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Personality in a Hierarchical Model of Psychopathology

Thomas A. Widiger[1]

Martin Sellbom[2]

Michael Chmielewski[3]

Lee Anna Clark[4]

Colin G. DeYoung[5]

Roman Kotov[6]

Robert F. Krueger[5]

Donald R. Lynam[7]

Joshua D. Miller[8]

Stephanie Mullins-Sweatt[9]

Douglas B. Samuel[7]

Susan C. South[7]

Jennifer L. Tackett[10]

Katherine M. Thomas[7]

David Watson[4]

Aidan G. C. Wright[11]

[1]University of Kentucky, Department of Psychology, :Lexington, KY, United States

[2]University of Otago, Department of Psychology, Dunedin, New Zealand

[3]Southern Methodist University, Department of Psychology, Dallas, Texas, United States

[4]University of Notre Dame, Department of Pschology, South Bend, IN, United States

[5]University of Minnesota, Department of Psychology, Minneapolis, MN, United States

[6]Stony Brook University, Department of Psychiatry, Stony Brook, NY, United States

[7]Purdue University, Department of Psychological Sciences, West Lafayette, IN, United States

[8]University of Georgia, Department of Psychology, Athens, GA, United States

[9]Oklahoma State University, Department of Psychology, Stillwater, OK, United States

[10]Northwestern University, Department of Psychology, Evanston, IL, United States

[11]University of Pittsburgh, Department of Psychology, Pittsburgh, PA, United States

Authors' note: All of the authors of this manuscript are members of the HiTOP Personality Work Group. Correspondence concerning this paper should be addressed to Thomas A. Widiger, Ph.D., Department of Psychology, University of Kentucky, Lexington, KY, 40506-0044; email: widiger@uky.edu.

Abstract

The categorical model of classification in the American Psychiatric Association's (APA*) Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; APA, 2013) is sorely problematic. A proposed solution is emerging in the form of a quantitative nosology, an empirically based dimensional organization of psychopathology. More specifically, a team of investigators has proposed a Hierarchical Taxonomy Of Psychopathology (HiTOP; Kotov et al., 2017). The purpose of the current paper is to discuss the potential role, importance, and implications of personality within the HiTOP dimensional model of psychopathology. Suggested herein is that personality provides a foundational base for the HiTOP dimensional model of psychopathology. Implications concern the potential value of early assessment of and screening for personality as well as the development of protocols for the treatment of personality trait domains, which may in turn contribute to substantial improvements in quality of life, as well as mental and physical health.

Key words: personality, psychopathology, personality disorder, health, dimensional.

Personality in a Hierarchical Model of Psychopathology

It has become readily apparent that the categorical model of classification employed within the American Psychiatric Association's (APA) *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; APA, 2013) is sorely problematic (Chmielewski, Clark, Bagby, & Watson, 2015; Clark, 2007; Hyman, 2010; Krueger & Markon, 2006, 2011; Widiger & Clark, 2000; Widiger & Crego, in press). Even the primary authors of *DSM*-5 questioned the validity of a categorical classification of psychopathology.

> In the more than 30 years since the introduction of the Feighner criteria by Robins and Guze, which eventually led to *DSM-III,* the goal of validating these syndromes and discovering common etiologies has remained elusive. Despite many proposed candidates, not one laboratory marker has been found to be specific in identifying any of the *DSM*-defined syndromes. Epidemiologic and clinical studies have shown extremely high rates of comorbidities among the disorders, undermining the hypothesis that the syndromes represent distinct etiologies. Furthermore, epidemiologic studies have shown a high degree of short-term diagnostic instability for many disorders. With regard to treatment, lack of treatment specificity is the rule rather than the exception. (Kupfer, First, & Regier, 2002, p. xviii)

Indeed, a principal goal of the authors of *DSM-5* was to shift the classification toward a dimensional model. *DSM-5* Research Planning Work Groups were formed to develop white papers that would set an effective research agenda for the next edition of the diagnostic manual. The Nomenclature Work Group, charged with addressing fundamental assumptions of the

diagnostic system, concluded that it would be "important that consideration be given to advantages and disadvantages of basing part or all of DSM-V on dimensions rather than categories" (Rounsaville et al., 2002, p. 12).

The authors of *DSM-5* were successful in shifting some sections of the manual toward more dimensional conceptualizations (e.g., autism spectrum disorder, the conceptualization of a schizophrenia spectrum, the level of severity for substance use disorder, the reference within the introduction of the manual to the broad dimensions of internalizing and externalizing dysfunction that cut across existing categories, and the alternative model of personality disorder in Section III of *DSM-5* for emerging measures and models). However, as is acknowledged within its introduction, "DSM-5 remains a categorical classification of separate disorders" (APA, 2013, p. xii). Nevertheless, the introduction to the manual does explicitly acknowledge the failure of the categorical model: "The once plausible goal of identifying homogeneous populations for treatment and research resulted in narrow diagnostic categories that did not capture clinical reality, symptom heterogeneity within disorders, and significant sharing of symptoms across multiple disorders" (APA, 2013, p. 12).

A proposed solution to the shortcomings of the traditional taxonomies is emerging in the form of a quantitative nosology, an empirically-based organization of psychopathology (e.g., Achenbach & Rescorla, 2001; Clark & Watson, 2008; Forbush & Watson, 2013; Kotov, Ruggero, et al., 2011; Krueger & Markon, 2006; Lahey et al., 2008). Rather than being constructed in a "top-down" manner, this quantitative nosology is emerging from independent work of multiple research groups seeking to understand the natural organization of psychopathology (Kotov, 2016). Indeed, recently, a large consortium of investigators has

proposed a Hierarchical Taxonomy Of Psychopathology (HiTOP), as an alternative to traditional categorical classifications (Kotov et al., 2017).

HiTOP includes, at the highest level, a general factor of psychopathology, beneath which are, first, the broad domains of internalizing, externalizing, and thought disorder (Caspi et al., 2014; Forbes et al., in press; Kotov et al., 2017; Lahey et al., 2011, 2012). Further down are the five domains of detachment, antagonistic externalizing, disinhibited externalizing, thought disorder, and internalizing (along with a provisional somatoform domain). These five domains are not confined to personality disorder (e.g., disinhibited externalizing includes substance use disorders and internalizing includes mood and anxiety disorders) but they do align closely with the five domains of the DSM-5 Section III dimensional trait model, consisting of detachment (vs. extraversion), antagonism (vs. agreeableness), disinhibition (vs. conscientiousness), psychoticism (vs. lucidity), and negative affectivity (vs. emotional stability), respectively (APA, 2013; Krueger, Derringer, Markon, Watson, & Skodol, 2012; Wright & Simms, 2015). These five broad domains align in turn with the five domains of the five-factor model (FFM) of general personality. “These five broad domains are maladaptive variants of the five domains of the extensively validated and replicated personality model known as the ‘Big Five,’ or the Five Factor Model of personality and are also similar to the domains of the Personality Psychopathology Five (PSY-5)” (APA, 2013, p. 773). A sixth somatoform domain is at the same level as the personality disorder domains, but it is currently provisional.

The purpose of the current paper is to discuss the potential role and implications of personality within the HiTOP dimensional model of psychopathology; more specifically, that personality provides a foundational base for psychopathology more generally. One important

implication is that perhaps future clinical research should consider developing treatment protocols for the domains of personality rather than (or in addition to) the treatment of the disorders and problems in living that result in part from personality.

Personality and Important Life Outcomes

There was a time when the importance, if not even the existence, of personality was severely questioned, with some suggesting that persons' behaviors are primarily the result of the situations in which they are in rather than any cross-situational, fundamental personality dispositions (Mischel, 1968). This period of doubt and skepticism has long since passed. Not only has the construct validity of personality been well established, but personality traits are now recognized as being clinically impactful. One increasingly recognized implication of this social, clinical impact is the potential importance and value of early recognition and intervention.

An historically notable study was provided by Friedman and colleagues (1993) who analyzed raw data from the Terman Life-Cycle Study of children, which had begun in 1921-1922. Terman's initial sample was 1,500 bright male and female children (age 11) whom he continued to assess every 5 to 10 years. By the time Friedman and colleagues considered these data, approximately 70 years later, the longitudinal information was quite informative with respect to mortality. Friedman and colleagues (1993) coded the original parental personality ratings at age 11 on 25 trait dimensions, and specifically developed proxy scales for extraversion, conscientiousness, and neuroticism. The findings demonstrated that, even when controlling for other obvious predictors, "conscientiousness in childhood was clearly related to survival in middle to old age" (Friedman et al., 1993, p. 176). Friedman et al. further suggested, "this may help us identify younger people at higher risk for later health problems" (p. 184).

The potential contributions of personality to a wide variety of mental, medical and other important life outcomes have since been demonstrated in many subsequent studies. Ozer and Benet-Martinez (2006) provided a fairly comprehensive review of the relationship of personality to a host of important life outcomes. They documented the significant impact of personality on individual life outcomes (e.g., happiness, subjective well-being, spirituality, virtues, physical health, longevity, self-concept, and identity), interpersonal outcomes (i.e., peer relationships, family relationships, and romantic relationships), and social-institutional outcomes (i.e., occupational choice, performance, political attitudes, values, volunteerism, community involvement, and criminality). They concluded, "personality effects are ubiquitous, influencing each of us all the time, and when aggregated to the population level such effects are routinely consequential" (Ozer & Benet-Martinez, 2006, p. 416). The strength of the relations was, in some cases, not large in terms of an effect size, but as they noted, even a small effect size would have quite substantial implications when considered within the population at large (Meyer et al., 2001). For instance, "even a small change in mean agreeableness scores might increase by thousands the number of volunteers serving community needs in AIDS clinics and elsewhere" (Ozer & Benet-Martinez, 2006, p. 416).

Roberts, Kuncel, Shiner, Caspi, and Goldberg (2007) conducted a meta-analysis of prospective, longitudinal studies (many of which controlled for important background factors) that considered the impact of personality on mortality, divorce, and/or occupational attainment. Roberts et al. documented that the future impact of personality equaled the impact of the well-established risk factors of socioeconomic status and cognitive ability. They also reiterated the point of Ozer and Benet-Martinez with respect to effect size, comparing their results with

influential studies in other areas of public health. As they noted, Rosenthal (1990) had indicated that taking aspirin prevented approximately 85 heart attacks in the patients of 10,845 physicians despite a meager .03 correlation between the consumption of aspirin and the heart-attack outcome. Danner, Snowden, and Friesen (2001) similarly indicated that the association between positive emotion and longevity was associated with a gain of almost 7 years of additional life, despite having an average effect size of around only .20. Roberts et al. argued that their documentation of the importance of personality on such important life outcomes suggests clearly that "personality should be addressed in prevention and intervention efforts" (p. 338).

Additional meta-analyses have established substantial links between personality and many other important life outcomes, including academic performance (Poropat, 2009); job performance, organizational citizenship behavior, counterproductive work behavior, and other aspects of organizational behavior (Sackett & Walmsley, 2014); and happiness and various types of satisfaction (including life satisfaction, job satisfaction, and marital satisfaction; see Heller, Watson, & Ilies, 2004; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010; Steel, Schmidt, & Shultz, 2008).

Personality and Psychopathology

Notably, Ozer and Benet-Martinez (2006) had included psychopathology as one of their individual life outcomes. Indeed, literature on the relationship between personality and psychopathology is vast, to say the least. As indicated by Tackett and Mullins-Sweatt (in press), "Over the past 15 years, research on personality and psychopathology has generally increased, from just over 8,000 new research products in 2001 to over 20,000 new research products every year for the past five years, based on cited works indexed in Google Scholar," and there was, of

course, a substantial body of research prior to this time (Clark, 2005). Many qualitative reviews of this literature have been conducted (e.g., Andersen & Bienvenu, 2011; Bagby, Uliaszek, Gralnick, & Al-Dajani, 2017; Clark & Watson, 2008; Klein, Kotov, & Bufferd, 2011; Lengel, Helle, DeShong, Meyer, & Mullins-Sweatt, 2016; Tackett & Mullins-Sweatt, in press; Watson & Naragon, 2008; Widiger & Smith, 2008). Even if one confines one's review to quantitative, meta-analytic studies, the literature remains substantial, including meta-analyses addressing the relationship of personality with multiple mental disorders (Jeronimus, Kotov, Riese, & Ormel, 2016; Malouff, Thorsteinsson, & Schutte, 2005), including, more specifically, substance use disorders (Kotov, Gamez, Schmidt, & Watson, 2010; Malouff, Thorsteinsson, Rooke, & Schutte, 2007; Ruiz, Pincus, & Schinka, 2008), smoking (Malouff, Thorsteinsson, & Schutte, 2006; Munafo, Zetteler, & Clark, 2007), eating disorders (Cassin & von-Ranson, 2005), anxiety disorders (Kotov et al., 2010), personality disorders (Samuel & Widiger, 2008), and mood disorders (Hakulinen et al., 2015; Kotov et al., 2010).

Kotov et al. (2010), for example, considered 175 studies and reported 66 meta-analyses concerning the relationship of personality (organized with respect to the five-factor model and the "Big Three" of negative emotionality, positive emotionality, and constraint; Clark & Watson, 2008) to anxiety (general anxiety, post-traumatic stress, agoraphobia, social phobia, specific phobia, and obsessive-compulsive anxiety disorder), mood (major depressive, unipolar depressive, and dysthymic disorder), and substance use disorders. They concluded that "the most important finding of the present study is that several 'big' personality traits were highly correlated with anxiety, depressive, and substance use disorders" (p. 810). They considered the effect sizes to be quite notable and certainly larger than they had anticipated, and stressed that

"greater attention to personality dimensions is warranted across clinical psychology" (p. 810).

Klein et al. (2011) reviewed the extensive body of research relating personality to depression. They indicated that there were consistent medium to large effect size relationships in cross-sectional studies as well as consistent support for a prospective longitudinal relationship. "Several studies using large community samples have reported that higher levels of neuroticism/negative emotionality predict the onset of first lifetime major depressive disorder episodes" (Klein et al., p. 281). They indicated more generally that the strength of the relationship suggested the potential benefit of identifying persons at an early age who might be at risk for an eventual clinical depression. "There is growing evidence that temperamental risk factors are evident at an early age, suggesting a promising approach to identifying young children at risk for depression" (Klein et al., 2011, p. 287).

Perhaps not surprisingly, the strongest relationship with psychopathology is clearly found for the domain of neuroticism (Bagby et al., 2017; Brown, 2007; Hettema, Neale, Myers, Prescott, & Kendler, 2006; Klein et al., 2011; Kotov et al., 2010; Ozer & Benet-Martinez, 2006; Tackett, Quilty, Sellbom, Rector, & Bagby, 2008). Recent prospective evidence has shown that neuroticism predicts the first onsets of generalized anxiety disorder, social phobia, and specific phobia (Goldstein, Kotov, Perlman, Watson, & Klein, in press; Jeronimus et al., 2016). "Neuroticism [is] a common dimension in the internalizing disorders" (Griffith et al., 2010, p. 1125). Neuroticism (or negative emotionality) is the trait disposition to experience negative affects, including anger, anxiety, self-consciousness, vulnerability, irritability, emotional instability, and depression (Tackett & Lahey, 2017). Persons with elevated levels of neuroticism respond poorly to environmental stress, interpret ordinary situations as threatening, and can

experience minor frustrations as hopelessly overwhelming (Widiger, 2009). Neuroticism is associated with a wide array of different forms of psychopathology, including anxiety, mood, eating, somatic symptom, and substance use disorders (Bagby et al., 2017), with a comparably wide array of physical maladies, such as cardiac problems, disrupted immune functioning, asthma, atopic eczema, irritable bowel syndrome, and even increased risk for mortality (Tackett & Lahey, 2017), and with central components of quality of life, such as occupational success, subjective well-being, emotional exhaustion, and marital dissatisfaction (Lahey, 2009).The relationships of neuroticism to mental and medical problems are multiple, in that neuroticism provides a vulnerability for the development of the respective disorders (Clark et al., 2005), as well as a disposition to exaggerate their importance and an interference (e.g., discouragement) to respond effectively to their treatment (Tackett & Lahey, 2017; Widiger, 2009).

In a large representative sample (N = 5504) of the Dutch general population, Cuijpers et al. (2010) compared the economic costs of neuroticism (health service uptake in primary and secondary mental health care, out-of-pocket costs, and production losses) with the costs associated with common mental disorders (e.g., mood, anxiety, substance use, and somatic disorders). The total excess costs of neuroticism per 1 million inhabitants resulting from the 25% highest scorers ($1,393 billion) were approximately 2.5 times higher than the excess costs of common mental disorders ($585 million). As suggested by Cuijpers et al. (2010), “the economic costs of neuroticism are enormous and exceed those of common mental disorders” (p. 1086).

Indeed, the evident importance of neuroticism to quality of life has led others to suggest that all persons should be routinely screened (early in life, but as adults as well) for their level of neuroticism, via the internet or during routine medical visits (Lahey, 2009; Widiger & Trull,

2007). “Not only would such efforts help identify those at potentially high risk for a range of adverse outcomes, information about levels of neuroticism could be incorporated into more personalized and, ideally, more effective treatments” (Tackett & Lahey, 2017, pp. 47-48). It is routine to screen for blood pressure and cholesterol levels, and would seem only natural and sensible to do the same for a trait with so many public health care implications (Widiger & Oltmanns, 2017). “Even if the indirect reduction in the prevalence of each individual adverse outcome were modest, it is possible that such a strategy could be cost-effective because of the sheer number of adverse outcomes associated with neuroticism” (Lahey, 2009, p. 14).

Furthermore, research has also documented consistent links of (low) conscientiousness and (low) agreeableness with externalizing psychopathology (e.g., ADHD, antisocial personality disorder, substance use disorders). For instance, Krueger et al. (2002) found strong genotypic links between disconstraint (which may be considered a higher order combination of FFM agreeableness and conscientiousness; see Markon, Krueger, & Watson, 2005) and the common variance of several externalizing disorders in the Minnesota twin registry sample, which replicated a previous phenotypic association (Krueger, McGue, & Iacono, 2001). Nigg et al. (2002) examined the association between FFM trait domains and ADHD in six separate community/student samples, which included both self-report and informant reports of ADHD symptoms. Both low agreeableness and low conscientiousness were moderately to strongly related to various inattention and hyperactivity symptoms, with contributions from Neuroticism as well, across measurement modalities. Finally, Lynam, Leukefeld, and Clayton (2003) examined associations between FFM traits and externalizing conditions (conduct problems, antisocial personality disorder symptoms, substance use disorders) both concurrently and

retrospectively in a sample of 841 19- and 20-year-olds from a large longitudinal study. They found that low agreeableness and low conscientiousness were related, similarly and widely, to all types of externalizing, including postdictively.

Finally, some research studies have also emphasized the importance of (low) positive emotionality or (low) extraversion from the FFM perspective for specific forms of psychopathology. Unlike the domains just discussed, it appears that positive emotionality/extraversion are particularly relevant in differentiating specific disorders/symptoms from broader spectra. For instance, Sellbom, Ben-Porath, and Bagby (2008) found that, in two clinical and non-clinical samples, low positive emotionality differentiated depression and social anxiety disorders from other internalizing disorders. In a very large clinical sample, Tackett et al. (2008) found that introversion differentiated distress from fear disorders to a small degree, but in particular, distinguished distress and fear disorders from OCD and bipolar disorders. In a large clinical trial for treatment of mood and anxiety disorders, Brown (2007) established both cross-sectional and longitudinal associations for (low) positive emotionality/approach motivation with depression and social phobia, but not for generalized anxiety disorder.

Personality and Personality Disorders

The contributions of the domains of agreeableness (vs. antagonism) and openness (vs. closedness) to "Axis I" psychopathology have not been nearly as strong as the domains of neuroticism, extraversion (vs. introversion), and conscientiousness (Bagby et al., 2017; Klein et al., 2011; Kotov et al., 2010; Ozer & Benet-Martinez, 2005). However, the contributions of agreeableness and openness become more apparent when one considers one particular form of psychopathology: personality disorder.

There has long been an interest in conceptualizing the personality disorders of the DSM and the International Classification of Diseases (ICD) as maladaptive variants of general personality structure (Clark, 1992; Widiger & Frances, 1985; Wiggins, 1982). Indeed, as suggested by Eysenck (1987) in the inaugural issue of the *Journal of Personality Disorders*, "The concept of personality disorders is not seen as a categorical diagnosis but as behavior characterized by the confluence of three major dimensions of personality" (p. 215).

DSM-5 Section II (*DSM-IV*) Personality Disorders

Much of the more recent personality and personality disorder research has focused primarily (albeit not solely) on the FFM and Big-Three dimensional models of personality (Clark, 2007). Indeed, the sheer number of FFM-personality disorder studies is itself quite vast (Widiger, Gore, Crego, Rojas, & Oltmanns, 2017). Widiger et al. (2017) summarized the results of well over 150 FFM-personality disorder studies. Meta-analyses of FFM-PD findings have been provided by Markon, Krueger, and Watson (2005), O'Connor (2002, 2005), Samuel and Widiger (2008), and Saulsman and Page (2004), each reaching the conclusion that the PD traits and symptoms are well covered by the FFM. Item response theory analyses have also been provided, with Samuel, Carroll, Rounsaville, and Ball (2013), Samuel, Simms, Clark, Livesley, and Widiger (2010), Stepp et al. (2012), and Walton et al. (2008) finding in most cases that the PD symptoms were extreme variants of general personality traits, and in all cases substantial overlap in coverage. A summary of the extensive empirical support for the coverage and conceptualization of individual personality disorders has been provided for the psychopathic (Derefinko & Lynam, 2013), borderline (Trull & Brown, 2013), schizotypal (Edmundson & Kwapil, 2013), dependent (Gore & Pincus, 2013), and narcissistic (Campbell & Miller, 2013) personality disorders.

Conceptualizing the personality disorders as maladaptive variants of the FFM (or of any dimensional trait model) addresses well the two fundamental problems of (a) heterogeneity within the existing diagnostic categories and (b) their excessive diagnostic co-occurrence (Clark, 2007; Krueger & Eaton, 2010; Widiger & Trull, 2007). Rather than force an individual into a category that includes traits that the person does not have and fails to recognize additional personality traits that are important for understanding the patient's level of adjustment and functioning, the dimensional trait model would allow the clinician and researcher to provide an individualized profile of precisely the traits that are present. This form of description is considerably more precise and accurate than a diagnostic category.

One of the concerns or objections to any dimensional model of psychopathology, and personality disorders more specifically, is the presumption that the human mind prefers or naturally thinks categorically (e.g., Bornstein, in press). There is also the related presumption that clinical decisions are themselves categorical, such as whether to provide treatment (e.g., Kraemer, Noda, & O'Hara, 2004). We would, however, suggest that most clinical decisions actually reflect dimensions or gradations. Clinicians and social agencies make decisions with respect to a duration of therapy sessions, an extent of insurance coverage, a degree of medication dosage, and even degrees of hospitalization (e.g., day hospital, partial hospitalization, residential program, or traditional hospitalization). And, it is self-evident that these different clinical decisions are not well informed by a single, uniform diagnostic threshold. The current diagnostic thresholds are not set at a point that is optimal for any one particular social or clinical decision, and yet the single diagnostic threshold is used to inform a wide variety of different decisions. A dimensional system has the flexibility to include different cutoff points for different social and

clinical decisions and would then be considerably more useful for clinicians and more credible for social agencies than the current system (Clark et al., 2014; Mullins-Sweatt & Lengel, 2012; Mullins-Sweatt, Lengel, & DeShong, 2016; Widiger & Trull, 2007).

Understanding of the *DSM-5* Section II personality disorders in terms of general trait structure also helps to address many of the controversies and limitations of the existing diagnostic categories. Diagnostic co-occurrence among the *DSM-IV* personality disorders has been highly problematic, and was said to be a primary rationale for the proposal to delete half of the diagnoses in *DSM-5* (Skodol, 2012). This co-occurrence is largely explained by the extent of shared FFM traits (Lynam & Widiger, 2001; O'Connor, 2005). Gender differences have also been very controversial for the personality disorders (Oltmanns & Powers, 2012) but the differential sex prevalence rates are consistent with the sex differences that would be predicted if the personality disorders are understood to be maladaptive variants of the general personality structure (Lynam & Widiger, 2007).

Very little is known about the childhood antecedents for most of the personality disorders. In contrast, there is a considerable body of research on the childhood antecedents of the general personality structure (Caspi, Roberts, & Shiner, 2005; De Pauw, 2017; Mervielde, De Clercq, De Fruyt, & Van Leeuwen, 2005; Newton-Howes, Chanen, & Clark, 2015; Shiner, 2005). De Clercq, De Fruyt, Van Leeuwen and Mervielde (2006) have even developed an instrument for the assessment of the maladaptive personality traits in childhood that are aligned with general personality structure. Tyrer (2015), Chair of the WHO ICD-11 Personality Disorders Work Group, lamented the reluctance of childhood clinicians and researchers to recognize and apply childhood antecedents of adult personality disorders. However, as indicated by De Fruyt and De

Clerq (2014), “an integrative model of personality pathology precipitants for childhood and adolescence is available now” (p. 469).

One of the major failings of the *DSM-5* Section II personality disorders has been the absence of empirically-based treatment guidelines (Mullins-Sweatt & Lengel, 2012), even though treatment selection is the primary purpose for identifying and diagnosing a psychiatric disorder (APA, 2013; Kupfer et al., 2002). In 1992 the American Psychiatric Association began publishing empirically-based practice guidelines, some of which are now in their third edition. However, to date, guidelines have been published for only one personality disorder: borderline (APA, 2001). None have been developed for the schizotypal, antisocial, narcissistic, dependent, avoidant, obsessive-compulsive, histrionic, paranoid, or schizoid personality disorders.

A primary reason for the absence of treatment protocols is the complex heterogeneity of the *DSM-5* Section II personality disorders (Watson et al., 2016; Widiger & Presnall, 2013). Each personality disorder is a syndromal assortment of maladaptive personality traits (Clark, 2007; Widiger & Trull, 2007). Two patients sharing the same personality disorder diagnosis can have few or even no traits in common (Trull & Durrett, 2005). Given the considerable variability of personality traits within each diagnostic category, it would be quite difficult to develop a uniform treatment program (Verheul, 2005). This fundamental limitation, however, would not apply to the domains of general personality structure. The five domains of the FFM are much better suited for treatment planning than the *DSM-5* Section II personality syndromes because they are considerably more distinct and homogeneous (Watson et al., 2016; Widiger & Presnall, 2013).

DSM-5 and *ICD-11* Dimensional Trait Model

A major step toward a conceptualization of personality disorders from the perspective of the

general personality structure occurred with *DSM-5* (APA, 2013). As noted earlier, the dimensional trait model included in Section III of *DSM*-5 for emerging measures and models (APA, 2013, p. 729), consists of the five broad domains of negative affectivity, detachment, psychoticism, antagonism, and disinhibition that are said to be aligned with the FFM domains of neuroticism, introversion, openness, antagonism, and low conscientiousness, respectively (APA, 2013). "These domains can be understood as maladaptive variants of the domains of the five-factor model of personality" (Krueger & Markon, 2014, p. 487). The authoritative measure of this dimensional trait model is provided by the Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012), which is now arguably the most heavily researched measure of maladaptive personality traits (Bagby, 2013; Krueger & Markon, 2014). Indeed, a considerable body of research has accumulated supporting the alignment of the DSM-5 trait model, as exemplified by measures such as the PID-5, with the FFM (e.g., De Fruyt et al., 2013; Few, Miller, Rothbaum, et al., 2013; Gore & Widiger, 2013; Griffin & Samuel, 2014; Suzuki, Samuel, Pahlen, & Krueger, 2015; Thomas et al., 2012; Watson, Stasik, Ro, & Clark, 2013; Wright & Simms, 2014) and with the Big Three domains of negative affectivity, positive affectivity, and constraint (e.g., Watson et al., 2013; Wright et al., 2012). The alignment of FFM openness with DSM-5 psychoticism has been less consistent, if not questionable (Griffin & Samuel, 2014; Watson, Nus, & Wu, in press; Watson, Stasik, Ro, & Clark, 2013; Wright & Simms, 2014), with the strength of the relationship though depending in part on how openness is conceptualized and/or assessed (Ashton & Lee, 2012; Chmielewski, Bagby, Markon, Ring, & Ryder, 2014; Crego & Widiger, 2017; Gore & Widiger, 2013; Moorman & Samuel, in press; Suzuki, Griffin, & Samuel, 2017).

Proposed for the eleventh edition of the World Health Organization's (WHO) *International Classification of Diseases* (*ICD-11*; First, Reed, Hyman, & Saxena, 2015; International Advisory Group for the Revision of *ICD-10* (2011) is another dimensional trait model, consisting of the five domains of negative affectivivity, detachment, dissociality, disinhibition, and anankastia (Tyrer, Reed, & Crawford, 2015), along with a borderline pattern specifier (anankastia is a broad domain of personality that includes perfectionism, emotional and behavioral constraint, and other obsessive-compulsive traits). Four of the five *ICD-11* domains are closely aligned, at least conceptually, with four of the five *DSM*-5 Section III domains (Mulder, Horwood, Tyrer, Carter, & Joyce, 2016); more specifically, *ICD-11* negative affectivity, detachment, dissocial, and disinhibition align with *DSM-5* Section III negative affectivity, detachment, antagonism, and disinhibition, respectively. The proposed *ICD-11* trait model does not include a domain of psychoticism as the *ICD-10* (WHO, 1992) personality disorder section does not include a schizotypal personality diagnosis (which is classified instead as a variant of schizophrenia). As expressed by Mulder et al. (2016), all five domains of the *ICD-11* proposal are considered to be aligned with the FFM: "Negative Affective with neuroticism, Detachment with low extraversion, Dissocial with low agreeableness, Disinhibited with low conscientiousness and Anankastic with high conscientiousness" (p. 85). This alignment has not yet been tested empirically, but, consistent with its European origins, Oltmanns and Widiger (in press) demonstrated a strong alignment with (a) the neuroticism, extraversion, and psychoticism domains of Eysenck's (1987) dimensional trait model (Eysenck psychoticism is substantively quite different from DSM-5 Section III psychoticism, as it does not specifically measure risk for psychotic symptomatology but rather traits of low agreeableness and low conscientiousness; Clark & Watson, 2008), as well

as (b) the neuroticism, extraversion, absorption, insensitivity, and orderliness domains of the 5-Dimensional Personality Test, which is an extension of Eysenck's model that is in turn aligned with the FFM (van Kampen, 2012).

Personality: The Base of HiTOP

As noted earlier, HiTOP is a dimensional model of psychopathology including mood, anxiety, psychotic, substance use, personality disorders, and other forms of mental disorder (Kotov et al., 2017). At the highest level there is a single general factor of psychopathology, beneath it three broad domains of internalizing, externalizing, and thought disorder (Forbes et al., in press; Lahey, Krueger, Rathous, Waldman, & Zald, 2017). At the level of six domains there is internalizing, thought disorder, disinhibited externalizing, antagonistic externalizing, and detachment (along with somatoform), which closely align with the five domains of the *DSM-5* Section III dimensional trait model as well five domains of general personality structure (Kotov et al., 2017). These factors are empirically observable even when symptoms of the mental disorders formerly designated as "Axis I" are included in factor analysis with symptoms of personality disorders (Markon, 2010; Wright & Simms, 2015). Table 1 provides the five personality disorder domains of HiTOP, along with the five domains of the DSM-5 Section III, the proposal for ICD-11 personality disorders, and general personality.

There are multiple ways in which personality and psychopathology can be related to one another. Personality and psychopathology can influence the presentation or appearance of one another (pathoplastic relationships), they can share a common, underlying etiology (spectrum relationships), and they can have a causal role in the development or etiology of one another (Bagby et al., 2017; Clark & Watson, 2008; Klein et al., 2011; Tackett & Mullins-Sweatt, in

press; Widiger & Smith, 2008). It is evident that the relationship of personality to personality disorder is largely a spectrum relationship (Widiger & Smith, 2008), and the same is perhaps largely true for personality and psychopathology (Clark & Watson, 2008). Whether the relationship to psychopathology is spectrum or causal, though, it is evident that personality has a fundamental role in predating and contributing to the development of different forms of psychopathology.

As suggested by Clark (2005), "temperament [is] a unifying basis for personality and psychopathology" (p. 505). Temperament provides the dispositional foundation for the eventual development of future episodes of many to most forms of psychopathology. Clark proposed the three fundamental temperaments of positive affectivity, negative affectivity, and disinhibition (Tellegen, 1993; Tellegen & Waller, 2008) for this foundation, consistent with their higher order location within the same structural model of personality and personality disorder (Kotov et al., 2017; Markon et al., 2005). As suggested more recently by Watson, Ellickson-Larew, Stanton, and Levin-Aspenson (2016), "personality provides a general structural framework for psychopathology" (p. 309).

One significant implication of this foundational contribution is that perhaps personality should itself become the focus of intervention, prior to the onset of evident psychopathology. As noted earlier, given the implications of personality for important life outcomes, both mentally and medically, there is a growing recognition, even a call, for identifying personality dispositions early in life (Klein et al., 2011; Lahey, 2009; Tackett & Lahey, 2017; Widiger & Trull, 2007). Early identification would be particularly useful if there was some form of intervention, once the trait evident vulnerability was identified. Indeed, Cuijpers et al. (2010) suggested, based on the

greater economic costs of neuroticism compared to common mental disorders, such as mood, anxiety, and substance use disorder, that "we should start thinking about interventions that focus not on each of the specific negative outcomes of neuroticism but rather on the starting point itself" (p. 1086). There has long been, and continues to be, a recognition, even a call, for having personality inform treatment planning for different forms of psychopathology (Harkness & Lilienfeld, 1997; Lengel et al., 2017). However, given the fundamental role for personality within the formation and structure of psychopathology (Kotov et al., 2017), personality should itself be the focus of treatment.

A defining feature of personality and personality disorder is temporal stability. As stated in DSM-5, a personality trait is a "tendency to feel, perceive, behave, and think in relatively consistent ways across time and across situations" (APA, 2013, p. 772). This temporal stability has indeed been documented empirically (Roberts & DelVecchio, 2008). However, this defining feature of personality has also been overstated and misunderstood. To some, personality traits reflect fixed entities that are unresponsive to environmental circumstances. This stereotypic understanding of personality and personality disorder has contributed to a mistaken belief that the treatment of personality disorders is not worth attempting and certainly not worth funding because personality does not change and is unresponsive to clinical interventions.

This stereotype, however, is simply not true. There is evident change in personality over time even without intervention (Roberts, Wood, & Caspi, 2008), and this change is typically for the better.[1] Specifically through adulthood, neuroticism decreases, agreeableness increases, and conscientiousness increases (Clark, 2009; Eaton, Krueger, & Oltmanns, 2011; McCrae et al., 1999; Roberts, Walton, & Viechtbauer, 2006; Soto, John, Gosling, & Potter, 2011). Moreover,

changes in general personality appear to lead to changes in personality disorder (Warner et al., 2004; Wright, Hopwood, & Zanarini, 2015).

Personality is indeed responsive to significant environmental events (e.g., Lüdtke, Roberts, Trautwein, & Nagy, 2011; Specht, Egloff, & Schmukle, 2011) and clinical interventions (Brown & Barlow, 2009; De Fruyt, Van Leeuwen, Bagby, Rolland, & Rouillon, 2006; Krasner et al., 2009; Piedmont, 2001; Reiss et al., 2014). A recent meta-analysis (Roberts et al., 2017) demonstrated that clinical interventions produced substantial declines in neuroticism (d = -0.57), along with relatively more modest increases in the other Big Five traits (ds ranged from 0.13 to 0.23), albeit it should be acknowledged that at least some of this change could reflect, at least in part, state-trait artifacts. Knutson et al. (1998) examined the effects of a selective serotonergic reuptake inhibitor (SSRI) on "normal" personality in a double-blind protocol involving 51 randomly assigned medically and psychiatrically healthy volunteers receiving either paroxetine (N=25) or placebo (N=26). None of the participants met currently, or throughout their lifetime to date, *DSM-IV-TR* diagnostic criteria for any mental disorder, as assessed with a semi-structured interview. None had ever received a psychotropic medication, had ever abused drugs, or had ever been in treatment for a mental disorder; nor were any currently seeking or desiring treatment for a mental disorder. Therefore, one could not attribute any subsequent changes in their personality traits to the effect of treating a co-occurring mood or anxiety disorder. The paroxetine (and placebo) treatment continued for 4 weeks. Knutson et al. reported that the SSRI administration (relative to placebo) significantly reduced scores on a self-report measure of neuroticism. The magnitude of change even correlated with plasma levels of SSRI within the SSRI treatment group. As concluded by Knutson et al. (1998), this was a clear "empirical demonstration that

chronic administration of a selective serotonin reuptake blockade can have significant personality and behavioral effects in normal humans in the absence of baseline depression or other psychopathology" (p. 378). The effect of serotonergic drug agents on traits of neuroticism has since been replicated a number of times (e.g., Fu et al., 2004; Harmer, Mackay, Reid, Cowen, & Goodwin, 2006; Harmer et al., 2009; Murphy, Yiend, Lester, Cowen, & Harmer, 2009; Quilty, Meusel, & Bagby, 2008; Tang et al., 2009). Reviews of the pharmacotherapy of neuroticism literature are provided by Ilieva (2015) and Soskin, Carl, Alpert, and Fava (2012). There are also suggestions of catecholaminergic agents for improved extraversion (McCabe, Mishor, Cowen, & Harmer, 2010; Tomarken, Dichter, Freid, Addington, & Shelton, 2004) and methylphenidates for low conscientiousness (Nigg et al., 2002). As suggested by Ilieva (2015), we can perhaps have an “enhancement of healthy personality through psychiatric medication” (p. 127).

Armstrong and Rimes (2016) have recently developed a mindfulness approach for the treatment of neuroticism and Barlow and colleagues (2011) have developed an empirically-validated Unified Protocol (UP) for the transdiagnostic treatment of neuroticism. Barlow et al. suggested that current psychological treatments, which have been driven largely by the fragmented categorical approach embodied in the APA diagnostic manual has become overly specialized, focusing on disorder-specific symptoms (Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2014). The UP protocol was initially designed to be transdiagnostic with respect to mood and anxiety disorders, but it has become evident that it is indeed “a cognitive-behavioral intervention designed to address core temperamental processes in emotional disorders” (Barlow et al., 2014, p. 357). The UP targets identification and modification of the strong negative

reactions to emotions that lead to problematic, avoidant coping across emotional disorders. "Amelioration of negative reactions to emotions in turn changes the frequency and intensity of future emotional experiences and thereby affects temperamental constructs" (Barlow et al., 2014, p. 357). Reducing levels of neuroticism could have quite substantial implications for public health care, given the impact of neuroticism on a diverse array of mental and medical disorders and quality of life, more generally. "The public-health implications of directly treating and even preventing the development of neuroticism would be substantial" (Barlow et al., 2014, p. 344). "Targeting neuroticism itself may represent a more efficient and cost-effective means of addressing the wide swath of public health problems associated with it" (Sauer-Zavala, Wilner, & Barlow, 2017, p. 192).

Other domains of personality are also receiving treatment consideration (Hopwood, in press; Presnall, 2013). Magidson, Roberts, Collado-Rodriguez, and Lejuez (2014) have made a similar recommendation for improving persons' levels of conscientiousness. "Efforts to change conscientiousness may hold great public health significance in enabling changes across key outcomes related to health, functioning, and quality of life" (Magidson et al., p. 1443). One's level of conscientiousness predicts a wide array of significant life outcomes, including occupational success, marital stability, academic achievement, and even health and longevity (Jackson & Roberts, 2017; Kern & Friedman, 2017). "Succinctly, conscientiousness is a personality trait that promotes better success in school, work, relationships, and physical and mental health" (Roberts, Hill, & Davis, 2017, p. 199). Similar benefits may also be achieved through the development of treatment protocols for antagonism, introversion (or detachment), and risky forms of openness (or unconventionality), as well as other approaches for the treatment

of neuroticism and low conscientiousness (Widiger & Presnall, 2013).

Conclusions

In sum, personality traits have substantial implications for important life outcomes, contributing to the development of many mental and medical problems, as well as more generally the quality of life. Consistent with this role, the structure of general personality provides a fundamental base for the HiTOP dimensional model of psychopathology. The time is perhaps right for the development of additional treatment protocols for improving personality, which may in turn contribute to substantial improvements in quality of life, as well as mental and physical health.

References

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington, VA: University of Vermont Research Center for Children, Youth, and Families.

American Psychiatric Association. (2001). *Practice guidelines for the treatment of patients with borderline personality disorder*. Washington, DC, American Psychiatric Association.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders.* (5th ed.). Washington, DC: American Psychiatric Association.

Andersen, A. M., & Bienvenu, O. J. (2011). Personality and psychopathology. *International Review of Psychiatry, 23*(3), 234-247.

Armstrong, L., & Rimes, K. A. (2016). Mindfulness-based cognitive therapy for neuroticism (stress vulnerability): A pilot randomized study. *Behavior Therapy*, *47*, 287-298.

Ashton, M. C., & Lee, K. (2012). Oddity, schizotypy/dissociation, and personality. *Journal of Personality, 80*, 113-134.

Bagby, R. M. (2013). Introduction to special issue on the Personality Inventory for DSM-5 (PID-5). *Assessment, 20*, 267-268.

Bagby, R. M., Uliaszek, A. A., Gralnick, T. M., & Al-Dajani, N. (2017). Axis I disorders. In T. A. Widiger (Ed.), *The Oxford handbook of the five factor model* (pp. 479-506). New York: Oxford University Press.

Barlow, D. H., Ellard, K. K., Fairholme, C., Farchione, T. J., Boisseau, C., Allen, L., & Ehrenreich-May, J. (2011). *Unified protocol for the transdiagnostic treatment of emotional disorders*. New York: Oxford University Press.

Barlow, D. H., Sauer-Zavala, S., Carl, J. R., Bullis, J. R., & Ellard, K. K. (2014). The nature, diagnosis, and treatment of neuroticism. Back to the future. *Clinical Psychological Science, 2*, 344-365.

Bornstein, R. F. (in press). The trait-type dialectic: Construct validity, clinical utility, and the diagnostic process. *Personality Disorders: Theory, Research, and Treatment*.

Brown, T. A. (2007). Temporal course and structural relationships among dimensions of temperament and *DSM–IV* anxiety and mood disorder constructs. *Journal of Abnormal Psychology, 116*, 313–328.

Brown, T. A., & Barlow, D. H. (2009). A proposal for a dimensional classification system based on the shared features of the *DSM–IV* anxiety and mood disorders: Implications for assessment and treatment. *Psychological Assessment, 21,* 256-271.

Campbell, W. K., & Miller, J. D. (2013). Narcissistic personality disorder and the five-factor model: Delineating narcissistic personality disorder, grandiose narcissism, and vulnerable narcissism. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the five-factor model* (3rd ed., pp. 133-146). Washington, DC: American Psychological Association.

Caspi, A., Houts, R. M., Belsky, D. W., Goldman-Mellor, C. J., Harrington, H., Israel, S., … Moffitt, T. E. (2014). The p factor: One general psychopathology factor in the structure of psychiatric disorders? *Clinical Psychological Science, 2*, 119-137.

Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology, 56*, 453-484.

Cassin, S.E., & von-Ranson, K.M. (2005). Personality and eating disorders: A decade in review. *Clinical Psychology Review, 25*, 895-916.

Chmielewski, M., Bagby, R. M., Markon, K., Ring, A. J., & Ryder, A. G. (2014). Openness to experience, intellect, schizotypal personality disorder, and psychoticism: Resolving the controversy. *Journal of Personality Disorders*, *28*(4), 483-499.

Chmielewski, M., Clark, L. A., Bagby, R. M., & Watson, D. (2015). Method matters: Understanding diagnostic reliability in *DSM-IV* and *DSM-5*. *Journal of Abnormal Psychology, 124*, 764-769.

Clark, L.A. (1992). Resolving taxonomic issues in personality disorders. *Journal of Personality Disorders*, *6*, 360–378.

Clark, L. A. (2005). Temperament as a unifying basis for personality and psychopathology. *Journal of Abnormal Psychology, 114*, 505-521.

Clark, L. A. (2007). Assessment and diagnosis of personality disorder: Perennial issues and an emerging reconceptualization. *Annual Review of Psychology, 57*, 277-257.

Clark, L. (2009). Stability and change in personality disorder. *Current Directions in Psychological Science, 18*, 27-31.

Clark, L. A., Vanderbleek, E., Shapiro, J., Nuzum, H., Allen, X., Daly, E., Kingsbury, T., Oiler, M., & Ro, E. (2015). The brave new world of personality disorder-trait specified: Effects of additional definitions on prevalence and comorbidity. *Psychopathology Review, 2*, 52-82.

Clark, L. A., & Watson, D. (2008). Temperament: An organizing paradigm for trait psychology. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 265–286). NY: Guilford Press.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological

Assessment Resources.

Crego, C., & Widiger, T. A. (2017). The conceptualization and assessment of schizotypal traits: A Comparison of the FFSI and PID-5. *Journal of Personality Disorders, 31,* 606-623.

Cuijpers, P., Smit, F., Penninx, B. W. J. H., de Graaf, R., ten Have, M., & Beekman, A. T. F. (2010). Economic costs of neuroticism: A population-based study. *Archives of General Psychiatry, 67,* 1086-1093.

Danner, D. D., Snowden, D. A., & Friesen, W. V. (2001). Positive emotions in early life and longevity: Findings from the Nun Study. *Journal of Personality and Social Psychology, 80,* 804-813.

De Clercq, B., De Fruyt, F., Van Leeuwen, K., & Mervielde, I. (2006). The structure of maladaptive personality traits in childhood: A step toward an integrative developmental perspective for *DSM-V*. *Journal of Abnormal Psychology, 115,* 639-657.

De Fruyt, F., & De Clercq, B. (2014). Antecedents of personality disorder in childhood and adolescence: Toward an integrative developmental model. *Annual Review of Clinical Psychology, 10,* 449-476.

De Fruyt, F., De Clerq, B., De Bolle, M., Willie, B., Markon, K. E., & Krueger, R. F. (2013). General and maladaptive traits in a five-factor framework for *DSM-5* in a university student sample. *Assessment, 20,* 295-307.

De Fruyt, F., Van Leeuwen, K., Bagby, R. M., Rolland, J. P., & Rouillon, F. (2006). Assessing and interpreting personality change and continuity in patients treated for major depression. *Psychological Assessment, 18,* 71-80.

De Pauw, S. S. (2017). Childhood personality and temperament. In T. A. Widiger (Ed.), *The*

Oxford handbook of the five-factor model (pp. 243-280). NY: Oxford University Press.

Derefinko, K., & Lynam, D. R. (2013). Psychopathy from the perspective of the five-factor model. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the five-factor model of personality* (3rd. ed., pp. 103-118). Washington, DC: American Psychological Association.

Eaton, N. R., Krueger, R. F., & Oltmanns, T. F. (2011). Aging and the structure and long-term stability of the internalizing spectrum of personality and psychopathology. *Psychology and Aging, 26,* 987-993.

Edmundson, M., & Kwapil, T. R. (2013). A five-factor model perspective of schizotypal personality disorder. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the five-factor model* (3rd ed., pp. 147-162). Washington, DC: American Psychological Association.

Eysenck, H. J. (1987). The definition of personality disorders and the criteria appropriate for their description. *Journal of Personality Disorders, 1*, 211-219.

Few, L. R., Miller, J. D., Rothbaum, A. O., Meller, S., Maples, J., Terry, D. P., ... & MacKillop, J. (2013). Examination of the Section III DSM-5 diagnostic system for personality disorders in an outpatient clinical sample. *Journal of Abnormal psychology, 122,* 1057-1069.

First, M. B., Reed, G. M., Hyman, S. E., & Saxena, S. (2015). The development of the ICD-11 clinical descriptions and diagnostic guidelines for mental and behavioural disorders. *World Psychiatry, 14,* 82-90.

Forbes, M. K., Kotov, R., Ruggero, C. J., Watson, D., Zimmerman, M., & Krueger, R. J. (in press). Delineating the joint hierarchical structure of clinical and personality disorders in an

outpatient psychiatric sample. *Comprehensive Psychiatry*.

Forbush, K. T., & Watson, D. (2013). The structure of common and uncommon mental disorders. *Psychological Medicine, 43*, 97-108.

Friedman, H. S., Tucker, J., Tomlinson-Keasey, C., Schwartz, J. Wingard, D., & Criqui, M. H. (1993). Does childhood personality predict longevity? *Journal of Personality and Social Psychology*, 65, 176-185.

Fu, C. H., Williams, S. C., Cleare, A. J., Brammer, M. J., Walsh, N. D., Kim, J., . . . Bullmore, E. T. (2004). Attenuation of the neural response to sad faces in major depression by antidepressant treatment: A prospective, event-related functional magnetic resonance imaging study. *Archives of General Psychiatry, 61,* 877-889.

Goldstein, B. L., Kotov, R., Perlman, G., Watson, D., & Klein, D. N. (in press). Trait and facet-level predictors of first-onset depressive and anxiety disorders in a community sample of adolescent girls. *Psychological Medicine.*

Gore, W. L., & Pincus, A. L. (2013). Dependency and the five-factor model. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the five-factor model* (3rd ed., pp. 163-177). Washington, DC: American Psychological Association.

Gore, W. L., & Widiger, T. A. (2013). The *DSM-5* dimensional trait model and five factor models of general personality, *Journal of Abnormal Psychology. 122*, 816-821.

Griffin, S. A., & Samuel, D. B. (2014). A closer look at the lower-order structure of the Personality Inventory for *DSM-5*: Comparison with the Five-Factor Model. *Personality Disorders: Theory, Research, and Treatment, 5*, 406-412.

Griffith, J. W., Zinbarg, R. E., Craske, M. G., Mineka, S., Rose, R. D., Waters, A. M., & Sutton,

J. M. (2010). Neuroticism as a common dimension in the internalizing disorders. *Psychological medicine, 40,* 1125-1136.

Hakulinen, C., Elovainio, M., Pulkki-Raback, L., Virtanen, M., Kivimaki, M.l & Jokela, M. (2015). Personality and depressive symptoms: Individual participant meta-analysis of 10 cohort studies. *Depression and Anxiety, 3*2, 461-470.

Harkness, A. R., & Lilienfeld, S. O. (1997). Individual differences science for treatment planning: Personality traits. *Psychological Assessment, 9*, 349–360.

Harmer, C. J., Mackay, C. E., Reid, C. B., Cowen, P. J., & Goodwin, G. M. (2006). Antidepressant drug treatment modifies the neural processing of nonconscious threat cues. *Biological Psychiatry, 59,* 816-820.

Harmer, C. J., O'Sullivan, U., Favaron, E., Massey-Chase, R., Ayres, R., Reinecke, A., . . . Cowen, P. J. (2009). Effect of acute antidepressant administration on negative affective bias in depressed patients. *American Journal of Psychiatry, 166,* 1178-1184.

Heller, D., Watson, D., & Ilies, R. (2004). The role of person versus situation in life satisfaction: A critical examination. *Psychological Bulletin, 130,* 574-600.

Hettema, J. M., Neale, M.C., Myers, J. M., Prescott, C. A., & Kendler, K. S. (2006). A population-based twin study of the relationship between neuroticism and internalizing disorders. *American Journal of Psychiatry, 163,* 857-864.

Hopwood, C. J. (in press). A framework for treating DSM-5 alternative model for personality disorder features. *Personality and Mental Health*.

Hyman, S. (2010). The diagnosis of mental disorders: The problem of reification. *Annual Review of Clinical Psychology, 6,* 155–179.

Ilieva, I. (2015). Enhancement of healthy personality through psychiatric medication: The influence of SSRIs on neuroticism and extraversion. *Neuroethics, 8*, 127-137.

International Advisory Group for the Revision of ICD-10 (2011). A conceptual framework for the revision of ICD-10 classification of mental and behavioral disorders. *World Psychiatry, 10*, 86-92.

Jackson, J. J., & Roberts, B. W. (2017). Conscientiousness. In T. A. Widiger (Ed.), *The Oxford handbook of the five factor model* (pp. 133-147). New York: Oxford University Press.

Jeronimus, B. F., Kotov, R., Riese, H., & Ormel, J. (2016). Neuroticism's prospective association with mental disorders halves after adjustment for baseline symptoms and psychiatric history, but the adjusted association hardly decays with time: a meta-analysis on 59 longitudinal/prospective studies with 443 313 participants. *Psychological Medicine*, *46*, 2883-2906.

Kern, M. L., & Friedman, H. S. (2017). Health psychology. In T. A. Widiger (Ed.), *The Oxford handbook of the five factor model* (pp. 403-422). New York: Oxford University Press.

Klein, D. N., Kotov, R., & Bufferd, S. J. (2011). Personality and depression: Explanatory models and review of the evidence. *Annual Review of Clinical Psychology*, *7*, 269.

Knutson, B., Wolkowitz, O.M., Cole, S.W., Chan, T., Moore, E.A, Johnson, R.C., Terpstra, J., Turner, R.A., Reus, V.I. (1998). Selective alteration of personality and social behavior by serotonergic intervention. *American Journal of Psychiatry, 155*, 373-379.

Kotov, R. (2016). The quantitative classification of mental illness: Emerging solution to boundary problems. In E. Bromet (Ed.), *Long-Term Outcomes in Psychopathology Research: Rethinking the Scientific Agenda* (pp. 140-157). New York, NY: Oxford

University Press.

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

Kotov, R., Krueger, R.F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, M., . . . Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology: A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology, 126,* 454-477.

Kotov, R., Ruggero, C. J., Krueger, R. F., Watson, D., Yuan, Q., & Zimmerman, M. (2011). New dimensions in the quantitative classification of mental illness. *Archives of General Psychiatry, 68,* 1003-1011.

Kraemer, H. C., Noda, A., & O'Hara, R. (2004). Categorical versus dimensional approaches to diagnosis: methodological challenges. *Journal of Psychiatric Research, 38,* 17-25.

Krasner, M. S., Epstein, R. M., Beckman, H., Suchman, A. L., Chapman, B., Mooney, C. J., & Quill, T. E. (2009). Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *Journal of the American Medical Association*, *302*(12), 1284-1293.

Krueger, R. F., & Eaton, N. R. (2010). Personality traits and the classification of mental disorders: Toward a complete integration in DSM-V and an empirical model of psychopathology. *Personality Disorders: Theory, Research, and Treatment*, *1*, 97-118.

Krueger R. F., Eaton, N. R., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2011). Personality in DSM-5: Helping delineate personality disorder content and framing the meta-structure. *Journal of Personality Assessment*, *93,* 325-331.

Krueger, R. F., Hicks, B. M., Patrick, C. J., Carlson, S. R., Iacono, W. G., & McGue, M. (2002). Etiologic connections among substance dependence, antisocial behavior and personality: Modeling the externalizing spectrum. *Journal of Abnormal Psychology*, *111*, 411-424.

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

Krueger, R. F., & Markon, K. E. (2006). Reinterpreting comorbidity: A model-based approach to understanding and classifying psychopathology. *Annual Review of Clinical Psychology, 2*, 111-133.

Krueger, R. F., & Markon, K. E. (2011). A dimensional-spectrum model of psychopathology: Progress and opportunities. *Archives of General Psychiatry, 68*(1), 10-11.

Krueger, R. F., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychological Medicine, 42*, 1879-1890. .

Kupfer, D. J., First, M. B. & Regier, D. A. (Eds.). (2002). Introduction. In D. J. Kupfer, M. B. First, & D. A. Regier (Eds.), *A research agenda for DSM-V* (pp. xv-xxiii). Washington, DC: American Psychiatric Association.

Lahey, B. B. (2009). Public health significance of neuroticism. *American Psychologist, 64*, 241-256.

Lahey, B. B., Applegate, B., Hakes, J. K., Zald, D. H., Hariri, A. R., & Rathouz, P. J. (2012). Is there a general factor of prevalent psychopathology during adulthood? *Journal of Abnormal Psychology, 121*, 971-977.

Lahey, B. B., Krueger, R. F., Rathouz, P. J., Waldman, I. D., & Zald, D. H. (2017). A hierarchical causal taxonomy of psychopathology across the life span. *Psychological Bulletin, 143,* 142-186.

Lahey, B. B., Van Hulle, C. A., Singh, A. L., Waldman, I. D., & Rathouz, P. J. (2011). Higher-order genetic and environmental structure of prevalent forms of child and adolescent psychopathology. *Archives of General Psychiatry, 68*, 181-189.

Lahey, B. B., Rathouz, P. J., Van Hulle, C., Urbano, R. C., Krueger, R. F., Applegate, B., . . . Waldman, I. D. (2008). Testing structural models of *DSM-IV* symptoms of common forms of child and adolescent psychopathology. *Journal of Abnormal Child Psychology, 36,* 187-206.

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO Personality Inventory. *Multivariate Behavioral Research, 39*, 329-358.

Lengel, G. J., Helle, A. C., DeShong, H. L., Meyer, N. A., & Mullins-Sweatt, S. N. (2016). Translational applications of personality science for the conceptualization and treatment of psychopathology. *Clinical Psychology: Science and Practice, 23*(3), 288-308.

Loranger, A. W. (1990). The impact of DSM-III on diagnostic practice in a university hospital. *Archives of General Psychiatry, 47*, 672-675.

Lüdtke, O., Roberts, B. W., Trautwein, U., & Nagy, G. (2011). A random walk down university avenue: Life paths, life events, and personality trait change at the transition to university life. *Journal of Personality and Social Psychology, 101,* 620-637.

Lynam, D. R., Leukefeld, C., & Clayton, R. R. (2003). The contribution of personality to the overlap between antisocial behavior and substance use/misuse. *Aggressive Behavior, 29,*

316–331.

Lynam, D. R., & Widiger, T. A. (2001). Using the five factor model to represent the *DSM-IV* personality disorders: An expert consensus approach. *Journal of Abnormal Psychology, 110*, 401-412.

Lynam, D. R., & Widiger, T. A. (2007). Using a general model of personality to understand sex differences in the personality disorders. *Journal of Personality Disorders, 21*, 583-602.

Magidson, J. F., Roberts, B. W., Collado-Rodriguez, A., & Lejuez, C. W. (2014). Theory-driven intervention for changing personality: Expectancy value theory, behavioral activation, and conscientiousness. *Developmental Psychology, 50*, 1442-1450.

Malouff, J. M., Thorsteinsson, E. B., Schutte, N. S., Bhullar, N., & Rooke, S. E. (2010). The Five-Factor Model of personality and relationship satisfaction of intimate partners: A meta-analysis. *Journal of Research in Personality, 44.* 124-127.

Malouff, J. M., Thorsteinsson, E. B., Rooke, S. E., & Schutte, N. S. (2007). Alcohol involvement and the Five-Factor Model of personality: A meta-analysis. *Journal of Drug Education, 37*, 277-294.

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

Malouff, J. M, Thorsteinsson, E. B., & Schutte, N. S. (2006). The Five-Factor Model of personality and smoking: A meta-analysis. *Journal of Drug Education, 36*, 47-58

Markon, K. E. (2010). Modeling psychopathology structure: a symptom-level analysis of Axis I and II disorders. *Psychological Medicine, 40*, 273-288.

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

McCabe, C., Mishor, Z., Cowen, P. J., & Harmer, C. J. (2010). Diminished neural processing of aversive and rewarding stimuli during selective serotonin reuptake inhibitor treatment. *Biological Psychiatry, 67*, 439-445.

McCrae, R. R., Costa, P. T., Lima, M. P., Simoes, A., Ostendorf, F., Algleitner, A., . . . Piedmont, R. L. (1999). Age differences in personality across the adult life span: Parallels in five cultures. *Developmental Psychology, 35*, 466-477.

Mervielde, I., De Clercq, B., De Fruyt, F., & Van Leeuwen, K. (2005). Temperament, personality, and developmental psychopathology as childhood antecedents of personality disorders. *Journal of Personality Disorders*, *19*(2), 171-201.

Meyer, G.J., Finn, S.E., Eyde, L.D., Kay, G.G., Moreland, K.L., Dies, R.R., et al. (2001). Psychological testing and psychological assessment. *American Psychologist, 56*, 128–165.

Mischel, W. (1968). *Personality and assessment*. London, England: Wiley.

Moorman, E. L., & Samuel, D. B. (in press). Schizotypal cognition-perception and openness: Alternative conceptualizations and assessments. *Psychological Assessment*.

Mulder, R. T., Horwood, J., Tyrer, P., Carter, J, & Joyce, P. R. (2016). Validating the proposed ICD-11 domains. *Personality and Mental Health,* 10m 84-95.

Mullins-Sweatt, S. N., & Lengel, G. J. (2012). Clinical utility of the five-factor model of personality disorder. *Journal of Personality, 80*, 1615-1639.

Mullins-Sweatt, S. N., Lengel, G. J., & DeShong, H. L. (2016). The importance of considering clinical utility in the construction of a diagnostic manual. *Annual Review of Clinical Psychology, 12,* 133-155.

Munafo, M. R., Zetteler, J. I., & Clark, T. G. (2007). Personality and smoking status: A meta-analysis. *Nicotine and Tobacco Research, 9*, 405-413.

Murphy, S. E., Yiend, J., Lester, K. J., Cowen, P. J., & Harmer, C. J. (2009). Short-term serotonergic but not noradrenergic antidepressant administration reduces attentional vigilance to threat in healthy volunteers. *International Journal of Neuropsychopharmacology, 12,* 169-179.

Nettle, D. (2006). The evolution of personality variation in humans and other animals. *American Psychologist, 61*, 622-631.

Newton-Howes, G., Chanen, A., & Clark, L. A. (2015). Personality disorder across the life course. *Lancet, 385*, 727-734.

Nigg, J. T., John, O. P., Blaskey, L. J., Huang-Pollock, C. L., Willicut, E. G., Hinshaw, S. P., & Pennington, B. (2002). Big five dimensions and ADHD symptoms:Links between personality traits and clinical symptoms. *Journal of Personality and Social Psychology, 83*, 451-469.

O'Connor, B. P. (2002). A quantitative review of the comprehensiveness of the five-factor model in relation to popular personality inventories. *Assessment, 9*, 188-203.

O'Connor, B. P. (2005). A search for consensus on the dimensional structure of personality disorders. *Journal of Clinical Psychology, 61*, 323-345.

Oltmanns, J. R., & Widiger, T. A. (in press). A self-report measure for the ICD-11 dimensional trait model proposal: The Personality Inventory for ICD-11. *Psychological Assessment.*

Oltmanns, T. F., & Powers, A. D. (2012). Gender and personality disorders. In T. A. Widiger (Ed.), *The Oxford handbook of personality disorders* (pp. 206-218). New York: Oxford University Press**.**

Ozer, D. J. & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57,* 401-421.

Piedmont, R. L. (2001). Cracking the plaster cast: Big Five personality change during intensive outpatient counseling. *Journal of Research in Personality, 35,* 500-520.

Poropat, A. E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin, 135,* 322-338.

Presnall, J. (2013). Disorders of personality: Clinical treatment from a five factor model perspective. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the five-factor model of personality* (pp. 409-432). Washington, DC: American Psychological Association.

Quilty, L. C., Meusel, L. A., & Bagby, R. M. (2008). Neuroticism as a mediator of treatment response to SSRIs in major depressive disorder. *Journal of Affective Disorders, 111,* 67-73.

Reiss, D., Eccles, J. S., & Nielsen, L. (2014). Conscientiousness and public health: Synthesizing current research to promote healthy aging. *Developmental Psychology, 50,* 1303-1314.

Roberts, B. W., Hill, P. L., & Davis, J. P. (2017). How to change conscientiousness: The sociogenomic trait intervention model. *Personality Disorders: Theory, Research, and Treatment, 8,* 199-205.

Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2007). The power of personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science, 2,* 313-345.

Roberts, B. W., Luo, J., Briley, D. A., Chow, P. I., Su, R., & Hill, P. L. (2017). A systematic review of personality trait change through intervention. *Psychological Bulletin, 143,* 117-141.

Roberts, B. W.,Walton, K., & Viechtbauer, W. (2006). Pattterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin, 132,* 1-25.

Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 375-398). NY: Guilford Press.

Rosenthal, R. (1990). How are we doing in soft psychology? *American Psychologist, 45,* 775-777.

Rounsaville, B. J., Alarcon, R. D., Andrews, G., Jackson, J. S., Kendell, R. E., Kendler, K. S., & Kirmayer, L. J. (2002). Toward *DSM-V*: Basic nomenclature issues. In D. J. Kupfer, M. B. First, & D. A. Regier (Eds.), *A research agenda for DSM-V* (pp. 1-30). Washington, DC: American Psychiatric Press.

Sackett, P. R., & Walmsley, P. T. (2014). Which personality attributes are most important in the workplace? *Perspectives on Psychological Science, 9,* 538-551.

Samuel, D. B. (2011). Assessing personality in the DSM-5: The utility of bipolar constructs. *Journal of Personality Assessment, 93,* 390-397.

Samuel, D. B., Carroll, K.M., Rounsaville, B.J., & Ball, S.A. (2013). Personality disorders as maladaptive, extreme variants of normal personality: Borderline personality disorder and neuroticism in a substance using sample. *Journal of Personality Disorders, 27,* 625-635.

Samuel, D. B., Simms, L. J., Clark, L. A., Livesley, W. J., & Widiger, T. A. (2010). An item response theory integration of normal and abnormal personality scales. *Personality disorders: Theory, Research, and Treatment, 1*, 5-21.

Samuel, D. B., & Widiger, T. A. (2008). A meta-analytic review of the relationships between the five-factor model and *DSM-IV-TR* personality disorders: A facet level analysis. *Clinical Psychology Review, 28,* 1326-1342.

Sauer-Zavala, S., Wilner, J. G., & Barlow, D. H. (2017). Addressing neuroticism in psychological treatment. *Personality Disorders: Theory, Research, and Treatment, 8,* 191-198.

Saulsman, L. M., & Page, A. C. (2004). The five-factor model and personality disorder empirical literature: A meta-analytic review. *Clinical Psychology Review, 23,* 1055-1085.

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

Shiner, R. L. (2005). A developmental perspective on personality disorders: Lessons from research on normal personality development in childhood and adolescence. *Journal of Personality Disorders, 19,* 202-210.

Skodol, A. E. (2012). Personality disorders in DSM-5. *Annual Review of Clinical Psychology, 8,* 317-344.

Soskin, D. P., Carl, J. R., Alpert, J., & Fava, M. (2012). Antidepressant effects on emotional temperament: Toward a biobehavioral research paradigm for major depressive disorder. *CNS Neuroscience & Therapeutics, 18,* 441-451.

Soto, C. J., John, O. P., Gosling, S. D., & Potter, J. (2011). Age differences in personality traits from 10 to 65: Big Five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology, 100*(2), 330-348.

Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the Big Five. *Journal of Personality and Social Psychology, 101*, 862-882.

Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin, 134,* 138-161.

Stepp, S. D., Yu, L., Miller, J. D., Hallquist, M. N., Trull, T. J., & Pilkonis, P. A. (2012). Integrating competing dimensional models of personality: Linking the SNAP, TCI, and NEO using item response theory. *Personality Disorders: Theory, Research, and Treatment, 3,* 107-126.

Suzuki, T., Griffin, S. A., & Samuel, D. B. (2017). Capturing the *DSM-5* alternative personality disorder model traits in the five-factor model's nomological net. *Journal of Personality, 85*, 220-231.

Suzuki, T., Samuel, D. B., Pahlen, S., & Krueger, R. F. (2015). *DSM-5* alternative personality disorder model traits as maladaptive extreme variants of the five-factor model: An item-response theory analysis. *Journal of Abnormal Psychology, 124*, 343-354.

Tackett, J. L., & Lahey, B. Neuroticism. (2017). In T. A. Widiger (Ed.), *The Oxford handbook of the five factor model* (pp. 39-56). NY: Oxford University Press.

Tackett, J. L., & Mullins-Sweatt, S. (in press). Personality and psychopathology. In O. P. John & R. Robins (Eds.). *Handbook of Personality: Theory and Research* (4th ed.) Guilford Press, New York, NY

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

Tang, T. Z., DeRubeis, R. J., Hollon, S. D., Amsterdam, J., Shelton, R., & Schalet, B. (2009). Personality change during depression treatment: a placebo-controlled trial. *Archives of General Psychiatry, 66*, 1322-1330.

Tellegen, A., (1993). Folk concepts and psychological concepts of personality and personality disorder. *Psychological Inquiry, 4*, 122-130.

Tellegen, A., & Waller, N. G. (2008). Exploring personality through test construction: Development of the Multidimensional Personality Questionnaire. In G. J. Boyle, G.

Mathews, & D. H. Saklofske (Eds.), *Handbook of personality theory and assessment, Vol. 2: Personality measurement and testing* (pp. 261-292). London, UK: Sage.

Thomas, K. M., Yalch, M. M., Krueger, R. F., Wright, A. G. C., Markon, K. E., & Hopwood, C. J. (2012). The convergent structure of *DSM-5* personality trait facets and Five-Factor Model trait domains. *Assessment, 12*, 308-311.

Tomarken, A. J., Dichter, G. S., Freid, C., Addington, S., & Shelton, R. C. (2004). Assessing the effects of bupropion SR on mood dimensions of depression. *Journal of Affective Disorders, 78*, 235-241.

Trull, T. J., & Brown, W. C. (2013). Borderline personality disorder: A five-factor model perspective. In T. A. Widiger & P. T. Costa (Eds.), *Personality disorders and the five-factor model* (3rd ed., pp. 118-132). Washington, DC: American Psychological Association.

Trull, T. J., & Durrett, C. A. (2005). Categorical and dimensional models of personality disorder. *Annual Review of Clinical Psychology, 1*, 355-380.

Tyrer, P. (2015). Personality dysfunction is the cause of recurrent non-cognitive mental disorder: a testable hypothesis. *Personality and Mental Health, 9,* 1-7.

Tyrer, P., Reed, G. M. & Crawford, M. J. (2015). Classification, assessment, prevalence, and effect of personality disorder. *Lancet, 385*, 717-726.

van Kampen, D. (2012). The 5-Dimensional Personality Test (5DPT): Relationships with two lexically based instruments and the validation of the absorption scale. *Journal of Personality Assessment, 94,* 92-101.

Verheul, R. (2005). Clinical utility for dimensional models of personality pathology. *Journal of Personality Disorders, 19,* 283-302.

Warner, M. B., Morey, L. C., Finch, J. F., Gunderson, J. G., Skodol, A. E., Sanislow, C. A., . . ., & Grilo, C.M. (2004). The longitudinal relationship of personality traits and disorder. *Journal of Abnormal Psychology, 113,* 217–227.

Walton, K. E., Roberts, B. W., Krueger, R. F., Blonigen, D. M., & Hicks, B. M. (2008). Capturing abnormal personality with normal personality inventories: An item response theory approach. *Journal of Personality, 76,* 1623-1648.

Watson, D., Clark, L. A., & Chmielewski, M. (2008). Structures of personality and their relevant to psychopathology: II. Further articulation of a comprehensive unified trait structure. *Journal of Personality, 76,* 1485-1522.

Watson, D., Ellickson-Larew, S., Stanton, K., & Levin-Aspenson, H. (2016). Personality provides a general structural framework for psychopathology: Commentary on "Translational applications of personality science for the conceptualization and treatment of psychopathology." *Clinical Psychology: Science and Practice*, *23,* 309-313.

Watson, D., & Naragon-Gainey, K. (2014). Personality, emotions, and the emotional disorders. *Clinical Psychological Science*, *2,* 422-442.

Watson, D., Nus, E., & Wu, K. D. (in press). Development and validation of the Faceted Inventory of the Five-Factor Model (FI-FFM). *Assessment*.

Watson, D., Stasik, S. M., Ro, E., & Clark, L. A. (2013). Integrating normal and pathological personality: Relating the *DSM-5* trait-dimensional model to general traits of personality. *Assessment, 20,* 312-326.

Widiger, T. A. (2009). Neuroticism. In: M. R. Leary & R. H. Hoyle (Eds.). *Handbook of individual differences in social behavio*r (pp. 129-146). New York: Guilford.

Widiger, T. A. (in press). Bruno Klopfer Award address: Five factor model personality disorder scales. *Journal of Personality Assessment*.

Widiger, T. A., & Clark, L. A. (2000). Toward *DSM-V* and the classification of psychopathology. *Psychological Bulletin, 126,* 946–963.

Widiger, T. A., & Crego, C. (in press). Mental disorders as discrete clinical conditions: Dimensional versus categorical classification. In D. Beidel, C. Frueh, & M. Hersen (Eds.), *Adult psychopathology and diagnosis* (8th ed.). NY: Wiley.

Widiger, T., & Frances, A. (1985). The DSM-III personality disorders: Perspectives from psychology. *Archives of General Psychiatry, 42,* 615–623.

Widiger, T. A., Gore, W. L., Crego, C., Rojas, S. L., & Oltmanns, J. R. (2017). Five factor model and personality disorder. In T. A. Widiger (Ed.). *The Oxford handbook of the five-factor model* (pp. 449-478). NY: Oxford University Press.

Widiger, T. A., & Oltmanns, J. R. (2017). Neuroticism is a fundamental domain of personality with enormous public health implications. *World Psychiatry, 16,* 144-145.

Widiger, T. A., & Presnall, J. R. (2013). Clinical application of the five-factor model. *Journal of Personality, 81,* 515-527.

Widiger, T. A., & Simonsen, E. (2005). Alternative dimensional models of personality disorder: Finding a common ground. *Journal of Personality Disorders, 19,* 110-130.

Widiger, T. A., & Smith, G. T. (2008). Personality and psychopathology. In O. P. John, R. Robins, & L. A. Pervin (Eds.). *Handbook of Personality: Theory and Research* (3rd ed., pp. 743-769) Guilford Press, New York, NY.

Widiger, T. A., & Trull, T. J. (2007). Plate tectonics in the classification of personality disorder: Shifting to a dimensional model. *American Psychologist, 62*, 71-83.

Wiggins, J. S. (1982). Circumplex models of interpersonal behavior in clinical psychology. In P. Kendall & J. N. Butcher (Eds.), *Handbook of research methods in clinical psychology* (pp. 183–221).New York: Wiley.

Williams, T. F., & Simms, L. J. (in press). Personality traits and maladaptivity: unipolarity vs. bipolarity. *Journal of Personality*.

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders. Clinical descriptions and diagnostic guidelines.* Geneva, Switzerland: Author.

Wright, A. G. C., & Simms, L J. (2014). On the structure of personality disorder traits: Conjoint analysis of the CAT-PD, PID-5, and NEO PI-3 trait models. *Personality Disorders: Theory, Research, and Treatment, 5*, 43-54.

Wright, A. G., Hopwood, C. J., & Zanarini, M. C. (2015). Associations between changes in normal personality traits and borderline personality disorder symptoms over 16 years. *Personality Disorders: Theory, Research, and Treatment*, *6*, 1-16.

Wright, A. G. C., & Simms, L. J. (2015) A metastructural model of mental disorders and pathological personality traits. *Psychological Medicine*, *45*, 2309-2319.

Wright, A. G., Thomas, K. M., Hopwood, C. J., Markon, K. E., Pincus, A. L., & Krueger, R. F. (2012). The hierarchical structure of *DSM-5* pathological personality traits. *Journal of Abnormal Psychology*, *121*, 951-957.

Footnotes

[1]Stating that an increase in (for instance) agreeableness and conscientiousness is a "change for the better" is not meant to imply that there are no maladaptive variants of agreeableness or conscientiousness. There is indeed a good deal of theoretical and empirical literature to suggest that there are maladaptive variants of extraversion, openness, agreeableness, conscientiousness, and low neuroticism (Nettle, 2006; Samuel, 2011; Widiger, in press). However, there is also disagreement as to the extent, importance and/or strength of these maladaptive variants (Krueger et al., 2011; Williams & Simms, in press). In any case, with respect to the cited literature indicating increases in (for instance) agreeableness and conscientiousness over time (e.g., Eaton et al., 2011; McCrae et al., 1999; Roberts et al., 2008; Soto et al., 2011), the measures that were used would likely have included little to no assessment of maladaptive agreeableness or conscientiousness, such that the increases would indeed suggest improvement in personality functioning.

Table 1

HiTOP, Personality Disorder, and Personality

HiTOP	**DSM-5 Section III**	**ICD-11 Proposal**	**Personality**
Internalizing	Negative Affectivity	Negative Affectivity	Neuroticism (Negative Affectivity)
Thought Disorder	Psychoticism	- - - - - - - - - - - -	Opennness (Unconventionality)
Disinhibited Externalizing	Disinhibition	+Disinhibition -Anankastic	-Conscientiousness (-Constraint)
Antagonistic Externalizing	Antagonism	Dissocial	Antagonism
Detachment	Detachment	Detachment	Introversion

Note. HiTOP = Hierarchical Taxonomy Of Psychopathology (Kotov et al., 2017); *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (APA, 2013); *ICD-11* = *International Classification of Diseases*, 11th edition (First et al., 2015).