis I disorders as well as the profiles of Cluster B PDs, the qualitative similarities between them support these statistical findings.

Staggering statistics of additional PD and Axis I comorbidity have also been reported (Lenzenweger et al., 2007). In one study, 70% of people diagnosed with antisocial PD also met the criteria for at least one Axis I disorder, while 84.5% of people diagnosed with borderline PD met the criteria for at least one Axis I disorder. Cluster A PDs in general were associated with Axis I disorders 41.1% of the time. People diagnosed with Cluster C PDs also met the criteria for Axis I disorders 49.7% of the time. The nature and extent of overlap between Axis I and II disorders adds significant concerns about the accuracy of the current conceptualization of PD diagnosis.

Comorbidity Between Axis II Disorders and Substance Use Disorders

Research also suggests considerable overlap between substance use disorders and Axis II PDs. Langas, Malt, and Opjordsmoen (2012) found that 46% of substance users seeking first-time substance treatment met criteria for a PD. Interestingly, a significant difference was found between patients with drug use disorders versus patients with alcohol use disorders, with 61% of drug use disorder patients meeting criteria for a PD and only 29% of alcohol use disorder patients meeting PD criteria.

Borderline PD has been found to be highly correlated with comorbid substance use disorders. In fact, people with borderline PD exhibit higher rates of drug and alcohol

abuse/dependence than people with other PDs (McGlashan et al., 2000; Walter et al., 2009; Zanarini et al., 2011). Research has shown that the comorbidity rate of borderline PD and a general substance use disorder is almost 60%, with a borderline PD/alcohol use disorder comorbidity rate of almost 50% and a borderline PD/drug use disorder comorbidity rate of almost 40% (Trull, Sher, Minks-Brown, Durbin, & Burr, 2000). Distel et al. (2012) found borderline personality traits to be significantly related to substance use and reported regular smoking and ever use of cannabis to be explained by common genetic factors (e.g., personality traits associated with both substance use disorders and borderline PD such as emotional dysregulation and impulsivity). The relationship between borderline personality traits and alcohol abuse was explained by environmental factors and not genetic influences.

Antisocial PD has also been determined to show high rates of comorbidity with substance use disorders. As high as 86% of people with antisocial PD have been found to also meet the criteria for a substance use disorder (Regier et al., 1990). Grant et al. (2005) found that antisocial PD had the highest comorbidity rates with substance use disorders of all PDs investigated. These findings illustrate the significant overlap between PDs and substance use disorders and the likelihood that similar underlying factors not accounted for in the current diagnostic system play a role in both types of disorders.

Heterogeneity Among PDs

Diagnostic cut-offs for PDs employed by the *DSM* have not been supported empirically (Kamphuis & Noordhof, 2009) and have led to problems in diagnosing PDs. For example, Krueger & Eaton (2010) pointed out that meeting the diagnosis of

borderline PD requires meeting at least five of nine criteria, which means that 256 different combinations of criteria are possible for people diagnosed with the same PD. The heterogeneity within each disorder has led to an inefficient diagnostic vocabulary in which two clients may share a diagnosis but may share very few symptoms (Krueger & Eaton, 2010). Negative treatment implications occur as a result of heterogeneity among disorders. For example, great difficulty has been reported in convincing public health agencies to provide funding for treatment of mental disorders when heterogeneity among disorders prevents consistent evidence of their existence and origins (Regier et al., 1998).

PD NOS

A successful classification system should be exhaustive and mutually exclusive (Livesley, 1998). Concerns about the lack of mutual exclusion in the diagnosis of PDs are addressed above. In an effort to achieve exhaustiveness, the *DSM-IV* created the Not Otherwise Specified categories of diagnosis. These categories are essentially "waste-basket" categories, inefficiently band-aiding the problem surrounding the current conceptualization of PDs (Livesley, 1998). Currently used diagnostic cut-offs complicate diagnosis and treatment when a client does not meet the number of criteria required for PD diagnosis yet expresses significant personality pathology (Good, 2012). The diagnosis of PD "not otherwise specified" (NOS) serves as the category in *DSM-5* in which such clients fall (APA, 2013). Verheul & Widiger (2004) found that PD NOS is diagnosed more often in clinical practice than any other PD. However, the diagnostic label provides no information about the pathological symptoms present (APA, 2012). Evidence surrounding the illogical PD NOS diagnosis provides additional fuel to the movement toward a significantly reorganized conception of PDs.

Proposed Model of PD Diagnosis

Given the concerns and practical issues with the conceptualization of PDs in the *DSM*, extensive efforts have been made to form a more accurate and clinically useful model of PD for upcoming editions of the manual. Krueger et al. (2011) described the primary goal of the movement toward PD reclassification, stating, "We must work to classify patients and their psychopathology as it occurs in nature, as a foundation for effective assessment and intervention" (p. 186). Livesley (1998) suggested six requirements for an empirically based classification:

1. The classification should explicitly state its principles for organization and its theoretical basis for diagnostic concepts so that they can be empirically tested.
2. The classification should be based on theory.
3. The classification should be empirically based to facilitate empirical testing and appropriate revision.
4. The classification should be consistent with the general conceptualization of psychopathology and should not delineate between Axis I and Axis II disorders because research evidence does not support the distinction of PDs from clinical syndromes.
5. The classification should be consistent with knowledge in related fields such as personality theory, neuroscience, behavior genetics, and evolutionary psychology.
6. The classification should be based on the phenotypic makeup of PDs because the phenotype is the subject of treatment.

He further suggested that it is possible to "establish a framework for a classification that begins to address some of the limitations of contemporary classifications, which can also

be modified on the basis of empirical findings so that it increasingly approximates a valid system" (Livesley, 1998, p. 139). Years of theoretical work have led to the proposal of many new models for conceptualizing PDs (Bornstein, 1998; Hopwood et al., 2011; Livesley, 1998; Parker, 1997; Tyrer & Johnson, 1996; Widiger & Simonsen, 2005; Widiger & Trull, 2007), an integration of the strong theoretical principles from each of the leading models (Skodol & Bender, 2009), and a dramatically different organization of proposed PD diagnosis.

Hybrid Dimensional-Categorical Organization

The proposed model included in Section III of *DSM-5* is comprised of a hybrid dimensional-categorical organization (APA, 2012). In order to be diagnosed with a PD, a person must demonstrate problems in self and interpersonal functioning (Criteria A/general criteria) and specific maladaptive traits (Criteria B/specific criteria). Pincus (2011) creatively compared the general criteria to the "Genus" and the specific criteria to the "Species" of PDs, as the general criteria captures what PD *is*, and the specific criteria captures the way PD is *expressed*, its phenotypic variability. Wright et al. (2012) explain that "PDs are to be bound together by the defining feature of self and interpersonal...impairment, and a maladaptive trait model will be provided for capturing phenotypic variation in the manifestation of PD" (p. 268). The general criteria can also be understood as the method for measuring the severity of PD (or the level of dysfunction), while the specific criteria are useful for explaining how the PD is manifested and how it negatively affects functioning (Hopwood et al., 2013). Authors of the model acknowledge that personality pathology is dimensional in nature, but at some point along the spectrum a person's functioning becomes impaired enough to justify the

diagnosis of PD (APA, 2011b). The new conceptualization and diagnostic system seek to classify personality pathology specifically with increasing amounts of detail according to the amount of time and information the clinician has available (Skodol et al., 2011b). The categorical element to this system proposes six specific PD types: antisocial, avoidant, borderline, narcissistic, obsessive-compulsive, and schizotypal. These types were kept from the PD conceptualization in the *DSM-IV-TR* and are diagnosed when particular impairments in personality functioning and pathological personality traits are present. Specifically, each PD type description includes a narrative explanation of distinctive problems in self and interpersonal functioning and commonly observed traits, dimensional ratings of how closely a client matches each type, and dimensional ratings of how closely a client's traits match those typically associated with each type (Skodol et al., 2011b). PD NOS is replaced by Personality Disorder Trait Specified (PDTS) in the new system, and is defined by impairment in functioning and pathological personality traits that do not fit into one of the six specific PD types. PDTS is distinguished from PD NOS in that the diagnosis of PDTS requires a specification of the nature of personality impairment rather than a non-descriptive categorization. A diagnosis of PDTS is meant to provide an avenue for clinically relevant personality characteristics to be acknowledged and treated accordingly, rather than lumped into an uninformative category and forgotten.

The Personality and Personality Disorders Work Group proposed the original general criteria for PDs, initially meant for inclusion in *DSM-5*, based on Livesley's (1998) adaptive failure model. In his model, a PD occurs when an individual fails to develop a cohesive sense of self and experiences chronic interpersonal dysfunction. Therefore, the general criteria is synonymous with personality functioning. Although the

theory behind this model fits the core elements in personality functioning well, criticism relating to the model's complexity and lack of empirical support led to further revision of the proposal (APA, 2011b). The current proposal for the general criteria of PDs included in Section III of *DSM-5* has integrated the Levels of Personality Functioning severity rating scale (Bender, Morey, & Skodol, 2011) into the general criteria, providing a more efficient and empirically valid definition in which core components of general PD severity are systematically rated on a 5-point scale. The inclusion of general criteria and subsumed severity ratings for the diagnosis of PDs characterizes the dimensional piece of the proposal. Specifically, personality functioning (general criteria) is divided into two subsets: impairment in self functioning (dimensions of identity and self-directedness) and interpersonal functioning (dimensions of capacity for empathy and capacity for intimacy). A dimensional severity rating of *0- no impairment* to *4-significant impairment* can be given on each of the components of self and interpersonal dysfunction (see Appendix A for a description of each severity level adapted from APA's (2011a) Levels of Personality Functioning Scale).

The authors of the *DSM-5* proposal incorporated a trait-based aspect to the diagnosis of PDs. The theory behind the trait-based approach suggests that maladaptive variants of personality traits make up PDs (Clark et al., 1997). Personality traits (specific criteria) proposed in the new model are defined by five broad domains: negative affectivity, detachment, antagonism, disinhibition vs. compulsivity, and psychoticism. The first four domains correspond to Five Factor Model (FFM) factors: neuroticism, (lack of) extraversion, (lack of) agreeableness, and conscientiousness, respectively.

Twenty-five trait facets make up the five overarching domains (see Appendix B for the APA's (2011a) explanation of each of the 25 trait facets).

The proposed conceptualization is meant to function with more flexibility and increased clinical utility, allowing for diagnosis of specific PDs, diagnosis of PDTS, dimensional ratings of functioning severity, pathological trait identification, and a general trait profile (APA, 2012). In order to diagnose a PD, both impairments in self and interpersonal functioning (general criteria; Criteria A) must be present along with at least one pathological personality trait domain or facet (specific criteria; Criteria B). The following guide to implementation has been proposed:

1. Is impairment in personality functioning (self and interpersonal) present or not?
2. If so, rate the level of impairment in self (identity or self-direction) and interpersonal (empathy or intimacy) functioning on the Levels of Personality Functioning Scale.
3. Is one of the 6 defined types present?
4. If so, record the type and the severity of impairment.
5. If not, is PD-Trait Specified present?
6. If so, record PDTS, identify and list the trait domain(s) that are applicable, and record the severity of impairment.
7. If a PD is present and a detailed personality profile is desired and would be helpful in the case of conceptualization, evaluate the trait facets.

8. If neither a specific PD type nor PDTS is present, evaluate the trait domains and/or the trait facets if these are relevant and helpful in the case conceptualization (APA, 2012).

Rationale for the Proposed Model

The rationale for each part of the proposed model is based on deriving a solution to the main criticisms and structural flaws in previous manuals (APA, 2011b). In general, the new model is meant to provide clinically useful, specific information on the severity and style of personality pathology. By differentiating severity from style, the model helps clinicians sort through treatment decisions. For instance, the severity of dysfunction can be assessed when determining the level of treatment that is needed (e.g., inpatient or outpatient), and the style of dysfunction can be assessed when determining the type of treatment that is needed (e.g., behavioral or insight-oriented; Hopwood et al., 2013). Incorporating a dimensional aspect to PD diagnosis has been supported empirically as a more reliable representation of personality pathology than categorical determinations (Clark, 1999; Heumann & Morey, 1990; Widiger, 1992). More clinically useful information is retained in a dimensional system, providing the opportunity to accurately describe individuals who exhibit a variety of pathological behaviors or traits (Clark et al., 1997). Because research evidence has not supported the diagnostic cutoffs defined in the current PD diagnostic system (Clark, 1992; Kass, Skodol, Spitzer, & Williams, 1985), a dimensional aspect is believed to be a more valid representation of personality pathology.

Members of the Personality and Personality Disorders Work Group have suggested that reducing the number of specific PD types from 10 to 6 will reduce the

possibility of comorbidity between disorders (Skodol et al., 2011a), arbitrary thresholds for diagnosis, and structural instability present in the current PD conceptualization (Skodol et al., 2011b). Results of an extensive literature search revealed empirical support for the retention of antisocial, borderline, and schizotypal PDs (Skodol et al., 2011b; see Patrick, Fowles, & Krueger, 2009; Siever & Davis, 2004; Skodol et al., 2002a; Skodol et al., 2002b for validation and utility of these disorders). Other literature has suggested that only outdated rationales exist for the retention of schizotypal and borderline PDs (Widiger & Trull, 2007). Some empirical literature has provided evidence for the retention of obsessive-compulsive PD (Bender et al., 2001; Skodol et al., 2011b; Stuart et al., 1998; Torgerson, 2009), while other literature suggests that evidence for obsessive-compulsive PD is lacking (Widiger & Trull, 2007). Little to no empirical evidence supports a rationale for retaining avoidant, schizoid, paranoid, dependent, narcissistic, or histrionic PDs as categorically distinct syndromes (Widiger & Trull, 2007). As a result of little empirical support for these diagnoses, PDs not retained in the new proposal (paranoid, schizoid, histrionic, dependent, and PD NOS) will be subsumed under the diagnostic category PDTS because research evidence reviewed by the Work Group indicates that these diagnostic categories would be better represented dimensionally rather than as specific types (Skodol et al., 2011b).

Discussion about retaining narcissistic PD has been controversial. Evidence shows that narcissistic personality traits can be identified across the full range of personality organization (Kernberg & Caligor, 2005; Morey et al., 2011), suggesting that a categorical model of diagnosis for this disorder is not capturing the construct accurately. However, Work Group members have chosen to retain narcissistic PD at this

point in order to further investigate and clarify how this disorder is organized in a maladaptive personality structure.

Hopwood et al. (2011) concluded that the general severity associated with PD "is the most important single predictor of concurrent and prospective dysfunction" (p. 305), indicating the significance of developing a model for the general criteria that accurately assesses this construct. Work Group members concluded that measures of severity in previous editions of the *DSM* have yet to be specific enough for personality pathology (e.g., *DSM-IV-TR* general severity specifiers, Axis V GAF Scale; Skodol et al., 2011b) and so proposed that the new model include a clinically useful severity rating scale. The Levels of Personality Functioning Scale is based on empirical evidence supporting the definition of general criteria in terms of self and interpersonal dysfunction (Skodol et al., 2011b; see Bender & Skodol, 2007; Blatt & Lerner, 1983; Donegan et al., 2003; Wagner & Linehan, 1999; Westen, Ludolph, Lerner, Ruffins, & Wiss, 1990). The scale was based on this evidence and then validated using IRT analyses (Morey et al., 2011). A dimensional representation of personality dysfunction (also used in the scale) has also been supported empirically (Bender et al., 2011). Several measures have validly assessed self and interpersonal functioning constructs on a dimensional scale, such as identity (Gamache et al., 2009), self-control (Verheul et al., 2008), capacity for emotional investment (Porcerelli, Cogan, & Hibbard, 1998), responsibility (Verheul et al., 2008), and maturity of relationships (Piper, Ogrodniczuk, & Joyce, 2004).

The new definition of general criteria of PDs is needed because of the arbitrarily delineated general criteria in the current diagnostic system (Skodol et al., 2011b). Incorporating the trait model makes an accurate set of general criteria a necessity

because, as emphasized by Livesley & Jang (2000), the diagnosis of maladaptive personality traits alone is not sufficient for diagnosis of a PD. A valid definition of the general criteria is also necessary for PD diagnosis. In addition, delineating general functional impairments in personality helps differentiate PD pathology from Axis I disorders (Skodol et al., 2011a).

Problems with the classification of PDs as distinct diagnostic entities provide a rationale for a trait-based approach as proposed in Section III of *DSM-5*. Skodol et al. (2011b) suggested that comorbidity is rampant in PD diagnosis because personality traits that underlie PDs overlap across the categorical diagnoses. Research has shown that describing PDs in terms of maladaptive personality traits reduces comorbidity between disorders (Lynam & Widiger, 2001; O'Connor, 2005). A trait-based approach is intended to be in line with the natural combinations of personality traits across individuals, in contrast to the current diagnostic system that fails to parse out PDs as they appear in nature (Skodol et al., 2011b). A trait-based approach to diagnosis is also suggested to be representative of the genetic structure of personality and an effective model from which to plan appropriate treatment because clinical interventions are typically planned around specific dysfunctions (Livesley, 1998). Work Group members suggested that the proposed trait-based approach allows for a complete descriptive understanding of each client as well as an explanation of differences and similarities among clients (Krueger, Skodol, Livesley, Shrout, & Huang, 2007). In addition to helping solve the comorbidity problem, the new approach is also implicated to help solve the problem surrounding the high prevalence of PD NOS (Verheul, Bartak, & Widiger, 2007) by providing a clinically useful profile for every client instead of a non-descriptive

categorical label (Skodol et al., 2011b). The problem of heterogeneity among PDs will be addressed by accounting for individual differences that make each person's personality unique without lumping all clients under the same diagnostic umbrella (Skodol et al., 2011b). By including only stable traits in the specific diagnostic criteria, the new model is likely to gain greater stability in terms of test-retest reliability (Skodol et al., 2011b). The trait-based model will display personality pathology as it occurs in nature – on a continuum (Skodol et al., 2011a).

The relationship between PDs and four of the five domains of the FFM has been well-documented (O'Connor, 2005; Saulsman & Page, 2004). Skodol et al. (2011b) reported that one article per month on average has been published on this relationship since 2000. Many models of personality pathology have been determined to be in concert with four domains of the FFM (neuroticism, extraversion, conscientiousness, and agreeableness; Widiger & Simonsen, 2005). As a result of evidence about the relationship between personality pathology and the FFM, Work Group members decided that the four domains of the FFM should be the foundation for the proposed model of PD traits (Skodol et al., 2011b). An organization of PDs based on the FFM provides a new perspective on the relationship between normal and pathological personality. By basing the proposed trait conceptualization on the FFM, clients with a PD will be understood as persons with extreme variations of normal personality traits instead of persons who have disorders with traits that are distinct from normal personality characteristics (Widiger & Trull, 2007). The fifth domain in the proposed model, psychoticism, was derived from evidence suggesting that unconventional behavior or perceptual disturbances comprise an

important additional factor not well-covered by the FFM (Tackett, Silberschmidt, Krueger, & Sponheim, 2008; Watson, Clark, & Chmielewski, 2008).

Measuring General and Specific Personality Constructs

Assessment instruments are essential for objectively measuring the constructs underlying personality and PDs. These instruments serve as a vessel for examining hypotheses about the nomological net containing personality constructs (Clark et al., 1997). The establishment of a new conceptualization of PDs requires the development of assessments that accurately represent the constructs comprising PDs. Clark et al. (1997) discussed the inevitable relationship between construct development and assessment of the derived constructs. Convergent validity represents one feature in this relationship. For example, deriving and validating independent measures of a construct that yield parallel outcomes is a difficult but reasonable task (Clark et al., 1997). When measures of specific constructs overlap, they are not actually measuring distinctly separate constructs, indicating weak convergent validity. Therefore, obtaining measures that accurately assess independent constructs comprising PDs is a necessary condition for the progression of our understanding of PDs.

Part of the problem with our understanding of PDs up to this point has involved a lack of convergent validity among assessment instruments. Clark et al. (1997) stated that PD assessment instruments are simply not measuring the same constructs. Given the lack of empirical evidence and theory to guide the current conceptualization of PDs, it is not surprising that we experience this lack of convergent validity among corresponding instruments and frequently observe inconsistencies in the PD literature (Clark et al., 1997). The new diagnostic model seeks to establish a more accurate understanding of the

constructs underlying PDs. Along with the revised conceptualization, a revised set of instruments to measure the newly defined constructs is also necessary (Clark et al., 1997).

Understanding the construct overlap among assessment instruments depends on understanding several facets in the conceptualization of PDs. Assessment instruments must accurately reflect the criteria outlined for the construct, yet the validity of the instruments depends on the accuracy of the criteria in representing the construct as it occurs in nature (Clark et al., 1997). If these conditions are met – that is, if the instrument accurately reflects the criteria which accurately reflect the construct in nature – then, in the case of PDs, little overlap between constructs should exist. If overlap is observed between the general and specific criteria outlined for PDs, one or more of three possibilities represent the cause: (1) the conceptualization of PDs is faulty, (2) the criteria used to represent the constructs inherent to PDs do not represent them accurately, or (3) the assessment instruments do not accurately reflect the criteria (Clark et al., 1997). Theoretical conceptualization has been identified as the main problem with past and present PD diagnosis; therefore, assessment instruments correctly representing the new (more accurate) conceptualization should display considerably less overlap among general and specific criteria than past instruments if the new model is more reflective of PD constructs. Previous studies have used the following instruments to assess general and specific PD criteria.

Measures of General Personality Dysfunction

The General Assessment of Personality Disorder (GAPD; Livesley, 2006) is a recently developed instrument designed to assess the components of Livesley's (1998) adaptive failure model of general personality dysfunction. Berghuis et al. (2012)

explored the factor structure of the GAPD together with the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008) to test a model of general personality dysfunction. The GAPD and SIPP-118 were jointly analyzed and a clear three-factor structure of general personality dysfunction emerged, explaining 62.9% of the variance. Factor 1 labeled Self-identity dysfunctioning explained 49.5% of the variance, Factor 2, Pro-social functioning, accounted for 7.1% of the variance, and Factor 3, Relational dysfunctioning, explained 6.2% of the variance. These results indicate that a model of general personality dysfunction can be obtained from available measures, and the factor structure of these measures closely resembles the general criteria as outlined in the new classification proposal (Berghuis et al., 2012).

After identifying the factor structure within the GAPD and SIPP-118, researchers examined the relationship between the GAPD, SIPP-118, and NEO-Personality Inventory Revised (NEO-PI-R; Costa & McCrae, 1992), a measure of specific personality traits in line with the Five Factor Model of personality. Results indicate that a factor structure of general personality dysfunction remains even when combined with personality trait facets, suggesting that general personality dysfunction can be differentiated from specific personality traits (Berghuis et al., 2012). Specifically, a seven-factor model accounted for 64.7% of the variance. Openness to Experience (Factor 6) and Conscientiousness (Factor 4) were the most clear cut, drawing only from facets representing each domain and neither factor correlating with general personality dysfunction. Neuroticism, Extraversion, and Agreeableness traits were accounted for under different factors. Neuroticism facets were distributed between several general dysfunction factors, and the highest degree of conceptual overlap was found in the relationships between Extraversion

and assumed factors of general dysfunction and Agreeableness and assumed factors of general dysfunction. Self-identity functioning (Factor 1) remained unchanged by the addition of trait facets in the analysis. These findings are also in line with the proposed revisions to diagnostic criteria for PDs.

Items from the GAPD and the SIPP-118 were combined and analyzed in an effort to develop a continuum of general personality pathology severity, resulting in the development of the Personality Level Measurement scale and revealing several important findings (Morey et al., 2011). Principal component analyses revealed a correlation of .80 between the SIPP-118 and the GAPD, indicating that the scales are in fact measuring the same general personality construct. Subsequent analyses revealed that more severe ratings of general personality dysfunction "were associated with assignment of a specific PD diagnosis and were also associated with assignment of multiple PD diagnoses" (Morey et al., 2011, p. 350). Greater levels of personality pathology were associated with borderline, schizotypal, antisocial, and paranoid PDs, while the least pathological scores were associated with narcissistic and obsessive-compulsive PDs. Participants receiving a diagnosis of PD NOS demonstrated less severe functioning deficits than those receiving specific PD diagnoses, and participants with no PD symptoms had scores reflecting low general personality pathology. These associations make sense when considering the clinical picture of symptom severity for each of these disorders. These results indicate that not only is it possible to obtain a model of general personality dysfunction from available measures, but it is also possible to use the model to specify dimensions of severity within personality pathology and predict the assignment of specific PDs (Morey et al., 2011).

Measures of Specific Personality Traits

Members of the *DSM-5* Personality and Personality Disorders Work Group developed a model for maladaptive personality traits based on an integration of existing models, which led to the development of the Personality Inventory for *DSM-5* (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012). The work of Widiger & Simonsen (2005) was particularly influential in the development of the PID-5, providing a basic framework of four bipolar domains from which to measure maladaptive personality traits. These domains include extraversion vs. introversion, antagonism vs. compliance, constraint vs. impulsivity, and negative affect vs. emotional stability. The workgroup examined 18 models of maladaptive personality traits and concluded that Widiger and Simonsen's (2005) model could effectively organize the traits from each of these models. A fifth domain of psychoticism was also chosen for inclusion in the trait model as a result of research suggesting this domain accounts for odd or peculiar personality traits not covered in the original four domains (Harkness, McNully, & Ben-Porath, 1995).

Ashton, Lee, de Vries, Hendrickse, and Born (2012) sought to clarify the constructs measured by the PID-5 by identifying the locations of PID-5 variables within the major dimensions of personality variation defined by the HEXACO (Ashton & Lee, 2010) and a factor of schizotypal and dissociative tendency (Ashton & Lee, 2012). The PID-5 Negative Affectivity domain scale demonstrated moderate factor loadings on HEXACO Emotionality (.43 and .36 in two samples), on Schizotypy/Dissociation (.32 and .34), on Agreeableness (-.37 and -.25), and on Extraversion (-.29 and -.16). It was concluded that the construct of Negative Affectivity as measured by the PID-5 is a blend

of Emotionality, Schizotypy/Dissociation, (low) Agreeableness, and somewhat (low) Extraversion. The PID-5 Detachment domain scale demonstrated a strong loading on the low end of Extraversion (-.65 and -.51) and moderate loading on Schizotypy/Dissociation (.31 and .30). The PID-5 Antagonism scale was closely related to the low end of HEXACO Honesty-Humility (-.54 and -.50), while the PID-5 Disinhibition domain scale loaded most strongly on the low end of HEXACO Conscientiousness (-.56 and -.45). PID-5 Psychoticism was most strongly related to Schizotypy/Dissociation (.56 and .39). Interestingly, all three facets of PID-5 Psychoticism were related more to the Schizotypy/Dissociation domain than to the HEXACO Openness to Experience domain. Ashton et al. (2012) noted that the Psychoticism domain measures distorted perceptions of reality, while Openness to Experience assesses imagination or unconventionality. Although none of the PID-5 scales were associated with Openness to Experience, the PID-5 effectively assesses personality traits associated with schizotypal tendencies via the Psychoticism domain. The PID-5 represented Agreeableness least among the HEXACO domains, with PID-5 Hostility being the only scale with a strong loading on Agreeableness. On the other hand, the PID-5 was strongly associated with HEXACO Honesty-Humility with several PID-5 scales representing the low pole of this domain, including Deceitfulness, Grandiosity, Manipulativeness, Antagonism, and somewhat Callousness and Attention Seeking. The authors note that "heavy coverage of low Honesty-Humility seems appropriate in an inventory designed to measure traits associated with personality disorder, given that the exploitation of others – a hallmark of low-Honesty-Humility persons – is prominent in personality pathology" (Ashton et al.,

2012, p. 656). These results suggest that the PID-5 scales largely span most of the seven dimensions measured by the HEXACO and the factor of Schizotypy/Dissociation.

Another measure of dysfunctional personality traits is the Zuckerman-Kuhlman Personality Questionnaire (ZKPQ; Zuckerman, Kuhlman, Teta, Joireman, & Kraft, 1993). Zuckerman's Alternative Five Factor Model was designed as an alternative to the Five-Factor Model to measure normal personality traits (Zuckerman et al., 1993; Zuckerman, Kuhlman, Thornquist, & Kiers, 1991). The ZKPQ has been found to be predictive of personality disorders as measured by Millon's Clinical Multiaxial Inventory (MCMI-III; Aluja, Cuevas, Garcia, & Garcia, 2007; Millon, Millon, & Davis, 1994). Specifically, Cluster A PDs are mainly predicted by ZKPQ Neuroticism-Anxiety, while other scales such as the low pole of Sociability, Impulsive Sensation Seeking, and Aggression-Hostility also play a role in these disorders. Cluster B PDs are most highly predicted by ZKPQ Impulsive Sensation Seeking and Aggressive-Hostility, while other scales are related to specific Cluster B disorders (e.g., Sociability to histrionic PD and Neuroticism-Anxiety to borderline PD). Cluster C PDs are best characterized by ZKPQ Neuroticism-Anxiety. Participants with *T* scores at the high end of the Cluster A continuum tended to present with high scores on Neuroticism-Anxiety and Aggressive-Hostility and low scores on Sociability. Participants with *T* scores at the high end of the Cluster B continuum tended to demonstrate high levels of Impulsive Sensation Seeking, Aggressive-Hostility, and Sociability and above average levels of Activity and Neuroticism-Anxiety. High end Cluster C participants tended to show high levels of Neuroticism-Anxiety and low levels of the remaining domains, especially Sociability.

These results provide supporting information on associations among specific personality traits and PDs.

Huang et al. (2011) demonstrated that the ZKPQ can predict functioning styles of PDs as measured by the Parker Personality Measure (PERM; Parker & Hadzi-Pavlovic, 2001) in a sample of healthy and PD patients. Cluster A participants demonstrated the lowest scores on ZKPQ Sociability, and Cluster B participants demonstrated the highest scores on ZKPQ Impulsive Sensation Seeking and Aggression-Hostility. Cluster C1 participants (avoidant and dependent types) showed the highest scores on ZKPQ Neuroticism-Anxiety, while Cluster C2 (obsessive-compulsive type) showed the highest scores on ZKPQ Activity. Multiple regression analyses indicated that all PERM styles related to Cluster B PDs except for narcissistic PD could be consistently predicted by ZKPQ Impulsive Sensation Seeking. Narcissistic PD was predicted more accurately by Aggression-Hostility in the patient sample. The PERM Antisocial style was predicted best of all the PD styles from ZKPQ scales in the patient group (adjusted $R^2 = 0.47$), and ZKPQ Impulsive Sensation Seeking, Aggression-Hostility, and Activity acted as predictors for this style in both the healthy control and the patient group. ZKPQ Neuroticism-Anxiety consistently predicted the PERM Borderline style in both the healthy control and the patient group. These results "confirmed the predictability of ZKPQ traits to 11 functioning styles of personality disorder in both healthy controls and personality-disorder patients, and found the prediction more powerful in the patient group, suggesting that both normal personality traits and personality-disorder styles could be measured with the same dimensional battery" (Huang et al., 2011, p. 324).

The ZKPQ has also been investigated in relation to the Dimensional Assessment of Personality Pathology (DAPP-BQ; Livesley & Jackson, 2009), a measure of 18 maladaptive personality traits and four higher order factors: Emotional Dysregulation, Dissocial Behavior, Inhibition, and Compulsivity (Livesley, Jang, & Vernon, 1998). Wang, Du, Wang, Livesley, and Jang (2004) reported that ZKPQ Neuroticism-Anxiety was related to 12 of 18 DAPP-BQ scales. Principal components analysis between ZKPQ and DAPP-BQ scales yielded five factors accounting for 65.54% of the total variance. ZKPQ Neuroticism-Anxiety loaded on the DAPP-BQ Emotional Dysregulation factor (Factor 1), and ZKPQ Aggression-Hostility loaded on the DAPP-BQ Dissocial Behavior factor (Factor 2). Factor 3, labeled Impulsive Misconduct, was composed of DAPP-BQ Self-Harm, Conduct Problems, and Compulsivity, and ZKPQ Impulsive-Sensation Seeking. ZKPQ Sociability was negatively associated with the DAPP-BQ Inhibition factor (Factor 4), and ZKPQ Activity was associated with the DAPP-BQ Compulsivity factor (Factor 5).

The DAPP-BQ (Livesley & Jackson, 2009) has been found to be reflective of different levels of the personality structure hierarchy. Six levels of higher order traits were explored by Kushner et al. (2011), revealing the following hierarchical structure: Level 1 (Personality), Level 2 (Emotional Dysregulation and Dissocial Behavior), Level 3 (Emotional Dysregulation, Inhibitedness, and Dissocial Behavior), Level 4 (Emotional Dysregulation, Inhibitedness, Dissocial Behavior, and Compulsivity), Level 5 (Emotional Dysregulation, Need for Approval, Inhibitedness, Dissocial Behavior, and Compulsivity), and Level 6 (Emotional Dysregulation, Need for Approval, Inhibitedness, Dissocial Behavior/Externalizing, Dissocial Behavior/Disagreeable, and Compulsivity). Multiple

regression analyses assessed the predictive ability of DAPP-BQ components on *DSM-IV* PD symptoms counts. Substantial PD cluster variance was accounted for by different levels of the DAPP-BQ hierarchy, ranging from 32% to 39%. The hierarchy accounted for variance in specific PDs as well, ranging from 9% to 39% across the levels. The Emotional Dysregulation factor was found to significantly predict the majority of PDs, while the Dissocial Behavior factor was associated with cluster B PDs. Dissocial Behavior/Externalizing (Level 6) significantly predicted cluster B PDs as well, while Dissocial Behavior/Disagreeable (Level 6) predicted PDs from all clusters. Inhibitedness was associated with cluster A PDs and somewhat associated with avoidant, borderline, and obsessive-compulsive PDs. Paranoid, narcissistic, and obsessive-compulsive PDs were predicted by the Compulsivity factor, while histrionic, narcissistic, borderline, avoidant, and dependent PDs were periodically predicted by the Need for Approval factor. Each level of the hierarchy was found to significantly predict variance in PD symptom counts; however, some levels contributed to PD prediction more specifically than others. For instance, Level 5 components were found to have increased predictive capacity over Level 4, as evidenced by a six percent increase in prediction of borderline PD symptoms in Level 5 as compared to Level 4. Cluster B and C disorders were predicted more accurately by the Need for Approval factor in Level 5, suggesting that important information is available in Level 5 of the hierarchy not accounted for by Level 4. No significant gains in prediction of PDs were found in Level 6. Overall results of this study suggest that the DAPP-BQ is useful for distinguishing PD symptoms at varying hierarchical levels, ranging from general personality pathology to specific PD traits.

The relationship between DAPP-BQ lower order personality traits and the categorical PDs as outlined in *DSM-IV* has been explored with adult patient participants as well (Pukrop et al., 2009). Results indicated that

> clinically meaningful distinctions based on categorical classifications are validly reflected by the DAPP trait system: Group differences on all higher-order dimensions and 18 lower-order traits were in the expected directions. Patients with PD had the most extreme scores, followed by other psychiatric patients without PD (and without psychosis); finally, normal controls showed the lowest mean values (Pukrop et al., 2009, p. 580).

The DAPP-BQ dimensional system was reported to adequately account for subthreshold diagnostic information that is lost in the categorical model. Discrete dimensional trait profiles for all categories of PDs were found within the DAPP-BQ. For example, paranoid PD was characterized best by DAPP-BQ Suspiciousness and also by traits subsumed under the Emotional Dysregulation factor (Identity Problems, Affective Lability, Anxiousness, and Social Avoidance). Schizotypal PD was also characterized by DAPP-BQ Suspiciousness as well as Cognitive Distortion. DAPP-BQ Restricted Expression primarily accounted for schizoid PD symptoms, and Social Avoidance, Identity Problems, low Insecure Attachment, and low Narcissism also contributed to schizoid PD prediction. Avoidant PD was similarly predicted by DAPP-BQ Social Avoidance, Restricted Expression, and Identity Problems. Antisocial PD was predicted by DAPP-BQ Conduct Problems, while borderline PD was primarily predicted by the Emotional Dysregulation domain including traits of Affective Lability, Anxiousness, Self-Harm, and Cognitive Disortion and was also strongly characterized by Stimulus

Seeking. DAPP-BQ Narcissism was the strongest predictor of histrionic and narcissistic PD. Histrionic PD was characterized by Narcissism, Stimulus Seeking, and missing Social Avoidance, while narcissistic PD was characterized by Narcissism and Dissocial Behavior traits (e.g., Rejection and Callousness). Obsessive-compulsive PD was found to be primarily predicted by the DAPP-BQ Compulsivity domain, and dependent PD was characterized by DAPP-BQ Submissiveness and Insecure Attachment. Pukrop et al. (2009) suggest that the meaningful relationships between DAPP-BQ traits and PD symptoms can be used as a tool to help advance the PD diagnostic system. Common sources of variance found in all PDs (e.g., Emotional Dysregulation and Neuroticism) help explain the extensive overlap between PD categories, while lower order traits (as measured by the DAPP-BQ) help differentiate problems inherent to specific personality pathology.

Bagge and Trull (2003) explored the relationships between higher and lower order DAPP-BQ factors and PD symptoms in a non-clinical sample. Results suggested that, similar to Pukrop et al. (2009), DAPP-BQ Emotional Dysregulation underlies all PDs except antisocial PD. The Emotional Dysregulation factor includes a range of symptoms (e.g., affective instability, cognitive dysregulation, anxiety, oppositionality, narcissism) which could account for its broad coverage of PDs. Lower order DAPP-BQ traits were found to be better predictors of specific pathological personality symptoms. After accounting for the effects of gender and comorbid personality pathology, the following associations remained significant: paranoid PD was predicted by DAPP-BQ Suspiciousness and low Social Avoidance; schizotypal PD was predicted by Cognitive Dysregulation, Suspiciousness, and Intimacy Problems; schizoid PD was predicted by

Intimacy Problems and low Stimulus Seeking; antisocial PD was predicted by Stimulus Seeking, Conduct Problems, and low Suspiciousness; borderline PD was predicted by Affect Lability, Self-Harm, and Conduct Problems; histrionic PD was predicted by Submissiveness, Affect Lability, Narcissism, low Insecure Attachment, and low Restricted Expression; narcissistic PD was predicted by Narcissism, Callousness, and Rejection; dependent PD was predicted by Submissiveness and Insecure Attachment; avoidant PD was predicted by Social Avoidance, low Stimulus Seeking, and low Callousness; and obsessive-compulsive PD was predicted by Anxiety, Rejection, and Compulsivity. The majority of DAPP-BQ scores were most highly correlated with the PD including that prototypical trait (e.g., DAPP-BQ Submissiveness was most highly associated with dependent PD), and DAPP-BQ traits accounted for considerable amounts (sometimes over 50%) of PD symptom variance. This study indicated

> that the DAPP-BQ traits (and Livesley's model of personality pathology) are indeed relevant to the *DSM-IV* personality disorders. Further, [the] regression results provide preliminary data suggesting that DAPP-BQ traits can serve to differentiate between individual personality disorders. While the higher-order factors reflect major dimensions of personality pathology that characterize groups of personality disorders (e.g., Inhibition), the lower-order traits can aid in further distinguishing the personality disorders (Bagge & Trull, 2003, p. 30).

Additional research has examined the hypothesis that personality pathology represents the extremes of normal personality using the DAPP-BQ and the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993) as measures of pathological personality traits and the NEO-PI-R as a measure of normal personality traits (Samuel et

al., 2010). Results of IRT analyses indicated that, in general, the NEO-PI-R provided more psychometric information at the low poles of the underlying personality trait (e.g., Neuroticism), while the DAPP-BQ and SNAP provided more data at the high poles of the latent trait. Results corroborated the DAPP-BQ as a scale measuring maladaptive personality traits which fall on the extremes of personality variation. Results also suggested that measures of normal and abnormal personality can both be useful in determining personality pathology because both types of measures are assessing traits along a continuum; however, measures of pathological personality traits like the DAPP-BQ are better for capturing pathology as they assess the highest trait severity. Although differences between scales of normal and abnormal personality pathology were significant, a substantial amount of overlap was also found between them. Therefore, overall findings suggest that there is likely distinction as well as overlap between measures of normal and abnormal personality.

The DAPP-BQ and the other measures mentioned above have been shown to assess constructs believed to make up PDs as they naturally occur. Research on the proposed model for diagnosing PDs will require assessment instruments that accurately measure general and specific PD constructs. Additionally, the new model can be tested by comparing its components to a well-established related concept, the concept of interpersonal theory.

Personality Problems and Interpersonal Theory

Interpersonal theory proposes that "the most important expressions of personality occur in phenomena involving more than one person" (Pincus & Gurtman, 2006, p. 84). Sullivan (1953) suggested that maladaptive personalities are naturally expressed through

problematic interpersonal relationships. In fact, extensive literature demonstrates that interpersonal dysfunction is a central impairment within disordered personalities (Benjamin, 1996; Carson, 1969; Horowitz, 2004; Kiesler, 1986; Leary, 1957; Livesley, 2001; McLemore & Benjamin, 1979; Parker et al., 2004; Pincus & Hopwood, 2012; Pincus & Wiggins, 1990). McLemore and Brokaw (1987) propose "that disordered personality, by nature, involves the enactment of disordered thought-feeling-action patterns (TFAPs; TFA patterns) in relation to significant other people" (p. 271). Kiesler (1986) explains that PDs lead people to display rigid and extreme use of narrow classes of interpersonal actions, despite the appropriateness of the actions across social situations. Hopwood et al. (2013) highlight the idea originating from interpersonal theory that "*personality pathology is not what someone is, it is what someone does*" (p. 281). Based on research evidence, it is safe to say that personality pathology is most "poignantly expressed" (Hopwood et al., 2013, p. 281) through what people *do* in their interactions with others.

Hopwood, Koonce, and Morey (2009) propose that any accurate model used to conceptualize and diagnose personality pathology should account for interpersonal difficulties. Personality pathology as defined in Section III of *DSM-5* is largely represented by interpersonal problems. The proposed model emphasizes the importance of looking at how individuals think about themselves, others, and how they interact with other people (APA, 2013). As the research suggests, interpersonal theory has been shown to be a good fit for representing personality pathology as it is defined in the proposed model (Hopwood et al., 2013). Linking the new model of PD with

interpersonal theory contributes to the justification of the proposed model and its possible implementation into future editions of the *DSM.*

Components of Interpersonal Theory

*The main concept in interpersonal theory is t*he "interpersonal situation", which is defined as an event "involving a self and other and associated with an affective experience" (Hopwood et al., 2013, p. 274). The affective experience that occurs within the interpersonal situation varies depending on one's ability to satisfy basic needs of interpersonal security and self-esteem. When these needs are met through the interpersonal situation, the event goes well and behaviors are reinforced, but when the basic needs are not met, the event goes poorly and brings about emotional dysregulation and distress. Hopwood et al. (2013) propose that the ideas of interpersonal security and self-esteem in interpersonal theory theoretically correspond with the concepts of interpersonal dysfunction and self dysfunction, respectively, in the proposed model of PD. Common patterns develop in interpersonal situations as a result of social learning (Sullivan, 1953). Patterns may represent satisfaction of basic needs for interpersonal security and self-esteem, or they may be characterized by perpetually unsatisfied needs and distress. Overall, personality pathology can be defined from an interpersonal perspective as patterns of unsatisfying interpersonal situations (Hopwood et al., 2013).

Three components organize interpersonal situations: agency and communion, dysregulation, and parataxic distortions. *These components can be readily applied to the proposed conceptualization of PDs (*Hopwood et al., 2013). Agency and communion are broad metaconcepts within which the concepts of self-esteem and interpersonal security were organized (Wiggins, 1991, 2003). Agency represents the idea of being a

differentiated individual and making efforts to achieve power in order to maintain differentiation. Communion is characterized by being a part of a social group and working toward intimacy and cohesion with that group (Bakan, 1966). Agency and communion in interpersonal theory align conceptually with self and interpersonal components, respectively, in the proposed model of PD (Pincus, 2011).

The second component relevant to interpersonal situations is dysregulation. Dysregulation occurs when the basic needs of interpersonal security and self-esteem are not met in an interpersonal situation. Chronic and extreme dysregulation is a sign of personality pathology (Hopwood et al., 2013). According to interpersonal theory, dysregulation occurs in one of three areas: self, affect, or the interpersonal field (Pincus, 2005; Pincus, Lukowitsky, & Wright, 2010). Self regulation includes managing one's self-concept, or how one thinks about oneself during interpersonal situations. Hopwood et al. (2013) point out that several elements of self dysfunction as defined in the new model of PD characterize features of self regulation (or dysregulation). For example, self dysfunction in the new model is represented by difficulties differentiating self from others, unstable self-esteem, and incoherent sense of self, all of which can be translated into problems with self regulation. Affect regulation includes being able to control emotions and affective expression in interpersonal situations (Gratz & Roemer, 2004). Aspects of self dysfunction in the proposed model of PD characterize affect dysregulation, including problems experiencing the range of emotions and problems regulating emotions appropriately when they are experienced (Hopwood et al., 2013). Field regulation (of the interpersonal field) includes monitoring how one relates to others and how one's behavior affects others' behavior (Wiggins & Trobst, 1999). Field

regulation is represented in the interpersonal dysfunction component of the proposed model of PD as difficulty developing empathy for others and difficulty developing feelings of intimacy for others (Hopwood et al., 2013).

Parataxic distortions represent the third component included in interpersonal situations. Sullivan (1953) suggested that parataxic distortions take place when a person's mental perception of an interpersonal situation is different from an objective perception of the situation. While healthy personality functioning can be understood as the ability to experience interpersonal situations without distortions, pathological personality functioning is commonly represented by parataxic distortions, leading to increasing distress and dysregulation in the areas of self, affect, and the interpersonal field (Hopwood et al., 2013). For example, a distorted perception of an interpersonal situation may involve a feared outcome such as criticism or abandonment that causes a person to feel threatened and protective (e.g., self dysregulation), fearful (e.g., affect dysregulation), and act defensively (e.g., field dysregulation; Hopwood et al., 2013). Hopwood et al. (2013) point out that "maladaptive interpersonal behavior can oftentimes be understood as a logical response to a misperception, deeply rooted in an individual's social learning, which points to a clear target for intervention" (p. 279).

Agency and communion, regulation, and parataxic distortion provide structure to interpersonal situations and represent a theoretically grounded model that fits well with the proposed model of PD. Each of these components work together in an organized system of

> behavioral transactions [that] occur as a sequence of inputs from others in the interpersonal field in terms of agentic and communal behavior, colored by

> perception, which are mediated by internal processes related to goal satisfaction and affective regulation, leading to interpersonal output that may or may not be adaptive (Hopwood et al., 2013, p. 280).

Personality pathology can be represented by this model of interpersonal situations. A person with personality pathology tends to distort interpersonal interactions, feel threatened, and exert defensive behaviors that are based on misperceptions. Basic needs of agency and communion (self-esteem and interpersonal security) are regularly unmet and lead to self dysregulation, negative affect, and maladaptive interpersonal behavior (Hopwood et al., 2013). This series of events occurs in "recurrent patterns" (Sullivan, 1953, p. 111) that, when chronically maladaptive, create considerable self and interpersonal problems consistent with the proposed definition of PD (Hopwood et al., 2013). Overall, interpersonal theory provides a theoretically grounded foundation useful for understanding mechanisms that drive personality disordered behaviors and validating the proposed model of PD. The next step is to connect interpersonal theory with an organized assessment system capable of accurately depicting personality pathology within the interpersonal situation.

The Interpersonal Circumplex

Patterns of interpersonal dysfunction that represent personality pathology can be meaningfully organized by the interpersonal circumplex, an empirically validated model for assessing personality functioning. The development of the interpersonal circumplex began in Oakland, CA, at the Kaiser Foundation Health Plan where researchers were investigating the relationships between personality structure and group interactions (Pincus & Gurtman, 2006). Interpersonal variables (e.g., complains, teaches, distrusts,

cooperates) were obtained from behavioral observations during group therapy. These variables were organized around a circular continuum with two axes termed dominance vs. submission and affiliation vs. aggression. The metaconcepts of agency and communion in interpersonal theory align with the dominance vs. submission and affiliation vs. aggression axes of the circumplex, respectively. The circumplex is divided into the following clockwise octants: Domineering/Controlling, Intrusive/Needy, Overly Accommodating, Self-Sacrificing, Nonassertive, Socially Inhibited, Cold/Distant, and Vindictive/Self-Centered (see Figure 1). The circular structure of the variables indicates that variables adjacent to one another are more similar than variables on opposite poles. Both the severity and the style of interpersonal behavior can be measured using the interpersonal circumplex (Gurtman, 1992). Severity is assessed based on the distance of a behavior from the center of the circle, with greater distance from the center equating to greater severity or intensity of the behavior. Style is measured by the placement of the behavior around the circle, falling within one of the eight octants and providing information on the content or theme of the behavior. Interpersonal circumplex measures have been used as nomological nets compatible for assessing the interpersonal features of other constructs (Gurtman, 1992, 2009) and, therefore, provide a theoretically grounded avenue for exploring interpersonal dysfunction inherent to PDs.

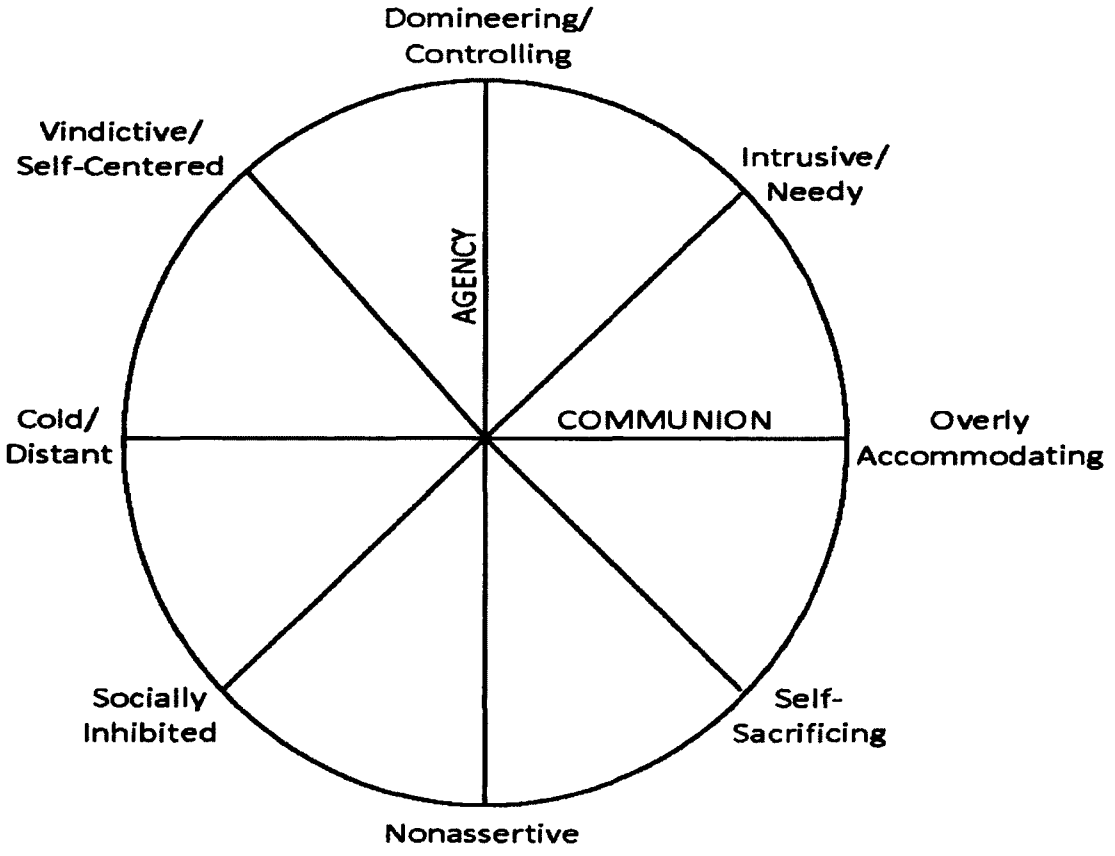

Figure 1 *The Interpersonal Circumplex*

PDs and the Interpersonal Circumplex

The characteristic interpersonal problems inherent to PDs have been distinctly represented using the interpersonal circumplex model. Specific *DSM-IV* PD categories have also been represented by interpersonal profiles within the circumplex (Horowitz, 2004). For example, paranoid PD has been linked to the Vindictive/Self-Centered octant on the circumplex, and schizoid PD has been linked to the Cold/Distant and Socially Inhibited octants. Avoidant PD is related to the Socially Inhibited and Nonassertive octants, while dependent PD is related to the Self-Sacrificing octant on the circumplex. Histrionic PD falls on the Intrusive/Needy octant, while narcissistic PD falls on the

Domineering/Controlling and Vindictive/Self-Centered octants (Wright, Pincus, & Lenzenweger, 2010). Interestingly, borderline PD has not been associated with any particular interpersonal theme, indicating that the interpersonal dysfunction associated with this disorder is broad, manifesting itself in multiple interpersonal problems (Hopwood & Morey, 2007).

Relationships between the interpersonal circumplex and personality pathology in a group of individuals attending outpatient treatment for alcohol dependence have also been explored (Matano & Locke, 1995). Researchers found that paranoid and antisocial patients were associated with the Cold-Domineering quadrant of the interpersonal circumplex, while histrionic patients were associated with the Warm-Domineering quadrant. Dependent patients related most to the Warm-Nonassertive quadrant, and schizoid, avoidant, and schizotypal patients related most to the Cold-Nonassertive quadrant. Narcissistic patients fell into the Domineering half of the circle, but were typically neither Warm nor Cold. Overall level of interpersonal complaints was also measured in this study. The following disorders demonstrated the highest mean levels of interpersonal dysfunction: schizotypal (2.0), paranoid (1.8), avoidant (1.8), schizoid (1.7), borderline (1.7), negativistic (1.6), and histrionic (1.2). Interestingly, compulsive, narcissistic, and antisocial patients did not report many interpersonal problems. The findings in this study were compared to two previous studies, one that employed student participants (Pincus & Wiggins, 1990), and one that employed personality-disordered patients (Soldz, Budman, Demby, & Merry, 1993). Consistency within the findings from each of the three studies suggests that "the types of interpersonal problems associated

with different personality disorders are consistent across different populations" (Matano & Locke, 1995, pg. 66).

Wright et al. (2012) mapped the Personality Inventory for *DSM-5* (PID-5) scales onto the Inventory of Interpersonal Problems – Short Circumplex (IIP-SC) in order to explore the 25 maladaptive traits and five domains proposed in the new model of PDs as they relate to interpersonal problems. Results indicated that the five domains correlated with IIP-SC octants in the following ways: Negative Affect (PID-5) correlated most highly with the Intrusive octant on the IIP-SC, Detachment (PID-5) correlated most highly with the Avoidant octant, Antagonism (PID-5) correlated most highly with the Domineering octant, Disinhibition correlated most highly with the Vindictive octant, and Psychoticism (PID-5) correlated most highly with the Vindictive octant. Of note is the finding that the interpersonal profile for PID-5 Psychoticism was the least differentiated of the five domains. Results of this study demonstrate that the proposed trait domains for PDs can be matched with interpersonal difficulties assumed to underlie personality pathology.

These findings link PDs to the larger theoretical model of interpersonal functioning; however, the proposed model of PDs would benefit from further investigation to determine the place of the developing constructs within the larger framework of the interpersonal circumplex (Wright et al., 2012).

Summary

A hybrid dimensional-categorical model of PDs originally proposed for *DSM-5* has been supported in the literature, and the authors of the model believe that it will begin the process of solving the extensive problems found in previous PD diagnostic systems.

The incorporation of a dimensional component to diagnosis and accompanying severity ratings is believed to represent PDs more accurately and account for individual differences in personality functioning. The high rates of comorbidity among PDs in the current diagnostic classification represent an inaccurate view of personality pathology as it appears in nature, while the new proposal uses trait dimensions to account for individual variation in personality expression and fewer, more carefully defined specific PD types. The new model also contains a resolution to the heterogeneity problem encountered in the current system by accounting for similarities and differences between individuals diagnosed with the same PD (using the dimensional severity system and delineation between prominent traits). Test-retest reliabilities for PD assessment are expected to increase as a result of the new model's emphasis on traits, which should represent the relative stability of personality traits more accurately. A solution to the PD NOS dilemma is expected by accounting for specific characteristics of individuals diagnosed with PDTS rather than having an uninformative diagnostic label of PD NOS. Correcting for the significant conceptual flaws of previous manuals should provide a better diagnostic system that is closer to accurately representing PDs. The model of PDs outlined for inclusion in future editions of the *DSM* and associated rationale presents a need for empirical research to test the proposal and implement appropriate modifications.

Purpose of the Current Study

In light of the proposed reconceptualization of PD diagnosis and the importance of developing an accurate diagnostic representation of PDs, the purpose of the current study was to investigate the relationships among maladaptive personality traits, general personality dysfunction, and interpersonal problems. General personality functioning has

been defined as an overarching, yet separate construct from specific personality traits. This definition has yet to be tested thoroughly. Empirical evidence is needed to determine if the proposed conceptualization will operate in reality as is suggested in theory. Patterns of interpersonal dysfunction provide a helpful framework for understanding and treating dysfunction inherent to PDs. Therefore, self-report measures of general personality functioning, specific dysfunctional personality traits, and interpersonal dysfunction were given to participants from two different groups. Triangulating these constructs will help clarify the roles of the underlying components in maladaptive personalities, eventually leading to more accurate diagnosis and effective treatment of personality problems.

Hypotheses

Based on the available literature suggesting that an inherent relationship exists between personality pathology and interpersonal problems (e.g., Horowitz, 2004; Pincus & Gurtman, 2006), recent findings that specific personality traits can be mapped onto the interpersonal circle (Wright et al., 2012), and the assumption that general personality dysfunction as defined by the new model is represented in the interpersonal situation (Hopwood et al., 2013), the following hypotheses were investigated in this study.

Hypothesis One:

(a) The DAPP-SF Callousness scale will be positively related to the IIP-64 Domineering/Controlling scale in both samples.

(b) When Callousness is the highest DAPP-SF score, Domineering/Controlling will be the highest IIP-64 scale in both samples.

Hypothesis Two:

(a) The DAPP-SF Insecure Attachment scale will be positively related to the IIP-64 Intrusive/Needy scale in both samples.

(b) When Insecure Attachment is the highest DAPP-SF score, Intrusive/Needy will be the highest IIP-64 scale in both samples.

Hypothesis Three:

(a) The DAPP-SF Suspiciousness scale will be positively related to the IIP-64 Vindictive/Self-Centered scale in both samples.

(b) When Suspiciousness is the highest DAPP-SF score, Vindictive/Self-Centered will be the highest IIP-64 scale in both samples.

Hypothesis Four:

(a) The DAPP-SF Rejection scale will be positively related to the IIP-64 Domineering/Controlling scale in both samples.

(b) When Rejection is the highest DAPP-SF score, Domineering/Controlling will be the highest IIP-64 scale in both samples.

Hypothesis Five:

(a) The DAPP-SF Oppositionality scale will be positively related to the IIP-64 Domineering/Controlling and Vindictive/Self-Centered scales in both samples.

(b) When Oppositionality is the highest DAPP-SF score, Domineering/Controlling will be the highest IIP-64 scale in both samples.

Hypothesis Six:

(a) The DAPP-SF Low Affiliation scale will be positively related to the IIP-64 Cold/Distant and Socially Inhibited scales in both samples.

(b) When Low Affiliation is the highest DAPP-SF score, Socially Inhibited will be the highest IIP-64 scale in both samples.

Hypothesis Seven:

(a) The DAPP-SF Restricted Expression scale will be positively related to the IIP-64 Cold/Distant and Socially Inhibited scales in both samples.

(b) When Restricted Expression is the highest DAPP-SF score, Cold/Distant will be the highest IIP-64 scale in both samples.

Hypothesis Eight:

(a) The DAPP-SF Submissiveness scale will be positively related to the IIP-64 Overly Accommodating and Self-Sacrificing scales in both samples.

(b) When Submissiveness is the highest DAPP-SF score, Self-Sacrificing will be the highest IIP-64 scale in both samples.

Hypothesis Nine:

(a) The DAPP-SF Intimacy Problems scale will be positively related to the IIP-64 Cold/Distant and Socially Inhibited scales in both samples.

(b) When Intimacy Problems is the highest DAPP-SF score, Cold/Distant will be the highest IIP-64 scale in both samples.

Hypothesis Ten:

The DAPP-SF Total Scale scores will be positively related to the PLM Interpersonal scale score in both samples.

Hypothesis Eleven:

The IIP-64 Total score will be positively related to the PLM Interpersonal scale score in both samples.

CHAPTER TWO

METHOD

Participants

In order to empirically test the above hypotheses, two groups of diverse participants were employed in the study. The DAPP-SF, the PLM, the IIP-64, and the MC-C were administered to undergraduate students at a midsized southern university through an online survey. Data from these participants comprised the student sample. Archival data from the DAPP-SF, the PLM, the IIP-64, and the PDS were gathered from individuals who were either clients at a 90-day private residential substance use treatment facility in the southern United States or who were referred to the facility for evaluation due to substance use concerns. Data from these participants comprised the clinical sample.

Measures

Dimensional Assessment of Personality Pathology – Short Form (DAPP-SF)

The DAPP-SF (van Kampen, de Beurs, & Andrea, 2008) is a 136-item self-report measure of 18 pathological personality traits which map onto 4 broad dimensions: Emotional Dysregulation, Dissocial Behavior, Social Avoidance, and Compulsiveness. Items are rated on a 5-point Likert scale from *1 = strongly disagree* to *5 = strongly*

agree. The measure is appropriate for non-clinical and clinical populations. *T* scores for each of 18 scales are generated when scoring the DAPP-SF, and *T* scores of 65 or above are considered significantly elevated. Cronbach's alpha values for each scale range from .78 to .89 and are compatible with the original 290-item measure, the DAPP-BQ (van Kampen et al., 2008). Good convergent, discriminant, and construct validities have been reported for the DAPP-SF, and reliability across samples has been established (de Beurs, Rinne, van Kampen, Verheul, & Andrea, 2009). For the purposes of this study, only DAPP-SF scales involving interpersonal functioning were administered to the student sample. After administration, scores for each of the following nine interpersonal scales were obtained: Callousness, Insecure Attachment, Intimacy Problems, Low Affiliation, Oppositionality, Rejection, Restricted Expression, Submissiveness, and Suspiciousness. All DAPP-SF scales were administered to the substance use treatment sample, but only scores from the interpersonal scales were used in the current study.

Personality Level Measurement

Morey, et al. (2011) created a shortened version of the General Assessment of Personality Disorder (GAPD; Livesley, 2006) and the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008), which are both measures assessing general personality dysfunction across two domains: self pathology and interpersonal pathology. During PLM test construction, two expert raters independently rated GAPD and SIPP-118 items in accordance with the level of pathology expected to be related to each possible response. Ratings that were agreed upon by both raters were used to determine levels of pathology, and these items were analyzed to identify a single set of items reflective of overall personality pathology. IRT analyses determined types of dysfunction

related to different severity levels on the latent trait and an estimate of each item's ability to differentiate individuals at one severity level from other severity levels. The final scale reflects a combined, condensed version of the GAPD and the SIPP-118 measuring general personality dysfunction in the domains of self and interpersonal pathology. The PLM scale contains 65 items which are rated on a 4-point Likert scale from *1 = strongly disagree* to *4 = strongly agree*. A total score is calculated by summing each item, and higher scores reflect increasing pathology. Correlations with the full versions of the GAPD and the SIPP-118 were reported above .90.

Inventory of Interpersonal Problems (IIP-64)

The Inventory of Interpersonal Problems (IIP-64; Horowitz, Alden, Wiggins, & Pincus, 2003) is an objective self-report measure of interpersonal problems as defined by the eight segments of the interpersonal circumplex (Domineering/Controlling, Vindictive/Self-Centered, Cold/Distant, Socially Inhibited, Nonassertive, Overly Accommodating, Self-Sacrificing, and Intrusive/Needy). The IIP-64 contains 64 items and is broken into two main sections. The first section inquires about "things you find hard to do with other people" while the second section asks about "things you do too much." Items are rated on a 5-point Likert scale from *0 = Not at all* to *4 = Extremely.* The IIP-64 can be scored using standard (non-ipsatized) *T* scores and/or individual-based (ipsatized) *T* scores. Each scoring method yields different information about the individual's interpersonal dysfunction. Standardized scoring is useful for determining an individual's overall interpersonal difficulty and specific areas of difficulty relative to the general population, while ipsatized scoring is useful for determining particular types of interpersonal difficulty that are especially salient for the individual when considering

his/her personal overall level of functioning. In other words, ipsatized scoring determines which areas of interpersonal functioning are especially problematic compared to the individual's overall level of dysfunction instead of compared to the general population. *T* scores of 70 or above are considered significantly elevated for both scoring methods. In this study, Total IIP-64 scores will be calculated using the standardized scoring method, and scores on each of the eight scales will be calculated using ipsatized scoring. Cronbach's alpha coefficients of the standard *T* scores for the eight scales ranged from .76 to .88, and the standard Total score coefficient was .96. Ipsatized *T* scores yielded moderate test-retest reliabilities on each of the scales ranging from .57 to .76 (Horowitz et al., 2003). Good construct validity has also been reported for this measure (Gurtman, 1992).

Paulhus Deception Scales (PDS)

The PDS (Paulhus, 1998) is a 40-item self-report questionnaire that assesses a respondent's tendency to give socially desirable answers. The measure is composed of two main scales: Impression Management (IM) and Self-Deceptive Enhancement (SDE). Impression Management assesses the degree to which the respondent is faking or lying, and Self-Deceptive Enhancement measures lack of insight or overconfidence. Items from each scale are measured on a 5-point Likert scale from *1 = Not True* to *5 = Very True*. High scores reflect socially desirable or defensive responding, while low scores represent honest responding. Adequate internal reliabilities have been reported in several samples, Cronbach's alpha for college group = .70 (SDE), .81 (IM), and .83 (Total); Cronbach's alpha for general group = .75 (SDE), .84 (IM), and .85 (Total). PDS validity has been supported through the following correlations with other measures of socially desirable

responding: Marlowe-Crowne = .73 and Edward's Social Desirability Scale = .64. For the purpose of the current study, the PDS was administered to the clinical sample only. Interpretation of PDS scores will help rule out invalid responding on the administered questionnaires.

Marlowe-Crowne Social Desirability Scale – Form C (MC-C)

The MC-C (Reynolds, 1982) is a 13-item true/false self-report questionnaire that assesses socially desirable responding. High scores represent socially desirable responding, while low scores represent honest responding. Adequate reliability has been established for this scale, $r = 0.76$, and validity has been demonstrated through correlations with the original 33-item measure, $r = 0.93$. In this study, the MC-C will be used to gauge the degree of social desirability included in the responses of student participants and help identify possibly invalid responses on the administered questionnaires.

Procedure

Prior to data collection, this study was approved by the Institutional Review Board (see Appendix C). Undergraduate students were recruited from psychology classes and offered extra credit for their participation in an online survey about general personality dysfunction, disordered personality traits, and interpersonal dysfunction. Students were informed that the results of their surveys are anonymous, and they were given a link to a consent form. If they gave consent, they were taken to the online survey which contained the PLM, the DAPP-SF, the IIP-64, and the MC-C. Archival data previously completed by residents at a substance use treatment facility or individuals

referred for evaluation at the facility was obtained from the PLM, the DAPP-SF, the IIP-64, and the PDS. Residential participants' assessment scores were collected as archival data and were deidentified before being included in the clinical sample.

Statistical Analysis

First, descriptive statistics and frequencies were calculated for demographic variables and each scale in the study. Descriptive statistics and frequencies for the MC-C and the PDS were examined in order to determine social desirability outliers in the student and clinical samples. Participants who obtained scores on the MC-C or the PDS that were 1.5 SD or more above the mean were removed in one version of the data set. All participants' data were included in a second version of the data set. A priori hypothesis testing was conducted for both data sets to determine if significant differences were present between the clinical sample and the student sample. Mann-Whitney U Tests were conducted for each of 19 scales. After these analyses, it was determined to test each hypothesis independently for the student and clinical samples. Next, the student and clinical samples (in both data sets) were divided using the Split File function in SPSS. Analyses for each hypothesis in each data set were conducted as follows:

Hypothesis one stated that (a) the DAPP-SF Callousness scale would be positively related to the IIP Domineering/Controlling scale in both the student sample and the clinical sample, and (b) when Callousness was the highest DAPP-SF score, Domineering/Controlling would be the highest IIP score in both samples. Part (a) of this hypothesis was tested for the student and clinical samples using Spearman's correlation. In the student sample, Part (b) was tested using Chi Square analysis. In the clinical sample, Part (b) was tested using Fisher's Exact Test. Effect sizes of significant results

found in Part (b) were determined using Phi. Expected and observed frequency counts for significant associations found in Part (b) were also reported.

Hypothesis two stated that (a) the DAPP-SF Insecure Attachment scale would be positively related to the IIP Intrusive/Needy scale in both the student and clinical samples, and (b) when Insecure Attachment was the highest DAPP-SF score, Intrusive/Needy would be the highest IIP octant in both samples. Part (a) of this hypothesis was tested for both samples using Spearman's correlation. Part (b) was tested using Fisher's Exact Test for both the student and clinical samples.

Hypothesis three stated that (a) the DAPP-SF Suspiciousness scale would be positively related to the IIP Vindictive/Self-Centered scale in the student and clinical samples, and (b) when Suspiciousness was the highest DAPP-SF score, Vindictive/Self-Centered would be the highest IIP scale in both samples. Part (a) was tested using Spearman's correlation for both samples. In the student sample, Chi Square analysis was used to test Part (b). In the clinical sample, Fisher's Exact Test was used to test Part (b). Effect sizes of significant results found in Part (b) were determined using Phi. Expected and observed frequency counts for significant associations found in Part (b) were also reported.

Hypothesis four stated that (a) the DAPP-SF Rejection scale would be positively related to the IIP Domineering/Controlling scale in both the student and clinical samples, and (b) when Rejection was the highest DAPP-SF score, Domineering/Controlling would be the highest IIP scale in both samples. For both samples, Part (a) was tested using Spearman's correlation. Part (b) was tested using Fisher's Exact Test for both the student and clinical samples. Effect sizes of significant results found in Part (b) were determined

using Phi. Expected and observed frequency counts for significant associations found in Part (b) were also reported.

Hypothesis five stated that (a) the DAPP-SF Oppositionality scale would be positively related to the IIP Domineering/Controlling and Vindictive/Self-Centered scales in both the student and clinical samples, and (b) when Oppositionality was the highest DAPP-SF score, Domineering/Controlling would be the highest IIP scale in both samples. Part (a) was tested using Spearman's correlation in both the student and clinical samples. Part (b) was tested using Fisher's Exact Test in both samples.

Hypothesis six stated that (a) the DAPP-SF Low Affiliation scale would be positively related to the IIP Cold/Distant and Socially Inhibited scales in both the student and clinical samples, and (b) when Low Affiliation was the highest DAPP-SF score, Socially Inhibited would be the highest IIP scale in both samples. Spearman's correlation was used to test Part (a) in both samples. Fisher's Exact Test was used to test Part (b) in both samples. Effect sizes of significant results found in Part (b) were determined using Phi. Expected and observed frequency counts for significant associations found in Part (b) were also reported.

Hypothesis seven stated that (a) the DAPP-SF Restricted Expression scale would be positively related to the IIP Cold/Distant and Socially Inhibited scales in both the student and clinical samples, and (b) when Restricted Expression was the highest DAPP-SF score, Cold/Distant would be the highest IIP scale in both samples. Part (a) was tested using Spearman's correlation for both the student and clinical samples. Part (b) was tested using Fisher's Exact Test for the clinical sample, but Part (b) was not able to be

tested in the student sample because Restricted Expression was never the highest DAPP-SF score for this group.

Hypothesis eight stated that (a) the DAPP-SF Submissiveness scale would be positively related to the IIP Overly Accommodating and Self-Sacrificing scales in both the student and clinical samples, and (b) when Submissiveness was the highest DAPP-SF score, Self-Sacrificing would be the highest IIP scale in both samples. Spearman's correlation was used to test Part (a) in both samples. Part (b) was tested using Fisher's Exact Test for the clinical sample, but Part (b) was not able to be tested in the student sample because Submissiveness was never the highest DAPP-SF score for this group.

Hypothesis nine stated that (a) the DAPP-SF Intimacy Problems scale would be positively related to the IIP Cold/Distant and Socially Inhibited scales in both the student and clinical samples, and (b) when Intimacy Problems was the highest DAPP-SF score, Cold/Distant would be the highest IIP scale in both samples. Spearman's correlation was used to test Part (a) in both the student and the clinical samples. Chi square was used to test Part (b) in the student sample, and Fisher's Exact Test was used to test Part (b) in the clinical sample. Effect sizes of significant results found in Part (b) were determined using Phi. Expected and observed frequency counts for significant associations found in Part (b) were also reported.

Hypothesis ten stated that DAPP-SF total scale scores would be positively related to the PLM Interpersonal scale score in both samples. For both samples, each of nine DAPP-SF scales were correlated with the PLM Interpersonal scale score using Spearman's correlation.

Hypothesis eleven stated that the IIP Total score would be positively related to the PLM Interpersonal scale score in both samples. Spearman's correlation was used to test this hypothesis in both the student and clinical samples.

After testing each hypothesis in both data sets (with and without social desirability outliers removed), findings were compared to determine if data from participants who scored highly on measures of social desirability affected results of hypothesis testing. Results from the data set with social desirability outliers removed were reported. Then, Fisher's Z-Transformations were conducted to examine relationships between correlational findings for the student and clinical samples. Principal components analysis was conducted for both samples with all scales used in the study in order to determine the factor structure of the constructs assessed. Bonferroni adjustment was utilized in order to correct for inflated alpha levels caused by multiple correlations and comparisons in this study (Bland & Altman, 1995). For hypotheses one (a) through nine (a), ten, and eleven in both samples, results were considered significant at $p = .002$ (.05/24 correlations on the same data set). For hypotheses one (b) through nine (b), results were considered significant at $p = .006$ (.05/9 comparisons with nominal variables). Results of Fisher's Z-Transformations were considered significant at $p = .002$ (.05/24 correlations compared).

CHAPTER THREE

RESULTS

Participants

Participants included 255 undergraduate students at a medium size, public university in the South (student sample) and 252 individuals either attending inpatient treatment at a private substance use treatment facility or being evaluated to determine if substance use treatment would be appropriate (clinical sample). Seventeen participants from the clinical sample did not complete the DAPP-SF; therefore, only data gathered from the remaining measures were available for analysis for these individuals. Fourteen student participants obtained scores of 1.5 standard deviations or more above the mean on the MC-C (equaling a score of 11 or more), suggesting that they may have answered in a socially desirable manner. Eighteen participants from the clinical sample obtained scores of 1.5 standard deviations or more above the mean on the PDS (equaling a total score of 92 or more), indicating defensive or socially desirable responding. Statistical analyses were conducted with all available data from each sample as well as without data from the 32 participants who obtained elevated social desirability scores. Results indicated that data gathered from participants who attained elevated scores on the MC-C or the PDS affected results of hypothesis testing, leading to significant results in four analyses that were no longer significant when social desirability outliers were removed. Participants

who scored highly on measures of social desirability may have also adjusted their responses on the DAPP-SF, PLM, and IIP to reflect inaccurate personality constructs and interpersonal problems, which may have contributed to the differences in results of hypothesis testing with and without their data included. Therefore, data from these participants ($n = 32$) were removed. A total of 241 student participants were included in the study, and a total of 234 participants from the clinical sample were included. The student sample was 64.3% female ($n = 155$) and 35.7% male ($n = 86$). The average student's age was 20 years ($SD = 4.412$, *Range* = 16-62). Eleven students did not report their age. The ethnicity of the student sample was as follows: 73.9% White ($n = 178$), 17.8% African American ($n = 43$), 2.9% Hispanic or Latino ($n = 7$), 2.1% Asian ($n = 5$), 0.4% American Indian or Alaskan Native ($n = 1$), and 1.7% Other ($n = 4$; Pakistani, Nordic, and French American). Three students did not report their ethnicity. The clinical sample was 43.2% female ($n = 101$) and 56.8% male ($n = 133$). The average age in the clinical sample was 39 years ($SD = 12.2275$, *Range* = 18-70). Information on ethnicity for the clinical sample was not available for review.

Descriptive Statistics

Descriptive statistics for the DAPP-SF, PLM, and IIP are reported in Tables 1 through 5. Table 1 reports the descriptive statistics from the DAPP-SF scales for the student sample. The mean DAPP-SF score for this sample ranged from 41.77 (Restricted Expression) to 61.43 (Suspiciousness). See Table 1 for detailed descriptives from each DAPP-SF scale in the student sample.

Table 1

Descriptive Statistics from DAPP-SF Scales for the Student Sample

DAPP-SF Scale	*N*	*Range*	*M*	*SD*
Callousness	241	11-106	58.43	13.333
Insecure Attachment	241	23-83	54.07	10.018
Intimacy Problems	241	34-98	55.52	11.464
Low Affiliation	241	25-67	48.43	8.083
Oppositionality	241	6-89	53.42	10.984
Rejection	241	8-82	52.77	10.262
Restricted Expression	241	15-61	41.77	7.539
Submissiveness	241	14-58	42.09	7.497
Suspiciousness	241	20-98	61.43	11.828

Descriptive statistics from the DAPP-SF scales for the clinical sample are presented in Table 2. The mean DAPP-SF score for this sample ranged from 44.71 (Callousness) to 51.19 (Intimacy Problems). See Table 2 for detailed descriptives from each DAPP-SF scale in the clinical sample.

Table 2

Descriptive Statistics from the DAPP-SF Scales for the Clinical Sample

DAPP-SF Scale	*N*	*Range*	*M*	SD
Callousness	217	12-92	44.71	11.219
Insecure Attachment	217	24-79	47.07	10.574
Intimacy Problems	217	33-98	51.19	11.547
Low Affiliation	217	25-81	46.28	11.138
Oppositionality	217	19-83	46.80	13.672
Rejection	217	14-89	45.85	10.088
Restricted Expression	217	17-79	46.30	10.439
Submissiveness	217	14-82	46.18	10.610
Suspiciousness	217	23-81	46.61	10.228

Descriptive statistics for the student sample from the IIP scales are presented in Table 3. The mean IIP score for this sample ranged from 55.68 (Overly Accommodating) to 58.90 (Intrusive/Needy). See Table 3 for descriptive statistics from each IIP scale in the student sample.

Table 3

Descriptive Statistics from IIP Scales for the Student Sample

IIP Scale	*N*	*Range*	*M*	*SD*
Domineering/Controlling	241	39-100	58.29	13.810
Vindictive/Self-Centered	241	39-90	57.84	12.546
Cold/Distant	241	38-93	56.99	12.453
Socially Inhibited	241	39-86	57.73	10.881
Nonassertive	241	37-83	56.62	10.368
Overly Accommodating	241	34-80	55.68	10.132
Self-Sacrificing	241	36-89	56.88	10.030
Intrusive/Needy	241	38-96	58.90	11.755

Descriptive statistics for the clinical sample from the IIP scales are presented in Table 4. The mean IIP score for this sample ranged from 48.56 (Cold/Distant) to 56.93 (Self-Sacrificing). See Table 4 for descriptive statistics from each IIP scale in the clinical sample.

Table 4

Descriptive Statistics from IIP Scales for the Clinical Sample

IIP Scale	*N*	*Range*	*M*	*SD*
Domineering/Controlling	234	39-98	50.33	11.046
Vindictive/Self-Centered	234	39-82	48.84	9.874
Cold/Distant	234	40-87	48.56	10.384
Socially Inhibited	234	39-93	51.55	12.529
Nonassertive	234	37-90	55.85	12.433
Overly Accommodating	234	34-91	56.79	12.066
Self-Sacrificing	234	36-91	56.93	12.109
Intrusive/Needy	234	38-84	52.81	10.528

Descriptive statistics from the IIP Total scores and the PLM Interpersonal Scale scores for each sample are detailed in Table 5. The mean IIP Total score for the student sample was 59.03 and 53.40 for the clinical sample. The mean PLM Interpersonal Scale score for the student sample was 2.08 and 1.62 for the clinical sample. See Table 5 for descriptive statistics for these scales.

Table 5

Descriptive Statistics from IIP Total Scores & PLM Interpersonal Scale for Each Sample

Measure	*N*	*Range*	*M*	*SD*
IIP Total				
Student	241	35-84	59.03	10.560
Clinical	234	36-87	53.40	10.930
PLM Interpersonal Scale				
Student	241	1.08-3.23	2.08	.392
Clinical	234	1.00-3.19	1.62	.461

To determine how the means obtained in the current study relate to mean scores previously found in the literature, one-sample t-tests were performed on each variable available for comparison. In the student sample, variables were compared to the general population norms reported in the DAPP-BQ Technical Manual (Livesley & Jackson, 2009) and the normative sample reported in the IIP Manual (Horowitz et al., 2003). PLM Interpersonal Scale norms have not yet been established in the literature. Results indicate that 18 out of 19 scales in this sample differed significantly from previously established norms. Table 6 outlines the detailed results from the student sample.

Table 6

One-Sample T-Test Results for the Student Sample

Scale	*Obtained Mean*	*Normative Mean*	*t*	*df*	*p*
DAPP-SF					
Restricted Expression	41.77	42.16	-.801	240	.424
Rejection	52.77	41.40	17.204	240	.000*
Intimacy Problems	55.52	32.06	31.769	240	.000*
Suspiciousness	61.43	27.94	43.957	240	.000*
Oppositionality	53.42	36.76	23.547	240	.000*
Callousness	58.43	30.10	32.983	240	.000*
Low Affiliation	48.43	37.78	20.447	240	.000*
Insecure Attachment	54.07	34.14	30.884	240	.000*
Submissiveness	42.09	39.14	6.099	240	.000*
IIP-64					
Domineering/Controlling	58.29	50	9.319	240	.000*
Vindictive Self-Centered	57.84	49	10.937	240	.000*
Cold/Distant	56.99	50	8.709	240	.000*
Socially Inhibited	57.73	50	11.024	240	.000*
Nonassertive	56.62	49	11.409	240	.000*
Overly Accommodating	55.68	50	8.701	240	.000*
Self-Sacrificing	56.88	50	10.641	240	.000*
Intrusive/Needy	58.90	51	10.430	240	.000*
Total	59.03	50	13.275	240	.000*

In the clinical sample, variables were compared to the general population norms reported in the DAPP-BQ Technical Manual (Livesley & Jackson, 2009) and the normative sample reported in the IIP Manual (Horowitz et al., 2003). DAPP-BQ clinical population norms were not used for comparison because the clinical norms excluded substance users (Livesley & Jackson, 2009); therefore, it was deemed more appropriate to compare this study's clinical sample (made up of substance use treatment residents) to the general population norms. PLM Interpersonal Scale norms have not yet been established in the literature and, therefore, were not available to compare to this study's

samples. Results indicate that 16 out of 19 scales in the clinical sample differed significantly from previously established norms. Table 7 describes the results obtained from the clinical sample.

Table 7

One-Sample T-Test Results for the Clinical Sample

Scale	*Obtained Mean*	*Normative Mean*	*t*	*df*	*p*
DAPP-SF					
Restricted Expression	46.30	42.16	5.843	216	.000*
Rejection	45.85	41.40	6.496	216	.000*
Intimacy Problems	51.19	32.06	24.404	216	.000*
Suspiciousness	46.61	27.94	26.893	216	.000*
Oppositionality	46.80	36.76	10.815	216	.000*
Callousness	44.71	30.10	19.182	216	.000*
Low Affiliation	46.28	37.78	11.247	216	.000*
Insecure Attachment	47.07	34.14	18.017	216	.000*
Submissiveness	46.18	39.14	9.769	216	.000*
IIP-64					
Domineering/Controlling	50.33	50	.459	233	.647
Vindictive Self-Centered	48.84	49	-.245	233	.806
Cold/Distant	48.56	50	-2.125	233	.035*
Socially Inhibited	51.55	50	1.897	233	.059
Nonassertive	55.85	49	8.433	233	.000*
Overly Accommodating	56.79	50	8.607	233	.000*
Self-Sacrificing	56.93	50	8.755	233	.000*
Intrusive/Needy	52.81	51	2.624	233	.009*
Total	53.40	50	4.759	233	.000*

A Priori Hypothesis Testing

To determine if significant differences were present between the clinical sample and the student sample, one-way between groups ANOVAs were planned for each of 19 dependent variables in the study. Because the assumption of normality required for

ANOVA was violated in all 19 analyses, Mann-Whitney U Tests were conducted as a non-parametric alternative. The Mann-Whitney U Test can be used to compare medians of distributions if the assumption of similarly shaped distributions is met (Lund & Lund, 2013). Seven distributions of DAPP, IIP, and PLM scores for the student and the clinical sample were similar, as assessed by visual inspection. Table 8 describes the comparison of median scores from each sample for these similar distributions. Twelve distributions of DAPP, IIP, and PLM scores for each sample were assessed to be dissimilar. Therefore, information on mean ranks, as opposed to medians, for each sample is reported (Lund & Lund, 2013). Table 9 depicts the comparison of mean ranks from the student sample and the clinical sample for these distributions. Sixteen Mann-Whitney U Tests revealed significant differences between the student sample and the clinical sample when comparing each sample's scores on DAPP scales, IIP scales, and the PLM Total score. Because significant differences were found between the student and clinical samples according to Mann-Whitney U analyses, the two samples were confirmed as different groups, and hypotheses were justified to be tested independently for each sample. Results for each hypothesis are reported separately for the student sample and the clinical sample.

Table 8

Mann-Whitney U Tests Comparing Median Scores of Both Samples

Dependent Variable	*Student Median*	*Clinical Median*	*U*	*z-score*	*p-value*
DAPP Rejection	53.67	46.68	15,399.5	-7.601	.000*
DAPP Intimacy Problems	55.12	48.89	19,337.0	-4.817	.000*
DAPP Callousness	60.00	42.14	10,200.5	-11.278	.000*
DAPP Low Affiliation	48.00	43.82	20,442.0	-4.036	.000*
IIP Nonassertive	55.25	53.28	26,230.0	-1.316	.188
IIP Overly Accommodating	56.30	55.69	28,434.5	.159	.874
IIP Total Score	58.89	52.19	19,599.5	-5.749	.000*

Table 9

Mann-Whitney U Tests Comparing Mean Ranks of Both Samples

Dependent Variable	*Student Mean Rank*	*Clinical Mean Rank*	*U*	*z-score*	*p-value*
DAPP Restricted Expression	203.27	258.63	32,469.5	4.470	.000*
DAPP Suspiciousness	302.43	148.50	8,572.5	-12.429	.000*
DAPP Oppositionality	265.54	189.48	17,463.5	-6.141	.000*
DAPP Submissiveness	209.02	252.24	31,083.0	3.490	.000*
DAPP Insecure Attachment	274.38	179.66	15,332.5	-7.649	.000*
IIP Dominant/ Controlling	280.03	194.71	18,067.0	-6.778	.000*
IIP Vindictive/ Self-Centered	293.30	181.05	14,870.0	-8.917	.000*
IIP Cold/Distant	291.07	183.35	15,408.0	-8.558	.000*
IIP Socially Inhibited	277.97	196.83	18,563.5	-6.450	.000*
IIP Self-Sacrificing	241.49	234.41	27,357.0	-.562	.574
IIP Intrusive/ Needy	273.56	201.37	19,626.5	-5.740	.000*
PLM Interpersonal Total Score	303.91	170.12	12,313.0	-10.624	.000*

Hypotheses

Hypothesis One

Hypothesis one predicted that (a) the DAPP-SF Callousness scale would be positively related to the IIP Domineering/Controlling scale in both the student sample and the clinical sample, and (b) when Callousness was the highest DAPP-SF score, Domineering/Controlling would be the highest IIP score in both samples.

Student Sample

In the student sample, a Pearson's correlation was planned to test hypothesis one (a), but the assumptions of normality and no significant outliers were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Callousness scale was significantly positively related to the IIP Domineering/Controlling scale, $r_s(239) = .530, p < .001$. These results support hypothesis one (a) in the student sample.

Chi square analysis was used to test hypothesis one (b) in the student sample. Nominal variables called DAPP-SF Callousness Highest and IIP Domineering/Controlling Highest were created in order to set up the Chi square. Each participant was given a "Yes" if his/her DAPP-SF Callousness score was the highest out of all nine DAPP-SF scale scores and given a "No" if it was not. Similarly, each participant was given a "Yes if his/her IIP Domineering/Controlling score was the highest out of all eight IIP scale scores and given a "No" if it was not. Results indicated that there was a significant association between DAPP-SF Callousness Highest and IIP Domineering/Controlling Highest, $X^2(1) = 26.285, p < .001$. There was a medium effect size for this association, Phi = .330. DAPP-SF Callousness and IIP

Domineering/Controlling were observed as the highest scores in their respective measures 22 times, which is greater than the expected frequency of 9.4 times. Therefore, results indicate that DAPP-SF Callousness and IIP Domineering/Controlling were both the highest scores within their respective measures significantly more frequently than what would be expected by chance alone. These results support hypothesis one (b) in the student sample.

Clinical Sample

In the clinical sample, a Pearson's correlation was planned to test hypothesis one (a), but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Callousness scale was significantly positively related to the IIP Domineering/Controlling scale, $r_s(215) = .378, p < .001$. These results support hypothesis one (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis one (b) in the clinical sample because one expected cell frequency count was less than five (breaking the assumption required for Chi Square; Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Callousness Highest and IIP Domineering/Controlling Highest, $p = .214$. Therefore, hypothesis one (b) was not supported in the clinical sample.

Hypothesis Two

Hypothesis two predicted that (a) the DAPP-SF Insecure Attachment scale would be positively related to the IIP Intrusive/Needy scale in both the student and clinical

samples, and (b) when Insecure Attachment was the highest DAPP-SF score, Intrusive/Needy would be the highest IIP octant in both samples.

Student Sample

In the student sample, a Pearson's correlation was planned to test hypothesis two (a), but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Insecure Attachment scale was significantly positively related to the IIP Intrusive/Needy scale, $r_s(239) = .230$, $p < .001$. These results support hypothesis two (a).

Fisher's Exact Test was used to test hypothesis two (b) in the student sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Insecure Attachment Highest and IIP Intrusive/Needy Highest, $p = .476$. Therefore, hypothesis two (b) was not supported in the student sample.

Clinical Sample

In the clinical sample, a Pearson's correlation was planned to test hypothesis two (a), but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Insecure Attachment scale was significantly positively related to the IIP Intrusive/Needy scale, $r_s(215) = .358$, $p < .001$. These results support hypothesis two (a).

Fisher's Exact Test was used to test hypothesis two (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Insecure

Attachment Highest and IIP Intrusive/Needy Highest, $p = .482$. Therefore, hypothesis two (b) was not supported in the clinical sample.

Hypothesis Three

Hypothesis three predicted that (a) the DAPP-SF Suspiciousness scale would be positively related to the IIP Vindictive/Self-Centered scale in the student and clinical samples, and (b) when Suspiciousness was the highest DAPP-SF score, Vindictive/Self-Centered would be the highest IIP scale in both samples.

Student Sample

In the student sample, a Pearson's correlation was planned to test hypothesis three (a), but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Suspiciousness scale was significantly positively related to the IIP Vindictive/Self-Centered scale, $r_s(239) = .506, p < .001$. These results support hypothesis three (a) in the student sample.

Chi square analysis was used to test hypothesis three (b) in the student sample. Results indicated no significant association between DAPP-SF Suspiciousness Highest and IIP Vindictive/Self-Centered Highest, $X^2(1) = 5.819, p = .016$ (p considered significant at .006). Therefore, results indicate that DAPP-SF Suspiciousness and IIP Vindictive/Self-Centered were not observed to co-occur more frequently than what would be expected by chance alone. These results do not support hypothesis three (b) for the student sample.

Clinical Sample

In the clinical sample, a Pearson's correlation was planned to test hypothesis three (a), but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Suspiciousness scale was significantly positively related to the IIP Vindictive/Self-Centered scale, $r_s(215) = .400$, $p < .001$. These results support hypothesis three (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis three (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Suspiciousness Highest and IIP Vindictive/Self-Centered Highest, $p = .383$. Therefore, hypothesis three (b) was not supported in the clinical sample.

Hypothesis Four

Hypothesis four stated that (a) the DAPP-SF Rejection scale would be positively related to the IIP Domineering/Controlling scale in both the student and clinical samples, and (b) when Rejection was the highest DAPP-SF score, Domineering/Controlling would be the highest IIP scale in both samples.

Student Sample

Pearson's correlation was planned to test hypothesis four (a) in the student sample, but the assumptions of normality and no significant outliers were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Rejection scale was significantly positively related to the

IIP Domineering/Controlling scale, $r_s(239) = .437, p < .001$. These results support hypothesis four (a) in the student sample.

Fisher's Exact Test was used to test hypothesis four (b) in the student sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Rejection Highest and IIP Domineering/Controlling Highest, $p = .752$. Therefore, hypothesis four (b) was not supported in the student sample.

Clinical Sample

Pearson's correlation was planned to test hypothesis four (a) in the clinical sample, but the assumptions of normality and no significant outliers were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Rejection scale was significantly positively related to the IIP Domineering/Controlling scale, $r_s(215) = .242, p < .001$. These results support hypothesis four (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis four (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was a significant association between DAPP-SF Rejection Highest and IIP Domineering/Controlling Highest, $p = .004$. There was a small effect size for this association, Phi = .219. DAPP-SF Rejection and IIP Domineering/Controlling were observed as the highest scores in their respective measures eight times, which is greater than the expected frequency of 3.1 times. Therefore, results indicate that DAPP-SF Rejection and IIP Domineering/Controlling were both the highest scores within their respective measures significantly more

frequently than what would be expected by chance. These results support hypothesis for (b) for the clinical sample.

Hypothesis Five

Hypothesis five stated that (a) the DAPP-SF Oppositionality scale would be positively related to the IIP Domineering/Controlling and Vindictive/Self-Centered scales in both the student and clinical samples, and (b) when Oppositionality was the highest DAPP-SF score, Domineering/Controlling would be the highest IIP scale in both samples.

Student Sample

Pearson's correlation was planned to test hypothesis five (a) in the student sample, but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Oppositionality scale was significantly positively related to the IIP Domineering/Controlling scale, $r_s(239) = .225$, $p < .001$, and not significantly related to the IIP Vindictive/Self-Centered scale, $r_s(239) = .182$, $p = .005$ (significant p-value adjusted to .002 to account for inflated alpha levels caused by multiple correlations). These results partially support hypothesis five (a) in the student sample.

Fisher's Exact Test was used to test hypothesis five (b) in the student sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Oppositionality Highest and IIP Domineering/Controlling Highest, $p = .270$. Therefore, hypothesis five (b) was not supported in the student sample.

Clinical Sample

Pearson's correlation was planned to test hypothesis five (a) in the clinical sample, but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013) . The DAPP-SF Oppositionality scale was significantly positively related to the IIP Domineering/Controlling scale, $r_s(215) = .308$, $p < .001$, and significantly positively related to the IIP Vindictive/Self-Centered scale, $r_s(215) = .378$, $p < .001$. These results support hypothesis five (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis five (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Oppositionality Highest and IIP Domineering/Controlling Highest, $p = .713$. Therefore, hypothesis five (b) was not supported in the clinical sample.

Hypothesis Six

Hypothesis six stated that (a) the DAPP-SF Low Affiliation scale would be positively related to the IIP Cold/Distant and Socially Inhibited scales in both the student and clinical samples, and (b) when Low Affiliation was the highest DAPP-SF score, Socially Inhibited would be the highest IIP scale in both samples.

Student Sample

Pearson's correlation was planned to test hypothesis six (a) in the student sample, but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Low Affiliation scale was not significantly related to the IIP Cold/Distant

scale, $r_s(239) = .153$, $p = .018$ (significant p-value adjusted to .002), but was significantly positively related to the IIP Socially Inhibited scale, $r_s(239) = .454$, $p < .001$. These results partially support hypothesis six (a) in the student sample.

Fisher's Exact Test was used to test hypothesis six (b) in the student sample because two expected cell frequency counts were less than five (Lund & Lund, 2013). Results indicated that there was no significant association between DAPP-SF Low Affiliation Highest and IIP Socially Inhibited Highest, $p = .039$ (p considered significant at .006). Therefore, results indicate that DAPP-SF Low Affiliation and IIP Socially Inhibited were not observed as the highest scores within their respective measures more frequently than what would be expected by chance. These results do not support hypothesis six (b) for the student sample.

Clinical Sample

Pearson's correlation was planned to test hypothesis six (a) in the clinical sample, but the assumptions of normality and no significant outliers were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Low Affiliation scale was significantly positively related to the IIP Cold/Distant scale, $r_s(215) = .438$, $p < .001$, and significantly positively related to the IIP Socially Inhibited scale, $r_s(215) = .624$, $p < .001$. These results support hypothesis six (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis six (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Low

Affiliation Highest and IIP Socially Inhibited Highest, $p = .098$. Therefore, hypothesis six (b) was not supported in the clinical sample.

Hypothesis Seven

Hypothesis seven stated that (a) the DAPP-SF Restricted Expression scale would be positively related to the IIP Cold/Distant and Socially Inhibited scales in both the student and clinical samples, and (b) when Restricted Expression was the highest DAPP-SF score, Cold/Distant would be the highest IIP scale in both samples.

Student Sample

Pearson's correlation was planned to test hypothesis seven (a) in the student sample, but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Restricted Expression scale was significantly positively related to the IIP Cold/Distant scale, $r_s(239) = .476$, $p < .001$, and significantly positively related to the IIP Socially Inhibited scale, $r_s(239) = .414$, $p < .001$. These results support hypothesis seven (a) in the student sample.

Hypothesis seven (b) could not be tested in the student sample because DAPP-SF Restricted Expression was never the highest of the DAPP-SF scale scores. IIP Cold/Distant was observed as the highest IIP scale score 29 times in the student sample. Hypothesis seven (b) could not be tested in the student sample because DAPP-SF Restricted Expression Highest and IIP Cold/Distant Highest never co-occurred.

Clinical Sample

Pearson's correlation was planned to test hypothesis seven (a) in the clinical sample, but the assumptions of linearity and normality were not met. Therefore,

Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Restricted Expression scale was significantly positively related to the IIP Cold/Distant scale, $r_s(215) = .346$, $p < .001$, and was significantly positively related to the IIP Socially Inhibited scale, $r_s(215) = .495$, $p < .001$. These results support hypothesis seven (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis seven (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Low Affiliation Highest and IIP Highest, $p = 1.000$. Therefore, hypothesis seven (b) was not supported in the clinical sample.

Hypothesis Eight

Hypothesis eight stated that (a) the DAPP-SF Submissiveness scale would be positively related to the IIP Overly Accommodating and Self-Sacrificing scales in both the student and clinical samples, and (b) when Submissiveness was the highest DAPP-SF score, Self-Sacrificing would be the highest IIP scale in both samples.

Student Sample

Pearson's correlation was planned to test hypothesis eight (a) in the student sample, but the assumptions of linearity and normality were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Submissiveness scale was significantly positively related to the IIP Overly Accommodating scale, $r_s(239) = .549$, $p < .001$, and was significantly positively related to the IIP Self-Sacrificing scale, $r_s(239) = .416$, $p < .001$. These results support hypothesis eight (a) in the student sample.

Hypothesis eight (b) was unable to be tested with Chi Square analysis in the student sample because DAPP-SF Submissiveness was never the highest of the DAPP-SF scale scores. IIP Self-Sacrificing was observed as the highest IIP scale score 34 times in the student sample. Hypothesis eight (b) could not be tested in the student sample because DAPP-SF Submissiveness Highest and IIP Self-Sacrificing Highest never co-occurred.

Clinical Sample

Pearson's correlation was planned to test hypothesis eight (a) in the clinical sample, but the assumptions of normality and no significant outliers were not met. Therefore, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Submissiveness scale was significantly positively related to the IIP Overly Accommodating scale, $r_s(215) = .593$, $p < .001$, and was significantly positively related to the IIP Self-Sacrificing scale, $r_s(215) = .438$, $p < .001$. These results support hypothesis eight (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis eight (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was not a significant association between DAPP-SF Submissiveness Highest and IIP Self-Sacrificing Highest, $p = .130$. Therefore, hypothesis eight (b) was not supported in the clinical sample.

Hypothesis Nine

Hypothesis nine stated that (a) the DAPP-SF Intimacy Problems scale would be positively related to the IIP Cold/Distant and Socially Inhibited scales in both the student

and clinical samples, and (b) when Intimacy Problems was the highest DAPP-SF score, Cold/Distant would be the highest IIP scale in both samples.

Student Sample

In the student sample, Pearson's correlation was planned to test hypothesis nine (a), but the assumptions of linearity and normality were not met. Consequently, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Intimacy Problems scale was significantly positively related to the IIP Cold/Distant scale, $r_s(239) = .205$, $p < .001$, but was not significantly related to the IIP Socially Inhibited scale, $r_s(239) = .130$, $p = .044$ (significant p-value adjusted to .002). These results partially support hypothesis nine (a) in the student sample.

Chi square analysis was used to test hypothesis nine (b) in the student sample. Results indicated that there was not a significant association between DAPP-SF Intimacy Problems Highest and IIP Cold/Distant Highest, $X^2(1) = 4.882$, $p = .027$ (p-value adjusted to .025 to account for inflated alpha level caused by two comparisons including IIP Cold/Distant Highest). These results do not support hypothesis nine (b) for the student sample.

Clinical Sample

In the clinical sample, Pearson's correlation was planned to test hypothesis nine (a), but the assumptions of normality and no significant outliers were not met. Instead, Spearman's correlation was conducted as a nonparametric alternative (Lund & Lund, 2013). The DAPP-SF Intimacy Problems scale was not significantly related to the IIP Cold/Distant scale, $r_s(215) = .194$, $p = .004$ (p-value adjusted to .002), and was not

significantly related to the IIP Socially Inhibited scale, $r_s(215) = .186$, $p = .006$ (p-value adjusted to .002). These results do not support hypothesis nine (a) in the clinical sample.

Fisher's Exact Test was used to test hypothesis nine (b) in the clinical sample because one expected cell frequency count was less than five (Lund & Lund, 2013). Results indicated that there was no significant association between DAPP-SF Intimacy Problems Highest and IIP Cold/Distant Highest, $p = .023$ (p considered significant at .006). These results indicate that DAPP-SF Intimacy Problems and IIP Cold/Distant were not observed as the highest scores within their respective measures more frequently than what would be expected by chance. These results do not support hypothesis nine (b) for the clinical sample.

Hypothesis Ten

Hypothesis ten stated that DAPP-SF total scale scores would be positively related to the PLM Interpersonal scale score in both samples.

Student Sample

To test hypothesis ten in the student sample, a Pearson correlation was planned, but assumptions of linearity, normality, and/or no significant outliers were violated in each comparison. Therefore, Spearman's correlations were conducted instead as a nonparametric alternative (Lund & Lund, 2013). Table 10 displays results from each correlation in the student sample. Results indicated significant positive associations between eight of the nine DAPP-SF scales, yielding partial support for hypothesis ten in the student sample. The only non-significant association was between DAPP-SF Intimacy Problems and the PLM Interpersonal scale score, $p = .212$. See Table 10 for detailed results from the student sample.

Table 10

Spearman's Correlation Results from DAPP-SF Scales & PLM Interpersonal Scale for Student Sample

DAPP-SF Scale	*df*	r_s	*p*
Restricted Expression	239	.546	.000*
Rejection	239	.289	.000*
Intimacy Problems	239	.081	.212
Suspiciousness	239	.612	.000*
Oppositionality	239	.438	.000*
Callousness	239	.465	.000*
Low Affiliation	239	.567	.000*
Insecure Attachment	239	.448	.000*
Submissiveness	239	.452	.000*

*significant at $p = .002$

Clinical Sample

To test hypothesis ten in the clinical sample, a Pearson correlation was planned, but assumptions of linearity, normality, and/or no significant outliers were violated in each comparison. Therefore, Spearman's correlations were conducted instead as a nonparametric alternative (Lund & Lund, 2013). Table 11 displays results from each correlation in the clinical sample. Results indicated significant positive associations between seven of the nine DAPP-SF scales, yielding partial support for hypothesis ten in the clinical sample. Non-significant associations occurred between DAPP-SF Rejection

and the PLM Interpersonal scale score (p = .012) and between DAPP-SF Intimacy Problems and the PLM Interpersonal scale score (p = .463). See Table 11 for detailed results from the clinical sample.

Table 11

Spearman's Correlation Results from DAPP-SF Scale & PLM Interpersonal Scale for Clinical Sample

DAPP-SF Scale	*df*	r_s	*p*
Restricted Expression	215	.456	.000*
Rejection	215	.170	.012
Intimacy Problems	215	.050	.463
Suspiciousness	215	.496	.000*
Oppositionality	215	.518	.000*
Callousness	215	.487	.000*
Low Affiliation	215	.564	.000*
Insecure Attachment	215	.407	.000*
Submissiveness	215	.501	.000*

*significant at p = .002

Hypothesis Eleven

Hypothesis eleven stated that the IIP Total score would be positively related to the PLM Interpersonal scale score in both samples.

Student Sample

To test hypothesis eleven in the student sample, Pearson's correlation was planned. However, the assumptions of normality and no significant outliers were violated, and a Spearman's correlation was conducted instead as a nonparametric alternative (Lund & Lund, 2013). Results indicated a significant positive relationship between the IIP Total score and the PLM Interpersonal Scale score, $r_s(239) = .570$, $p < .001$. These results support hypothesis eleven in the student sample.

Clinical Sample

In the clinical sample, Pearson's correlation was planned in order to test hypothesis eleven. However, the assumption of normality was violated, and a Spearman's correlation was conducted instead as a nonparametric alternative (Lund & Lund, 2013). Results indicated a significant positive relationship between the IIP Total score and the PLM Interpersonal Scale score, $r_s(215) = .598$, $p < .001$. These results support hypothesis eleven in the clinical sample.

Additional Findings

To determine if the associations found during hypothesis testing were comparable between the student and the clinical samples, Fisher's Z-Transformation was conducted for each of the 24 correlations in hypotheses one through eleven. Table 12 presents the findings of the Fisher's Z-Transformations. Twenty-three of 24 Z-Transformations yielded no significant differences between compared correlations. One finding suggested a significant difference between the student and clinical sample when comparing the correlations of DAPP-SF Low Affiliation and IIP Cold/Distant, $Z = -3.34$, $p = .001$. See Table 12 for detailed results.

Table 12

Fisher's Z-Transformation Results Comparing Correlations Found in Student & Clinical Samples

Correlations Compared	*Student r_s*	*Clinical r_s*	*Z*	*p*
Hypothesis 1				
Callousness & D/C	.530	.378	2.03	.042
Hypothesis 2				
Insecure Attach. & I/N	.230	.358	-1.48	.139
Hypothesis 3				
Suspiciousness & V/SC	.506	.400	1.41	.159
Hypothesis 4				
Rejection & D/C	.437	.242	2.34	.019
Hypothesis 5				
Oppositionality & D/C	.225	.308	-0.95	.342
Oppositionality & V/SC	.182	.378	-2.26	.024
Hypothesis 6				
Low Affiliation & C/D	.153	.438	-3.34	.001*
Low Affiliation & SI	.454	.624	-2.56	.011
Hypothesis 7				
Restricted Exp. & C/D	.476	.346	1.66	.097
Restricted Exp. & SI	.414	.495	-1.08	.280
Hypothesis 8				
Submissiveness & OA	.549	.593	-0.69	.490
Submissiveness & SS	.416	.438	-0.28	.780
Hypothesis 9				
Intimacy Prob. & C/D	.205	.194	0.12	.901
Intimacy Prob. & SI	.130	.186	-0.16	.542
Hypothesis 10				
Callousness & PLM	.465	.487	-0.30	.764
Insecure Attach. &	.448	.407	0.53	.596
PLM	.612	.496	1.78	.075
Suspiciousness & PLM	.289	.170	1.33	.184
Rejection & PLM	.438	.518	-1.10	.271
Oppositionality & PLM	.567	.564	0.05	.960
Low Affiliation & PLM	.546	.456	1.27	.204
Restricted Exp. & PLM	.452	.501	-0.67	.503
Submissiveness & PLM	.081	.050	0.33	.741
Intimacy Prob. & PLM				
Hypothesis 11	.570	.598	-0.16	.542
IIP Total & PLM				

*significant at $p = .002$

A principal components analysis (PCA) was conducted on the DAPP-SF scales, the PLM Interpersonal Scale, and the IIP-64 scales in both the student and clinical samples. The appropriateness of PCA was assessed prior to analysis. In the student sample, the correlation matrix indicated that all variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.876 with individual KMO measures all greater than 0.6, indicating sufficient sampling adequacy. Bartlett's Test of Sphericity was statistically significant ($p < .001$), indicating that the data should be factorizable (Lund & Lund, 2013).

In the student sample, PCA revealed four components with eigenvalues greater than one and explaining 38.9%, 14.6%, 11.3%, and 6.6% of the total variance, respectively. Visual inspection of the scree plot indicated that three components should be retained (Cattell, 1966). When Lautenschlager (1989) criteria were applied, results indicated support for a three-component solution (see Table 13). The three-component solution explained 64.9% of the total variance. The components can be represented by the terms DAPP+PLM, IIP Top Half, and IIP Bottom Half, respectively.

Table 13

Three-Component Solution for the Student Sample

	DAPP+PLM	IIP Top Half	IIP Bottom Half
DAPP Oppositionality	.804		
DAPP Insecure Attachment	.785		
DAPP Low Affiliation	.741		
DAPP Suspiciousness	.692		
DAPP Submissiveness	.671		
DAPP Restricted Expression	.641		
DAPP Intimacy Problems	-.581		
DAPP Rejection	.542		
DAPP Callousness	.537	.503	
PLM Interpersonal Scale	.474		
IIP Vindictive/Self-Centered		.924	
IIP Domineering/Controlling		.918	
IIP Cold/Distant		.769	
IIP Intrusive/Needy		.603	
IIP Overly Accommodating			.807
IIP Nonassertive			.805
IIP Self-Sacrificing			.682
IIP Socially Inhibited			.579

In the clinical sample, the correlation matrix indicated that all but one variable (DAPP Intimacy Problems) had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.875 with all but one individual KMO measures (DAPP Intimacy Problems) greater than 0.6, indicating sufficient sampling adequacy. Bartlett's Test of Sphericity was statistically significant ($p < .001$), indicating that the data should be factorizable (Lund & Lund, 2013).

In the clinical sample, PCA revealed four components with eigenvalues greater than one and explaining 43.2%, 12.7%, 10.1%, and 8.5% of the total variance, respectively. Visual inspection of the scree plot indicated that four components should be retained (Cattell, 1966). When Lautenschlager (1989) criteria were applied, results

indicated support for a four-component solution (see Table 14). The four-component solution explained 74.6% of the total variance. The first three components can be represented by the terms DAPP+PLM, IIP Top Half, and IIP Bottom Half. The fourth component appears to represent misfit scales that did not fit in any other category.

Table 14

Four-Component Solution for the Clinical Sample

	DAPP+PLM	IIP Top Half	IIP Bottom Half	Misc.
DAPP Restricted Expression	.880			
DAPP Rejection				-.625
DAPP Intimacy Problems				.752
DAPP Suspiciousness	.813			
DAPP Oppositionality	.787			
DAPP Callousness	.782			
DAPP Low Affiliation	.827			
DAPP Insecure Attachment	.695			
DAPP Submissiveness	.782			
IIP Domineering/Controlling		.903		
IIP Vindictive/Self-Centered		.922		
IIP Cold/Distant		.807		
IIP Socially Inhibited		.442		
IIP Nonassertive			.709	
IIP Overly Accommodating			.911	
IIP Self-Sacrificing			.884	
IIP Intrusive/Needy		.639	.459	
PLM Interpersonal Scale	.480			

CHAPTER FOUR

DISCUSSION

General Overview

Results of data analysis indicated several findings useful for understanding the relationships between personality pathology and interpersonal problems. Significant differences were found between samples obtained in this study and normative data previously reported in the literature (Horowitz et al., 2003; Livesley & Jackson, 2009). A priori hypothesis testing also revealed significant differences between the student and clinical samples. Unexpectedly, the student sample obtained higher mean scores on 15 of 19 scales, indicating a higher level of maladaptive personality traits (measured by the DAPP-SF scales), general interpersonal dysfunction (measured by the PLM Interpersonal scale), and interpersonal problems (measured by the IIP-64) than the clinical sample. The clinical sample obtained higher mean scores on only four of 19 scales: DAPP-SF Restricted Expression, DAPP-SF Submission, IIP Overly Accommodating, and IIP Self-Sacrificing. However, the clinical sample did show greater amounts of variation in score dispersions as evidenced by higher standard deviations than the student sample in 12 of 19 scales administered.

Generally, one would expect a clinical sample to demonstrate higher levels of pathology than a non-clinical student sample, but findings in this study indicated the

opposite. One possible explanation for these results is that the clinical data obtained for use in this study came from a group of individuals who may have been defensive in their responses on the measures administered. Most of the clinical participants were professionals referred for substance use treatment or evaluation because they were suspected to have violated professional ethical standards by using substances. They may have been highly motivated to underreport difficulties to maintain their professional standing and to demonstrate that they did not have problems that would interfere with doing their jobs. Additionally, the four scales on which the clinical sample obtained higher mean scores were scales that may have seemed more socially acceptable to endorse. For example, endorsing problems with being too accommodating of others' needs or being self-sacrificing may have been easier for participants in the clinical sample to admit than endorsing problems with being too domineering, vindictive, or too needy of attention from others. The student sample, on the other hand, likely did not have any reason to underreport difficulties because of the voluntary and anonymous nature of the survey they completed. Another possible explanation for these findings involves the difference in mean age between the two samples. The student sample mean age was 20, while the clinical sample mean age was 39. Developmentally speaking, the student sample age falls in a typically more vulnerable stage of life where many stressors are being experienced for the first time (e.g., living away from parents, having more responsibilities). The clinical sample age is a traditionally more established period of life with less change and adjustments. This difference may have contributed to reports of more personal and interpersonal problems in the student sample than in the clinical sample.

Due to significant differences found between the student and clinical samples, data from each group was analyzed and reported separately. Results of hypothesis testing in the student sample revealed 11 significant relationships between DAPP-SF scales and IIP-64 scales out of 14 total hypothesized relationships. Eight significant relationships out of nine hypothesized relationships between DAPP-SF scales and the PLM Interpersonal scale were found in the student sample. The hypothesized relationship between the PLM Interpersonal scale and the IIP Total score in the student sample was also confirmed. One out of nine hypothesized associations between DAPP-SF highest scales and IIP-64 highest scales was found in the student sample, suggesting that the most distinctive maladaptive personality trait co-occurred with the most distinctive interpersonal problem area in several instances. In the clinical sample, 12 significant relationships were found between DAPP-SF scales and IIP-64 scales out of 14 total hypothesized relationships. Seven significant relationships between DAPP-SF scales and the PLM Interpersonal scale were found out of nine hypothesized relationships in the clinical sample. The hypothesized relationship between the PLM Interpersonal scale and the IIP Total score in the clinical sample was also found. In the clinical sample, one of nine hypothesized associations between DAPP-SF highest scales and IIP-64 highest scales was observed. These findings are discussed in more detail in the following sections on each hypothesis; however, results generally support the idea that maladaptive personality traits as measured by the DAPP-SF are associated with interpersonal problems as defined in the IIP-64, and specific maladaptive personality traits can be traced to specific types of interpersonal problems. Findings also suggest that maladaptive personality traits are associated with interpersonal dysfunction, a subset of general

personality pathology defined by the PLM and by the new model of PDs. Interpersonal dysfunction correlated with overall severity of interpersonal problems as defined by the IIP Total score.

Additional analyses comparing correlational relationships in each sample support the new model of PDs. Findings of Fisher's Z-Transformations of correlations in the student and clinical samples revealed no significant differences in the strength of the relationships in 23 of 24 cases. In other words, there were no major differences found between the student and clinical samples in terms of how maladaptive personality traits in each sample related to interpersonal problems or general interpersonal dysfunction, or in how general interpersonal dysfunction related to overall interpersonal problems. Although differences were found in the *amount* of personality pathology and interpersonal problems reported between the two samples, the *types* of relationships found between personality traits, interpersonal dysfunction, and interpersonal problems were similar in both samples in the majority of cases. These results support the theory behind the new model of PDs because they suggest that personality pathology present in nature will have the same core features and relationships with interpersonal problems even in two notably different groups of people.

Principle components analysis of the DAPP-SF scales, the PLM Interpersonal scale, and the IIP-64 scales revealed a three-component structure for the student sample and a four-component structure for the clinical sample. In the student sample, all nine DAPP-SF scales as well as the PLM Interpersonal scale loaded strongly on the first component termed DAPP+PLM. The DAPP-SF scales were designed to assess specific maladaptive personality traits, while the PLM Interpersonal scale was designed to

measure general interpersonal dysfunction. The nine DAPP-SF scales utilized in this study were chosen because of their interpersonal quality, which may explain their loading on the same component as the PLM Interpersonal scale. The traits measured by the DAPP-SF are manifested in and experienced through interpersonal interactions. The second component was comprised of four IIP-64 scales (Vindictive/Self-Centered, Domineering/Controlling, Cold/Distant, and Intrusive/Needy), and DAPP-SF Callousness also loaded strongly on this component. Component Two, also termed IIP Top Half, appears to contain the top half of the interpersonal circumplex. It is possible that DAPP-SF Callousness also loaded on this component because of its relationship with the Dominant axis of the circumplex. The third component was comprised of the remaining four IIP-64 scales (Overly Accommodating, Nonassertive, Self-Sacrificing, and Socially Inhibited), suggesting that this component, termed IIP Bottom Half, contains the bottom half of the interpersonal circumplex.

In the clinical sample, seven of nine DAPP-SF scales and the PLM Interpersonal scale loaded strongly on the first component termed DAPP+PLM. This component may capture maladaptive personality traits with an interpersonal quality as well as general interpersonal dysfunction. The second component was made up of five of eight IIP-64 scales (Domineering/Controlling, Vindictive/Self-Centered, Cold/Distant, Socially Inhibited, and Intrusive/Needy), which may represent the top half of the interpersonal circumplex and was termed IIP Top Half. The third component was comprised of the remaining three IIP-64 scales (Nonassertive, Overly Accommodating, and Self-Sacrificing) and IIP-64 Intrusive/Needy which was cross-loaded with the second component, IIP Top Half. This component may represent the bottom half of the

interpersonal circumplex and can be represented by the term IIP Bottom Half. The fourth component was comprised of DAPP-SF Rejection and Intimacy Problems. Intimacy Problems was the one scale in the clinical sample that did not correlate at 0.3 with any other variables and did not have a sufficient KMO measure, which may partially explain its loading on a fourth component.

Hypothesis One

Results of Spearman's correlation indicated support for Hypothesis one, part (a) of this hypothesis in both the student and clinical samples. The positive associations found between DAPP-SF Callousness and IIP-64 Domineering/Controlling can be understood by examining the content of the scales involved in the relationship. Callousness can be understood as a maladaptive personality trait representing lack of empathy for the feelings of other people. Callous individuals are motivated by self-interest and have trouble seeing anyone else's perspective but their own. They may manipulate or exploit others in order to meet their own needs and show little concern about how their behavior affects others (Livesley & Jackson, 2009). Domineering/Controlling individuals have problems giving up control. They may manipulate others in order to avoid feeling a loss of control and be unable to consider someone else's perspective without challenging it. This type of behavior leads to frequent arguments with others (Horowitz et al., 2003). While DAPP-SF Callousness represents a pathological personality trait, IIP-64 Domineering/Controlling represents how that trait may manifest itself in interpersonal situations. In this study, as trait Callousness increased in an individual, the amount of Domineering/Controlling interpersonal problems reported also increased in two separate samples. These findings

support the new conceptualization of PDs by demonstrating one aspect of the relationship between personality disordered traits and specific interpersonal problems that add to the clinical picture and help define PD.

Part (b) of Hypothesis one was supported in the student sample and was not supported in the clinical sample. In the student sample, a medium effect size linked Callousness Highest and Domineering/Controlling Highest variables. These results suggest that when Callousness was the most prominent maladaptive personality trait, then Domineering/Controlling interpersonal problems were the most common type of interpersonal dysfunction a significant amount of the time in the student sample. These findings lend additional support for the ability to connect specific maladaptive personality traits with specific types of interpersonal interactions. In the clinical sample, Callousness Highest and Domineering/Controlling Highest were not significantly associated. One explanation for the different findings between the two samples concerns the difference in frequency of Callousness Highest and Domineering/Controlling Highest in each sample. Callousness was only observed as the highest DAPP-SF scale 4.3% of the time in the clinical sample versus 22.4% of the time in the student sample. Domineering/Controlling was observed as the highest IIP-64 scale 8.5% of the time in the clinical sample versus 17.4% of the time in the student sample.

Hypothesis Two

Hypothesis two (a) was supported in both the student and clinical samples. Small positive associations were found between DAPP-SF Insecure Attachment and IIP-64 Intrusive/Needy, which add support for the theory behind the new model of PD. Insecure Attachment is defined by fear of abandonment, dependence on others for security, and

seeking out others in stressful times. An insecurely attached person may appear very needy and cannot tolerate separation from an attachment figure (Livesley & Jackson, 2009). IIP-64 Intrusive/Needy is a logical associate of DAPP-SF Insecure Attachment. A person who scores highly on Intrusive/Needy feels the need to be engaged with others and may be imposing on others to receive attention. Poor boundaries (e.g., telling personal things too much or not keeping things private from others) and difficulties being alone are common (Horowitz et al., 2003). DAPP-SF Insecure Attachment characterizes a pathological personality trait, while IIP-64 Intrusive/Needy represents how that trait shows up in interpersonal situations. In this study, as Insecure Attachment increased across individuals, the amount of Intrusive/Needy interpersonal problems reported also increased in both samples. These findings support Hypothesis two (a) and the new conceptualization of PDs.

Hypothesis two (b) was not supported in either the student sample or the clinical sample. In this study, there does not appear to be a significant association between DAPP-SF Insecure Attachment Highest and IIP-64 Intrusive/Needy Highest. In each sample, Insecure Attachment and Intrusive/Needy were observed to co-occur as the highest scores in their respective measures only one time. Although Insecure Attachment and Intrusive/Needy scores were positively correlated in both samples, they do not co-occur in a meaningful way when they are the highest scores. It is possible that these variables are related more closely to other scales than they are to each other.

Hypothesis Three

For Hypothesis three (a), as the level of Suspiciousness increased across individuals, the amount of problems reported with Vindictive/Self-Centered interpersonal

interactions also increased for both the student and clinical samples. This association makes sense when considering that Suspiciousness can be understood as being hypervigilant about being tricked or harmed by others, looking for hidden meaning behind the actions of others, and having a chronic sense of mistrust (Livesley & Jackson, 2009). Similarly, the Vindictive/Self-Centered scale is elevated when a person expresses anger and holds grudges because he or she feels others have been deceptive or exploitive, has difficulty forgiving slights from others, and cares little about the needs of others (Horowitz et al., 2003). Support for Hypothesis three (a) in two different samples yields additional support for the new model of PDs that emphasizes the relationship between PD and interpersonal difficulties.

Part (b) of Hypothesis three was not supported in either sample. There was not a significant connection found between Suspiciousness as the highest of the nine DAPP-SF scales and Vindictive/Self-Centered as the highest of the eight IIP-64 scales in either sample. Although the scale scores for these variables appear to be positively related, there is not a relationship between them when they are each the highest scores in their respective measures.

Hypothesis Four

Support for part (a) of Hypothesis four was found in both samples through Spearman's correlation. As trait Rejection increased for an individual, Domineering/Controlling also increased, representing a positive association between the variables. These results empirically demonstrate the logical connection between Rejection, defined as a dominant, critical, and antagonistic individual who feels frustrated

when not in charge (Livesley & Jackson, 2009), and the Domineering/Controlling interpersonal style (defined in Hypothesis one).

Hypothesis four (b) was supported in the clinical sample, but it was not supported in the student sample. In the student sample, these two scales did not co-occur as the highest scales in their respective measures significantly. It is possible that Rejection Highest is more closely associated with another Highest scale on the IIP, or perhaps Rejection Highest does not meaningfully relate to a particular Highest scale on the IIP even though the Rejection score does have a significant positive association with the Domineering/Controlling score. In the clinical sample, a significant positive association with a small effect size was found between Rejection Highest and Domineering/Controlling Highest. These results demonstrate that when Rejection was the most maladaptive personality trait in the clinical group, interpersonal interactions were significantly more likely to contain problems with Domineering/Controlling tendencies more than any other type of interpersonal problem. Trait Rejection clearly shows itself through interpersonal interactions in the form of Domineering/Controlling-type behaviors for the clinical sample.

Hypothesis Five

A significant positive association between Oppositionality and Domineering/Controlling indicated that as Oppositionality increased across individuals, Domineering/Controlling interpersonal problems also increased in both samples. Oppositionality is defined by Livesley and Jackson (2009) as the tendency to passively oppose the requests of others, fail to meet expectations, and show little ambition or initiative. Passive non-compliance with the expectations of others keeps the Oppositional

individual in control of his/her situation, which may serve as the connection to a Domineering/Controlling interpersonal style.

A significant positive relationship was found between Oppositionality and Vindictive/Self-Centered in the clinical sample but not in the student sample. In the clinical sample, trait Oppositionality was meaningfully related to the Vindictive/Self-Centered interpersonal style. In the student sample, the passive rebellion associated with Oppositionality was not connected to Vindictive/Self-Centered interpersonal interactions. One explanation for these results may be that Oppositionality in the student sample is more closely tied to a different interpersonal style. Alternatively, Oppositionality in the student group may manifest itself somewhat differently than in the clinical group. For example, students may be more likely to be oppositional in reference to different stimuli than the clinical sample, which may influence the trait's relationship with interpersonal interactions. While a student may demonstrate Oppositionality in reference to the expectations of a professor or parent because he/she wants to make independent decisions, an individual in the clinical group may show Oppositionality toward the expectations of an employer or co-worker because he/she feels that the co-worker or boss has been deceptive. Being motivated to act in an oppositional manner because of fears of deception may relate more to the Vindictive/Self-Centered interpersonal style than oppositional behavior motivated by other reasons. Potential differences in the motivations for oppositional behavior in the two samples may have contributed to differences in results found in this portion of part (a) of Hypothesis five.

Hypothesis five (b) was not supported in either sample. No significant connection was found between Oppositionality as the highest of the nine DAPP-SF scales and

Domineering/Controlling as the highest of the eight IIP-64 scales. One explanation for these results is that Domineering/Controlling Highest was already discovered to be significantly associated with other DAPP-SF scales in previous hypothesis testing. In Hypothesis one (b) Callousness Highest was significantly associated with Domineering/Controlling Highest in the student sample, and in Hypothesis four (b) Rejection Highest was significantly associated with Domineering/Controlling Highest in the clinical sample. The question of which DAPP-SF Highest scale is matched with Domineering/Controlling when it is the highest IIP-64 scale was answered in previous hypothesis testing for both the student and clinical samples.

Hypothesis Six

Results of Spearman's correlation for Low Affiliation and Cold/Distant supported part (a) of Hypothesis six for the clinical sample but not for the student sample. In the student sample, trait Low Affiliation was not meaningfully related to the Cold/Distant interpersonal style. It is possible that the student sample's unique developmental stage affected the relationship between these variables and contributed to non-significant results. For many, college is a time with more frequent social engagements than during other life stages, which could have influenced student participants' experience of trait Low Affiliation or Cold/Distant-type interpersonal problems.

In the clinical sample, a significant positive relationship was found, suggesting that as Low Affiliation becomes a more prominent trait for an individual from the clinical group, Cold/Distant-type interpersonal problems also become more prominent. Low Affiliation has been defined as the tendency to avoid social relationships, feel little satisfaction from social contact, and fear being embarrassed in public (Livesley &

Jackson, 2009). A person high in Low Affiliation may be likely to experience Cold/Distant interpersonal problems, defined as having little connection with others, problems making lasting commitments to others, and lacking sympathy and warmth for others (Horowitz et al., 2003).

Spearman's correlation for Low Affiliation and Socially Inhibited supported Hypothesis six (a) in the student sample but not in the clinical sample. In the clinical sample, no meaningful association was found between trait Low Affiliation and Socially Inhibited interpersonal problems. One explanation for these results could be that Low Affiliation in the clinical sample was already found to be significantly related to Cold/Distant interpersonal problems. This connection may account for the majority of how trait Low Affiliation plays out in an interpersonal context. In the student sample, a significant positive association was found between trait Low Affiliation and the Socially Inhibited interpersonal style. A person high in Low Affiliation may encounter Socially Inhibited-type interpersonal problems, which can be understood as anxiousness or embarrassment in social contexts, difficulties socializing, and hypervigilance to negative evaluation. Participants in the student sample may have been even more prone to Low Affiliation and a Socially Inhibited interpersonal style because of the vulnerable stage of life that often accompanies the college years.

Part (b) of Hypothesis six was not supported in either sample. Low Affiliation and Socially Inhibited were not observed to co-occur as the highest scores more frequently than what would be expected by chance. It is possible that inherent differences between the samples led to different findings. These results do not support Hypothesis six (b).

Hypothesis Seven

Results of Spearman's correlation for Restricted Expression and Cold/Distant yielded significant positive relationships and supported Hypothesis seven (a) in both the student and clinical samples. Restricted Expression can be understood as the tendency to avoid showing feelings of any kind, disclosing personal information, and seeking help or advice from others (Livesley & Jackson, 2009). It makes sense that Restricted Expression would be experienced interpersonally as having little connection with other people, which is characteristic of the Cold/Distant interpersonal style.

A correlation between Restricted Expression and Social Inhibited provided support for Hypothesis seven (a) in both samples. A significant positive relationship between trait Restricted Expression and Socially Inhibited-type interpersonal problems was found. These results show that a person who has little emotion and avoids self-disclosure would experience specific interpersonal problems related to Socially Inhibited interactions with others, including feeling hesitant to initiate social interactions and appearing distant and unsociable. These findings support the new model of PD diagnosis by demonstrating another connection between disordered personality traits and problematic interpersonal styles.

Hypothesis seven (b) was not supported in the clinical sample and was unable to be tested in the student sample. Restricted Expression was never observed as the highest DAPP-SF score for any of the student participants, making it impossible to test part (b) of this hypothesis in the student sample. In the clinical sample, no significant association between DAPP-SF Restricted Expression Highest and IIP-64 Cold/Distant Highest was found.

Hypothesis Eight

Significant positive associations were found between trait Submissiveness and an Overly Accommodating interpersonal style, providing support for hypothesis eight (a) in both samples. Individuals high in Submissiveness tend to be unassertive and reliant on others for reassurance, afraid of making someone else angry, and subordinate of their own needs (Livesley & Jackson, 2009). Results suggest that trait Submissiveness is expressed through Overly Accommodating interpersonal interactions, including engaging in efforts to win the approval of and please others, avoiding arguments, and being easily exploited (Horowitz et al., 2003).

A correlation between DAPP-SF Submissiveness and IIP-64 Self-Sacrificing also supported Hypothesis eight (a) in both samples. A significant positive association between trait Submissiveness and a Self-Sacrificing interpersonal style was found; a person who takes on a subservient role in relationships will experience difficulties setting limits for others, maintaining personal boundaries, and putting others' needs before their own, which are commonly seen in the Socially Inhibited style (Horowitz et al., 2003). Support of Hypothesis eight, part (a) in two different samples suggests that connections between specific maladaptive personality traits and particular types of interpersonal problems can be made, which supports the theory behind the new model of PDs.

Hypothesis eight (b) was not supported in the clinical sample and was unable to be tested in the student sample. In the student sample, Submissiveness was never observed as the highest DAPP-SF score for any of the student participants, making it impossible to test part (b) of this hypothesis in the student sample. In the clinical sample,

no significant association between DAPP-SF Submissiveness Highest and IIP-64 Self-Sacrificing Highest was found.

Hypothesis Nine

Relationships found between DAPP-SF Intimacy Problems and IIP-64 Cold/Distant support Hypothesis nine (a) in the student sample but not in the clinical sample. In the clinical sample, no significant relationship was found between trait Intimacy Problems and a Cold/Distant interpersonal style. One explanation for these results may be that the Intimacy Problems scale is defined by avoidance of close attachments with others, including sexual relationships (Livesley & Jackson, 2009), while the Cold/Distant scale does not assess problems with physical intimacy in the same way as the DAPP-SF Intimacy Problems scale. In the student sample, a small but significant positive relationship was found between Intimacy Problems and Cold/Distant-type interpersonal problems, suggesting that Intimacy Problems and Cold/Distant interpersonal interactions are meaningfully connected at least in this particular student sample.

Hypothesis nine (a) was also tested using Spearman's correlation for DAPP-SF Intimacy Problems and IIP-64 Socially Inhibited. Results did not support part (a) of this hypothesis in either sample. Again, it is possible that the scales that were correlated were not meaningfully related to each other because the Intimacy Problems scale measures problems with attachment, including sexual relationships, while the Socially Inhibited scale does not measure inhibition in sexual relationships.

Part (b) of Hypothesis nine was not supported in either sample. Intimacy Problems Highest was not significantly associated with Cold/Distant Highest. In other

words, there was not a connection found when Intimacy Problems was the most prominent maladaptive personality trait and Cold/Distant interpersonal problems were the most prominent type of interpersonal problems. These findings do not support Hypothesis nine (b).

Hypothesis Ten

In the student sample, eight of nine DAPP-SF scale scores were significantly positively related to the PLM Interpersonal scale and supported Hypothesis ten. The only scale that was not significantly associated with the PLM Interpersonal scale was DAPP-SF Intimacy Problems. As previously mentioned, the Intimacy Problems scale measures difficulties with attachments to others, including sexual attachments. The assessment of sexual attachments in the Intimacy Problems scale may explain why it was not significantly related to the PLM Interpersonal scale, which does not assess sexual relationships. The eight significant relationships found in the student sample lend support for the new model of PDs as they demonstrate that specific maladaptive personality traits are connected with general personality dysfunction. The new model of PDs is based on the premise that PDs are made up of underlying general dysfunction as well as maladaptive traits, which is supported by the findings in Hypothesis ten.

In the clinical sample, seven of nine DAPP-SF scale scores were significantly positively related to the PLM Interpersonal scale. DAPP-SF Intimacy Problems and DAPP-SF Rejection were not significantly associated with the PLM Interpersonal scale. One explanation for the lack of significant association between Rejection and the PLM Interpersonal scale involves the type of participants in the clinical sample. Many clinical participants high in trait Rejection may have also worked in settings where they were in

professional, leadership roles. Rejection is defined by a critical attitude toward others which can lead to verbal abuse (Livesley & Jackson, 2009). For most people, this type of trait would likely lead to general interpersonal dysfunction as measured by the PLM (as it did in the student sample), but for professionals in the clinical sample, it is possible that trait Rejection did not lead to interpersonal dysfunction because of their positions of authority. For example, a medical doctor may be allowed to demonstrate Rejection-type behavior without experiencing as much interpersonal dysfunction because people working under him may be less likely to confront him about his verbally harsh style. A student, on the other hand, who demonstrates trait Rejection towards others may be more likely to encounter more general interpersonal dysfunction because he/she is not in an authoritative role and others may respond more openly to his/her Rejection-type behaviors. The seven significant relationships found in the clinical sample mirror results from the student sample and support the new model of PDs.

Hypothesis Eleven

Significant positive relationships between IIP-64 Total scores and PLM Interpersonal scale scores were found in both the student and clinical samples and support Hypothesis eleven. A correlation suggested that as the severity of general personality pathology (specifically interpersonal dysfunction) increases across individuals, the amount of reported overall interpersonal problems also increases. These findings support the idea that general interpersonal dysfunction can be observed through interactions with others, and the severity of general dysfunction varies with severity of interpersonal problems. Results support the new model of PDs by demonstrating similar connections between disordered personality constructs in two different samples.

Implications

The current study contributes to the field of PD research, diagnosis, and treatment. First, results from this study begin to address the need for continued research on the new model of PDs, a request that is clearly stated by the authors of the *DSM-5* through their decision to include the new model in Section III of the newest diagnostic manual. This study focused on making connections between central constructs outlined in the new model (general personality dysfunction and specific maladaptive personality traits) and interpersonal theory via the interpersonal circumplex. By establishing the relationships among maladaptive personality traits, general interpersonal dysfunction, and interpersonal problems, the new model was tested and partially supported.

The second contribution of the current study is testing the new model in two diverse samples. The new model of PD diagnosis will need to be tested in many more samples, but the current study adds to the research base behind the new model by examining PD constructs in a clinical sample of substance users and in a college student sample. Both samples were of adequate size to extract meaningful interpretations from the available data and provide preliminary support for inclusion of the new model into Section II of future diagnostic manuals.

In addition to PD research implications and possible influence on future diagnostic systems, the current study also has implications for the treatment of PDs. Connecting PD constructs with the interpersonal circumplex provides a tangible target for treatment. Problematic personality functioning identified within the context of specific interpersonal problems can be treated efficiently by correcting specific types of interpersonal patterns that are not adaptive for the client. This allows for treatment of the

client's problematic behavior rather than attempted treatment of flaws in his/her character. Corrective experiences in interpersonal interactions may also lead to improvement in clients' self functioning and ability to perceive the behaviors of others accurately.

Limitations and Suggestions for Future Research

Several limitations of the current study need to be addressed. First, it is important to note that the current study was based on self-report data only. Inherent limitations exist when participants report on their own behaviors, including the possibility of negative impression management or naïve awareness of one's own tendencies. The clinical sample, in particular, may have been motivated to underreport problems and present a favorable impression due to their circumstances of being evaluated at or being residents of a substance use treatment facility. Future studies may benefit from additional sources of information other than self-report data when researching the topic of personality traits, functioning, and interpersonal problems. Additionally, future research should obtain data from additional samples of participants from diverse groups in order to assess the generalizability of the new model of PDs.

Another limitation in the current study involves the use of multiple comparisons. The Bonferroni adjustment was used to help control for multiple correlations and hold steady the chance of a Type I error in this study. However, future studies would benefit from making fewer comparisons in order to prevent the possibility of inaccurate results. Future studies may also consider exploring relationships between scales on each measure to learn more about how the scales relate to one another. Testing the new model of PDs with different measures of PD traits and general dysfunction other than the DAPP-SF and

the PLM would be useful in future studies to see if obtained results are consistent across various assessment instruments. Finally, exploring potential connections between the interpersonal circumplex and the FFM may be an interesting avenue for future research.

Summary

Historically, there has been a conceptual problem in the diagnostic system of PDs which has led to problems with clinical utility and damaged treatment efficacy. Categories of PDs defined in the diagnostic nomenclature have not been supported through empirical research (Livesley, 1998; Livesley et al., 1994; Westen & Shedler, 2000; Widiger, 1992; Widiger, 1993), and substantial comorbidity among Axis II disorders and between Axis I and II disorders has been observed (Grant, et al., 2005; Lenzenweger et al., 2007; Watson & Sinha, 1998; Zimmerman et al., 2005). PDs, as they are currently defined, are heterogeneous and carry labels that convey little meaningful information (Krueger & Eaton, 2010; Verheul & Widiger, 2004). The problems created by the foundational flaws in the current diagnostic model of PDs spurred recognition of a need for change. Personality and Personality Disorder Work Group members developed a new model of PD diagnosis quite distinct from the current model that has an empirical basis and attempts to depict PDs as they occur in nature. The new model boasts a hybrid dimensional-categorical design, and its authors proposed that it will be effective in solving the problems in previous models of PD diagnosis. The new model was scheduled for a grand entrance as a diagnostic overhaul in *DSM-5*; however, the decision was made to postpone inclusion of the new model in Section II and, instead, to include it in Section III of the manual, where it can undergo further research and validation before becoming the official PD classification (APA, 2013).

The current study was born out of the need to empirically test the new model of PDs. Specifically, the purpose of this study was to investigate relationships between general and specific constructs of maladaptive personality and patterns of interpersonal problems. The interpersonal circumplex was used to tangibly represent interpersonal problems and to connect the new model of PDs with interpersonal theory. Constructs assumed to underlie PDs were examined by administering measures of general dysfunction and specific personality traits to a sample of college students and a clinical sample of individuals attending or being evaluated for residential substance use treatment. The Personality Level Measurement scale (PLM; Morey et al., 2011), a combined and shortened version of the GAPD and the SIPP-118, was used to assess general personality dysfunction. The Dimensional Assessment of Personality Pathology – Short Form (DAPP-SF; van Kampen et al., 2008) was used to assess specific maladaptive traits. Both samples also completed the Inventory of Interpersonal Problems (IIP-64; Horowitz et al., 2003), an assessment based on the interpersonal circumplex that measures interpersonal problems. Obtained data were analyzed using Spearman's correlation, Chi Square, Fisher's Z-Transformation, One-Sample T-Test, and Principal Components Analysis to investigate relationships among the constructs.

Results indicated support for the majority of hypothesized relationships and generally supported the theory behind PD constructs proposed in the new model. While limitations exist, including using only self-report data and making multiple comparisons, the current study has several meaningful implications. Contributions include adding to the body of research on the new model of PDs, providing provisional support for the proposed model, connecting it with another well-established theory (interpersonal

theory), and providing connections between maladaptive personalities and problematic interpersonal patterns that could contribute to improved treatment efficacy.

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APPENDIX A

LEVELS OF PERSONALITY FUNCTIONING SCALE

LEVELS OF PERSONALITY FUNCTIONING SCALE

	Self		Interpersonal	
Level	Identity	Self-Direction	Empathy	Intimacy
0	-Ongoing awareness of a unique self; maintains role-appropriate boundaries. -Consistent and self-regulated positive self-esteem, with accurate self-appraisal. -Capable of experiencing, tolerating and regulating a full range of emotions.	-Sets and aspires to reasonable goals based on a realistic assessment of personal capacities. -Utilizes appropriate standards of behavior, attaining fulfillment in multiple realms. -Can reflect on, and make constructive meaning of, internal experience.	-Capable of accurately understanding others' experiences and motivations in most situations. -Comprehends and appreciates others' perspectives, even if disagreeing. -Is aware of the effect of own actions on others.	-Maintains multiple satisfying and enduring relationships in personal and community life. -Desires and engages in a number of caring, close and reciprocal relationships. -Strives for cooperation and mutual benefit and flexibly responds to a range of others' ideas, emotions and behaviors.
1	-Relatively intact sense of self, with some decrease in clarity of boundaries when strong emotions and mental distress are experienced. -Self-esteem diminished at times, with overly critical or somewhat distorted self-appraisal. -Strong emotions may be distressing, associated with a restriction in range	-Excessively goal-directed, somewhat goal-inhibited, or conflicted about goals. -May have an unrealistic or socially inappropriate set of personal standards, limiting some aspects of fulfillment. -Able to reflect upon internal experiences, but may overemphasize a	-Somewhat compromised in ability to appreciate and understand others' experiences; may tend to see others as having unreasonable expectations or a wish for control. -Although capable of considering and understanding different perspectives, resists doing so. -Inconsistent is awareness of effect	-Able to establish enduring relationships in personal and community life, with some limitations on degree of depth and satisfaction. -Capacity and desire to form intimate and reciprocal relationships, but may be inhibited in meaningful expression and sometimes constrained if

	Self		Interpersonal	
Level	Identity	Self-Direction	Empathy	Intimacy
	of emotional experience.	single (e.g., intellectual, emotional) type of self-knowledge.	of own behavior on others.	intense emotions or conflicts arise. -Cooperation may be inhibited by unrealistic standards; somewhat limited in ability to respect or respond to others' ideas, emotions and behaviors.
2	-Excessive dependence on others for identity definition, with compromised boundary delineation. -Vulnerable self-esteem controlled by exaggerated concern about external evaluation, with a wish for approval. Sense of incompleteness or inferiority, with compensatory inflated, or deflated, self-appraisal. -Emotional regulation depends on positive external appraisal. Threats to self-esteem may engender strong emotions such as rage or shame.	-Goals are more often a means of gaining external approval than self-generated, and thus may lack coherence and/or stability. -Personal standards may be unreasonably high (e.g., a need to be special or please others) or low (e.g., not consonant with prevailing social values). Fulfillment is compromised by a sense of lack of authenticity. -Impaired capacity to reflect upon internal experience.	-Hyper-attuned to the experience of others, but only with respect to perceived relevance to self. -Excessively self-referential; significantly compromised ability to appreciate and understand others' experiences and to consider alternative perspectives. -Generally unaware of or unconcerned about effect of own behavior on others, or unrealistic appraisal of own effect.	-Capacity and desire to form relationships in personal and community life, but connections may be largely superficial. -Intimate relationships are largely based on meeting self-regulatory and self-esteem needs, with an unrealistic expectation of being perfectly understood by others. -Tends not to view relationships in reciprocal terms, and cooperates predominantly for personal gain.
3	-A weak sense of autonomy/agency;	-Difficulty establishing	-Ability to consider and understand the	-Some desire to form relationships

	Self		Interpersonal	
Level	Identity	Self-Direction	Empathy	Intimacy
	experience of a lack of identity, or emptiness. Boundary definition is poor or rigid: may be over identification with others, overemphasis on independence from others, or vacillation between these. -Fragile self-esteem is easily influenced by events, and self-image lacks coherence. Self-appraisal is un-nuanced: self-loathing, self-aggrandizing, or an illogical, unrealistic combination. -Emotions may be rapidly shifting or a chronic, unwavering feeling of despair.	and/or achieving personal goals. -Internal standards for behavior are unclear or contradictory. Life is experienced as meaningless or dangerous. -Significantly compromised ability to reflect upon and understand own mental processes.	thoughts, feelings and behavior of other people is significantly limited; may discern very specific aspects of others' experience, particularly vulnerabilities and suffering. -Generally unable to consider alternative perspectives; highly threatened by differences of opinion or alternative viewpoints. -Confusion or unawareness of impact of own actions on others; often bewildered about peoples' thoughts and actions, with destructive motivations frequently misattributed to others.	in community and personal life is present, but capacity for positive and enduring connection is significantly impaired. -Relationships are based on a strong belief in the absolute need for the intimate other(s), and/or expectations of abandonment or abuse. Feelings about intimate involvement with others alternate between fear/rejection and desperate desire for connection. -Little mutuality: others are conceptualized primarily in terms of how they affect the self (negatively or positively); cooperative efforts are often disrupted due to the perception of slights from others.
4	-Some desire to form relationships in community and personal life is present, but capacity for positive and	-Poor differentiation of thoughts from actions, so goal-setting ability is severely compromised,	-Pronounced inability to consider and understand others' experience and motivation.	-Desire for affiliation is limited because of profound disinterest or expectation of harm. Engagement

	Self		Interpersonal	
Level	Identity	Self-Direction	Empathy	Intimacy
	enduring connection is significantly impaired. -Relationships are based on a strong belief in the absolute need for the intimate other(s), and/or expectations of abandonment or abuse. Feelings about intimate involvement with others alternate between fear/rejection and desperate desire for connection. -Little mutuality: others are conceptualized primarily in terms of how they affect the self (negatively or positively); cooperative efforts are often disrupted due to the perception of slights from others.	with unrealistic or incoherent goals. -Internal standards for behavior are virtually lacking. Genuine fulfillment is virtually inconceivable. -Profound inability to constructively reflect upon own experience. Personal motivations may be unrecognized and/or experienced as external to self.	-Attention to others' perspectives virtually absent (attention is hypervigilant, focused on need-fulfillment and harm avoidance). -Social interactions can be confusing and disorienting.	with others is detached, disorganized or consistently negative. -Relationships are conceptualized almost exclusively in terms of their ability to provide comfort or inflict pain and suffering. -Social/ interpersonal behavior is not reciprocal; rather, it seeks fulfillment of basic needs or escape from pain.

APPENDIX B

PROPOSED DSM-5 TRAIT DOMAINS & FACETS

PROPOSED DSM-5 TRAIT DOMAINS & FACETS

Trait Domain/*Facet*	Description
Negative Affectivity	Involves experiencing negative affect intensely and with regularity.
Emotional Lability	Unstable affective experiences and frequent mood shifts; emotions that are quickly aroused, intense, and/or excessive in relation to events and circumstances.
Anxiousness	Intense feelings of nervousness, edginess, or panic in reaction to various situations; worry about the adverse effects of past unpleasant experiences and future negative possibilities; feeling apprehensive, frightened, or threatened by uncertainty; fears of embarrassment or "losing it."
Separation Insecurity	Worry about rejection by, and/or separation from, significant others, associated with concerns about excessive dependence on others and loss of autonomy.
Perseveration	Persistence at tasks long after behavior has stopped being functional or effective; repetition of the same behavior despite repeated failures.
Submissiveness	Adaptation of one's behavior to the wants of others.
Hostility	Persistent or regularly-experienced angry feelings; responding angrily or irritably to mild slights or insults; Gruff, nasty, or vindictive behavior.
Depressivity	Regular feelings of being sad, depressed, and/or hopeless; difficulty "bouncing back" from such moods; pessimism regarding the future; pervasive feelings of shame; low self worth; suicidality.
Suspiciousness	Expectations of, and heightened altertness to, signs of others' ill-intent or harm; doubting others' loyalty and fidelity; ideas of persecution.
(lack of) Restricted Affectivity	Limited reaction to situations which would arouse emotion in most others; constricted affective experience and expression.
Detachment	Involves withdrawal from others and from interactions with others.

Trait Domain/*Facet*	Description
Restricted Affectivity	Limited reaction to situations which would arouse emotion in most others; constricted affective experience and expression.
Depressivity	Regular feelings of being sad, depressed, and/or hopeless; difficulty "bouncing back" from such moods; pessimism regarding the future; pervasive feelings of shame; low self worth; suicidality.
Suspiciousness	Expectations of, and heightened altertness to, signs of others' ill-intent or harm; doubting others' loyalty and fidelity; ideas of persecution.
Withdrawal	Preference for being alone rather than being with others; shyness in social situations; avoidance of social contacts and social activity; rarely, if ever, initiates social contact.
Anhedonia	Lack of pleasure from, engagement in, or energy for life experiences; deficits in the capacity to feel enjoyment or have interest in things.
Intimacy Avoidance	Avoidance of intimate relationships, interpersonal attachments, and sexual/romantic relationships.
Antagonism	Involves behaviors that result in the individual being in conflict with others.
Manipulativeness	Frequent use of deception to influence or exercise control over others; use of charm, or glibness to achieve one's goals.
Deceitfulness	Dishonesty; false representation of self; embellishment or fabrication when relating events.
Grandiosity	Feeling entitled, either overtly or covertly; self-centeredness; firmly holding to the belief that one is superior to others.
Attention Seeking	Excessive attempts to make one the focus of others' attention; desiring of admiration.
Callousness	Lack of concern about others' feelings or problems; lack of remorse about the negative or harmful effects of one's actions on other people; aggression or malevolence toward others.
Hostility	Persistent or regularly-experienced angry feelings; responding angrily or irritably to mild slights or insults; Gruff, nasty, or vindictive behavior.

Trait Domain/*Facet*	Description
Disinhibition	Involves behaving without reflecting on potential future consequences or such behavior. Compulsivity is the inverse of this domain.
Irresponsibility	Lack of regard for, or failure to honor, financial and other obligations or commitments to others; lack of follow through on promises.
Impulsivity	Behaving on the spur of the moment in response to immediate stimuli; behaving on a momentary basis without a plan or consideration of possible outcomes; struggles to establish and follow plans; a sense of urgency and self-destructive behavior when under emotional distress.
Distractibility	Having a hard time focusing on tasks; attention is easily diverted by extraneous stimuli; difficulty maintaining behavior that is goal-focused.
Risk Taking	Unnecessary engagement in activities which are potentially self-damaging without regard for consequences; proneness to boredom and unplanned initiation of activities to counter boredom; lack of concern for one's limitations and denial of the reality of danger to oneself.
(lack of) Rigid Perfectionism	Insistence on flawlessness, without errors or faults, including the performance of oneself and others; sacrificing timeliness to guarantee correctness in every detail; believing that there is only one correct way to do things; difficulty altering ideas and/or perspectives; excessive concern with details, arrangements, and order.
Psychoticism	Involves having odd or unusual experiences.
Unusual Beliefs and Experiences	Thought content that is viewed by others as peculiar or idiosyncratic; odd experiences of reality.
Eccentricity	Peculiar behavior or appearance; saying unusual or contextually-inappropriate things.
Cognitive and Perceptual Dysregulation	Bizarre thought processes; circumstantial, vague, and/or over-elaborate thought or speech; odd sensory experiences in various modalities.

APPENDIX C

HUMAN USE APPROVAL LETTER

LOUISIANA TECH
UNIVERSITY

MEMORANDUM

OFFICE OF UNIVERSITY RESEARCH

TO: Ms. Meggie Rowland and Dr. Tony Young

FROM: Dr. Stan Napper, Vice President Research & Development

SUBJECT: HUMAN USE COMMITTEE REVIEW

DATE: February 24, 2014

In order to facilitate your project, an EXPEDITED REVIEW has been done for your proposed study entitled:

"Dissecting Personality Disorders: An Investigation of Disordered Personality Constructs & the Interpersonal Circumplex"

HUC 1175

The proposed study's revised procedures were found to provide reasonable and adequate safeguards against possible risks involving human subjects. The information to be collected may be personal in nature or implication. Therefore, diligent care needs to be taken to protect the privacy of the participants and to assure that the data are kept confidential. Informed consent is a critical part of the research process. The subjects must be informed that their participation is voluntary. It is important that consent materials be presented in a language understandable to every participant. If you have participants in your study whose first language is not English, be sure that informed consent materials are adequately explained or translated. Since your reviewed project appears to do no damage to the participants, the Human Use Committee grants approval of the involvement of human subjects as outlined.

Projects should be renewed annually. ***This approval was finalized on February 24, 2014 and this project will need to receive a continuation review by the IRB if the project, including data analysis, continues beyond February 24, 2015.*** Any discrepancies in procedure or changes that have been made including approved changes should be noted in the review application. Projects involving NIH funds require annual education training to be documented. For more information regarding this, contact the Office of University Research.

You are requested to maintain written records of your procedures, data collected, and subjects involved. These records will need to be available upon request during the conduct of the study and retained by the university for three years after the conclusion of the study. If changes occur in recruiting of subjects, informed consent process or in your research protocol, or if unanticipated problems should arise it is the Researchers responsibility to notify the Office of Research or IRB in writing. The project should be discontinued until modifications can be reviewed and approved.

If you have any questions, please contact Dr. Mary Livingston at 257-2292 or 257-5066.

LOUISIANA TECH
UNIVERSITY

OFFICE OF UNIVERSITY RESEARCH

MEMORANDUM

TO: Dr. Tony Young and Ms. Meggie Rowland

FROM: Dr. Stan Napper, Vice President of Research & Development

SUBJECT: Human Use Committee Review

DATE: March 12, 2015

RE: Approved Continuation of Study HUC 1175

TITLE: **"Dissecting Personality Disorders: An Investigation of Disordered Personality Constructs & the Interpersonal Circumplex"**

HUC 1175

The above referenced study has been approved as of March 12, 2015 as a continuation of the original study that received approval on February 24, 2014. **This project will need to receive a continuation review by the IRB if the project, including collecting or analyzing data, continues beyond March 12, 2016.** Any discrepancies in procedure or changes that have been made including approved changes should be noted in the review application. Projects involving NIH funds require annual education training to be documented. For more information regarding this, contact the Office of University Research.

You are requested to maintain written records of your procedures, data collected, and subjects involved. These records will need to be available upon request during the conduct of the study and retained by the university for three years after the conclusion of the study. If changes occur in recruiting of subjects, informed consent process or in your research protocol, or if unanticipated problems should arise it is the Researchers responsibility to notify the Office of Research or IRB in writing. The project should be discontinued until modifications can be reviewed and approved.

If you have any questions, please contact Dr. Mary Livingston at 257-5066.