UNIVERSITY OF AMSTERDAM

UvA-DARE (Digital Academic Repository)

General Personality Disorder: A study into the core components of personality pathology

Berghuis, H.

Publication date
2014

Document Version
Final published version

Link to publication

Citation for published version (APA):
Berghuis, H. (2014). *General Personality Disorder: A study into the core components of personality pathology*.

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (https://dare.uva.nl)

Download date:24 Aug 2022

General Personality Disorder

A study into the core components of personality pathology

Han Berghuis

General Personality Disorder

A study into the core components of personality pathology

Han Berghuis

© Han Berghuis, 2014

Cover: Han, 1989
Layout cover: Nikki Vermeulen, Ridderprint BV
Printed by: Ridderprint BV, Ridderkerk, the Netherlands

ISBN: 978-90-5335-886-3

The study and publication of this dissertation was financially supported by Stichting De Open Ankh, Soesterberg en GGz Centraal, Amersfoort.

GENERAL PERSONALITY DISORDER

A study into the core components of personality pathology

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
Prof. dr. D.C. van den Boom
ten overstaan van een door het college voor promoties
ingesteld commissie,
in het openbaar te verdedigen in de Agnietenkapel
op woensdag 1 oktober 2014, te 12:00 uur

door

Johannes Guido Berghuis
geboren te Grootegast

Promotiecommissie

Promotores:	Prof. dr. R. Verheul Prof. dr. J.H. Kamphuis
Overige leden:	Prof. dr. A.R. Arntz Prof. dr. W. van den Brink Prof. dr. J.J.M. Dekker Prof. dr. P. Luyten

Faculteit der Maatschappij- en Gedragswetenschappen

Voor Ina

Contents

Part III

1

Introduction

The need for a model of core features of personality disorder

This thesis is a study into the core components of personality pathology: in search of General (dimensions of) Personality Disorder. At first glance, this quest may seem like a *contradictio in terminis*, the search for specific aspects of something generic. At the same time a definition of core aspects of personality pathology is important in the context of diagnosis and classification of personality disorders (PDs).

First, an overarching definition of PD is necessary, in order to distinguish personality disorders from other mental disorders. This definition should include the essential characteristics across a wide range of specific types of PD. Second, the clinical value of assessing general features of PD and distinguishing a severity dimension of (the core features of) PD is emphasized by many authors (e.g., Bender, Morey & Skodol, 2011; Bornstein, 1998; Bornstein & Huprich, 2011; Hopwood, 2011; Kamphuis & Noordhof, 2009; Kernberg, 1984; Livesley, 1998, 2003, 2007; Parker et al., 2004; Pincus, 2005; Rutter, 1987; Trull, 2005; Tyrer & Johnson, 1996; Verheul et al., 2008; Wakefield, 2008; Widiger & Trull, 2007).

In the last decade and in the run up for DSM-5, the limitations of the DSM-IV have been well documented, criticizing for instance the lack of empirical support for the categorical model, inadequate coverage, excessive comorbidity, and limited clinical utility (Bernstein, Iscan & Maser, 2007; Clark, 2007; Krueger & Markon, 2006; Samuel, 2011; Westen & Shedler, 2000). Not only the categorical definitions of *specific* PDs are criticized, also the General Diagnostic Criteria for a PD of the DSM-IV are appraised as too general and insufficiently specific for the diagnosis of PD (Livesley & Jang, 2000; Wakefield, 2008). Moreover, the absence of a severity dimension of personality dysfunction in the DSM-IV is also referred to in this context, since growing evidence suggests that severity of personality pathology is the best predictor of therapeutic outcome for PD patients (Bornstein, 1998; Hopwood et al., 2011).

Dimensional trait models are suggested as alternative models to the DSM-model to diagnose PD (Clark, 2007; Kreuger & Eaton, 2010; Livesley, 2007; Widiger & Simonsen, 2005). The proposals for radical change in the diagnosis of PDs by the Personality & Personality Disorders workgroup for the DSM-5 (APA, 2010, 2011) can be regarded as a response to the fundamental criticism of the DSM-IV.

In the present thesis models of General PD are explored, empirically tested, and related to models of personality traits. The selected models are conceptually related to the Alternative DSM-5 model for PD (APA, 2013).

Alternative models of General PD

In this thesis various models of core features of PD are investigated. See Table 1 for an overview and comparison. According to these models, PD is best conceptualized as a type of functional impairment independently of specific personality traits, and PD is defined as a failure of the adaptive functions of personality. As can be seen from the Table, the alternative models show considerable overlap and consistency. This paragraph provides some detail about each of the core features models.

First, Livesley and colleagues (1994, 1998, 2000, 2003) suggested that PD occurs when "*the structure of personality prevents the person from achieving adaptive solutions to universal life tasks"* (Livesley, 1998, p. 141). This conceptualization was expressed in clinically more relevant terms as: 1) Failure to establish stable and integrated representations of self and others; 2) Interpersonal dysfunction as indicated by the failure to: (i) develop the capacity for intimacy, to function adaptively as an attachment figure, and/or to establish the capacity for affiliative relationships; and (ii) function adaptively in the social group as indicated by the failure to develop the capacity for prosocial behavior and/or cooperative relationships. These deficits are considered enduring failures that can be traced to adolescence or early adulthood and are not due to another pervasive and chronic mental disorder such as a cognitive or schizophrenic or substance use disorder. Livesley operationalized this adaptive failure model in a self-report assessment instrument, the *General Assessment of Personality Disorder* (GAPD; Livesley, 2006; Berghuis, 2007; Berghuis, Kamphuis, Verheul, Larstone & Livesley, 2013; Hentschell & Livesley, 2013). The GAPD is one of the main instruments used in this thesis to measure general personality dysfunction.

Another attempt to capture the core features of PD is described by Verheul et al. (2008). Based on two consensus group meetings of 10 clinical experts, 25 facets of adaptive personality functioning were identified. Further research with these facets

Table 1. Overview and comparison of alternative models of structural and functional impairment of personality disorders used in this study

Livesley (2003)	Verheul et al. (2008)	Kernberg (1984)	DSM-5 (APA, 2013)
Selfpathology	Identity integration	Identity integration	Identity
	Selfcontrol	Defense mechanisms	Self-direction
Interpersonal dysfunction	Relational capacity		Empathy Intimacy
	Social concordance		
	Responsibility		
		Reality testing	

led to 16 unidimensional and clinically relevant aspects: i.e., emotion regulation, effortful control, stable self-image, self-reflexive functioning, aggression regulation, frustration tolerance, self-respect, purposefulness, enjoyment, feeling recognized, intimacy, enduring relationships, responsible industry, trustworthiness, respect, and cooperation. These 16 facets were eventually operationalized in the *Severity Indices of Personality Problems* (SIPP-118; Verheul et al., 2008), a 118-item self-report questionnaire. Subsequent research showed that five higher order domains of personality functioning were underlying these 16 facets: Identity integration, Self-control, Relational capacity, Social concordance, and Responsibility. These domains appeared to discriminate between clinical and non-clinical populations, to provide unique information over and above trait-based dimensions, and to be associated with severity of personality pathology (Verheul et al., 2008). Cross-national validity of the SIPP-118 was shown in a study of Arnevik, Wilberg, Monsen, Andrea, & Karterud (2009). The SIPP-118 is used as another measurement of general personality dysfunction in this thesis.

Third, Kernberg (Kernberg, 1984; Kernberg & Caligor, 2005) developed a model which characterizes the basic structure of personality in terms of levels of ego-organization: psychotic, borderline, and neurotic ego-organization, respectively. Structural diagnosis of these different levels can be derived from the specifically developed Structural Interview (Kernberg, 1984). This interview explores the level of identity integration, nature of defenses, and level of adequate reality testing to determine a patient's position in the three-level classification. In view of the time-consuming nature of the Structural Interview, as well as the high level of psychodynamic knowledge and clinical skills required of the interviewer, Kernberg and associates constructed a semi-structured interview (STIPO; Buchheim, Clarkin, Kernberg, & Doering, 2006) and the self-report questionnaire *Inventory of Personality Organization* (IPO; Clarkin, Foelsch, & Kernberg, 2001). The IPO is used in a study of the present thesis to explore core features of PD.

Finally, the Personality & Personality Disorders (P&PD) workgroup of the DSM-5 proposed the factors Self (i.e. Identity and Self-direction) and Interpersonal dysfunction (i.e. Empathy and Intimacy) as core factors defining the general criteria of PD (APA, 2010, 2011). Identity is associated with the experience of oneself as a unique human being, with clear boundaries between self and others, with a stable self-esteem and accurate self-appraisal, and with the capacity for, and with the ability to regulate, a range of emotional experience. Self-directedness is defined as the ability to pursuit coherent and meaningful short-term and life goals, the utilization of constructive and prosocial internal standards of behavior, and the ability to self-reflect productively. Empathy is the ability of comprehension and appreciation of others' experiences and motivations, to be able to tolerate differing perspectives, and the understanding of the effects of own behavior on others. Finally, Intimacy is associated with the depth and duration of positive connections with others, the desire and capacity for closeness, and with mutuality of regard reflected in interpersonal behavior. The proposal to change the general definition of PD for the DSM-5, was based on the observation that the DSM-IV-TR general criteria

were a-theoretical, and not specific to PDs (Livesley, 2007). Also, these DSM-IV-TR general criteria were to be not been widely utilized in clinical practice and in research assessment of PD (Johnson, First, Cohen & Kasen, 2008). The proposed general criteria for the DSM-5 in terms of impairment in self and interpersonal functioning is consistent with multiple theories of PD from different frames of reference (Bender et al., 2011; Clarkin & Huprich, 2011; Luyten & Blatt, 2011). Also, studies using self and interpersonal functioning have shown that these dimensions are informative in determining severity of personality pathology (Bender et al., 2011). The different proposals of the P&PD workgroup went on line during the course of this thesis (APA, 2010, 2011), and are now included in Section III of the DSM-5 (APA, 2013; Alternative DSM-5 model for PD).

All of the above mentioned models of structural or functional impairment of PD suggest that PD can be defined independently of trait variation (Kernberg & Caligor, 2005; Krueger, Skodol, Livesley, Shrout, & Huang, 2007; Livesley et al., 1994; Skodol et al., 2011; Trull & Durrett, 2005). This idea is important in the context of determining maladaptive levels of (normal) personality straits (see also chapter 7 of this thesis). This idea is also a central part of the conceptualization of PD according to the Alternative DSM-5 model for PD (APA, 2013), in which the combination of personality dysfunction and personality traits leads to a diagnosis of a specific PD type.

Relevant models of personality traits

There are many different models and operationalizations with respect to personality traits. Widiger & Simonsen (2005) reviewed 16 alternative dimensional trait models of PD, and distinguished four approaches: 1) proposals to provide dimensional representations of existing constructs (e.g. Tyrer & Johnson, 1996; Westen & Shedler, 2000); 2) proposals to integrate Axes II and I with respect to common spectra (e.g. Siever & Davis, 1991; Krueger, 2005); 3) proposals to provide dimensional reorganization of diagnostic criteria (e.g. Livesley, 2003; Clark, McEwen, Collard, Hickok, 1993; Harkness & McNulty, 1994); and 4) proposals to integrate Axis II with dimensional models of general personality structure (e.g. Costa & McCrae, 1992a; Eysenck, 1987; Millon et al., 1996; Tellegen & Waller, 1987). Two models and measurements of the latter two categories are used in this thesis, i.e. the *Dimensional Assessment of Personality Disorders-Basic Questionnaire* (DAPP-BQ; Livesley & Jackson, 2009) and the *NEO-Personality Inventory-Revised* (NEO-PI-R; Costa & McCrae, 1992b). The DAPP-BQ was chosen as a measure of *pathological* personality traits, and shows comprehensive coverage of personality pathology and relevance to clinical work (Trull, 2005). The NEO-PI-R was selected as a measure of *normal* personality traits and is a widely used operationalization of the Five-Factor Model (FFM) of personality. In addition, results of our study were related to the new Alternative DSM-5 model for PD (and the earlier proposals of the P&PD group; see Table 2).

The *DAPP-BQ* is an operationalization of pathological personality traits and is based on the dimensional model of personality pathology developed by Livesley and Jackson (1986). This model was composed of a list of traits and behaviors that characterized each of the DSM-III PDs. Self-report items were developed to assess each prototypical behavior or trait of each targeted PD. A factor-analytic procedure resulted in a model of personality pathology including 18 lower-order and four higher-order traits: Emotional Dysregulation, Dissocial Behavior, Inhibitedness, and Compulsivity. Several studies supported this factor structure (Bagge & Trull, 2003; Livesley, Jang, & Vernon, 1998; Pukrop, Gentil, Steingring, & Steinmeyer, 2001), including a study in a Dutch sample (van Kampen, 2002, 2008).

The *NEO-PI-R* is probably the most popular operationalization of the Five Factor Model (FFM). Unlike the DAPP-BQ, the NEO-PI-R was developed by using a 'top-down' approach. This means that the higher-order dimensions (i.e., neuroticism, extraversion, openness, agreeableness, and conscientiousness) were the starting point of the development of the questionnaire. Each of the five main dimensions has six lower-order facets. The NEO-PI-R has been based on empirical studies of trait terms within existing languages. These lexical studies were conducted mainly in the English language, but also in several other languages throughout the world, including the Dutch language (Hoekstra, Ormel, de Fruyt, 2007). The NEO-PI-R is a widely used instrument in both clinical practice and personality research. Studies have found general support for the relevance of the NEO-PI-R for the full range of PDs (Saulsman & Page, 2004; Widiger & Costa, 2002; Widiger & Samuel, 2008). However, there is also some concern whether the NEO-PI-R, as an operationalization of normal personality traits, is capable to cover the full range of pathological personality traits (Krueger & Eaton, 2010; Samuel, 2010).

In addition to the DAPP-BQ and NEO-PI-R, this thesis also refers to the proposals of the P&PD workgroup for the use of traits in the diagnosis and assessment of PD in the DSM-5 (APA, 2010, 2011). This so-called hybrid dimensional-categorical model for personality and PD assessment and diagnosis is now in Section III of the DSM-5 (APA, 2013; to be referred to as the Alternative DSM-5 model for PD). The proposed trait model represents an extension of the FFM of personality and includes the more extreme and maladaptive personality traits

Table 2. Personality trait domains as operationalized by the DAPP-BQ, NEO-PI-R, and Alternative DSM-5 Model for PD

DAPP-BQ	NEO-PI-R	DSM-5, Section III
Emotional dysregulation	Neuroticism	Negative affectivity
Inhibitedness	Extraversion	Detachment
	Openness	Psychoticism
Dissocial behavior	Agreeableness	Antagonism
Compulsivity	Conscientiousness	Disinhibition

necessary to capture maladaptive features of PDs (APA, 2012). In the process of development five dimensions emerged: negative affectivity, detachment, antagonism, disinhibition, and psychoticism. Each dimension consist of three to nine lower-order facets, with a total of 25 facets.

Samples

Five different samples were used in this study: one Canadian sample, and four Dutch samples (Table 3, page 17).

The GAPD-study described in chapter 2 used both a Dutch psychiatric sample and a sample of 196 persons in the Canadian general population. The IPO-study (chapter 3) was conducted in a Dutch sample of 371 psychiatric patients and 181 normal controls. In addition, the IRT-study described in chapter 4 utilized both a Dutch psychiatric sample and a subgroup of 1,759 participants of the SCEPTRE-study of Verheul et al. (2008).

Finally, all other studies of this thesis were conducted using sub-samples of a Dutch sample of a total of 537 psychiatric patients. In all sub-samples, data were available from one or more of the following instruments: the DAPP-BQ, the GAPD, the NEO-PI-R, the SIPP-118, the *Structured Clinical Interview for DSM-IV Axis-II Personality Disorder* (SCID-II; First,Gibbon, Spitzer, Williams, Benjamin, 1997). The size of the sub-samples differed, due to different combinations of measurements available. The size of the sub-samples were as follows: n = 280 (chapter 2), n = 424 (chapters 4 and 5), n = 261 (chapter 6), and n = 291 (chapter 7). The nature of the different samples and sub-samples are also described in the Method section of each chapter.

Aims of this thesis

This thesis encloses three main sections:

Part I:
The first part explores various models reflecting General PD, and investigates the psychometric characteristics of these models.

Part II:
The second part examines the relationship between models of General PD with dimensional trait models.

Part III:
The third part summarizes and discusses the results of this research project.

Outline of this thesis

Chapter 1 is the introduction of this thesis.

In **Part I**, chapters 2, 3, and 4 explore the structure of various models of General PD and severity levels of PD.
Chapter 2 explores a model of functional impairment, i.e. Livesley's adaptive failure model, as a definition of General PD. This chapter also describes a study on the psychometric properties of the *General Assessment of Personality Disorders* (GAPD), as an instrument for assessing the core features of PD. *Chapter 3* explores a model of structural impairment, i.e. Kernberg's model of ego-organisation, as a definition of core features of PD. The reliability and validity of the *Inventory of Personality Organization* (IPO), as a measure of the structural model of Kernberg are tested in this chapter. *Chapter 4* identifies markers of a general level of personality (dys)functioning in a study using item-respons theory (IRT; Lord, 1980). These markers of general personality dysfunction are compared with the levels of personality functioning which were proposed for the DSM-5 personality disorders diagnostic formulations.

In **Part II**, chapters 5, 6, and 7 explore the relationships between models of general personality dysfunction and models of personality traits.
Chapter 5 investigates whether models of general personality dysfunction can be distinguished from the Five-Factor Model of personality. *Chapter 6* describes a study towards the incremental value of models of personality dysfunction and models of personality traits in the prediction of the presence and severity of PDs. *Chapter 7* is a brief communication concerning the question whether the extreme endpoints of the Five-Factor Model domains are intrinsically maladaptive.

Finally, in **Part III**, *Chapter 8* summarizes the results and presents the strengths and limitations of the present studies. The results of the studies are discussed, also in the context of the proposed changes of the definition of personality disorders for the *DSM-5*, and the clinical applications are formulated.

Table 3. Samples and subsamples of the present thesis

Sample	N = 196	N = 181	N = 371	N = 1,579	N = 537				
Subsample					*n =280*	*n=424*	*n =424*	*n =261*	*n=291*
Population	General population	General population	Psychiatric patients	Psychiatric patients	Psychiatric patients	Psychiatric patients	Psychiatric patients	Psychiatric patients	Psychiatric patients
% PD	-	-	n.a.	52.1[a]	51.1[b]	43.9[b]	50.9[b]	52.1[b]	52.1[b]
Measures	GAPD DAPP-BQ	IPO-NL NEO-PI-R	IPO-NL NEO-PI-R	SIPP-118	GAPD SIPP-118 DAPP-BQ	GAPD SIPP-118	GAPD SIPP-118 NEO-PI-R	GAPD SIPP-118 NEO-PI-R DAPP-BQ	GAPD NEO-PI-R
Country	Canadian	Dutch	Dutch	Dutch	Dutch	Dutch	Dutch	Dutch	Dutch
% female	67.3	69.0	68.0	n.a.	72.0	72.4	72.4	73.9	72.2
Mean age	37.9	41.3	34.0	n.a.	34.2	33.9	33.9	34.2	34.2
Chapter in dissertation	Chapter 2	Chapter 3	Chapter 3	Chapter 4	Chapter 2	Chapter 4	Chapter 5	Chapter 6	Chapter 7

Note: n.a: not available. [a] As measured with the *Structured Interview for DSM-IV Personality* (SIDP-IV). [b] As measured with the *Structured Clinical Interview for DSM-IV Axis-II Personality Disorder* (SCID-II). GAPD: *General Assessment of Personality Disorders*; IPO-NL: *Inventory of Personality Organization*; SIPP-118: *Severity Indices of Personality Problems*; DAPP-BQ: *Dimensional Assessment of Personality Pathology-Basic Questionnaire*; NEO-PI-R:*NEO-Personality Inventory-Revised.*

Part I

2

The General Assessment of Personality Disorder (GAPD) as an instrument for assessing the core features of personality disorders

Published as: Berghuis, H., Kamphuis, J.H., Verheul, R., Larstone, R. & Livesley, J. (2013). The General Assessment of Personality Disorder (GAPD) as an instrument for assessing the core features of personality disorders. *Clinical Psychology and Psychotherapy, 20,* 544-557.

Introduction

The classification of personality disorder (PD) is in a state of flux. The current categorical model as presented in the DSM-IV is plagued by extensive diagnostic overlap, poor coverage of the domain, considerable diagnostic heterogeneity, and minimal empirical support (Clark, 2007; Livesley, 2003; Trull & Durrett, 2005). Empirical comparisons of categorical and dimensional models consistently show that dimensional models fit the data better and are more reliable (Livesley et al., 1994; Widiger, 1993; Trull & Durrett, 2005). This has given way to discussion of how to incorporate dimensions into future classifications (Widiger, Livesley, & Clark, 2009). The proposals of the Personality and Personality Disorder Workgroup for the DSM-5 PD (APA, 2011) which advocates incorporating dimensions, can be seen as a result of this discussion.

Although adoption of a dimensional system would provide a much needed empirical foundation for classifying PD, an important question remains about how to differentiate trait variations that constitute a disorder from statistical deviance, because statistical extremity alone is considered insufficient to diagnose a disorder (Parker & Barrett, 2000; Wakefield, 1992). An independent evaluation of distress or impairment is therefore required (Trull, 2005). This paper proposes a systematic definition of PD that is conceptually independent of trait descriptions of PD, and investigates whether such a definition may be used to construct an assessment instrument that differentiates PD from normal personality variation and from other mental disorders.

Definitions of Personality Disorder

Contemporary ideas about the nature of PD are strongly influenced by the DSM-III (APA, 1980) definition that PD consists of maladaptive traits. This generated extensive research into the trait structure of personality. The value of this approach is that it is consistent with evidence that the phenotypic features of PD are continuous with normal personality variation (Livesley et al., 1994; Widiger, 1993; Widiger & Simonsen, 2005; Trull & Durrett, 2005) and it begins to integrate the classification of PD with trait theories of personality (Eysenck, 1987; Costa & Widiger, 2002; Widiger & Lowe, 2007; Widiger & Simonsen, 2005; Widiger & Trull; 2007). However, definition of PD in terms of maladaptive traits is complicated by the question of how to distinguish normal and abnormal trait elevation. The usual way to solve this problem is to require some additional factor such as maladaptive trait expression, clinical significance, or inflexibility of trait expression in addition to trait elevation to justify a diagnosis of disorder.

The notion that traits which lie (very) high or (very) low on various personality dimensions represent potential disorder is elaborated by Widiger and colleagues (e.g., Widiger & Mullins-Sweatt, 2009; Widiger & Trull, 2007). They offer a four step process approach to diagnosing PD using the five-factor model (FFM). The first step is to describe personality using the 30 facets traits and five domains of the FFM. The second step is to *"identify the problems of living associated with elevat-*

ed scores" (Widiger & Mullins-Sweatt, 2009, p. 201) or the social and occupational impairments and distress associated with elevated scores (Widiger & Trull, 2007). The third step is to determine whether the problems of living (or 'impairments') reach clinical significance. They propose that a useful guide for making this determination is the global assessment of functioning (GAF) scale on Axis V of the DSM-IV-TR. The fourth optional step is to match the FFM profile with prototypical profiles of clinical diagnostic constructs such as the DSM-IV-TR personality disorders. Although the proposal has many attractive features and would almost certainly yield a diagnostic assessment that is more useful for many purposes than a DSM-IV-TR diagnosis, there are problems with the underlying definition of PD. The approach entails a time-consuming task of listing impairments or problems of living associated with the 60 poles of the 30 facet traits in the FFM, although an abbreviated version consisting of 26 facets is also suggested (Widiger & Lowe, 2007). While the proposed descriptors appear reasonable, the empirical basis of the items listed is unclear. More problematic from a definitional perspective, the problems that Wakefield (2008) noted in using constructs like 'maladaptive' and 'clinically significant' as a way to characterize forms of trait expression are not addressed. Using the GAF scale creates a further problem if DSM-5 will not employ multiaxial classification as the Axis V would not be part of the system.

A more substantial problem of a pure trait model is that it neglects the integrating and organizing aspects of personality that are central to a broader conception of personality (Allport, 1961; McAdams, 1996; Rutter, 1987). As Millon (1996) noted, personality is not a potpourri of unrelated traits and miscellaneous behaviors but a tightly knit organization of stable structures (e.g., internalized memories and self-images) and coordinated functions (e.g., unconscious mechanisms and cognitive processes). It also involves the organization and coherence of the individual (Cervone & Shoda, 1999). Similarly, PD as historically described in the clinical literature is considered to involve more than maladaptive traits (Livesley, 2003; Livesley & Jang, 2000; Millon & Davis, 1996; Rutter, 1987). Reference is also made to disturbed identity or self-pathology (Cloninger, 2000; Masterson & Klein, 1995; Kernberg, 1984), repetitive patterns of maladaptive interpersonal behavior (Benjamin, 2003; Millon, 1981), impaired social functioning (Rutter, 1987), impaired motivation and self-directedness (Cloninger, 2000), impaired metacognitive processes or mentalization (Bateman & Fonagy, 2004; Dimaggio, Semerari, Carcione, Procacci, & Nicolò, 2006), the lack of adaptive capacities (Verheul et al., 2008), and so on. Thus the idea that maladaptive traits are a sufficient indicator of disorder is inconsistent with traditional clinical conceptions of personality (Wakefield, 2008).

Problems with conceptualizing PD solely on the basis of maladaptive trait expression and desire to capture dysfunction in the organizational or integrative aspects of personality have prompted suggestions that PD be defined independently of trait variation (Livesley et al., 1994; Trull & Durrett, 2005). Schneider (1921/1950) attempted to do this by defining PD as abnormal personality that causes suffering to the self or society. The value of Schneider's contribution is the

distinction between statistical abnormality and disorder, an idea that is fundamental to dimensional classification. Unfortunately, the criteria proposed – suffering caused to self and society – are subjective and value-laden. An alternative formulation of functional impairment defines disorder as a failure of the adaptive functions of personality. This approach requires a consideration of the functions of personality and how these functions are impaired in PD. Cantor (1990) suggested that the adaptive function of personality is to solve major personal and universal life tasks. Plutchik (1980) described four universal tasks considered fundamental to adaptation in the ancestral environment: 1. development of a sense of identity, 2. solving problems of social hierarchy that are characteristic of primate groups, 3. establishing territoriality and belongingness, and 4. coming to terms with temporality involving problems of loss and separation. The solutions to these tasks form important elements of personality and the failure to arrive at adaptive solutions to any of these tasks gives rise to the harmful dysfunction that forms the core of PD (Livesley, 2003).

Personality Disorder as Adaptive Failure

Livesley and colleagues (1994, 1998, 2000, 2003) suggested that PD occurs when *"the structure of personality prevents the person from achieving adaptive solutions to universal life tasks"* (Livesley, 1998, p. 141). This conceptualization can be expressed in more clinically relevant terms while retaining an evolutionary perspective as 1. failure to establish stable and integrated representations of self and others and 2. interpersonal dysfunction, that is, failures in the capacity for effective kinship and societal relations. To complete this definition it is necessary to add that these deficits are enduring failures that can be traced to adolescence or early adulthood and that they are not due to another pervasive and chronic mental disorder such as a cognitive or schizophrenic disorder.

This formulation attempts to integrate an understanding of the adaptive functions of normal personality with clinical conceptions of PD. The clinical literature typically emphasizes that PD involves chronic interpersonal difficulties (Benjamin, 2003; Rutter, 1987; Vaillant & Perry, 1980). Rutter (1987), for example, concluded that PD is *"characterized by a persistent, pervasive abnormality in social relationships and social functioning generally"* (p.454). A second clinical tradition conceptualizes PD in terms of problems with identity or sense of self. Although this literature is largely, but not exclusively, confined to psychoanalytic contributions, it has been extremely influential with considerable impact on clinical conceptions of PD, particularly as related to borderline and narcissistic pathology. Examples are Kohut's (1971) account of the failure to develop a cohesive sense of self in narcissistic conditions, Kernberg's (1984) concept of identity diffusion, and Masterson's reconceptualization of PD as disorders of the self (Masterson & Klein, 1995). Similarly, Cloninger (2000), writing from a very different theoretical perspective, noted that low self-directedness - defined as a failure of the motivational or agentic aspect of self or identity - is a hallmark of PD. Finally, Verheul et al. (2008), in an attempt to develop a measure of the core features of PD, suggested

that a lack of identity integration - defined as the coherence of identity, and the ability to see oneself and one's own life as stable, integrated, and purposive - is one of the most distinguishing characteristics of PD.

Defining the features of General Personality Disorder

The first step in operationalizing the adaptive failure conception of PD, and in developing a measure of PD (i.e. the *General Assessment of Personality Disorder* [GAPD; Appendix]: Livesley, 2006), was to conceptualize the two main components of the definition: self and interpersonal pathology. The self was conceptualized as a knowledge system for organizing self-referential knowledge (Harter, 1999; Toulmin, 1978; Livesley, 2003). This permitted a description of self-pathology in terms of the cognitive structure of self-knowledge rather than its contents (self-schemas), an important step toward specifying PD using constructs that are conceptually distinct from trait-based behaviors. This is an important part of the conceptualization of self-pathology that leads to a measurement instrument that is designed to assess the formal or structural aspects of the self, rather than distorted self-images or maladaptive schemas. It was assumed that the self-system, like other knowledge structures, develops through simultaneous processes of differentiation and integration. Throughout development, the differentiation of self-knowledge from other forms of knowledge begins to establish a boundary between self and others and self-knowledge becomes organized into multiple self-schemas. At the same time, connections develop among self-schemata to create different representations of the self. In the process, self-knowledge becomes hierarchically organized as specific schemas combine to construct different representations of the self. This process culminates in an overarching autobiographical self-narrative that integrates the diverse aspects of self-knowledge and self-experiences. These links within self-knowledge contribute to the subjective sense of personal unity and continuity that characterizes an adaptive personality structure: the more extensive these links are, the greater the sense of personal unity and coherence (Horowitz, 1998). Complementing these cognitive constructs, the self was also conceptualized as a motivational or conative system based on the literature that considers the term "self" to refer not only to the organization of self-referential knowledge but also *"to the more-or-less integrated center of agentic activity*" (Sheldon & Elliot, 1999, pp.483). A sense of direction, purpose, agency, and autonomy are crucial components of adaptive self-functioning (Carver & Scheier, 1998; Shapiro, 1981). Finally, the interpersonal component was also defined. Although this component of PD was more difficult to specify independently of trait content, it was attempted by emphasizing pathology as the failure to develop specific interpersonal capacities as opposed to the form these failures take. These failures are conceptualized as the failure to develop the capacity for intimacy and attachment, an inability to establish affiliative relationships, and a disinterest in social contact. Dysfunctions in societal relations concerned failures in the capacity for prosocial, moral, and cooperative behavior.

The second step in developing a measure of PD (i.e. the GAPD; Appendix) was to use this conceptualization to structure an assessment instrument to evaluate self and interpersonal pathology. Self-pathology comprised two main dimensions (problems of differentiation and problems of integration) and three additional facets of self-pathology (consequences of structural problems of the self). Problems of differentiation, that is the range of schema used to represent the self, were subdivided largely on the basis rational considerations into 5 facets: poorly delineated interpersonal boundaries, lack of clarity or certainty about self-attributes, sense of inner emptiness, context dependent self-definition (concept of self varies according to the perceived wants or expectations of others), and poorly differentiated representations of others (based on general object relations theory, self-knowledge was assumed to develop in the context of interpersonal relationships). Problems of integration, or the extent to which self-schemas are connected to form a coherent understanding of the self, were organized into 4 facets: lack of sense of historicity and personal continuity, fragmentary self- and other-representations, self-state disjunctions (the occurrence of different poorly related self-states [Ryle, 1995; Horowitz, 1998]), and the occurrence of a real self/false self disjunction (Livesley, 2003). Three additional facets of self-pathology were defined based on the clinical literature: lack of authenticity, a defective sense of self (that is, perception of the self as flawed), and a poorly developed understanding of others (that is, difficulty describing and understanding the rules or grammar of behavior [Livesley & Bromley, 1973], a concept related to mentalization). The conative structure of self-pathology or the self-directedness component was divided into three facets: lack of autonomy and agency, lack of meaning, direction, and purpose to life, and difficulty setting and attaining rewarding goals. The interpersonal component of PD was operationalized by emphasizing that pathology is the failure to develop specific interpersonal capacities as opposed to the form these failures take. These were conceptualized as the failure of kinship and societal functioning, respectively. Both were divided into two facets. The kinship component evaluated the capacity for intimacy and affiliation, while the societal component was divided into failure to establish the ability for prosocial behavior and problems with cooperativeness.

The third step in constructing the GAPD was to compile items to assess the 15 facets of self-pathology, and 4 facets of interpersonal dysfunction. Items were identified from a search of the clinical literature, culled from assessment interviews and psychotherapy sessions with patients with PD, and written based on the definition of the construct.

Current study

Although the literature points to the importance of defining PD in terms of dysfunction in the higher-order organization of personality, definitions based on abstract and generalized constructs raise concerns about whether such constructs can be measured reliably. This study was designed to explore this issue. Four questions are addressed. First, can the adaptive failure definition be used to develop a self-report measure that meets standard psychometric criteria of an adequate psy-

chological test? Essentially, the definition consists of two components: self-pathology and interpersonal dysfunction, both of which are complex multidimensional constructs. Comprehensive assessment of them requires construction of several subscales to evaluate different facets of self- and interpersonal pathology. Second, does the facet structure of the subscales reflect the two component structure proposed in the definition and is this structure robust across clinical and general population samples? Third, does the measure discriminate between clinical samples with PD and general population samples and, importantly, between clinical samples with and without PD? The latter differentiation is important because it is necessary to demonstrate that the measure assesses PD rather than general psychopathology and distress. Finally, what is the relationship between components of general PD and dimensions of PD as assessed by measures of PD traits?

Methods

Participants

Our two samples consisted of Canadian and Dutch participants. The Canadian group (n = 196) was a general population sample from the Vancouver, British Columbia area, recruited through newspaper advertisements. These participants completed the GAPD as part of an ongoing series of studies investigating cognitive and motivational processes underlying PD. This sample consisted of 64 men (32.7%) and 132 women (67.3%), with a mean age of 37.9 years (SD = 15.0, range = 18-76).

The Dutch sample (n = 280) consisted of a heterogeneous group of psychiatric patients, comprised of 78 men (28%) and 202 women (72%), with a mean age of 34.2 years (SD = 11.7, range = 17-66). Education attainment varied as follows: 14.6% had completed elementary school/ lower vocational education, 38.2% secondary school/ intermediate vocational training, and 45.0 % upper vocational education/university; for 2.2% data were not available. Patients were invited to participate in the study by their treating clinical psychologist or psychiatrist or completed a questionnaire as part of a routine psychological evaluation. All patients signed an informed consent form and received a € 10 gift certificate for their participation. Patients with insufficient command of the Dutch language, with organic mental disorders or mental retardation, and patients in acute crisis were excluded. Table 1 shows the clinical characteristics of this sample. In 51.1% of the cases at least one DSM-IV PD, as measured by the SCID-II (First et al., 1997), was reported. The most frequent Axis II diagnoses were avoidant PD (19.3%), borderline PD (18.9%), and PD not otherwise specified (PDNOS; 15.4%), a distribution that is similar to that reported in a recent prevalence study (Zimmerman, Rothschild & Chelminski, 2005). We utilized a cut-off of 10 diagnostic criteria for the definition of PDNOS (Verheul, Bartak & Widiger, 2007). Nearly 70% (69.2%) met criteria for one or more comorbid Axis I disorders, the majority of which were mood disorders (40.7%) or anxiety disorders (12.9%).

Table 1. Clinical characteristics of the Dutch psychiatric sample (n=280)

Characteristics	n	%
Current DSM-IV Axis-I diagnosis[a,b]		
Mood disorder	114	40.7
Anxiety disorder	36	12.9
Eating disorder	16	5.7
Adjustment disorder	23	8.2
V-code	17	6.1
Other disorders	42	15.1
No Axis I disorder	32	11.4
Current DSM-IV Axis II diagnosis[a,c]		
Paranoid personality disorder	19	6.8
Schizoid personality disorder	2	0.7
Schizotypal personality disorder	0	0.0
Antisocial personality disorder	14	5.0
Borderline personality disorder	53	18.9
Histrionic personality disorder	2	0.7
Narcissistic personality disorder	5	1.8
Avoidant personality disorder	54	19.3
Dependent personality disorder	7	2.5
Obsessive-Compulsive personality disorder	16	5.7
Personality disorder NOS[d]	43	15.4
Any personality disorder	143	51.1

Note. [a] Individuals could be assigned more than one diagnosis. [b] Clinical diagnosis. [c] SCID-II diagnosis. [d] Cut-off: 10 criteria

Measures

General Assessment of Personality Disorder (GAPD). The GAPD (Livesley, 2006) is a 142-item self-report measure operationalizing the two core components of personality pathology proposed in Livesley's (2003) adaptive failure model. The primary scale Self-pathology covers items regarding the structure of personality (e.g., problems of differentiation and integration) and agency (e.g., conative pathology). The primary scale Interpersonal dysfunction is about failure of kinship functioning and societal functioning. These primary scales are divided into a total of 19 subscales (15 for Self-pathology, 4 for Interpersonal dysfunction). The definitions of the subscales of the GAPD are presented in the Appendix. The present study used the original Canadian version and a Dutch translation (Berghuis, 2007). The original Canadian version was translated into Dutch, and then back translated by an English native speaker; this version was subsequently approved by the original author (J.L.). Of note, the Dutch translation differs from the Canadian version in that the Canadian version includes two additional questions that were added by the original test author (J.L.) after data collection had already started in the Netherlands (item 12 from the Affiliation subscale and item 98 from the Difficulty setting and attaining goals subscale).

*Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II).*The SCID-II (First et al., 1997; Weertman, Arntz, & Kerkhofs, 2000: Dutch version) is a widely used 134-item semi-structured interview for the assessment of Axis II PDs. Each item is scored as 1 (absent), 2 (subthreshold), or 3 (threshold). Dimensional scores are obtained by summing the raw scores of the criteria for the Axis II categories and clusters. All SCID-II interviews were administered either by specifically trained clinicians with extensive experience, or by master-level psychologists who were trained by one of the authors (H.B.) and who attended monthly refresher sessions to promote consistent adherence to study protocol. Several studies have documented high interrater reliability of the SCID-II (e.g. Maffei, et al., 1997 [from .83 - .98], Lobbestael, Leurgans & Arntz, 2010 [from .78 - .91], Dutch study). Therefore, no formal assessment of interrater reliability was conducted. To further mitigate concerns about measurement error, we calculated internal consistencies for the SCID-II dimensional scores. Cronbach's alphas ranged from fair (.57, schizotypal PD) to good (.82, narcissistic PD), with a mean score of .71.

*Dimensional Assessment of Personality Pathology - Basic Questionnaire (DAPP-BQ).*The DAPP-BQ (Livesley & Jackson, 2009; van Kampen, 2006: Dutch version) is a 290-item questionnaire that assesses 18 factor analytically-derived PD trait scales: Affective lability, Anxiousness, Callousness, Cognitive dysregulation, Compulsivity, Conduct problems, Identity problems, Insecure attachment, Intimacy problems, Narcissism, Oppositionality, Rejection, Restricted expression, Self-harm, Social avoidance, Stimulus seeking, Submissiveness, and Suspiciousness. The response format is a 5-point Likert scale ranging from 1 ("very unlike me") to 5 ("very like me"). The DAPP-BQ is organized into four higher order clusters: Emotional dysregulation, Dissocial behavior, Inhibition, and Compulsivity. The psychometric properties of both the Canadian and Dutch versions of the DAPP-BQ are well documented (Livesley & Jackson, 2009; van Kampen, 2006).

Statistical analysis

Means, standard deviations, and internal consistencies (Cronbach's alpha) were computed for the GAPD (sub)scales. The GAPD factor structure was investigated using principal component analysis (PCA) with oblique (oblimin) rotation. Item parcels of the subscales were used as indicators. Parallel analysis (Horn, 1965) was conducted to determine the optimal number of factors to retain. The resulting solution was then evaluated and theoretically interpreted (Livesley, 2003). Subsequent analyses were conducted to test aspects of the convergent and discriminant validity of the GAPD using Pearson correlations, multivariate analysis of covariance (MANCOVA), and discriminant function analysis. All analyses were conducted using SPSS 17.0 for Windows.

Table 2. Factor loadings of the subscales from the Canadian GAPD (n = 196) and Dutch GAPD (n = 280)

	Canadian GAPD		Dutch GAPD	
Scale Name	Factor 1	Factor 2	Factor 1	Factor 2
Self-pathology				
Poorly delineated boundaries	**.83**	.01	**.88**	.04
Lack of self clarity	**.88**	.05	**.88**	.01
Sense of inner emptiness	**.84**	.03	**.79**	.04
Context dependent self-definition	**.80**	-.31	**.85**	.19
Poorly differentiated images of others	.43	.33	.35	.47
Lack of historicity and continuity	**.89**	-.05	**.88**	.04
Fragmentary self-other representations	**.85**	.07	**.78**	.14
Self-state disjunctions	**.80**	-.01	**.85**	.11
False self-real self disjunction	**.73**	.24	**.71**	.17
Lack of authenticity	**.82**	.15	**.81**	.12
Defective sense of self	**.77**	.11	**.65**	.16
Poorly developed understanding of human behavior	.45	.41	.31	.54
Lack of autonomy and agency	**.80**	.03	**.70**	.09
Lack of meaning, purpose, and direction	**.76**	.08	**.70**	.15
Difficulty setting and attaining goals	**.86**	.01	**.76**	.09
Interpersonal dysfunction				
Intimacy and attachment	.22	**.70**	.15	**.68**
Affiliation	.15	**.73**	.06	**.80**
Prosocial	-.11	**.75**	.10	**.77**
Cooperativeness	.06	**.80**	.02	**.81**

Note. Direct oblimin rotation. Absolute loadings of .32 or greater were included on a component. Unique loadings are in bold. The Interpersonal dysfunction subscales refer to maladaptive functioning (e.g. non-cooperativeness).

Results

Factor structure and internal consistency

To examine the factor structure of the GAPD, we conducted a PCA with oblique (oblimin) rotation of item parcels of the subscales (Table 2). Oblimin rotation was used as we theorized that the underlying factors would be related to an integrated model of core features of personality pathology. Using parallel analysis, the average eigenvalues from the random correlation matrices compared to the eigenvalues from our data correlation matrix yielded a cut-point of two factors as optimal solution in both samples. The two-factor solution explained 66.7% of the variance in the Canadian sample (57.5% and 9.2%, respectively), and 65.0% of the variance in the Dutch sample (57.6% and 7.4%, respectively).

As shown in Table 2, the two-factor structure appeared remarkably consistent across samples. Almost all subscales of both the Canadian and the Dutch versions

of the GAPD had the highest loadings on the factors to which they had been theoretically allocated in the origi nal instrument. Only two subscales from the primary scale Self-pathology showed substantial cross-loadings with the second factor (i.e., Poorly differentiated images of others, Poorly developed understanding of human behavior). Primary loadings on both factors were overall substantially higher than the secondary loadings (range difference scores .47 - .88), again except for the subscales Poorly differentiated images of others and Poorly developed understanding of human behavior (difference scores .10 and .04 for the Canadian sample, and .12 and.23 for the Dutch sample, respectively).

Table 3. Means, Standard Deviations, internal consistencies and number of items of the parceled subscales of the Canadian (n = 196) and Dutch (n = 280) GAPD

		Canadian GAPD			Dutch GAPD		
Scale Name	Items	Mean	*SD*	Alpha	Mean	*SD*	Alpha
Self-pathology		30.42	9.71	.98	40.63	11.53	.98
Poorly delineated boundaries	7	1.95	.75	.78	2.41	.89	.83
Lack of self clarity	7	2.28	.96	.89	3.23	1.06	.87
Sense of inner emptiness	4	1.89	1.08	.91	2.60	1.08	.84
Context dependent self-definition	5	2.46	.88	.78	2.86	.96	.80
Poorly differentiated images of others	4	1.98	.73	.66	2.15	.80	.70
Lack of historicity and continuity	6	2.05	.91	.87	2.56	1.01	.86
Fragmentary self-other representations	11	2.32	.69	.88	2.60	.82	.87
Self-state disjunctions	5	2.02	1.00	.86	2.33	.98	.81
False self/real self disjunction	6	2.08	1.01	.90	3.18	1.07	.87
Lack of authenticity	7	2.05	.73	.86	2.58	.97	.88
Defective sense of self	3	2.21	1.21	.90	3.13	1.19	.87
Poorly developed understanding of human behavior	6	2.12	.84	.84	2.43	.85	.82
Lack of autonomy and agency	5	1.91	.85	.83	2.61	.84	.77
Lack of meaning, purpose and direction	7	2.63	.42	.92	3.11	1.02	.90
Difficulty setting and attaining goals	9/8	2.53	.78	.89	2.86	.89	.85
Interpersonal dysfunction		9.44	1.87	.94	9.39	2.32	.93
Intimacy and attachment	10	2.08	.80	.86	2.38	.86	.85
Affiliation	10/9	2.29	.90	.90	2.54	.94	.89
Prosocial	17	2.44	.37	.88	2.03	.51	.81
Cooperativeness	15	2.63	.34	.85	2.45	.58	.85

Note. SD: Standard deviation. The subscales of the 'Interpersonal dysfunction' domain refer to maladaptive functioning.

As can be seen in Table 3, Cronbach's alpha from the primary scales of the Canadian and Dutch GAPD ranged from .93 to .98; the alphas of the subscales ranged from .66 to .92 with a median of .86 for the Canadian GAPD, and from .70 to .90, with a median of .84 for the Dutch version. Means and standard deviations of the subscales are also presented in Table 3.

Convergent and discriminant validity

To test for convergent validity we examined the relationship of the GAPD with conceptually relevant models: a) the DSM model, employing symptom measure of PD, and b) the trait-based model of personality pathology that is operationalized by the DAPP-BQ. We computed Pearson correlations of the GAPD scales (i.e., Self-pathology and Interpersonal dysfunction) with the dimensional scores on the SCID-II in the Dutch sample. Since not all PDs were sufficiently represented, they were organized into clusters A, B, and C. All correlations were significant at the .01

Table 4. Correlations between the GAPD and the DAPP-BQ in a Canadian community sample (n = 196) and a Dutch psychiatric sample (n = 246)

	GAPD scales		GAPD scales	
	Self-pathology	Interpersonal dysfunction	Self-pathology	Interpersonal dysfunction
DAPP-BQ scales	Canadian sample		Dutch sample	
Emotional Disturbance				
Submissiveness	**.64****	.27**	**.57****	.29**
Cognitive distortion	**.82****	.50**	**.77****	**.53****
Identity problems	**.88****	.50**	**.85****	**.57****
Affect lability	**.63****	.28**	**.64****	.38**
Oppositionality	**.75****	.48**	**.62****	.38**
Anxiousness	**.76****	.36**	**.79****	.44**
Social avoidance	**.67****	**.62****	**.72****	**.62****
Suspiciousness	**.54****	.43**	**.64****	**.53****
Insecure attachment	.39**	.16*	**.56****	.23**
Narcissism	.35**	.07	.43**	.22**
Self-harm	**.69****	.46**	**.53****	.33**
Dissocial Behavior				
Stimulus seeking	.31**	.12	.45**	.30**
Callousness	.33**	**.57****	.42**	**.56****
Rejection	.15*	.19**	.24**	.33**
Conduct problems	.42**	.40**	.35**	.40**
Inhibitedness				
Restricted expression	**.50****	**.61****	**.60****	**.56****
Intimacy	.34**	.21**	.38**	**.51****
Compulsivity				
Compulsivity	-.17*	-.20**	-.03	-.05

Note. ** Correlation is significant at the 0.01 level, * correlation is significant at the 05 level (2-tailed). Correlations above .50 are printed in bold.

level. As expected, the associations between Self-pathology and Axis II were robust *(r* = .38, .39 and .38 for Cluster A, B, and C, respectively). Interpersonal dysfunction also correlated with Cluster A, B, and C (*r* = .40, .21 and .28, respectively).

The DAPP-BQ was selected as it operationalizes a model of dysfunctional personality variation. As can be seen in Table 4, all DAPP-BQ dimensions were significantly related to the major domains of the GAPD, with the exception of Compulsivity in the Dutch sample, and Stimulus seeking in the Canadian sample. Large correlations were found between GAPD Self-pathology and DAPP-BQ Emotional dysregulation subscales in both samples (range *r* = .53 - .88), with the exception of DAPP-BQ Narcissism (*r* = .43 and .35) and Insecure attachment in the Canadian sample (*r* = .39). For DAPP-BQ Dissocial Behavior all subscales were moderately associated with the two primary scales of the GAPD in both samples, except DAPP-BQ Callousness which showed a large correlation with GAPD Interpersonal dysfunction (*r* = .56 and .57). Of note are the low correlations of DAPP-BQ Compulsivity with the GAPD primary scales in the Dutch sample.

Table 5 shows the means and standard deviations for the two primary scales of the GAPD (i.e. Self-Pathology and Interpersonal dysfunction) for both the Canadian and Dutch sample in different groups. As the GAPD was specifically designed to index general personality dysfunction, we reasoned that patients with more severe personality pathology should score higher than those with less severe personality, who in turn should score higher than those without PD. To test this aspect of the discriminative ability of the GAPD, we divided the Dutch patient sample into strata of severity of personality pathology. Severity of personality pathology was based on the number of diagnosed personality disorders (none, one, and two or more). The group without PDs consisted of patients in treatment for other psychiatric problems or disorders. These three groups did not differ with respect to gender (X^2 = .57, *p* = .75), but differed in age (*F* [2, 277] = 5.45, *p* = .01). Age influenced group differences only on the Self-pathology factor (*F* [1, 276] = 6.48, *p* = .01), such that the scores on the Self-pathology factor declined with age.

As can be seen in Table 5, severity of personality pathology significantly corresponded with higher scores on the primary GAPD components. Cohen's *d* was calculated for the group differences. There was a medium effect size for the difference on Self-pathology and Interpersonal dysfunction (*d* = .73 and .57, respectively) between the no-PD and one PD groups. Medium to small effect sizes for the difference on Self-pathology and Interpersonal dysfunction (*d* = .73 and .28, respectively) were found between the group with one and the group with two or more PDs (*d* = .57 and .28, respectively). Large effect sizes for the difference on Self-pathology and Interpersonal dysfunction (*d* = 1.49 and .90, respectively) were observed between the no-PD group and the group with two or more PDs. To facilitate comparison with future studies, Table 5 presents the non-adjusted means; age adjusted means differed only in decimals.

Table 5. The association between GAPD factor scale scores and the number of diagnosable personality disorders per patient n =280)

	General population Canadian sample	Number of diagnosable personality disorders Dutch Sample					
Factor		0-PD	1-PD	2^{+}-PD	*F* (2. 276)	Post hoc test	Effect size
	(*n = 196*)	(*n = 137*)	(*n = 96*)	(*n = 47*)			
Self-pathology	30.42 (9.7)	35.66 (10.9)	43.28 (10.1)	50.06 (8.3)	34.54*	$0 < 1 < 2^{+}$**	.73[a]; .73[b], 1.49[c]
Interpersonal dysfunction	9.44 (1.9)	8.49 (2.2)	9.79 (2.3)	10.42 (2.1)	15.07*	$0 < 1, 2^{+}$**	0.57[a]; .28[b], .90[c]

Note. GAPD:General Assessment of Personality Disorder.
The data in the general population and the number of diagnosable personality disorders columns are the mean-scores (standard deviations).
0-PD: no personality disorder; 1-PD: one personality disorder; 2^{+}-PD: 2 or more personality disorders.
[a] Cohen's *d* effect size of the difference between the 0-PD group and the 1-PD group.
[b] Cohen's *d* effect size of the difference between the 1-PD group and the 2^{+}-PD group.
[c] Cohen's *d* effect size of the difference between the 0-PD group and the 2^{+}-PD group.
* $p < .001$. ** $p < .01$

A discriminant function analysis was performed on the entire clinical group (n = 280) with the presence or absence of PD as the dependent variable and the scores on the primary GAPD scales as the independent variables. The value of this function was significantly different for the no-PD and any-PD group (X^2 = 56.32, df = 2, p < .001). Overall, the discriminant function analysis classified 68.8% of the participants correctly as PD patients or no-PD patients. This represents an increase of 17.8% in accuracy, assuming an a priori chance of 51% on the basis of the base rate of our sample. Based on the discriminant function analysis, the sensitivity (proportion of the any-PD group, correctly classified as such) was .71 and specificity (proportion of the no-PD group, correctly classified as such) of the GAPD was .66, respectively.

Discussion

Structure of the Canadian and the Dutch Versions of the GAPD

The present study is the first to examine the GAPD as a self-report questionnaire operationalizing Livesley's (2003, 2007) adaptive failure model. One of the main findings is the highly similar factor structure of the Canadian GAPD and its Dutch counterpart. The factor structure was not only remarkably consistent across these cross-national samples, but was also congruent with the two primary scales of the original instrument. These findings can be seen as an initial cross-national validation of the underlying adaptive failure model. The multidimensionality of the Self-pathology and Interpersonal dysfunction scales was shown in the subscale reliabilities. Moreover, the primary scales were comprised of subscales that demonstrated good internal consistency.

Models of Personality Dysfunction and the GAPD

In Livesley's adaptive failure model, personality dysfunction is seen as a failure of adaptation in relevant life domains, especially those concerning establishing a stable, coherent sense of self and identity, and developing prosocial patterns of interpersonal behavior. These components are operationalized in the primary scales Self-pathology and Interpersonal dysfunction of the GAPD. A comparable structure of the core features of personality pathology has also been found in other studies. Verheul et al. (2008) investigated the core components of personality dysfunction and proposed that in addition to the conceptually similar domains of Identity integration, Relational capacities, and Social concordance, Self-control and Responsibility may also be identified as higher order domains of disturbed personality functioning. A third model by Parker and colleagues (Parker et al., 2004) as well as the model by Cloninger (2000) posit that deficits in Cooperativeness and Coping or Self-directedness form the higher order structure of the construct defining disordered personality function. Taken together, some theoretical convergence is notable such that the domains of Self-pathology, Self-directedness, Coping,

Interpersonal Functioning, and Cooperativeness are considered core factors of disordered personality functioning across a variety of studies and perspectives. However, although the above factors show content overlap, they are not identical. Future research should investigate the ways in which the GAPD is related to other models.

Discriminatory Power of the GAPD

Since the GAPD was developed in the context of the discussion on categorical and dimensional classifications of PDs, it is significant that the GAPD was able to differentiate between patients with and without categorical PD. The primary GAPD scales also differentiated between levels of severity of personality pathology. These findings suggest the possibility of using GAPD scores for the derivation of (multiple) cut-points for determining (degree of) pathology on the basis of severity of symptoms and dysfunction (Helzer, Kraemer & Krueger, 2006; Kamphuis & Noordhof, 2009). Such cut-points would go beyond mere statistical criteria as they are underpinned by theoretical constructs and a coherent conceptual rationale. This is relevant to clinical practice because linking pathology to a theoretical meaningful framework increases clinical utility (Shedler & Westen, 2004; Verheul, 2005).

The GAPD also appears to differentiate between patients and non-patients. This finding is notable because the GAPD putatively measures specific dysfunction of personality rather than general emotional impairment or psychosocial dysfunction. Of course, these concepts are inherently related, an association which has also been observed by others. For example, Ro & Clark (2009) described the importance of psychosocial dysfunction in diagnosis of PD, and acknowledged the conceptual overlap between trait measures, personality and social functioning, and psychosocial functioning. In their study, scales related to personality functioning (in particular, identity) loaded onto the same factor as scales related to subjective well-being, suggesting conceptual overlap. On the other hand, their study found a clear interpersonal and social functioning factor, as did ours. Since general emotional impairment is also expected in patients with only Axis I pathology, we believe our finding that the GAPD discriminated between patients with and patients without a PD indicates that more than just general pathology or distress is measured. Clearly, more research is needed to examine the degree to which these concepts can be optimally disentangled.

Dimensions of Personality Disorders and the GAPD

The GAPD scales were related to both the SCID-II dimensional score and the DAPP-BQ scales. Associations were of about equal strength with each of the Axis II clusters, suggesting that the GAPD measures general personality pathology rather than a specific type.

The Self-pathology scale of the GAPD and the Emotional dysregulation domain of the DAPP-BQ were most closely related in both samples of our study. Emotional dysregulation represents unstable and reactive tendencies, problems with identity and self-esteem, and interpersonal problems. Since the DAPP-BQ is

an instrument for the assessment of *pathological* personality traits (i.e., covering the maladaptive range of personality functioning), it is not surprising that these concepts are strongly related. Traits have a widespread impact on all aspects of personality and hence it is inevitable that trait measures will correlate with measures of core personality dysfunction, such as GAPD scores. In addition, the multidimensionality of traits, especially Emotional Dysregulation, contributes to conceptual overlap between trait models and models of personality dysfunctioning. Berghuis, Kamphuis & Verheul (2011) recently documented related meaningful associations between the GAPD and the NEO-PI-R (as a measurement of *normal* personality traits [Costa & McCrae, 1992b]), but also demonstrated in a joint factor analysis that components of general personality dysfunctioning (GAPD) and particular facets of specific personality traits (NEO-PI-R) were factorially distinct. As the DSM-5 Personality and Personality Disorders Workgroup (APA, 2011) is proposing a model of personality disorder assessment and classification containing concepts related to personality dysfunction and personality traits, it is important that the distinction between these two concepts and their operationalization across measurement methods (e.g. self-report measures and diagnostic interviews) are further investigated.

Of note are the minimal correlations between the DAPP-BQ Compulsivity scale and the primary scales of the GAPD. The DAPP-BQ Compulsivity domain may tap a unidimensional construct specific to a particular PD (perhaps OCPD). In support of this conjecture are the findings by Verheul et al. (2008), who also reported low correlations of the DAPP-BQ Compulsivity scale with subscales of another measure of the core components of personality (dys)functioning (i.e., the SIPP-118). Furthermore, the related normal personality trait of Conscientiousness (NEO-PI-R) has been shown to be specifically related to unique PDs rather than to general personality pathology (see Saulsman & Page, 2004).

Limitations

The current study is limited by some of its sampling properties. Not all PDs were represented in the Dutch psychiatric sample, and its unequal gender distribution (though not unusual in such psychiatric samples) should be taken into account when generalizing our findings. For the analysis of structure, we consider our cross-national sample strategy a strength, and the highly similar psychometric properties and principal components that emerged for the Dutch and Canadian versions of the GAPD suggest a robust structure. On the other hand, one cannot directly compare means across samples as they differ not only in clinical status (normal versus clinical subjects), but also nationality. Future studies may elucidate to what extent clinical and normal subjects differ within countries.

Limitations with regard to the measurements are the exclusive reliance on self-report measures for the assessment of personality dysfunction and personality traits, and the absence of formal inter-rater reliability data for the SCID-II ratings. The limitations of self-report instruments are extensively discussed (Ganellen, 2007), and it has been suggested that there are limitations in the capacity for psy-

chological insight and awareness in patients with personality pathology (Westen & Shedler, 2000). We recognize that this as an important general issue, and we also note that the issue requires systematic empirical analysis, but consider it beyond the focus of the present paper. We point out that the use of self-reports is a widely used method in both PD research and clinical practice, and choose here to focus on the specific contribution self-report instruments may make in emerging models of personality pathology. We derive some encouragement from the observation that the GAPD differentiated PD from both normal personality, and from other mental disorders. Moreover, we consider the use of structured interview (SCID-II) based rating of symptoms of DSM-IV PDs in this context also as a strength, as it bypasses method variance inflated correlations.

As previously suggested, the nature of the relationship of the GAPD with other related models and measures requires further exploration. Further research may also reveal to what extent the GAPD may be useful for screening purposes for the detection of general personality pathology. For such an application, it would be imperative for the questionnaire to distinguish reliably PD cases from non-cases, and to demonstrate high specificity to detect comorbidity between Axis I and II.

In conclusion, we present the GAPD as a promising operationalization of a conceptually coherent model of maladaptive personality functioning. This instrument may contribute to the discussions about the nature of the DSM-5 personality disorder representation. In the successively proposed DSM-5 models (APA, 2010, 2011), personality (dys)function is part of the assessment of PD. Moreover, a consistent part of the proposals is the revised General Criteria for PD that specify significant impairment in personality functioning manifested by impairment in self-functioning and interpersonal functioning. This is the first diagnostic criterion. The GAPD primary scales are very similar to these criteria, and could therefore be used as indices for that criterion.

More generally, the GAPD may be used in a similar, previously described two-step diagnostic procedure for the assessment of PD (Livesley, 2003; Pincus, 2005). In such procedures, the definition of PD pathology is distinguished from the description of individual differences in the phenomenology of PD. The GAPD can be used as an instrument to define disordered functioning from a categorical perspective, but should probably supplemented by additional assessment instruments when a formal clinical diagnosis of PD is needed. In a second step, other instruments such as the DAPP-BQ can provide a descriptive dimensional picture of the person. The combination of these perspectives may lead to an integrated assessment approach of personality pathology (Huprich, Bornstein & Schmitt, 2011; Stepp et al., 2012), in which the integration of multiple perspectives on personality traits and personality pathology and multiple relevant instruments is used in the assessment of personality and personality disorder. This integrated assessment approach may yield a more comprehensive understanding of PD patients which presumably will be conducive to high quality treatment planning.

3

Psychometric properties and validity of the Dutch Inventory of Personality Organization (IPO-NL)

Published as: Berghuis, H., Kamphuis, J.H., Boedijn, G., & Verheul, R. (2009). Psychometric properties and validity of the Dutch Inventory of Personality Organization (IPO-NL). *Bulletin of the Menninger Clinic, 73*, 44–60.

Introduction

In personality assessment, a distinction can be made between descriptive and structural diagnosis. Descriptive diagnosis predominantly involves the description of externally observable behavior, whereas structural diagnosis aims to examine the underlying, not directly observable, structure of personality. Examples of the descriptive approach are the categorical diagnosis according to the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) and various dimensional models of personality (for a recent review, see Widiger & Simonsen, 2005). The structural approach is rooted in the structural model of Freud. Kernberg has developed a contemporary application of this structural model (Kernberg, 1984; Kernberg & Caligor, 2005). According to Kernberg's model, the basic structure of personality can be meaningfully characterized in terms of levels of ego-organization. Kernberg distinguishes, from most to least severely disturbed, psychotic, borderline, and neurotic ego-organization, respectively. Structural diagnosis of these different levels can be derived from the specifically developed Structural Interview (Kernberg, 1984). This interview involves both a psychiatric examination and a psychodynamic diagnostic interview. Specifically, the interview explores the level of identity integration, nature of defenses, and level of adequate reality testing to determine a patient's position in the three-level classification. Criticisms of this model are primarily aimed at the scarcity of empirical underpinnings and the unsatisfactory reliability of the Structural Interview (Derksen, Hummelen, & Bouwens, 1989; Reich & Frances, 1984).

In view of the time-consuming nature of the Structural Interview, as well as the high level of psychodynamic knowledge and clinical skills required of the interviewer, Kernberg and associates constructed a semi-structured interview (STIPO; Buchheim et al., 2006) and the self-report questionnaire Inventory of Personality Organization (IPO; Clarkin et al., 2001). The IPO is the focus of the current study. Similar to its interview counterpart, the IPO is primarily designed to measure the dimensions of identity diffusion, defenses, and reality testing, and aims to contribute to the structural diagnosis of personality.

Several studies have addressed the psychometric properties of the IPO in both clinical and nonclinical samples. Good internal consistency and test-retest reliability for the three main scales Identity Diffusion (ID), Primitive Defenses (PD), and Reality Testing (RT) were observed in nonclinical (Lenzenweger, Clarkin, Kernberg, & Foelsch, 2001; Normandin et al., 2002) and clinical (Vermote et al., 2003) samples. Factor analyses yielded a three-factor solution, but in most studies the third factor made insufficient independent contribution to the proportion of explained variance. Preference was therefore given to a clustered factor of PD and ID, with RT as a second factor (Lenzenweger et al., 2001; Normandin et al., 2002; Vermote et al., 2003).

The relationship between the IPO and DSM-IV personality pathology has also been investigated in several studies. For example, Foelsch et al. (2000) reported that the IPO scales differentiated between clustered (i.e., low-level borderline,

high-level borderline, and neurotic) Axis II diagnoses. In a study by Vermote et al. (2003), high correlations were observed between the ID and PD scales and the borderline and paranoid personality disorders, as well as between the RT scale and the borderline and schizotypal personality disorders. In addition, the IPO scales showed theoretically predicted relationships to several relevant constructs in (structural) personality pathology such as negative affectivity, disturbances in aggression regulation, trait anxiety, psychosis proneness, and interpersonal problems (Lenzenweger et al., 2001; Vermote et al., 2003). Furthermore, the IPO appeared to be sensitive to changes in aspects of borderline personality organization following psychotherapeutic treatment (Arntz & Bernstein, 2006). Finally, the RT subscale emerged as a predictor for different facets of dissociation (Spitzer et al., 2006).

Various versions and translations of the IPO have been developed (e.g., Clarkin et al., 2001; Normandin et al., 2002; Vermote et al., 2003). All versions consist of the three main scales, ID, PD and RT, and some versions include additional scales. The most recent English version of the IPO was published in 2001 (Clarkin et al., 2001) and includes two additional scales, Aggression (AG) and Moral Values (MV). The authorized Dutch translation of this questionnaire (IPO-NL; Ingenhoven, Poolen, & Berghuis, 2004) and the additional scales have not yet been evaluated empirically. The current study was designed to determine the basic psychometric properties and to investigate the concurrent and convergent validity of the IPO-NL. Specifically, we examined its sensitivity to clinical status and tested its convergent validity by relating the IPO- NL to selected measures of personality and personality pathology.

Methods

Participants

The total sample (N = 552) comprised a heterogeneous sample of psychiatric patients and a nonclinical control sample. The clinical sample (n = 371) was recruited from inpatient and outpatient programs from two large mental health care institutes in the Netherlands (Symfora groep, Amersfoort; and Parnassia, The Hague). All included patients were specifically referred for extensive personality assessment by a licensed clinical psychologist or psychiatrist. Referral was based on the clinical impression that significant personality pathology was implicated in the patient's presenting problems. Patients with psychotic disorders, organic mental disorders, and mental retardation and patients in acute crisis were excluded. The clinical group included 253 women (68%) and 117 men (32%); one value was missing. The mean age was 34.0 years (SD = 11.6, range = 17-64). The nonclinical sample (n = 181) consisted of various subgroups: train passengers (n = 91; 50%), members of an amateur choir (n = 59; 33%), and clinical psychologists in training (n = 31; 17%). This group included 125 women (69%) and 56 men (31%). Their mean age was 41.3 years (SD = 16.8; range = 18-80).

Instruments

Inventory of Personality Organization (IPO; Clarkin et al., 2001). The IPO is an 83-item self-report questionnaire. All items are rated on a 5-point Likert-scale format, ranging from 1 (never true) to 5 (always true). The IPO has three main scales, including Identity Diffusion (ID; 21 items), Primitive Defenses (PD; 16 items), and Reality Testing (RT; 20 items) and two additional, newly developed scales, Aggression (AG; 18 items) and Moral Values (MV; 11 items, three of which are derived from the main scales). ID measures facets related to a poorly integrated identity, for example, poor and inconsistent self-representations, and inadequate perception and understanding of others. PD refers to primitive psychological defenses such as externalization, splitting, projection, idealization, and devaluation. RT covers items related to the *"capacity to differentiate self from nonself, to distinguish intrapsychic from external sources of stimuli, and to maintain empathy with ordinary social criteria of reality"* (Kernberg, 1984, p. 18). AG consists of items related to the control over aggressive impulses, (para)suicidal acts and ideations, manipulation of others, and sadistic aggression. MV assesses the psychodynamic construct of superego pathology. This study used the authorized Dutch translation by Ingenhoven et al. (2004). The original English version was translated to Dutch, and then back translated by a native English speaker. Comments on this translation by one of the original authors (J.F. Clarkin) were incorporated into the definitive translation, which was then authorized as such. This translated version differs from the version published in 2001 (Lenzenweger et al., 2001) in its inclusion of the additional AG and MV scales and in the ordering of items. In the 2001 version, items belonging to the same scale were listed sequentially, whereas the Dutch translators opted to randomize the order of items (with permission of the original authors).

NEO-Personality Inventory (NEO-PI-R; Costa & McCrae, 1992b; Hoekstra et al., 1996, Dutch version). The 240-item NEO-PI-R is a widely used operationalization of the Five-Factor Model (FFM) of personality. Respondents indicate their level of agreement with each of the statements on a 5-point scale. Items map onto the five personality domains, each of which is subdivided into six facets. Costa and McCrae (1992a) report extensive reliability and validity data on the NEO-PI-R. Research has shown that high scores on Neuroticism in combination with low scores on Agreeableness and Conscientiousness are strongly connected to general (severe) personality pathology (Saulsman & Page, 2004; Widiger & Costa, 2002). This so-called NAC-profile served as another test of the IPO's convergent validity; based on theory and previous research, it was predicted that the IPO would show moderate to high correlations with Neuroticism, Agreeableness, and Conscientiousness, which would be greater than the correlations with Extraversion and Openness to Experience.

Symptom Checklist (SCL-90; Derogatis, 1994; see also Arrindell & Ettema, 2003, Dutch version). The SCL-90 is a widely used 4-point self-report clinical rating scale that assesses symptoms in nine areas of patient functioning. Psychometric research on the SCL-90 has yielded favorable results with regard to internal

consistency, test-retest reliability, and correlations with related measures (Arrindell & Ettema, 2003). We selected the SCL-90 Total Score and the Personality Severity Index (PSI) and the Current Symptom Index (CSI) for the analyses. The PSI is the mean score of the subscales Interpersonal Sensitivity (SEN) and Hostility (HOS) and has been found to be strongly related to (severe) personality pathology (Karterud et al., 1995; Starcevic, Bogojevic, & Marinkovic, 2000). The CSI is the mean score of the remaining SCL-90 subscales. We predicted that the IPO-NL would be most strongly related to the SCL-90 personality pathology index.

Data analysis

Basic psychometric properties of the IPO-NL were assessed for the clinical sample. Specifically, the internal consistency (Cronbach's alpha) and test-retest reliability were assessed for the IPO-NL and its subscales, and the factor structure was investigated using a principal component analysis (PCA). A varimax rotation was used to yield factors describing the major independent components of variance in the IPO. To decide on the optimal number of factors, we inspected the Scree plot of eigenvalues and evaluated the interpretability of resulting factor structures by relating the solutions to theory (esp. Kernberg). Additional analyses were conducted to test aspects of the construct validity of the IPO. First, to establish the sensitivity of the IPO-NL to clinical status, means of the clinical and nonclinical groups were compared using ANCOVAs adjusted for age. Second, to test our predictions, correlations with the NEO- PI-R and selected SCL-90 indices were calculated. All analyses were conducted with SPSS 15.0 for Windows.

Results

Reliability

As can be seen from Table 1, Cronbach's alpha for the five IPO-NL scales in the clinical sample ranged from 0.78 (MV) to 0.93 (ID). Only three items had a corrected item-total correlation less than .30. Feedback from multiple respondents suggested that item 21 was ambiguous, which we confirmed on closer grammatical inspection. This item was therefore excluded from further statistical analyses[1]. One month test-retest correlations were computed for a subsample of normal controls (n = 62) and patients (n = 14). These correlations (see Table 1) generally did not differ between patients and control participants, and ranged from .80 (AG) to .86 (ID), suggesting excellent test-retest reliability. An exception was noted for the MV with a correlation of .72 for the patients and .84 for the normal control group.

[1] In future studies, we will utilize a revised translation of item 21, so that the Dutch and English versions of the IPO remain equivalent.

Table 1. Means, Standard Deviations, internal consistency and test-retest reliability of the IPO-NL-scales in a nonclinical (n =181) and a clinical group (n = 371)

IPO-NL-scales	Nonclinical		Clinical				
	M	*SD*	*M*	*SD*	*d*	α	r^*
Identity Diffusion	38.47	10.91	54.21	17.33	1.09	.93	.86
Primitive Defenses	26.99	7.63	38.33	12.61	1.09	.91	.82
Reality Testing	29.43	8.00	38.43	13.38	0.82	.91	.85
Aggression	23.16	4.00	30.81	9.69	1.03	.85	.80
Moral Values	21.30	5.74	24.65	7.26	0.51	.78	.75
Total Scale	139.35	32.68	186.43	54.59	1.05		

Note. *M* = mean score; *SD* = standard deviation; *d* = Cohen's *d,* effect size; α = Cronbach's alpha; r^* = test-retest reliability (combined clinical and nonclinical groups), $p < .001$ (one-tailed).

Factor structure

To explore the factor structure of the IPO-NL, a PCA with varimax rotation was conducted on the clinical sample (n = 371). An exploratory analysis was selected because no previous study has examined the IPO with the additional Aggression and Moral Values scales. While the IPO-NL was designed to measure five scales, our scree plot suggested that a four-factor solution was more appropriate than a five-factor solution, and the four-factor solution was also superior from a theoretical point of view. This four-factor model explained a combined total of 41.9% of the variance, consisting of one large component (21.5%) and three smaller components explaining 8.5%, 8.4%, and 3.6%, respectively. Following the recommendations of Stevens (2002), we declared loadings above .27 in absolute value as statistically significant. Only one item had a factor loading below .27. Items that loaded ≥.27 on a given factor were assigned to that factor. Items loading onto two or more factors were assigned to the factor for which they had highest loadings. The interpretation of the pattern of rotated factor loadings (see Table 2) is as follows: Factor I was interpreted as General Personality Pathology, with primary loadings of almost all items of the ID, PD and MV scales, and seven items of the RT scale and six items of the AG scale, respectively. Fifty-two of the 82 items loaded onto this first factor. Factor II was interpreted as Reality Testing or psychotic vulnerability, with primary loadings almost exclusively from items of the RT scale. Factor III was called Aggression, with primary loadings from items of the AG scale, and items from other scales with clear aggressive content. Factor IV was interpreted as Sadistic Aggression, with primary loadings from three items with sadistic content of the AG scale. Intercorrelations between these four factors ranged from .03 (be-

tween Factors I and IV) to .60 (between Factors III and IV), with a median correlation of .41. Primary loadings were substantially higher than the secondary loadings (median difference score .33, range .02-.71).

Table 2. Factor loadings of the 82 items from the IPO-NL in a clinical group (n = 371)

IPO-scale Item number	Factor loading			
	I	II	III	IV
Identity Diffusion				
62	**.76**	.13	-.03	.04
15	**.71**	.08	.06	.01
61	**.66**	.19	.22	-.13
50	**.66**	.11	**.31**	.02
34	**.65**	.11	.05	.04
42	**.63**	-.03	.09	.01
39	**.63**	.07	.20	.09
09	**.61**	.15	.11	.05
79	**.60**	.24	.20	.11
48	**.58**	.19	-.02	-.02
13	**.58**	.23	**.28**	.24
69	**.57**	.04	**.28**	-.17
07[a]	**.55**	.19	.24	-.04
32	**.55**	.09	.19	.01
83	**.54**	.24	**.29**	**-.46**
49	**.52**	.19	-.03	.09
77	**.52**	.14	.07	-.02
41	**.51**	.10	**.43**	.20
63	**.50**	.04	.20	**-.27**
38	**.43**	**.30**	-.04	.24
19	**.39**	.07	**.54**	.10
Primitive Defenses				
23	**.69**	.16	.17	.06
05	**.67**	.19	.18	-.07
43	**.64**	.10	**.29**	.04
12	**.62**	.19	**.34**	.14
20[a]	**.58**	**.30**	.25	.18
33	**.59**	.25	.12	.10
29	**.57**	.22	.21	.14
06[a]	**.54**	.12	.31	.12
46	**.54**	.18	.09	.12
17	**.53**	.12	.07	-.02
78	**.52**	.16	.11	-.06
80	**.50**	.20	.16	.18
36	**.46**	.13	.13	.16
04	**.37**	.22	.12	.15
70	**.40**	**.29**	**.42**	**-.31**
40	.09	.26	.19	.22
Reality testing				
75	**.61**	.24	-.05	.12
10	**.61**	.25	.10	.01
28	**.60**	.19	.13	-.13
51	**.51**	.19	.04	-.02
66	**.51**	.25	**.44**	.18

Table 2. Continued

IPO-scale Item number	Factor loading			
	I	II	III	IV
Reality Testing				
47	**.48**	**.40**	.15	.01
53	**.43**	**.37**	.12	-.17
57	.04	**.81**	.10	.05
54	.18	**.78**	.11	-.04
35	.23	**.76**	.07	-.01
65	.04	**.67**	.15	-.05
76	.24	**.62**	.17	.22
11	**.34**	**.56**	**.28**	.09
01	**.30**	**.56**	.23	.07
73	.20	**.55**	.25	-.02
81	.27	**.49**	.34	**-.32**
58	**.44**	**.48**	**.22**	-.03
52	.19	**.46**	.08	.14
16	**.30**	**.46**	.21	.07
55	**.32**	.11	**.45**	.25
Aggression				
08	**.57**	.06	.20	.17
60	**.52**	.09	.21	-.08
24	**.52**	.22	**.28**	-.04
02	**.50**	.14	**.29**	.19
74	**.43**	.26	**.29**	-.15
30	**.40**	**.28**	.24	-.25
45	.26	**.29**	.23	-.20
82	-.04	.09	**.73**	.06
44	.20	.11	**.67**	.01
72	.13	.08	**.66**	.17
26	.07	.23	**.64**	.02
68	.09	.15	**.54**	.08
59	.18	.16	**.49**	-.17
25	.20	.15	**.48**	-.01
14	**.32**	.15	**.44**	.10
71	.20	-.01	.18	**.73**
56	.04	.14	.19	**.67**
37	.13	.08	.34	**.60**
Moral Values				
18	**.54**	.14	.18	.03
31	**.53**	.08	.04	.01
03	**.43**	.21	**.27**	.07
22	**.41**	.12	**.36**	-.01
64	**.41**	.07	.24	.16
27	.06	.22	**.56**	.15
67	.19	.08	**.36**	.22

Note. Varimax Rotated Principal Component Analysis. Factor loadings greater than .27 (Stevens, 2002) are printed in bold. [a] Also MV-scale item.

Construct validity

As a preliminary analysis, we tested baseline equivalence of groups for gender and age. No significant group differences were observed for gender ($X^2 = 0.03$, $df = 1$, $p = .87$). The clinical group was significantly younger than the nonclinical group; $t(550) = 5.99$, p = < .001).

Next, in order to examine IPO-NL sensitivity to clinical status, the scores of the clinical and nonclinical groups were compared using ANCOVAs adjusting for age. The clinical group scored consistently higher on all IPO scales (see Table 1): ID, $F(2, 548) = 90.14$, p < .001; PD, $F(2, 548) = 75.81$, $p < .001$; RT, $F(2, 548) = 44.16$, $p < .001$; AG, $F(2, 548) = 65.28$, $p < .001$; MV, $F(2, 548) = 25.33$, $p < .001$; IPO total score, $F(2, 548) = 76.81$, $p < .001$.

As a test of convergent validity, correlations between the IPO- NL scales and the SCL-90 were calculated, as shown in Table 3. Correlations between the IPO-NL scales and the Personality Severity Index (PSI, median $r = .73$; range .64-.80) were higher than the associations between the IPO-NL scales and the Current Symptom Index (CSI, median $r = .63$; range .46-.67), suggesting that the IPO is more strongly related to personality pathology than to Axis I symptomatology. Table 3 also shows the intercorrelation matrix of the IPO-NL scales and the NEO-PI-R domain scores. As expected, we observed low correlations with Extraversion and Openness (median r = .10; range .02-.20) and moderate to high correlations with Neuroticism, Agreeableness, and Conscientiousness (median r = .48; range .23-.76). This can be seen as suggestive evidence for a positive association with the NAC profile that presumably measures general, severe personality pathology.

Table 3. Correlations between the IPO-NL-scales and personality and pathology measures (SCL-90, NEO-PI-R) in a clinical group (N = 109).

	IPO-NL Total	Identity Diffusion	Primitive Defenses	Reality Testing	Aggression	Moral Values
SCL-90						
Total score	**.73****	**.70****	**.69****	**.68****	**.55****	**.53****
PS-Index	**.80****	**.76****	**.79****	**.69****	**.65****	**.64****
CS-Index	**.67****	**.65****	**.62****	**.63****	**.54****	**.46****
NEO-PI-R						
Neuroticism	**.66****	**.76****	**.61****	**.53****	.48**	.49**
Extraversion	- .12	- .20*	- .06	- .14	- .06	- .06
Openness	- .09	- .02	- .10	- .07	- .13	- .11
Agreeableness	- .45**	- .34**	- .44**	- .23*	**- .56****	**- .59****
Conscientiousness	- .47**	**- .51****	- .40**	- .36**	- .45**	- .36**

Note. * p < 0.05; ** p < 0.01 (2-tailed). PS-Index: Personality Severity Index, CS-Index: Current Symptom Index. Correlations above .50 are printed in bold.

Discussion

This study presents a first empirical test of an authorized version for the Dutch IPO in a heterogeneous sample. Various aspects of reliability and validity of the IPO were evaluated. Regarding reliability, we found good internal consistency of the IPO-NL and its subscales, and good to excellent test-retest reliability. Our findings were commensurate with those reported in earlier studies of different (various languages) versions of the IPO (Lenzenweger et al., 2001; Normandin et al., 2002; Vermote et al., 2003).

The IPO-NL factor structure deviated from the five factors predicted by theory. Our data fit a four-factor solution best. The first, large factor defies specific interpretation other than general personality pathology. It is predominantly composed of items that putatively belong to the Identity Diffusion (ID), Primitive Defenses (PD), and Moral Values (MV) scales. We were not surprised that ID and PD loaded on one factor, as this finding corresponds to the factorial solutions from prior studies regarding the IPO (Lenzenweger et al., 2001; Normandin et al., 2002; Vermote et al., 2003). The observed ID/PD/MV factor, our "general personality pathology" factor, is theoretically related to the neurotic-borderline continuum of psychological functioning; particularly the content of the items from the ID and PD scales with the highest factor loadings represent this theme. General psychological functioning is, according to Kernberg's model, strongly dependent on the degree of identity integration and the quality of defensive operations (Kernberg & Caligor, 2005). High scores on this factor should be strongly related to Kernberg's concept of borderline personality organization, because the main feature of borderline personality organization is identity diffusion combined with primitive defenses, mainly splitting (Kernberg, 1984). Lower scores on this factor should be related to neurotic personality organization. It is not clear why most items of the MV scale also loaded onto this factor of general personality pathology. Perhaps the Moral Values construct is difficult to operationalize without eliciting, for instance, individual differences in tendencies toward socially desirable answers (Ganellen, 2007).

The other three factors were more straightforward to interpret. Almost all RT items coalesced in one factor, supporting the structural integrity of a reality testing subscale. This factor should differentiate the psychotic personality organization from neurotic and borderline personality organizations, because individuals with a psychotic personality organization present, in addition to severe identity diffusion and primitive defenses, a loss of reality testing. The third and fourth factors were almost completely composed of AG items, or items that have aggressive content, with the (small) fourth factor separating out blatantly sadistic content. According to Kernberg's model, the presence of pathological aggression predominates in severe personality disorders (Kernberg & Caligor, 2005). A high score on the AG factor combined with high scores on the other factors would give an extra indication of the severity of the personality pathology. Further research is indicated to test whether the two AG scales may be fused or should be measured separately. The

distinction may be one of mere severity, but it is also possible that the sadistic aggression factor is associated with specific pathology, perhaps akin to the previously abandoned DSM-III-R sadistic personality disorder. Items included "I enjoy it when I make other people suffer," "I have been told I enjoy other people's suffering," and "I get excited by other people suffering."

In sum, the current IPO-NL consists of a large factor that blends ID, PD, and MV together, a specific Reality Testing factor, and two aggression-related factors (aggression and sadism) that may or may not be merged into one. As such, our factorial solution did not closely fit the predetermined constructs or scales. This finding may due to (1) error in the delineation of the constructs, (2) difficulty operationalizing these constructs, a problem acknowledged by the original authors (Clarkin et al., 1994), (3) the Dutch translation or (4) specifics of the sample composition. Further research may rule out the latter possibility, and subsequent fine-tuning of the item formulation and selection may help decrease the probability of the second possibility for error.

Several findings in our study support the construct validity of the IPO-NL. First, the IPO-NL and its subscales discriminated between the clinical and nonclinical groups, with generally large effect sizes. Second, the IPO-NL was strongly associated with selected measures of personality and personality pathology. Our expectations regarding the pattern of associations with the Five-Factor Model were consistently confirmed. Higher IPO-NL scores were associated with higher Neuroticism, lower Agreeableness, and lower Conscientiousness. Moreover, as predicted, higher (absolute) associations were observed with the trio Neuroticism, Agreeableness, and Conscientiousness than with Extraversion and Openness to Experience. This pattern of associations and the suggestive fit with the personality pathology "NAC" profile (Saulsman & Page, 2004) lends support to the notion that the IPO measures personality pathology. Moreover, the observed differential associations with the FFM were generally in line with those reported by Laverdière et al. (2007), who found positive associations between identity diffusion (ID) and primitive defenses (PD) with the Five-Factor dimensions Neuroticism and Agreeableness, and to a lesser extent with Conscientiousness. Consistent with the predictions and the pattern of associations with the FFM, the IPO-NL scales also yielded higher associations with the SCL-90 index that measures personality pathology (PSI) than with its SCL counterpart measuring general symptomatology (CSI, and SCL-90 total). Taken together, the IPO-NL appears to be a sensitive questionnaire that taps behaviors, cognitions, and symptoms related to severity of general personality pathology.

There are some limitations of the present study that deserve comment. First, our convenience sample consisted of outpatients presenting with diverse clinical problems. No formal diagnostic testing using structured interviews was conducted, which limits the ability for systematic comparison. The current sample should best be considered a naturalistic sample of outpatients presenting with complex, comorbid problems suggesting personality dysfunction (which led to their referral for extensive personality assessment). Caution should therefore be used in making

inferences to other populations. Further, due to the size of our clinical sample (and the resulting 5-1 subject/variable ratio), cross-validation of the derived factor structure is strongly indicated. Another limitation, though not specific to this study, concerns the use of self-reports in operationalizing Kernberg's model. Although the use of self-reports is widespread and generally cost effective in clinical practice, it may not be optimally suited for the assessment of unconscious patterns of thinking, reacting, and behaving (Ganellen, 2007; Shedler, Mayman, & Manis, 1993). It remains to be seen to what extent self-report statements may yield viable indices of, for example, (preconscious) primitive defenses central to Kernberg's theory.

These limitations notwithstanding, we believe the present study suggests that the IPO-NL may be a clinically useful instrument for the assessment of general personality pathology, perhaps especially if it is combined or followed up with additional hetero-method instruments (Meyer, 1997). Future research may further articulate the proposed factors by taking an exploratory test construction approach, that is, by engaging in iterative cycles of item generation, data collection, and construct delineation, as recently described by Tellegen & Waller (2008).

4

Toward a model for assessing level of personality functioning in DSM-5: Empirical articulation of a core dimension of personality pathology[a,b]

Published as: Morey, L.C., Berghuis, H., Bender, D.S., Verheul, R., Krueger, R.F., & Skodol, A. (2011). Toward a Model for Assessing Level of Personality Functioning in DSM-5, Part II: Empirical Articulation of a Core Dimension of Personality Pathology, *Journal of Personality Assessment, 93,* 347-353.

[a] This manuscript was awarded with the Walter G. Klopfer Award 2011 (Society for Personality Assessment).
[b] This project was supported by a DSM-5 Research Group Data Analysis proposal grant.

Introduction

Although the Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM-IV]; American Psychiatric Association, 1994) characterized personality disorders (PDs) as 10 discrete categories of personality problems, one of the most consistent findings in the PD literature is that of comorbidity; it is far more common for individuals to receive co occurring rather than single PD diagnoses. Comorbidity has been cited as an important weakness of the DSM-IV, and as a rationale for a dimensional personality pathology system (Widiger, Simonsen, Sirovatka, & Regier, 2006). However, individuals with PDs often tend to lie within similar 'regions' of the space defined by dimensional systems, even across dimensional approaches. For example, within the Five-factor personality trait model, a number of different DSM-IV PDs demonstrate similar configurations involving high neuroticism, low agreeableness, and low conscientiousness (Morey, Gunderson, Quigley, & Lyons, 2000; Morey et al., 2002; Saulsman & Page, 2004; Zweig-Frank & Paris, 1995). Although often understood as a problem with discriminant validity, comorbidity might also be compelling evidence of essential commonalities among PDs (Krueger & Markon, 2006; Morey, 2005), with presumably distinct criteria sets or personality dimensions tapping into these commonalities.

The DSM-IV conceptualization of PD is largely uninformative on PD commonalities. The general criteria for PD involve (a) manifestations in two domains of functioning; (b) enduring inflexibility; (c) clinically significant distress or impairment; (d) temporal stability, and diagnostic primacy relative to (e) other psychiatric or (f) medical conditions. Difficult to operationalize effectively (Livesley, 1998), this definition is nonspecific regarding to the nature of the personality dysfunctions. Furthermore, discontinuity between those with PDs and those without such disorders is implied, when there is an increasing consensus that PD is a dimensional rather than categorical phenomenon, manifesting at different levels of severity (Tyrer & Johnson, 1996).

In light of the shortcomings of the DSM-IV conceptualization of PD, the DSM-5 Personality and Personality Disorders (P&PD) Work Group has proposed an approach that describes core features of personality psychopathology at different levels of severity (Skodol et al., 2011). As noted by Bender, Morey, and Skodol (2011), there is considerable convergence in theoretical accounts and empirical research on measures of core personality pathology (e.g., Blatt & Auerbach, 2003; Diguer et al., 2004; Dimaggio et al, 2006; Fonagy & Target, 2006; Huprich & Greenberg, 2003; Kernberg & Caligor, 2005; Levy et al., 2006; Piper, Ogrodniczuk, & Joyce, 2004), and each of these formulations discusses the potential clinical utility of a severity dimension of personality pathology. Such a dimension can be viewed as conceptually independent of specific personality traits, instead representing a more general adaptive failure or delayed development of an intrapsychic system needed to fulfill adult life tasks (Livesley, 2003). As noted by Bornstein (1998), *"the best predictor of the therapeutic outcome for PD patients is severity, not type, of personality pathology"* (p. 337). This conclusion is also sup-

ported by the findings of Hopwood et al. (2011), who found that general severity of personality pathology was the single best predictor of prospectively assessed functional impairment in patients with PD after 10 years of follow-up. Furthermore, such a severity dimension can be modeled independently from various trait dimensional systems of personality that have been proposed (Berghuis et al., 2012; Hopwood et al., 2011). An influential mapping of various DSM-IV PD concepts onto a core continuum of personality organization is provided by Kernberg and Caligor (2005), who organized the various specific disorders into a conceptual scheme that described the range of severity of personality organization from the more severe (e.g., schizoid, borderline) to less severe (e.g., obsessive-compulsive, avoidant, dependent) PD phenomena.

Bender et al. (2011) describe a severity continuum consisting of impairment in identity, self-direction, empathy, and intimacy. The purpose of this article was to provide an empirically based articulation of this global continuum, with the aim of characterizing its manifestations at different levels of severity. It was hypothesized that a core dimension of personality pathology, involving impairments in self and interpersonal functioning, can be extracted from symptomatic and phenomenological measures of personality problems, with key markers identified to anchor dimensional ratings of severity of personality pathology and to help establish 'caseness' in personality pathology. The study sought to identify these markers at different levels of this continuum, using item response theory (IRT; Lord, 1980). Articulation of this dimension is critical both as a basis for defining the core features of personality pathology, as well as representing differences in personality functioning within and among different PDs.

Method

Participants

Two samples involving participants from the Netherlands were examined. The Berghuis et al. (2012) sample included 424 psychiatric patients: a mixture of outpatients (87.3%) and inpatients (12.7%), ranging in age from 17 to 66 years old (M = 33.9, SD = 11.3), and 72.4% women. Among participants 33.1% had a specific DSM-IV PD diagnosis (i.e., assigned by their treating clinician); 39.0% received a PD not otherwise specified (PD-NOS) diagnosis, and 27.9% received no or deferred PD diagnosis. Study diagnoses were assigned with the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II), as described later: 43.9% met criteria for at least one DSM-IV PD, and 11.3% met criteria for more than one. The most common SCID-II diagnoses were borderline PD (21.2%) and avoidant PD (20.5%). Most patients met criteria for one or more comorbid Axis I disorders (clinical diagnosis), most often a mood disorder (42%) or an anxiety disorder (13.7%). IRT models and parameter estimates were derived from this sample. A second sample, from Verheul et al. (2008) came from multiple sites and included a total of 2,730 participants (2,252 psychiatric patients from treatment centers in

the Netherlands and 478 from the general population). A total of 1,759 participants who provided complete data were included in the analyses. Study diagnoses were assigned with the Structured Interview for DSM-IV Personality (SIDP-IV), as described later; 52.1% met criteria for at least one DSM-IV PD, and 23.3% met criteria for more than one. The most common SIDP-IV diagnoses were avoidant PD (24.6%) and PD-NOS (19.5%). This sample was used to test the generalization of results from the Berghuis et al. (2012) sample and to examine the relationship of the empirically derived markers to specific DSM-IV PDs in more detail.

Instruments

Study instruments included two self-report instruments, the *Severity Indices of Personality Problems* (SIPP-118; Verheul et al., 2008), and the *General Assessment of Personality Disorder* (GAPD; Livesley, 2006), to measure markers of global personality pathology, and two semistructured interviews, the SCID-II (First et al., 1997) and the SIDP-IV (Pfohl et al., 1997), from which DSM-IV PD diagnoses and associated criteria were obtained. Data on the SIPP-118, GAPD, and SCID-II were collected in the Berghuis et al. (2012) sample, whereas data on the SIPP-118 and SIDP-IV were gathered for the Verheul et al. (2008) study.

General Assessment of Personality Disorder (GAPD). The GAPD (Livesley, 2006) is a recently developed questionnaire measuring hypothesized core components of personality pathology according to Livesley's (2003) adaptive failure model. The GAPD version used in this study consists of 142 items rated on a 5-point Likert scale, ranging from 1 (very unlike me) to 5 (very like me), and made up of two main scales: Self-Pathology and Interpersonal Problems, and 19 subscales. Self-Pathology covers items regarding the structure of personality (e.g., problems of differentiation and integration) and agency (e.g., conative pathology). The Interpersonal Problems scale includes items measuring various impairments in social functioning. This study utilized the authorized Dutch translation by Berghuis (2007). In this sample, the internal consistency (coefficient alpha) reliability for the Self-Pathology scale was .87, and for the Interpersonal Problems scale was .89. However, it is important to note that for this project all analyses of GAPD were at the level of individual items rather than scales.

Severity Indices of Personality Problems (SIPP-118). The SIPP–118 (Verheul et al., 2008) is a dimensional self-report measure of the severity and core components of personality pathology. The SIPP-118 consists of 118 4-point Likert scale items (time frame of last 3 months), covering 16 facets of personality functioning, clustering in five higher order domains: self-control, identity integration, relational functioning, social concordance, and responsibility. Good psychometric properties, including (cross-national) validity, have been reported (Arnevik et al., 2009; Verheul et al., 2008). The median internal consistency (coefficient alpha) reliability of the 16 facets as measured in this sample was .77. As with the GAPD, all analyses of SIPP-118 data were at the level of individual items rather than scales.

Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). The SCID-II (First et al., 1997; Weertman et al., 2000) is a widely used

134-item semi structured interview for the assessment of personality disorders. Each item is scored as 1 (absent), 2 (subthreshold), or 3 (threshold). In the Berghuis et al. (2012) sample, dimensional scores were obtained by summing raw scores of the criteria for each PD category and cluster. Master's-level psychologists conducted the interviews, but no formal assessment of interrater reliability was conducted.

Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl et al., 1997). The Verheul et al. (2008) study measured PDs using the SIDP-IV (Dutch version) administered by master's-level psychologists. Verheul et al. reported a median inter rater reliability of 95% agreement (ranging from 84%-100%) on diagnosis, with a median intra class correlation coefficient of.74 (ranging from .60-.92) for the sum of DSM-IV PD traits present.

Analyses

Specific items from the SIPP-118 and GAPD questionnaires were selected based on markers of global personality pathology identified in the Bender et al. (2011) literature review, using a Situational Judgment Test (Motowidlo, Dunnette, & Carter, 1990) strategy. Two expert P&PD Work Group members (D. Bender and A. Skodol) independently rated every item on the SIPP-118 and GAPD questionnaires, specifying the level of personality pathology expected to be associated with each potential response on the Likert-type scales of these items. Consensual agreement on ratings was used to identify a set of items to discriminate across different levels of personality pathology. This set of items was examined using internal consistency analyses, made up of coefficient alpha, item-total correlations, and principal components analyses. The goal was to isolate a uni-dimensional set of items, consistent with the assumptions of IRT and with developing a single coherent index of overall personality pathology. Items demonstrating low item-total correlations or factorial complexity were eliminated.

The final step in the analysis involved constructing a two-parameter IRT model of the remaining items. The SIPP-118 and GAPD both use Likert-type scales, but the number of response alternatives differ (four vs. five alternatives). Because the goal of the study was to relate item content to severity of global personality pathology rather than to scale responses from particular options, scoring was dichotomized to facilitate interpretation (for the SIPP-118, fully agree and agree responses were combined and contrasted with other responses, whereas for the GAPD completely applicable and more applicable than not item scores were combined). Threshold parameters of these items were used to identify items characterizing the types of problems associated with different levels of severity on the latent trait of personality pathology, whereas discrimination parameters provided an estimate of the ability of the item to distinguish individuals at this level of the trait from those at lower levels of pathology. Analyses were performed with the MULTILOG 7.0 (Scientific Software International, 2003) program. Estimates of the score for each individual in the sample on this latent trait (i.e., the maximum

likelihood estimate of theta, or estimated theta) were retained for additional analyses examining the relationship of this trait to DSM-IV PD diagnoses.

Results

The first step in selecting items from the two self-report instruments was based on the situational judgment ratings of individual items from the instruments, as provided by the two expert raters. There was reasonable interrater reliability for these ratings of the SIPP-118 and GAPD items (interrater correlation on the fully agree ratings on the SIPP-118 was .76; and .74 on completely applicable to me ratings on GAPD items). Items on these two instruments that demonstrated high agreement across the two expert raters were selected if the raters agreed that a particular item was discriminating for the theoretical construct. Agreement between the raters was calculated as the squared Euclidean distance between the ratings for each response option across the two raters. Based on their agreement and differentiation properties, a total of 49 (of118) potential SIPP-118 markers and 57 (of 142) GAPD items were retained as potential indicators of the global personality pathology dimension. Subsequent analyses were then conducted to empirically refine this subset of items in preparation for the IRT analyses, using patient data from the Berghuis et al. sample. Internal consistency analyses for patient responses in the Berghuis et al. sample yielded an alpha for the 49-item SIPP-118 scale of .93, with a mean inter item correlation of .22; the alpha for the 57-item GAPD scale was .96, with a mean inter item correlation of .30. One item from the GAPD was eliminated as it demonstrated a moderate (i.e., neither extremely high nor low) mean and low item-total correlation (below .25). Remaining items were factor analyzed to further assess the unidimensionality of these constructed scales and their suitability for IRT analyses (Hambleton, Swaminathan, & Rogers, 1991). For both the SIPP-118 and the GAPD, there were large first components (representing 17.8% and 27.1% of the variance, respectively) and two other components (on both instruments) with eigenvalues above what would be predicted from parallel analyses (O'Connor, 2000), but each accounting for 6% of the variance or less. On both the SIPP-118 and the GAPD, six items were identified with potentially problematic cross-loadings on secondary components, factors that appeared to tap aggressive behaviors and anhedonia. The factor scores from the first principal component of the SIPP-118 correlated .80 with the first principal component of the GAPD, supporting the conclusion that the primary factors from both sets of items were measuring the same construct. After eliminating items from the SIPP-118 and GAPD that had low item-total correlations or problematic factor loadings, the two scales were combined to form a single 93-itemscale (43 from the SIPP-118 and 50 from the GAPD) that demonstrated considerable internal consistency (coefficient alpha = .96). This 93-item scale was then analyzed using a two-parameter IRT model. Items achieving a discrimination parameter > 1 were retained (a total of 65 items); a summed binary scoring of these items yielded a score that correlated .98 with the

theta estimate from the IRT analyses. This scale also correlated above .90 with both the earlier GAPD and SIPP-118 separate versions, as well as .51 with the sum of the total DSM–IV PD criteria as assessed by the SCID-II. A sampling of items providing information at various levels of the latent trait is presented in Table1, with estimated threshold and discrimination parameters for these items. Items are listed in order of threshold values; higher (positive) threshold scores indicate items that tend to discriminate at milder levels of personality pathology, whereas lower (negative) threshold scores indicate items informative around more severe pathology.

Table 1. IRT parameters for example GAPD/SIPP-118 items discriminating at different levels of a core personality pathology continuum

Item	Discrimination	SE	Threshold	SE
I believe that it does not help to try to work together with people.	1.15	0.24	-1.28	0.20
I can hardly remember what kind of person I was only a few months ago.	1.61	0.24	-0.53	0.12
I can't make close ties with people.	1.29	0.22	-0.47	0.14
My feelings about people change a great deal from day to day.	2.01	0.31	-0.23	0.09
Sometimes I think that I am a fake or a sham.	1.91	0.26	-0.16	0.09
I worry that I will lose my sense of who I really am.	2.40	0.33	0.02	0.08
My feelings about other people are very confused.	1.61	0.24	0.29	0.11
I drift through life without a clear sense of direction.	2.76	0.41	0.48	0.08
I have very contradictory feelings about myself.	2.23	0.32	0.95	0.11
I mostly have the feeling that my true self is hidden.	2.05	0.33	0.96	0.11

Note. GAPD: General Assessment of Personality Disorder; SIPP-118: Severity Indices of Personality Problems.

For each patient in the sample, the estimated theta score was computed as an estimate of the patient's score on the latent trait of global personality pathology. It was hypothesized that this score would prove to be a predictor of the assignment of a DSM-IV PD diagnosis, as well as predicting comorbidity among PDs. Table 2 provides the estimated theta means for study participants who received none, one, or two or more specific DSM-IV PD diagnoses as determined by the SCID-II. One-way analysis of variance followed by Bonferroni post-hoc tests revealed that these three diagnostic groupings all differed significantly, $F(2, 421) = 54.18$, $p < .001$. These results demonstrate that lower (i.e., more severe) theta scores were associated with assignment of a specific PD diagnosis and were also associated with assignment of multiple PD diagnoses. The area under the receiver operating characteristic (ROC) curve of .756 ($SE = .023$; asymptotic significance <.001) reveals that the theta score was a significant predictor of being assigned a specific PD diagno

Table 2. Predicted theta means by number of personality disorder diagnoses in two study samples

Number of PD diagnoses	*Berghuis et al. (2012)*			*Verheul et al. (2008)*		
	M	*SD*	*N*	*M*	*SD*	*N*
0	.3802	.9231	238	.3874	.7449	842
1	-.3416	.7297	138	.0613	.6733	507
2+	-.7120	.5673	48	-.2263	.6624	410

Note: All three groups significantly different within each sample, $p < .001$.

sis; a cutting score of zero (the theoretical mean of theta in a clinical sample) demonstrated a 73% sensitivity and 63% specificity for identifying individuals diagnosed with at least one of the 10 specific PDs in the Berghuis et al. sample.

To relate this latent trait dimension to specific DSM-IV PD criteria, a regression function (using a stepwise procedure with backward elimination) was calculated to estimate the obtained theta score for each patient, using all specific SCID-II criteria (see Table 3). Twelve DSM-IV PD criteria were retained in this function, sampled from across 6 of the 10 PD categories. The estimates provided by this function demonstrated a multiple correlation of .68 with the calculated theta score for participants. To extend these findings into a second patient sample, estimated theta scores were also derived for participants in the Verheul et al. (2008) sample using only the SIPP-118 items. To estimate corresponding theta scores in this second sample, a regression model was constructed from the sum of the 43 SIPP-118

Table 3. Coefficients for predicting estimated theta from SCID-II DSM-IV criteria

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	2.398	.255		9.418	.000
Identity disturbance (BPD3)	-.291	.053	-.262	-5.478	.000
Views self as inept (AVD7)	-.143	.048	-.140	-2.955	.003
Impulsivity (BPD4)	-.204	.050	-.194	-4.068	.000
Unwilling to get involved (AVD2)	-.231	.054	-.195	-4.274	.000
Reads hidden threat (PAR4)	-.176	.060	-.138	-2.932	.004
Emptiness (BPD7)	-.134	.048	-.129	-2.799	.005
Overconscientious (OCPD4)	.227	.074	.133	3.085	.002
Deceitfulness (ANT2)	-.218	.112	-.084	-1.958	.051
Reckless (ANT5)	-.302	.121	-.108	-2.490	.013
Seductive (HIS2)	.221	.097	.100	2.288	.023
Reluctant to confide (PAR3)	-.110	.055	-.090	-1.997	.047
Bears grudges (PAR5)	-.113	.057	-.092	-1.983	.048

Note. Dependent variable: theta; multiple $r = .679$. 1=absent, 2=subclinical, 3=present. SCID-II: Structured Clinical Interview for DSM-IV Axis II Personality Disorders.

items included in the original IRT scaling. The fit of this model was quite high (multiple $r = .97$) and as such should provide a reasonable estimate of theta in this new sample.

As was the case in the derivation sample, the estimated theta score in this cross-validation sample was significantly correlated with the total dimensional PD symptom score from the SIDP-IV (-.52, as compared to -.51 in the derivation sample). As with the Berghuis et al. data, the mean score on the predicted theta score was compared for patients from the Verheul et al. sample who received no specific PD diagnosis (for this sample, this included those receiving a PD-NOS designation), those receiving a single specific DSM-IV PD diagnosis, and those receiving multiple PD diagnoses. These means are shown in Table 2; one-way analysis of variance followed by Bonferroni post-hoc tests revealed that these three diagnostic groupings all differed significantly, $F(2, 1756) = 54.75$, $p < .001$. Results were similar to those noted in the Berghuis et al. sample, in that lower (i.e., more severe) theta scores were associated with assignment of a specific PD diagnosis, although there were also higher levels of personality pathology in those receiving multiple PD diagnoses. ROC analyses to determine the diagnostic efficiency of the theta estimate to predict a SIPD-IV personality diagnosis in the Verheul et al. (2008) data resulted in a significant but somewhat lower (relative to the original sample) estimated area under the curve of .673 ($SE = .015$; asymptotic significance < .001). As with the Berghuis et al. sample, in the Verheul et al. data, a theta cutting score of zero demonstrated reasonable diagnostic efficiency for identifying individuals diagnosed with at least one of the 10 specific PDs by the SIDP-IV, with 72% sensitivity and 82% specificity.

Table 4. Mean theta estimates for PD categories, Verheul et al. (2008) data

SIDP-IV Diagnosis	*N*	*M*	*SD*
Paranoid PD	86	-.4116	.6762
Schizoid PD	18	-.1130	.7435
Schizotypal PD	16	-.2942	.7950
Antisocial PD	55	-.3086	.7675
Borderline PD	314	-.3692	.6439
Histrionic PD	41	-.1764	.6000
Narcissistic PD	89	.0035	.6131
Avoidant PD	432	-.1427	.6395
Dependent PD	165	-.2410	.7436
Obsessive-Compulsive PD	316	.0544	.7044
PD NOS	343	.2517	.6597
No PD	499	.4807	.7854

Note. SIDP-IV: Structured Interview for DSM-IV Personality; PD: Personality Disorder ; NOS: Not Otherwise Specified.

The large size of the Verheul et al. (2008) sample also allowed for examining mean estimated theta scores for each of the specific PDs; in addition, the SIDP-IV provides for scoring of PD-NOS (which includes the three PDs found in the DSM-IV appendix), which allows an exploration as to how this concept fits within a dimension of general personality pathology. The mean theta values for the specific PD diagnostic groups (note that, because of PD comorbidity, these groups are not independent) and the PD-NOS group are presented in Table 4.

As might be expected theoretically, the most pathological scores (i.e., the greatest level of personality pathology) were found in the borderline, schizotypal, antisocial, and paranoid groups. The least pathological specific DSM-IV PDs appeared to be narcissistic and obsessive-compulsive. Those receiving a PD-NOS diagnosis from the SIDP-IV had mean theta scores indicative of appreciably less personality pathology than those meeting criteria for one of the specific PDs, where as those with no indication of PD had theta scores that were consistent with low personality pathology.

Discussion

The results presented here indicate that it is possible to identify a global dimension of personality pathology that is significantly associated with (a) the probability of being assigned any DSM-IV PD diagnosis, (b) the total number of DSM-IV PD features manifested, and (c) the probability of being assigned multiple DSM-IV PD diagnoses. Indicators of this dimension involve important functions related to self (e.g., identity integration, integrity of self-concept) and interpersonal (e.g., capacity for empathy and intimacy) relatedness. Features that, as reviewed earlier (Bender et al., 2011), play a prominent role in influential theoretical conceptualizations of core personality pathology (Livesley, 2003; Kernberg & Caligor, 2005; Kohut, 1971). Such results support the feasibility and potential utility of establishing a global PD severity scale in DSM-5 to capture this dimension, in doing so helping to clarify the continuum that distinguishes PD from non-PD patients, unlike more global measures such as the GAF scale (Axis V) in DSM-IV. As an example, total number of DSM-IV PD criteria present (which demonstrated significant correlations with the continuum described here) have been found to predict longer term personological and functional outcomes, differentiating the PDs from Axis I disorders such as major depression (Morey et al., 2010). Future research should be directed at a more detailed examination of the specificity of these self-other issues to the PD with respect to other psychiatric disorders.

The nature of the items presented in Table 1 reveals that this continuum reflects variations in degree of self-other pathology. Certain items proved to be good indicators of personality function at various points on this continuum. However, these are self-report items; ultimately, the challenge is to try to turn these self-reported experiences into a clinical rating scale, using the identified items as guidelines to markers of level of personality pathology. Table 5 represents an approxi mation of

Table 5. Example of a clinician rating scale for levels of personality pathology

Level of Personality Pathology	GAPD/SIPP-118 Item Indicators
Level 5 (item IRT thresholds in the +0.75 and greater range)	Some uncertainty and indecision around values and goals; occasional lapses in self-directedness; periodic self-doubt
Level 4 (item IRT thresholds in the +0.25 to +0.75 range)	Feelings of emptiness, insincerity, or lack of authenticity around identity; low frustration tolerance; consistent feelings of worthlessness
Level 3 (item IRT thresholds in the -0.25 to +0.25 range)	Little sense of direction or meaning in life; marked instability in perception and evaluation of others;
Level 2 (item IRT thresholds in the -0.55 to -0.25 range)	Alienation from others and from own feelings; poorly integrated and contradictory aspects of personality;
Level 1 (item IRT thresholds in the -0.75 and lower range)	Marked shifts in identity and goals; fragmentary and defective sense of self; poor boundaries between self and other; little or no capacity for cooperative relationships

Note. GAPD: General Assessment of Personality Disorder; SIPP-118: Severity Indices of Personality Problems

what such a rating scale might involve, drawing directly from the content of SIPP-118 and GAPD that are maximally informative at various points on this personality pathology continuum. It will be important for future studies to evaluate the reliability and validity of a clinician-based rating scale that incorporates such concepts. The ordinal patterning of severity described in Table 5 has a number of interesting features. Various features such as identity issues, interpersonal relatedness deficits, low self-worth, and low self-direction appeared to differentiate levels of personality pathology. In most instances, these indicators tended to vary quantitatively more than qualitatively at different levels of severity. However, as shown in Table 5, the markers that differentiated milder forms of personality pathology addressed primarily self and identity issues, whereas interpersonal issues (in addition to self-pathology) become discriminating at the more severe levels of personality pathology. Such a finding is consistent with the view of Kernberg (e.g., 1984, 1996) and others that identity issues play a foundational role in driving the characteristic interpersonal dysfunction noted in.PDs. However, this observation needs replication using markers independent of the particular set of items examined in this study.

As a statistical manual, the DSM-5 will ultimately identify a threshold necessary to describe an individual as having a 'personality disorder'. In DSM-IV, there was considerable ambiguity around the nature and placement of this threshold, particularly with respect to the PD-NOS category (Pagan, Oltmanns, Whitmore, & Turkheimer, 2005; Trull, 2005; Verheul, Bartak, & Widiger, 2007). It was also unclear whether the boundary was to be drawn along some continuum, and if so, what the rationale for that cutting point might have been. The analyses described here provide both a foundation for articulating this continuum, as well as some information about the relationship of DSM-IV PD concepts to this latent continuum. It is worth noting that the ordering of DSM-IV disorders along this continuum shown in Table 4 bears considerable correspondence to the comparable ordering of

personality organization severity described in Kernberg and Caligor's (2005) characterization; in fact, the ordinal association between the two orderings was moderately strong (Spearman's rho = .57). Perhaps the largest difference between these two conceptualizations involved the placement of narcissistic personality, which was described by Kernberg and Caligor in the moderate to severe range, whereas in our analyses it appeared to characterize milder forms of personality impairment. This difference might reflect differences between the DSM-IV characterization of narcissism as primarily involving inflated self-esteem, as compared to a broader description of narcissistic pathology described by Kernberg and other authors. These latter theoretical accounts of the narcissism construct tend to resemble the core dimension described here - suggesting that narcissistic impairments can be found across a broad range of personality functioning. Such a view is corroborated by the characterization of the severity of narcissistic personality described in Kernberg and Caligor's (2005) conceptual scheme, which indicated that narcissism and malignant narcissism spans the full range of personality organization. It is worth noting that a proposal to exclude narcissistic personality as a specific PD type has proven to be controversial; for this construct to be useful, it will be important to clarify with greater precision how this concept relates to personality severity.

Although this study represents an important step in describing a global dimension of personality pathology, future research is needed to address a number of questions. As noted previously, important questions remain regarding whether such a rating scale reflecting this dimension can be assessed by clinicians with reasonable interrater reliability, and whether such ratings will also be related to DSM-IV PD diagnoses (as were the self-reported characteristics examined in this study), as well as to adaptive functioning and outcome. It should also be noted that this continuum needs to be examined in additional samples. For example, the treatment-seeking nature of the samples examined here both limits the inclusion of some forms of PD (e.g., antisocial) that might not seek treatment, and it also limits the study of the 'healthier' end of this continuum, which could be accomplished through the use of community samples. Furthermore, the use of European samples of patients bears replication in North American samples, as well as in other cultures, to determine whether the descriptors of general personality pathology generalize across such cultures. Finally, given the variability in theta estimates for patients with PD diagnoses observed across the two samples (noted in Table 2), additional samples would be particularly useful for calibrating diagnostic thresholds for PD as referenced against the DSM-IV.

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) rep-

resenting particularly severe variants, whereas others - in particular, PD-NOS, but also obsessive-compulsive - appreciably less severe. Although a threshold for PD diagnosis could be calibrated against the DSM-IV, ultimately it will be important to examine other validators, such as functional impairment or disability, 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.

Part II

5

Core features of personality disorder: differentiating general personality dysfunctioning from personality traits

Published as: Berghuis, H., Kamphuis, J.H., Verheul, R. (2012). Core features of personality disorder: differentiating general personality dysfunctioning from personality traits. *Journal of Personality Disorders, 26*, 704-716.

Introduction

The current categorical DSM-IV-TR model of personality disorders has been extensively criticized for its failure to provide a valid and clinically useful representation of the clinical phenomena in this area of interest. The Personality and Personality Disorders Work Group of the DSM-5 Task Force apparently subscribes to these criticisms, as they have proposed a revolutionary new model for the classification of personality disorders (American Psychiatric Association, 2011). The proposal consists of a four-part assessment model, including: (1) a new general definition of personality disorder based on severe or extreme deficits in core components of personality functioning; (2) five identified severity levels of personality functioning; (3) six personality disorder types; and (4) five broad, higher-order personality trait domains. The first two components of the model refer to general personality dysfunctioning (GPD), whereas the last components refer to specific personality traits (SPT). The model assumes GPD and SPT to be relatively independent. This study aims to test this assumption.

In the DSM-5 proposal, GPD is operationalized by so-called essential features of personality disorder. These features are derived from the perspective that personality psychopathology fundamentally emanates from disturbances in thinking about self and others. Although this perspective can be traced back to many historical and traditional roots in psychoanalytical thinking, its revival over the past decennium is partly due to the growing dissatisfaction with DSM-IV-TR and preliminary empirical support for various models showing that self and other pathology can be measured and is associated with personality pathology in general (Cloninger, 2000; Livesley, 2003; Parker et al., 2004; Verheul et al., 2008). Two such models will be used in this study, and discussed here in more detail.

First, we consider Livesley's (2003) theoretically cogent Adaptive Failure model of GPD. According to this model, personality not only involves traits, but also an intra-psychic system which is needed to fulfill adult life tasks. This system consists of three components: (1) stable and integrated representations of self and others; (2) the capacity for intimacy, to function adaptively as an attachment figure, and/or establish affiliative relationships; and (3) the capacity for pro-social behavior and/or cooperative relationships, to function in a social group (Livesley, 2003). Malfunctioning of these three basic components define the concept of disorder. Livesley developed the General Assessment of Personality Disorder (GAPD; Livesley, 2006) as a self-report instrument to assess these three basic components.

Another recent approach toward the core components of (mal)adaptive personality functioning are the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008). The SIPP-118 was originally developed in a consensus meeting of clinical experts and has five higher-order domains, which are divided into 16 facets. The higher-order domains are: self control, identity integration, responsibility, relational functioning, and social concordance. In a validation study, it was reported that the SIPP-118 differentiates between clinical and nonclinical populations, and provides unique information over and above trait-based dimensions

(Verheul et al., 2008). In sum, the SIPP-118 can be considered as a promising instrument in detecting manifest core components of personality pathology. While these efforts to represent the GPD continuum are still somewhat experimental, it is now generally accepted that the variation in personality disorders can be delineated by a limited number of specific personality traits. Three to six broad domains of traits, that include both normal and abnormal personality characteristics, have been proposed as integrative and comprehensive (Watson, Clark, & Cmielewski 2008; Widiger & Simonsen, 2005). The DSM-5 proposal includes five broad, higher-order personality trait domains: Negative Affectivity, Detachment, Antagonism, Disinhibition versus Compulsivity, and Psychoticism).

An important problem of dimensional models is the determination of cut-offs for pathology (Kamphuis & Noordhof, 2009; Livesley, 2007; Widiger, Simonsen, Krueger, Livesley, & Verheul, 2005). A high or low score on facets of various domains of personality traits is neither a necessary nor a sufficient criterion for the determination of pathology. To resolve this problem nonadaptive variants of the traits of the FFM have been described by Widiger & Mullins-Sweatt (2009). They use the Global Assessment of Functioning (GAF) scale on Axis V as a criterion for determining the degree of severity. According to this view, extreme traits would justify the diagnosis of a personality disorder. However, as of yet strong empirical support is lacking and dimensional trait models remain to be criticized for its failure to provide a clear trait-independent operationalization of disadaptivity (Livesley, 2007; Trull, 2005; Wakefield, 2008). The previously discussed GPD factor may help bridge this gap.

The present study aims to explore a model of GPD and to investigate whether GPD can be meaningfully distinguished from SPT. We used the GAPD and the SIPP-118 as measurement for GPD and the NEO-PI-R to measure SPT. More specifically, the joint structure of the GAPD and SIPP-118 facets was examined to explore a model of GPD, and subsequently, the joint structure of the facets of GAPD, SIPP-118, and NEO-PI-R was examined to explore to what extent GPD and SPT can be differentiated.

Method

Participants and procedures

The data were collected by several psychiatric centers in the Netherlands. Patients were invited to participate in this study by their treating clinical psychologist or psychiatrist or completed a questionnaire as part of a routine psychological evaluation. Patients with insufficient command of the Dutch language, with organic mental disorders or mental retardation, or in acute crisis were excluded. All patients signed an informed consent form and received a € 10 gift certificate for their participation. The final sample (N = 424) consisted of a heterogeneous group of psychiatric patients; 370 (87.3 %) were outpatients.

The group consisted of 117 men (27.6 %) and 307 women (72.4 %) and were between 17 and 66 years old (M = 33.9, SD = 11.3). Table 1 shows the diagnostic characteristics of the participants. In 50.9% of the cases at least one DSM-IV personality disorder, as measured by the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II, First et al., 1997), was reported. The most frequent Axis II diagnoses were borderline personality disorder (21.2%), avoidant personality disorder (20.5%), and personality disorder NOS (15.1%), a pattern consistent with previous reports on naturalistic convenience samples (Zimmerman, Chelminski & Young, 2008). Consistent with other studies (e.g., a pattern consistent with previous reports on naturalistic convenience samples (Zimmerman, Chelminski & Young, 2008). Consistent with other studies (e.g.,Pagan et al., 2005; Verheul et al., 2007), we chose a cut-off point of 10 diagnostic criteria for Personality Disorder Not Otherwise Specified (PDNOS). Most patients met criteria for

Table 1. Clinical characteristics of the clinical sample (N = 424)

Characteristics	*N*	%
Current DSM-IV Axis-I diagnosis[a,b]		
Mood disorder	178	42.2
Anxiety disorder	58	13.8
Other disorders	124	29.5
No Axis I disorder	38	9.0
Deferred Axis-I	7	1.7
Unknown	12	2.9
Current DSM-IV Axis II diagnosis[a,c]		
Paranoid personality disorder	24	5.7
Schizoid personality disorder	2	0.5
Schizotypal personality disorder	0	0.0
Antisocial personality disorder	7	1.7
Borderline personality disorder	90	21.2
Histrionic personality disorder	5	1.2
Narcissistic personality disorder	10	2.4
Avoidant personality disorder	87	20.5
Dependent personality disorder	11	2.6
Obsessive-Compulsive personality disorder	21	5.0
Personality disorder NOS[d]	64	15.1
Cluster A	26	6.1
Cluster B	104	24.5
Cluster C	107	25.2
Any personality disorder	216	50.9

Notes. [a] Individuals could be assigned more than one diagnosis. [b] Clinical diagnosis. [c] SCID-II diagnosis.
[d] Cut-off is 10 criteria.

one or more comorbid Axis I disorders (clinical diagnosis). The prevalence of internalizing Axis I disorders in the present sample was relatively high, the majority met criteria for a mood disorder (42.2%) or an anxiety disorder (13.8%).

Instruments

General Assessment of Personality Disorders (GAPD; Livesley, 2006). The GAPD is a recently developed questionnaire that operationalizes the core components of personality pathology of Livesley's (2003) Adaptive Failure model. The GAPD version used in this study consists of 142 items, each of which is rated on a five-point Likert-scale format, ranging from 1 (very unlike me) to 5 (very like me). The GAPD has two main scales: Self-pathology and Interpersonal problems. In our study, the internal consistency coefficients (alphas) for the main scales were .98 and .93, respectively. These main scales are divided into a total of 19 subscales, with alphas in the current sample ranging from .68 - .90. The main scale Self-pathology covers items regarding the structure of personality (e.g., problems of differentiation and integration) and agency (e.g., conative pathology). The main scale Interpersonal problems is about failure of kinship functioning and failure of societal functioning. This study utilized the authorized Dutch translation by Berghuis (2007).

Severity Indices of Personality Problems-118 (SIPP-118; Verheul et al., 2008). The SIPP-118 (Verheul et al., 2008) is a dimensional self-report measure of the core components of (mal-)adaptive personality functioning, and provides indices for the severity of personality pathology. The SIPP-118 consists of 118 four-point Likert scale items covering 16 facets of personality functioning that cluster in five higher-order domains: Self-control, Identity integration, Relational functioning, Social concordance, and Responsibility. Two studies have reported good psychometric properties (Verheul et al., 2008) and cross-national consistency (Arnevik et al., 2009) of the SIPP-118, respectively.

NEO-Personality Inventory Revised (NEO-PI-R; Costa & McCrae, 1992b; Hoekstra et al., 1996, Dutch version). With its 240 five-point Likert scale items, the NEO-PI-R is a widely used operationalization of the Five-Factor Model (FFM) of personality. Items map onto the five personality domains, each of which is subdivided into six facets. Costa and McCrae (1992b) reviewed the extensive reliability and validity data on the NEO-PI-R.

Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II, First et al., 1997; Weertman et al., 2000, Dutch version). The SCID-II is a widely used 134-item semi-structured interview for the assessment of Axis II personality disorders. Each item is scored as 1 (absent), 2 (subthreshold), or 3 (threshold). Dimensional scores were obtained by summing the raw scores of the criteria for the Axis II categories and clusters. Interviewers were master-level psychologists who were trained by H.B. and who received monthly booster sessions to avoid drift from the guidelines.

Statistical analysis

A PCA with oblique rotation (Oblimin) was conducted to explore the joint structure of the GAPD subscales and the SIPP-118 facets. Next, a similar subsequent PCA explored the joint structure of GAPD, SIPP-118, and NEO-PI-R to examine to what extent GPD and SPT facets would yield distinctive factors. While we expected generally distinct components for GPD and SPT, we felt there was insufficient evidence available to make a priori allocation of facets to factors, and therefore rejected a confirmatory approach at this stage of research. To determine the appropriate factors to abstract, we used parallel analysis (Horn, 1965) utilizing randomly generated data.

Results

Factor structure of GAPD and SIPP-118

To explore a model of maladaptive personality functioning, we conducted a PCA with Oblique (Oblimin) rotation using the subscales of the GAPD and the SIPP-118 (see Table 2). The Kaiser-Maier-Olkin measure verified the sampling adequacy for analysis, KMO = .96, and the Bartlett's test of sphericity reached statistical significance ($p < .001$), supporting the factorability of the correlation matrix. A clear three-factor structure emerged. This three-factor model explained a combined 62.9% of the variance (49.5%, 7.1%, and 6.2%, respectively). Factor 1 (F1) was composed of subscales of the GAPD and the SIPP-118 related to the concept of Self-identity dysfunctioning. Factor loadings varied between .38 and .96, with very few cross loadings. F2 was composed of subscales that were related to the concept of social concordance or cooperativeness: Pro-social functioning. Factor loadings of the second factor were in the range from .47 and .70. The highest loading scales on F3 were related to the concept of Relational dysfunctioning. Factor loadings were between .51 and .69.

Factor structure of GAPD, SIPP-118, and NEO-PI-R

Table 3 shows the PCA with Oblique (Oblimin) rotation of the subscales of the GAPD, SIPP-118, and NEO-PI-R together. Parallel analysis indicated the retention of seven factors as the optimal solution for rotation. Indicators of factorability were good (KMO measure of sampling adequacy = .94; Bartlett's test of sphericity $p < .001$). The seven-factor model explained a combined 64.7% of the variance.

Table 2. Factorloadings of the subscales and facets of the GAPD and SIPP-118 as measures of general personality dysfunction in a clinical sample (N = 424)

	Factorloadings		
Variables	F1	F2	F3
GAPD, Selfpathology, Lack of self clarity	**.96**	.14	.04
GAPD, Selfpathology, Lack of authenticity	**.88**	.09	.12
GAPD, Selfpathology, Sense inner emptiness	**.85**	.09	.05
GAPD, Selfpathology, Lack of history and continuity	**.84**	-.07	-.12
GAPD, Selfpathology, Poorly bounderies	**.82**	.01	-.06
GAPD, Selfpathology, False self Real self disjunctions	**.79**	.09	.21
GAPD, Selfpathology, Lack meaning purpose direction	**.78**	.03	.18
GAPD, Selfpathology, Context dep. self definition	**.77**	.12	-.03
GAPD, Selfpathology, Diffculty setting and attaining goals	**.75**	-.08	.06
GAPD, Selfpathology, Self state disjunctions	**.73**	-.13	-.21
GAPD, Selfpathology, Fragmentary self-other representations	**.73**	-.17	.04
GAPD, Selfpathology, Lack of autonomy and agency	**.68**	-.05	.10
GAPD, Selfpathology, Defective sense of self	**.67**	-.13	.04
GAPD, Selfpathology, Poorly understanding human behavior	**.42**	-.28	.28
GAPD, Selfpathology, Poorly differentiated images of others	**.38**	-.29	.27
SIPP, Identity integration, Self-reflexive functioning	**-.80**	.01	.00
SIPP, Identity integration, Self respect	**-.78**	-.07	-.03
SIPP, Identity integration, Stable self image	**-.77**	.20	.21
SIPP, Identity integration, Purposefulness	**-.75**	.06	-.03
SIPP, Identity integration, Enjoyment	**-.64**	-.02	-.20
SIPP, Self control, Emotion regulation	**-.49**	**.47**	.27
SIPP, Social concordance, Frustration tolerance	**-.47**	**.46**	.14
SIPP, Relational functioning, Feeling recognized	**-.46**	.27	**-.30**
GAPD, Interpersonal, Cooperativeness	.01	**-.70**	**.38**
GAPD, Interpersonal, Prosocial	-.09	**-.68**	.20
SIPP, Social concordance, Aggression regulation	.02	**.79**	.18
SIPP, Social concordance, Respect	.12	**.78**	-.13
SIPP, Social concordance, Cooperation	-.04	**.63**	**-.40**
SIPP, Responsibility, Trusthworthiness	-.17	**.58**	.13
SIPP, Resonsiblity, Responsible industry	**-.36**	**.47**	.18
SIPP, Self control, Effortful control	**-.41**	**.53**	**.37**
GAPD, Interpersonal, Affiliation	.26	-.18	**.69**
GAPD, Interpersonal, Intimacy and attachment	**.34**	-.08	**.67**
SIPP, Relational functioning, Intimacy	**-.36**	.03	**-.58**
SIPP, Relational functioning, Enduring relationships	**-.44**	.16	**-.51**

Notes. Exploratory Factor Analysis, Oblimin rotation. Factorscores > | .30 | are printed in Bold. F1 = Self-identity dysfuntioning, F2 = Prosocial functioning, F3 = Relational dysfunctioning. GAPD = General Assessment of Personality Disorders. SIPP = Severity Indices of Personality Problems (SIPP-118).

Table 3. Factorloadings of the subscales of the GAPD, facets of the SIPP-118 and facets of the NEO-PI-R in a clinical sample (N=424).

	Factor loadings						
Variable	F1	F2	F3	F4	F5	F6	F7
Factor 1: Self-identity functioning							
GAPD, SP, Poorly boundaries	**-.95**	-.03	-.08	.07	.00	.09	.10
GAPD, SP, Lack of authenticity	**-.85**	-.09	-.01	-.07	.13	-.06	-.15
GAPD, SP, Fragmentary self and other representations	**-.81**	-.09	-.09	.05	-.15	.09	-.10
GAPD, SP,Lack of self clarity	**-.80**	-.01	.12	-.10	.05	-.12	-.09
GAPD, SP, Sense inner emptiness	**-.80**	-.08	.04	-.04	.04	-.09	-.06
GAPD, SP, Context dependent self def.	**-.80**	.08	.04	.08	.02	.04	.10
GAPD, SP, Lack of history, continuity	**-.78**	-.01	-.01	-.16	-.06	.01	.05
GAPD, SP, False self Real self disjunct.	**-.75**	-.13	.02	-.01	.10	-.01	-.28
GAPD, SP, Lack autonomy and agency	**-.72**	.15	-.08	.30	-.06	-.08	.03
GAPD, SP, Self state disjunctions	**-.72**	-.09	-.01	-.06	-.19	.09	.08
GAPD, SP, Defective sense of self	**-.63**	.07	-.01	.00	-.16	.08	-.11
GAPD, SP, Difficulty setting and attaining goals	**-.62**	.22	-.05	**-.36**	.06	-.10	-.01
GAPD, SP, Poorly diff. images others	**-.58**	.09	-.28	.01	-.03	.14	-.22
GAPD, SP, Lack of meaning purpose direction	**-.58**	.21	.09	-.26	.06	-.09	-.20
GAPD, SP,Poorly understanding of human behavior	**-.53**	.21	-.21	-.07	-.01	.02	-.21
SIPP, ID, Self-reflexive functioning	**.62**	.17	-.16	.14	.06	.19	.15
SIPP, ID, Purposefulness	**.57**	-.11	-.09	.25	.06	.12	.07
SIPP, ID,Stable self image	**.55**	.14	-.19	.15	**.35**	.05	.05
SIPP, ID, Enjoyment	**.51**	-.08	-.15	-.04	.10	.22	.19
Factor 2: Inactivity							
NEO-PI-R, E, Activity	-.04	**-.69**	-.06	.22	-.24	.05	.07
NEO-PI-R, E, Assertiveness	-.03	**-.50**	-.29	.16	-.03	.05	.15
NEO-PI-R, E, Excitement seeking	-.15	**-.43**	-.15	**-.31**	-.14	.09	.29
NEO-PI-R, O, Actions	.08	**-.60**	.03	-.27	.15	.17	.03
NEO-PI-R, N, Self-consciousness	-.24	**.36**	**.31**	-.00	-.17	.08	**-.36**
Factor 3: Obliging							
GAPD, IP, Prosocial	-.23	-.03	**-.62**	-.19	-.11	-.08	-.16
SIPP, ID, Self respect	**.40**	-.04	**-.43**	.13	.20	.04	.25
NEO-PI-R, A, Modesty	.00	.07	**.73**	-.03	.07	-.04	-.18
NEO-PI-R, A, Straightforwardness	.08	.21	**.52**	**.33**	.16	-.04	-.01
NEO-PI-R, A, Altruism	-.14	-.08	**.47**	.23	.12	.18	**.42**

Table 3. Continued

	Factor loadings						
Variable	F1	F2	F3	F4	F5	F6	F7
NEO-PI-R, N, Depression	**-.35**	.21	**.39**	-.14	**-.33**	.02	-.05
NEO-PI-R, N, Anxiety	**-.33**	**.32**	**.35**	.03	**-.35**	.04	-.02
Factor 4: Conscientiousness							
SIPP, RE, Responsible industry	.23	-.09	.13	**.68**	.12	-.03	-.03
SIPP, RE, Trustworthiness	.16	.06	.25	**.65**	.13	-.04	.03
NEO-PI-R, C, Dutifulness	-.05	.05	.20	**.77**	-.02	-.07	.12
NEO-PI-R, C, Order	.01	.07	-.07	**.72**	-.16	-.06	.03
NEO-PI-R, C, Self-discipline	.12	**-.36**	-.04	**.67**	.17	.01	-.04
NEO-PI-R, C, Achievement striving	.06	**-.52**	.06	**.66**	-.12	.14	-.09
NEO-PI-R, C, Deliberation	-.01	.29	-.12	**.63**	**.32**	.06	-.01
NEO-PI-R, C, Competence	.13	-.10	-.24	**.60**	.17	.12	.17
Factor 5: Prosocial functioning							
SIPP, SC,Aggression regulation	.02	.05	.19	.00	**.74**	.03	.05
SIPP, SE,Emotion regulation	**.33**	.04	-.14	.05	**.64**	.07	.00
SIPP, SE, Effortful control	.20	.17	-.16	**.31**	**.60**	.09	-.04
SIPP, SC, Respect	.17	-.19	**.44**	-.16	**.52**	.04	.06
SIPP, SC, Frustration tolerance	.26	-.28	-.08	.21	**.52**	.10	-.01
NEO-PI-R, N, Hostility	-.05	.04	-.11	-.01	**-.82**	.00	-.07
NEO-PI-R, N, Impulsiveness	-.04	-.14	.11	**-.41**	**-.48**	.10	-.03
NEO-PI-R, N, Vulnerability	-.24	**.34**	.29	-.29	**-.37**	-.10	.09
NEO-PI-R, A, Compliance	-.17	.25	**.32**	.03	**.66**	.05	.10
NEO-PI-R, A, Trust	.10	.06	.03	.04	**.44**	-.04	**.44**
Factor 6: Openness to experience							
NEO-PI-R, O, Aesthetics	-.11	-.02	.06	.05	-.04	**.75**	.00
NEO-PI-R, O, Ideas	-.02	-.13	-.16	.13	.16	**.69**	-.17
NEO-PI-R, O, Fantasy	-.01	.22	-.17	**-.32**	-.12	**.64**	.08
NEO-PI-R, O, Feelings	.12	.06	.16	.05	**-.47**	**.57**	.28
NEO-PI-R, O, Values	.17	-.15	.20	-.18	.16	**.51**	-.14
NEO-PI-R, A, Tendermindedness	-.17	.08	.36	.02	.10	**.38**	.28

Table 3. Continued

Variable	Factor loadings						
	F1	F2	F3	F4	F5	F6	F7
Factor 7: Relational functioning							
GAPD, IP, Affiliation	-.26	.19	-.09	.01	.06	.05	**-.68**
GAPD, IP, Intimacy and attachment	**-.38**	-.09	-.04	.02	.12	-.01	**-.64**
GAPD, IP, ooperativeness	-.16	.19	**-.35**	-.05	-.**33**	.06	**-.40**
SIPP, RF, Intimacy	.13	.14	-.19	.08	-.01	.12	**.78**
SIPP, SC, Cooperation	.05	-.26	.12	.04	**.41**	-.03	**.47**
SIPP, RF, Feeling recognized	**.40**	.08	-.03	-.01	.24	.03	**.43**
SIPP, RF, Enduring relationships	.27	.07	-.13	.08	.09	.02	**.67**
NEO-PI-R, E, Warmth	-.02	-.21	.10	.09	.05	.16	**.69**
NEO-PI-R, E, Gregariousness	-.08	**-.43**	.02	-.09	.10	-.18	**.63**
NEO-PI-R, E, Positive emotions	.28	-.24	-.09	-.02	-.11	**.32**	**.38**

Notes. Exploratory Factor Analysis, Oblimin rotation. Factorscores > | .30 | are printed in Bold. GAPD = General Assessment of Personality Disorders. SIPP = Severity Indices of Personality Problems (SIPP-118). NEO-PI-R = Revised NEO Personality Inventory. SP = Self pathology, IP = Interpersonal dysfunction. SE = Selfcontrol, ID = Identity integration, RF = Relational functioning, RE = Responsibility, SC = Social concordance, ED = Emotional Dysregulation, DB = Dissocial Behavior, IN = Inhibition, CO = Compulsivity. N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness. The naming of the factors are partly derived from the original scales, but differ in content after EFA.

On the basis of corresponding content of the underlying variables we named the seven factors as follows: Self-identity functioning (F1), Inactivity (F2), Obliging (F3), Conscientiousness (F4), Prosocial functioning (F5), Openness to Experience (F6), and Relational functioning (F7).

F1, with factor loadings ranging from .51-.95, was composed of all the subscales of the main scale Self-pathology of the GAPD and four of the five subscales from the domain Identity integration of the SIPP-118. Therefore, this factor seems to measure the notion of Self-identity functioning. F2, with factor loadings between .36 and .69, was defined as the negative pole of an active, participating and energetic attitude. Referring to Buss & Plomin (1984), we called this factor (phlegmatic) Inactivity. F3, with factor loadings in the range from .35-.62, measured predominantly aspects of the domain agreeableness of the NEO-PI-R, and related scales of both the GAPD and the SIPP-118. This third factor was interpreted as Obliging, a factor that measured a respectful and helpful attitude and a cheerful willingness toward others. F4, with factor loadings ranging from .60-.77, clearly measured Conscientiousness. F5, with factor loadings between .37 and .82, consisted mainly of scales measuringsocial concordance, and the regulation of affects, aggression and impulses, and therefore measured the notion of Pro-social functioning. F6, with factor loadings between .38 and .75, also measured a unique domain of the NEO-PI-R, namely Openness to Experience. Finally, F7, with factor loadings between .38 and .78, consisted of subscales and facets of various question-

naires. The connecting term within this factor was functioning in intimate and immediate relationships: Relational functioning.

The median intercorrelation between all factors was .08. Lowest intercorrelations were between the factors Conscientiousness (F4) and Openness to Experience (F6; r = .001) and the factors Obliging (F3) and Conscientiousness (F4; r = -.002). Highest intercorrelations were between the factors Self-identity functioning (F1) and Prosocial functioning (F5; r = .39) and Self-identity functioning (F1) and Relational functioning (F7; r = .39), which are the GPD-factors.

Discussion

The aim of this study was twofold: (1) to explore a model of general personality dysfunctioning (GPD); and (2) to investigate if general personality dysfunctioning and specific personality traits (SPT) can be meaningfully distinguished. Our main results suggest that indeed such a model can be derived from existing operationalizations, and that this model remains by and large intact when combined with a FFM personality inventory.

More specifically, when subjecting the operationalizations (i.e., GAPD and SIPP-118) of two of the more influential models of GPD to factor analysis, three cohesive factors emerged. These were named Self-identity dysfunctioning, Relational dysfunctioning, and Pro-social functioning. The largest factor in our model, i.e., Self-identity dysfunctioning, figures prominently in previous research on core features of personality pathology. For instance, self pathology is one of the core dimensions of both the Livesley (2003; GAPD: self-pathology) and Verheul et al. (2008; SIPP-118: identity integration) models. Other salient models, including those of Cloninger (2000) and Parker et al. (2004) also include self pathology, albeit at a lower-order level, and not in a separate domain (i.e., Cloninger, unstable self-image/self-transcendence;Parker, self-defeating/coping). Likewise, Kernberg's structural model (Kernberg & Caligor, 2005) includes identity diffusion as a core feature determining the cohesiveness of personality-organization, and the failure to develop a cohesive self plays a central role in Kohut's (1971) theorizing.

The second factor (i.e., Relational dysfunctioning) and third factor (i.e., Prosocial functioning) that emerged in our GPD model were also in line with previous work (Benjamin, 2005; Livesley, 2003; Verheul et al., 2008). Relational dysfunctioning resonates with the widely used concept of communion (Tellegen & Waller, 2008; Wiggins, 1991). Communion refers to the motivation and ability to experience intimacy, union, and solidarity. The third factor of our GPD model (i.e., Prosocial functioning) is similar to what has often been referred to as cooperativeness (Cloninger, 2000; Livesley, 2003; Parker et al., 2004). Cooperativeness commonly has a social or societal meaning in terms of the capacity for prosocial behavior, or capacity to work together. However, in our GPD model, it also encompasses (deficits in) self-control relating to affect, aggression, and impulse regulation in the service of prosocial aims. As such, this aspect of GPD connects to what has been

alternatively referred to as identity and ego functions (Livesley, 2003), coping (Parker et al., 2004), and primitive defenses (Kernberg & Caligor, 2005).

It is noteworthy that the three GPD factors that emerged from our factor analyses closely match the general definition of personality disorder as proposed by the DSM-5 Personality and Personality Disorders Work Group (American Psychiatric Association, 2011). Although this proposal is still subject to a dynamic and changing process of definition, personality disorders are represented by impairments in identity and sense of self and in the capacity for effective interpersonal functioning. Further, the definition stipulates that an impaired sense of self is evident from disturbed identity and self-direction. Failure to develop adaptive interpersonal functioning is defined by deficits in empathy and intimacy. Again, these differentiated criteria of the proposed general definition of personality disorder bear a striking resemblance to the subscales and facets that emerged from our GPD model.

Regarding our second aim, our results suggest that the factors observed in the GPD model remain largely intact when combined with facets of specific personality traits (SPT) in a joint factor analysis. In addition to the three factors of the GPD model, four factors associated with the FFM emerged. The Openness to Experience and Conscientiousness factors were most unequivocal in that all the six facets, and only these facets, that were originally part of these domains, comprised these factors. As in most previous studies utilizing the NEO-PI-R in the domain of PD, Openness to Experience was not associated with GPD (Saulsman & Page, 2004), nor was Conscientiousness. The other FFM traits, N, E, and A were subsumed under different factors. Facets of Neuroticism were scattered over different personality dysfunction factors. This finding is in line with the study by Dyce and O'Connor (1998) who showed that, while Neuroticism as a whole was related to all personality disorders, its comprising facets were distributed over various specific personality disorders. Most facets of Extraversion and Agreeableness mixed with putative GPD facets, therefore we renamed these factors as Inactivity and Obliging respectively. It appears that conceptual overlap is highest in these two domains; i.e., that these traits are most readily translated to pathology of the Axis II type, or conversely, that GPD factors apparently have (high end) trait-like features. This issue of conceptual overlap or bipolarity (Widiger et al., 2009) needs further investigation.

Several methodological limitations of the present study deserve comment. First, in view of the modest number of participants per variable, our findings are in need of cross-validation. Moreover, it is recommended that these future studies include samples with different PD distributions. While the composition of our sample is commensurate to those other published reports on naturalistic convenience samples, it includes relatively few patients with predominant cluster A or C personality pathology. In this regard, it may be noted that the traits being considered for DSM-5 are more pathological. An analysis using these traits might give different results. The prominence of the factor Self-identity dysfunctioning in our study with its predominantly unique loadings is notable, as the concept of self-pathology is both anchored in theory (Kernberg & Caligor, 2005; Kohut, 1971;

Livesley, 2003) and clinically relevant and useful for the understanding of personality. Further, it should be acknowledged that the GAPD and the SIPP-118 are relatively recently developed instruments. To date, there is no published data on the psychometric properties of the GAPD, while data are beginning to accumulate on the SIPP-118 psychometrics (Arnevik et al, 2009; Feenstra, Hutsebaut, Verheul, & Busschbach, 2011; Verheul et al., 2008). However, these two instruments are among the primary currently available operationalizations for conducting preliminary tests of the concept of general personality disorder, so prominently featured in the current DSM-5 proposals.

In conclusion, the DSM-5 Personality and Personality Disorders Work Group proposes an alternative model of personality, personality disorder assessment, and classification. The model consists of generic criteria for personality disorder, consisting of severe deficits in self, and in the capacity for interpersonal relatedness, which are combined with personality trait assessment and descriptions of major personality (disorder) types (APA, 2011). Our study shows that general personality related dysfunction can be meaningfully distinguished from specific personality traits, and we hope that our findings may contribute to the empirical foundation of the DSM-5 proposals for a renewed integrative assessment of personality disorders.

6

Specific personality traits and general personality dysfunction as predictors of the presence and severity of personality disorders in a clinical sample

Published as: Berghuis, H., Kamphuis, J.H., Verheul, R. (2014). Specific personality traits and general personality dysfunction as predictors of the presence and severity of personality disorders in a clinical sample. *Journal of Personality Assessment, 96,* 410-416.

Introduction

The categorical Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM-IV]; American Psychiatric Association, 1994) model of personality disorders (PDs) has been widely criticized for conceptual and empirical problems (for a recent review, see Krueger & Eaton, 2010). A number of alternative dimensional models of both normal and pathological personality traits have been developed. Although these dimensional models spring from various conceptual approaches, research shows a high degree of convergence between these models at the higher level of conceptualization and measurement (Widiger & Simonsen, 2005).

To illustrate, in their review of 18 alternative dimensional models of PD, Widiger and Simonsen (2005) identified five shared broad domains of personality traits: emotional dysregulation versus emotional stability, extraversion versus introversion, antagonism versus compliance, constraint versus impulsivity, and unconventionality versus closedness to experience. Each of these broad domains can be subdivided into more specific facets or lower order traits. Several studies have shown consistent relations between dimensional trait models and DSM-IV PDs (Bagby, Marshall, & Georgiades, 2005; Harkness, Finn, McNulty, & Shields, 2011; Samuel & Widiger, 2008; Saulsman & Page, 2004). For example, specific traits within the domain of emotional dysregulation versus emotional stability (e.g., negative temperament or neuroticism) tend to be strongly associated with all PDs, suggesting a general personality pathology factor (akin to a personality g factor; Hopwood, 2011). Openness is in most studies not associated with PD, whereas the pathological counterpart unconventionality or psychoticism shows meaningful correlations with corresponding PDs. The three other distinguished higher order domains of dimensional traits are also associated with general PD, and have additional PD-specific associations.

The relevance of trait models for the conceptualization and assessment of PD is widely acknowledged, and the same holds for the notion that personality traits alone do not suffice to diagnose PDs. Several authors have debated how extreme trait variation (especially of normal traits) can be differentiated from PD (Livesley & Jang, 2000; Parker & Barrett, 2000; Wakefield, 2008; Widiger & Costa, 2012). A specific proposal in this regard is offered by Widiger and colleagues (e.g., Widiger, Costa, & McCrae, 2002; Widiger & Mullins-Sweatt, 2009), who defined a four-step process approach to diagnosing PD using the Five-factormodel (FFM). The first step is to describe personality using domains and facets of the FFM. The second step is to identify the problems of living associated with elevated scores. The third step is to determine whether the problems of living reach clinical significance, using the global assessment of functioning (GAF) scale on AxisV of the DSM-IV-TR. The fourth, optional, step is to match the FFM profile with prototypical profiles of clinical diagnostic constructs such as the DSM-IV-TR PDs.

Table 1. Models of core features and severity of PD

Verheul et al. (2008)	Livesley (2003)	DSM-5 (APA, 2013)	Kernberg (1984)	Cloninger (2000)	Parker et al. (2004)	DSM-IV (APA, 1994) Bornstein (1998)
Identity integration	Selfpathology	Identity	Identity integration	Self-direction	Coping	
Selfcontrol		Self-direction	Defense mechanisms			Difficulty in impuls control; Inappropriate affectivity
Relational capacity	Interpersonal dysfunction	Empathy Intimacy		Cooperativeness	Cooperativeness	Impaired interpersonal functioning
Social concordance						
Responsibility						
			Reality testing			Distorted cognition

Another perspective would be to define PD by maladaptive traits, but such proposals have been criticized for failing to recognize personality as a coherent and organized structure of thoughts and behaviors (Cervone & Shoda, 1999; Livesley, 2003), with specific PDs reflecting the pathological manifestations of underlying psychological structures (Kernberg & Caligor, 2005).

The previously mentioned problems with trait extremity and the notion of personality as an organized and integrated structure have led to suggestions that core features of PD and severity levels of PD should be defined independently from trait variation (Livesley et al.,1994; Trull, 2005; Verheul et al., 2008). As one can see from Table 1, a number of noteworthy alternative conceptualizations have been proposed. First, both Cloninger (2000) and Parker et al. (2004) described self-directedness or coping and cooperativeness as core features of PD. Second, Kernberg (1984; Kernberg & Caligor, 2005) characterized the psychopathology of PD in terms of identity disturbance, primitive psychological defenses, and disturbed reality testing. Third, Verheul et al. (2008) defined five higher order domains of personality functioning that might serve as indexes of severity of dysfunction: identity integration, self-control, relational capacity, social concordance, and responsibility. Fourth, the Alternative DSM-5 Model for PD (APA, 2013; Section III) proposes dysfunction of the self (identity and self-direction), and interpersonal dysfunction (empathy and intimacy) as essential features of a PD. Fifth, Bornstein (1998; Bornstein & Huprich, 2011) developed a dimensional rating of overall level of personality dysfunction, capturing four essential features of personality pathology, as defined in the general criteria of PD of the DSM-IV: distorted cognition, inappropriate affectivity, impaired interpersonal functioning, and difficulty with impulse control. Finally, Livesley (2003) elaborated the definition of PD in his adaptive failure model, positing that the structure of personality helps individuals to achieve adaptive solutions to various universal life tasks; that is, the achievement of stable and integrated representations of the self and others, the capacity for intimacy, attachment and affiliation, and the capacity for prosocial behavior and cooperative relationships (Berghuis et al., 2013). Although distinct, all of the discussed models and proposals converge in that the general personality dysfunction and the severity of PD is expressed in the maladaptive behavior of the person with respect to the self, self-control or self-directedness, and interpersonal relations, independent of trait elevations. In line with this notion, it has been posited that the combination of personality trait models and models of levels of personality dysfunction might optimize the assessment of PDs (Bornstein & Huprich, 2011; Clark, 2007; Stepp et al., 2011). Also, the Alternative DSM-5 Model for PD (APA, 2013) proposes that the combination of severity levels of dysfunction of core features of PD and elevated personality traits leads to a diagnosis of PD. The research reported here might add to the database necessary to ultimately revise the current classification of PD accordingly.

In this study, we aimed to test this notion by investigating personality trait models of both normal and pathological personality and models of personality dysfunction, in relation to the presence and severity of DSM-IV PDs. The Revised

NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992b) was selected as a measure of normal personality traits, and the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2009) was chosen as a measure of pathological personality traits. In addition, two promising measures of general personality dysfunction were selected, the General Assessment of Personality Disorder (GAPD; Livesley,2006) and the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008). Three research questions were addressed. First, are the observed associations between models consistent with theoretical prediction? We predict that general personality dysfunction and the personality trait dimension emotional dysregulation versus emotional stability are strongly associated with all PDs, whereas associations of other traits will be mostly PD specific. Second, to what extent do these models predict the presence and severity of PD? Based on the preceding review, we predict that personality trait models predict specific PDs better than personality dysfunction models, whereas personality dysfunction models predict severity of PD better than personality trait models. Finally, what is the incremental validity of personality dysfunction models over personality trait models, and vice versa, in the prediction of the presence and severity of PD? This third research question is especially relevant in the context of the proposition that an extreme score on a trait domain is not sufficient to diagnose PD, and that a combination of assessment of traits and dysfunction facilitates an integrative diagnosis of PDs.

Method

Participants and Procedures

The study included a heterogeneous sample of 261 psychiatric patients. Of these, 73.9% were female, and the mean age was 34.2 years (*SD* = 12.0, range = 17-66). Patients were invited to the study by their clinical psychologist or psychiatrist, or completed a questionnaire as part of a routine psychological evaluation. All patients signed an informed consent form and received a €10 gift certificate for their participation. Patients with insufficient command of the Dutch language, with organic mental disorders or mental retardation, and patients in acute crisis were excluded.

Table 2 shows the clinical characteristics of this sample. In 52.1% of the cases at least one PD, as measured by the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997), was present. The most frequent Axis II diagnoses were avoidant (22.2%), borderline (20.7%), paranoid (7.7%), and obsessive-compulsive (6.1%) PD. Because other PDs were hardly or not represented, we selected only the most frequent present PDs for our analyses of specific PDs. The total number of diagnostic criteria across all PDs was used as a measure of the severity of PD. Among those with at least one PD, 78.9% also met criteria for one or more comorbid Axis I

Table 2. Frequencies, mean scores, and SD's of DSM-IV personality disorders ratings (N=261)

	Frequencies		*# Criteria*	
DSM-IV Personality disorders	*n*	%	*M*	*SD*
Paranoid PD	20	7.7	1.00	1.37
Schizoid PD	2	0.8	.27	.70
Schizotypal PD	0	0.0	.61	.93
Antisocial PD	3	1.1	.41	.89
Borderline PD	54	20.7	2.52	2.42
Histrionic PD	3	1.1	.29	.76
Narcissistic PD	3	1.1	.39	1.03
Avoidant PD	58	22.2	1.94	1.99
Dependent PD	7	2.7	.94	1.30
Obsessive-Compulsive PD	16	6.1	1.11	1.35
PD Totalscore[a]	136	52.1	9.25	6.44

Notes. Personality Disorders ratings are based on the SCID-II. [a] Individuals could be assigned more than one diagnosis.

disorders (clinical diagnosis), the majority of which were mood disorders(41.4%) or anxiety disorders (10.3%).The prevalence of PDs and comorbid Axis I disorders is largely comparable to other prevalence studies in clinical populations.

Measures

Dimensional Assessment of Personality Pathology-Basic Questionnaire. The DAPP-BQ (Livesley & Jackson, 2009; van Kampen, 2006 [Dutch version]) is a 290-item questionnaire assessing 18 factor-analytically derived PD trait scales. The DAPP-BQ is organized into four higher order clusters: emotional dysregulation, dissocial behavior, inhibition, and compulsivity. These higher order domains were used in this study. The response format is a 5-point Likert scale ranging from 1 (very unlike me) to 5 (very like me). Both the Canadian and Dutch versions of the DAPP-BQ are well documented and have favorable psychometric properties (Livesley & Jackson, 2009; van Kampen, 2006).

General Assessment of Personality Disorders. The GAPD (Livesley, 2006) is a 142-item self-report measure ope ationalizing the two core components of personality pathology proposed by Livesley (2003). The primary scale, Self-Pathology, covers items regarding the structure of personality (e.g., problems of differentiation and integration) and agency (e.g., conative pathology). The primary scale Interpersonal Dysfunction is about failure of kinship functioning and societal functioning. This study used the authorized Dutch translation (Berghuis, 2007). The Dutch GAPD demonstrated favorable psychometric properties in a mixed psychiatric sample (Berghuis et al., 2013).

NEO Personality Inventory-Revised. The 240-item NEO-PI-R (Costa & McCrae, 1992b; Hoekstra et al., 1996 [Dutch version]) is a widely used operationalization of the FFM. The 5-point Likert scale items map onto the five personality domains: neuroticism, extraversion, openness, agreeableness, and conscientiousness. Each domain is subdivided into six facets. This study used only the domains

of the NEO PI-R. The NEO-PI-R has favorable psychometric properties (Costa & McCrae, 1992a).

Structured Clinical Interview for DSM-IV Axis II Personality Disorders. The SCID-II (First et al., 1997; Weertman et al., 2000, Dutch version) is a 134-item semistructured interview for the assessment of DSM-IV PDs. Each item is scored as 1 (absent), 2 (subthreshold), or 3 (threshold). All SCID-II interviews were administered either by specifically trained clinicians with extensive experience, or by master level psychologists who were trained by the first author, and all attended monthly refresher sessions to promote consistent adherence to the study protocol. SCID-II interviewers were unaware of the results of the self-report questionnaires. Several studies have documented high interrater reliability of the SCID-II (e.g., Maffei et al., 1997, from .83-98; Lobbestael et al., 2010, from .78-91, Dutch study). No formal assessment of interrater reliability was conducted, but internal consistencies for the SCID-II dimensional scores ranged from fair (Cronbach's α = .54, schizotypal PD) to good (.81, borderline PD and avoidant PD), with a mean score of .70. For the individual PDs, raw scores (i.e., symptom counts) were obtained by calculating the number of present criteria (with score 3). Therefore, PDs are treated as dimensions and not as categories in the analyses. Also, the severity of PD is expressed in the dimensional total score. Table 1 provides the mean number of criteria met and the standard deviation of all diagnosed PDs.

Severity Indices of Personality Problems-118. The SIPP-118 (Verheul et al., 2008) is a dimensional self-report measure of the core components of (mal)adaptive personality functioning, and provides indexes for the severity of personality pathology. The SIPP-118 consists of 118 4-point Likert scale items covering 16 facets of personality functioning that cluster in five higher order domains: self-control, identity integration, relational functioning, social concordance, and responsibility. Two studies have reported good psychometric properties (Verheul et al., 2008) and cross-national consistency (Arnevik et al., 2009) of the SIPP-118, respectively.

Statistical Analysis

Pearson correlations were used to examine the associations among the DSM-IV PD symptom counts with the domains of the selected models of specific personality traits (NEO-PI-R and DAPP-BQ), and personality dysfunction (GAPD and SIPP-118).Hierarchical regression analyses were used to investigate the extent to which each model predicted the symptom counts of specific PD and severity of PDs, as well as their relative incremental predictive capacity.

Results

Relations between personality trait models and general personality dysfunction models

Table 3 displays the correlations among the primary scales of the NEO-PI-R, DAPP-BQ, SIPP-118, GAPD, and the SCID-II PD symptom counts. Most observed correlations were consistent with theoretical predictions. As expected, both measures of personality dysfunction (GAPD and SIPP-118) were highly intercorrelated (*r*s ranged from .49 to .86; median = .61). Also, theoretically related specific traits derived from NEO-PI-R and DAPP-BQ were strongly associated (e.g., DAPP-BQ Emotional dysregulation and NEO-PI-R Neuroticism, r = .79; DAPP-BQ Dissocial behavior and NEO-PI- Agreeableness, r = -.64).

Unexpectedly, we observed high correlations between some primary scales of the personality dysfunction and some specific trait measures, especially between DAPP-BQ Emotional dysregulation, and both GAPD Self pathology (r = .88) and SIPP-118 Identity integration (r = -.82). A similar pattern was observed for NEO-PI-R Neuroticism (r = .73 and r = -.76, respectively).

As predictors of the presence of individual PDs, personality trait models showed, also consistent with our expectations, PD-specific correlational patterns (e.g., borderline PD symptom count correlated with DAPP-BQ Emotional dysregulation, r = .58, but not with DAPP-BQ Compulsivity, r = -.10), whereas the personality dysfunction measures showed more generalized correlational patterns (e.g., borderline PD symptom count correlates with all SIPP-118 and GAPD scales ; *r*s between .26 and -.61, with a median r of .45).

Also as predictors of the severity of PD, personality dysfunction measures showed a consistent, generalized pattern of correlations (e.g., SIPP-118 and GAPD scales were correlated with severity of PD, *r*s between -.43 and .59, median = .49). In contrast, the personality trait measures showed medium correlations (*r*s between .04 and .46, median = .32), except for DAPP-BQ Emotional dysregulation, which showed a strong correlation with the severity of PD (r = .64).

Prediction of presence and severity of PDs

A series of multiple hierarchical analyses, with the domain scales of the NEO-PI-R, the DAPP- BQ, the SIPP-118, and primary scales of the GAPD as predictor variables, were conducted. The power of the selected specific personality trait and personality dysfunction models to predict the presence and severity of PD dimensional scores was tested, as well as the incremental validity of models of personality dysfunction (i.e., the GAPD and the SIPP-118) over and above models of personality traits (i.e., the NEO-PI-R and DAPP-BQ), to predict the presence and severity of PD dimensional scores (and vice versa). As can be seen in Table 4, all selected models significantly predicted each of the individual PDs as well as the severity of PDs (range R^2 = .04 -.40). Of note were the relatively low predictive

Table 3. Zero-order correlations between SCID-II PD symptom counts and the scores of the NEO-PI-R, DAPP-BQ, SIPP-118, GAPD (N=261)

	SCID-II					GAPD		SIPP-118					DAPP-BQ			
Dimensional traits	PAR	BOR	AVD	O-C	TOT	SP	IP	SE	ID	RF	RE	SC	ED	DB	IN	CO
NEO-PI-R																
N	. 28**	.45**	.45**	.11	.46**	**.73****	**50****	**-.72****	**-.76****	**-.60****	-.48**	**-.58****	**.79****	.27**	.38**	.07
E	-.12	-.00	-.45**	-.06	-.22**	-.47**	**-.54****	. 24**	.48**	**.59****	.15*	.32**	-.39**	.16**	**-.52****	.00
O	.07	.18**	-.09	.01	.08	-.11	-.17	.06	.14	.19**	-.07	.11	-.01	.08	-.21**	-.04
A	-.30**	-.25**	.04	-.20**	-.29**	-.32**	**-.49****	.43**	.27**	.33**	.45**	**.58****	-.31**	**-.64****	-.10	.10
C	-.12	-.40**	-.27**	.07	-.37**	**-.53****	-.41**	**.56****	**.56****	.41**	**.78****	.36**	**-.51****	-.41**	-.15*	**54****
DAPP-BQ																
ED	.39**	**.58****	.46**	.20**	**.64****	**.88****	**.58****	**-.77****	**-.82****	**-.65****	**-.58****	**-.60****				
DB	.25**	.42**	-.05	.15*	.37**	.43**	.47**	**-.54****	-.34**	-.30**	**-.61****	**-.54****				
IN	.21**	.12	.41**	.14*	.34**	**.55****	**.59****	-.26**	**-.51****	**-.69****	-.16**	-.27**				
CO	.09	-.10	.05	.32**	.04	.04	.00	-.02	.02	-.06	.34**	-.11				
SIPP-118																
SE	-.33**	**-.61****	-.22**	-.16**	**-.52****	**-.71****	**-.50****									
ID	-.34**	-.35**	-.14*	-.27**	-.43**	**-.86****	**-.72****									
RF	-.28**	-.47**	-.43**	-.17**	**-.51****	**-.56****	**-.76****									
RE	-.30**	-.28**	-.43**	-.26**	-.49**	**-.57****	-.49**									
SC	-.21**	-.45**	-.17**	-.07	-.43**	**-.58****	**-.63****									
GAPD																
SP	.33**	**.53****	.43**	.20**	**.59****											
IP	.32**	.26**	.33**	.22**	.45**											

Notes. ** *p< .01,* * *p< .05*. Significant correlations > .50 are printed in **bold**. PAR = Paranoid PD, BOR = Borderline PD, AVD = Avoidant PD, O-C = Obsessive-Compulsive PD, TOT = Severity of PD (i.e. dimensional totalscore of PD), SP = Self pathology, IP = Interpersonal dysfunction SE = Selfcontrol, ID = Identity integration, RF = Relational functioning, RE = Responsibility, SC = Social concordance, ED = Emotional Dysregulation, DB = Dissocial Behavior, IN = Inhibition, CO = Compulsivity. N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness.

Table 4. Hierarchical regression analyses showing incremental variance accounted for by the GAPD and SIPP-118 personality dysfunction models relative to the NEO-PI-R and DAPP-BQ personality trait models (and vice versa), respectively, in the prediction of DSM-IV PD symptom counts and severity of PDs (N=261)

	Model 1			Model 2		
Dimensional SCID-II rating	Step 1 R^2 NEO-PI-R	Step 2 ΔR^2 GAPD over NEO-PI-R	Step 2 ΔR^2 SIPP-118 over NEO-PI-R	Step 1 R^2 DAPP-BQ	Step 2 ΔR^2 GAPD over DAPP-BQ	Step 2 ΔR^2 SIPP-118 over DAPP-BQ
Paranoid PD	.26***	.04**	.05**	.16***	.02**	.07**
Borderline PD	.33***	.09***	.12***	.39***	.02**	.07***
Avoidant PD	.29***	.02	.05**	.34***	.01	.03*
Obsessive-Compulsive PD	.08***	.03**	.07**	.14***	.01	.04*
Severity of PD	.28***	.10***	.08***	.42***	.00	.01
	Model 3			Model 4		
Dimensional SCID-II rating	Step 1 R^2 GAPD	Step 2 ΔR^2 NEO-PI-R over GAPD	Step 2 ΔR^2 DAPP-BQ over GAPD	Step 1 R^2 SIPP-118	Step 2 ΔR^2 NEO-PI-R over SIPP-118	Step 2 ΔR^2 DAPP-BQ over SIPP-118
Paranoid PD	.17***	.11***	.04**	.20***	.08***	.04**
Borderline PD	.29***	.12**	.11***	.40***	.03**	.05***
Avoidant PD	.18***	.10***	.15***	.23***	.09***	.12***
Obsessive-Compulsive PD	.04***	.05**	.10***	.09***	.03*	.07***
Severity of PD	.34***	.03*	.07***	.32***	.02*	.04***

Notes. $p^{*} < .05$. $p^{**} < .01$, $p.^{***} < .001$. For the regression models with GAPD and NEO-PI-R, *df* = 49, 211; for GAPD and DAPP-BQ, *df = 37, 223;* for SIPP-118 and NEO-PI-R, *df* = 46, 214, for SIPP-118 and DAPP-BQ, *df* = 34, 226. Severity of PD = SCID-II dimensional totalscore.

values of the selected models in the prediction of obsessive–compulsive PD (range R^2 = .04 -.14). Regression Equations 1 and 2 compared the relative predictive power and incremental validity of the personality trait and dysfunction models. In these models the domain scores of the NEO-PI-R (Model 1) and the DAPP-BQ (Model 2) were entered as a first block in the regression equation (Step 1), followed by the primary scales of the GAPD and the SIPP-118 domains as a second block (Step 2), respectively. Conversely, regression Equations 3 and 4 estimated the incremental validity of the personality trait models over and above the personality dysfunction models by reversing the order of the blocks.

Table 4 shows that the GAPD and SIPP-118 models of general personality dysfunction incrementally predicted most specific PD dimensional scores over and above the NEO-PI-R and the DAPP-BQ (ΔR^2 value: range = .01-.12; Models 1 and 2). The additional variance of the GAPD over the DAPP–BQ was, however, rather small (ΔR^2 value: range = .01-.02). In the prediction of severity of PD, the GAPD predicted 10% additional variance over and above the NEO-PI-R, and the SIPP-118 showed 8% additional variance over and above the NEO-PI-R. However, the additional variance of the GAPD and SIPP-118 over and above the DAPP-BQ was minimal. Similarly and as expected, the NEO-PI-R and DAPP-BQ models of personality traits incrementally predicted all the dimensional scores of specific PDs over and above the GAPD and SIPP-118 (ΔR^2 value: range = .03-.15; Models 3 and 4). Likewise, the additional variance of the NEO-PI-R and the DAPP-BQ over and above the GAPD and SIPP-118 was smaller for the prediction of severity of PD than for the prediction of specific PDs (ΔR^2 value: range =.02-.07).

Discussion

This study examined the associations and predictive value of models of general personality dysfunction and specific personality traits in relation to the presence and severity of DSM-IV PDs. Three main questions were addressed: (a) Are the observed associations between specific personality traits and personality dysfunction models consistent with theoretical prediction? (b) To what extent do these models predict the presence and severity of PD ratings? and (c) What is the incremental validity of personality dysfunction models over and above specific personality trait models, and vice versa, in the prediction of the presence and severity of PD ratings?

With regard to the first question, we observed correlational patterns between the specific personality trait and personality dysfunction models that were largely consistent with prediction and with earlier research concerning these associations (e.g., Bagby et al., 2005; Samuel & Widiger, 2008; Saulsman & Page, 2004; Simonsen & Simonsen, 2009). As predicted, personality dysfunction (GAPD and SIPP-118) and the specific DAPP-BQ personality trait Emotional dysregulation were strongly associated with all PDs, whereas most associations of other traits were PD specific. However, we also found strong intercorrelations between SIPP-

118 Identity integration and GAPD Self pathology on the one hand, and DAPP-BQ Emotional dysregulationand, to a somewhat lesser extent, NEO-PI-R Neuroticism on the other hand. Future research should clarify whether these associations are accounted for by overlap on either a conceptual or measurement level (e.g., overlap of the facet identity problems of the DAPP-BQ domain Emotional dysregulation, and SIPP-118 Identity integration).

With respect to the second and third research questions, all four models predicted the presence and severity of PD dimensional scores. Consistent with previous research (e.g., Bagby et al., 2005; Samuel & Widiger, 2008; Saulsman & Page, 2004; Simonsen & Simonsen, 2009), specific personality trait models predicted the presence and severity of PD. With regard to the incremental validity, we observed that both the GAPD and SIPP-118 yielded significant prediction of PD and severity of PD above and beyond normal traits (NEO-PI-R), but their incremental validity was minimal (GAPD) or small (SIPP-118) over pathological personality traits (DAPP-BQ). Moreover, the NEO-PI-R had a comparable incremental validity over both the GAPD and the SIPP-118, which underscores the relevance of assessing traits. Taken together, it seems that the addition of a trait-independent measure improves the assessment of PD, especially in the context of normal, but not abnormal, personality traits. Accordingly, the GAPD and the SIPP-118 might have utility in Step 3 of the four-step procedure for the diagnosis of a PD from the perspective if the FFM, as proposed by Widiger et al. (2002). That is, ratings from the GAPD and SIPP-118 might help determine to what extent problems in living reach clinical significance. Because Axis V is no longer in the DSM-5, and general personality (dys)function is part of the Alternative DSM-5 Model for PD (DSM-5, Section III; APA, 2013), further research is needed to explore the value of personality dysfunction in the diagnosis of PD.

The DAPP-BQ proved to be a strong predictor of both specific PDs rating and the severity of PDs. We consider two possible explanations for the relatively strong predictive power of the DAPP-BQ. First, the items of the DAPP-BQ are partially derived from a list of behaviors and traits directly related to DSM-III personality disorders, where as the NEO-PI-R, SIPP-118, and GAPD arose from other, non-DSM-related models of personality. An alternative explanation for the relatively strong predictive power of the DAPP-BQ is related to the composition of especially the DAPP-BQ Emotional dysregulation scale. As also noted by Bagge and Trull (2003), the DAPP-BQ Emotional dysregulation scale includes a broad range of different maladaptive personality traits, including problems of the self, interpersonal problems, issues related to psychoticism, and emotional dysregulation. These traits are from different conceptual perspectives seen as central pathognomonic signs of personality pathology (Cloninger, 2000; Kernberg & Caligor, 2005; Livesley, 2003), and might therefore yield strong predictive power.

On the other hand, despite the strong predictive power of the DAPP-BQ relative to the other models, the SIPP-118 significantly added to the prediction provided by the DAPP-BQ for every specific PD dimension analyzed, and vice versa, the DAPP-BQ incremented the SIPP-118 predictions. Also the NEO-PI-R showed

incremental validity over the GAPD and SIPP-118. These findings of incremental validity between the different models used in this study become of interest as the Alternative DSM-5 Model for PD (APA, 2013) included a combination of personality traits and personality dysfunction for the assessment of specific PDs. In addition to this study, and in line with the DSM-5 proposals, Hopwood, Thomas, Markon, Wright, and Krueger (2012) also found a significant, but also small (ΔR^2 values range = .04-.13) incremental validity of symptoms reflecting personality pathology severity over and above specific pathological traits as measured with the *Personality Inventory for DSM-5* (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2011).

As a limitation, it needs to be acknowledged that our study only included the higher order domains and primary scales in the analyses. Future research could clarify to what extent lower order facet scales might be more powerful predictors of personality psychopathology (Reynolds & Clark, 2001). Moreover, a number of specific PDs were only minimally represented in our sample, causing us to limit our main analyses to the more prevalent PDs. Our findings can therefore only be generalized to the disorders included, leaving other PDs for future research. Notwithstanding, this study provides evidence in support of the notion of an integrative approach to the assessment of PDs (Hopwood et al., 2011; Stepp et al., 2011). Future research should further identify and sharpen the associations of (pathological) personality traits with general personality dysfunction in the assessment and classification of PDs.

7

Does personality pathology reside at both poles of the FFM? A test of the FFM bipolarity hypothesis in a clinical sample.

Berghuis, H., Kamphuis, J.H., Noordhof, A., &Verheul, R. (subm.).
Does Personality Pathology reside at Both Poles of the FFM? A Test of the FFM Bipolarity Hypothesis in a Clinical Sample.

Introduction

The Five Factor Model (FFM; John & Srivastava, 1999) has frequently been advocated as a trait-based dimensional alternative to the DSM-IV personality disorders. The FFM, as operationalized by the widely used Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992b), consist of five broad domains, each conceptualized as bipolar constructs: neuroticism versus emotional stability, extraversion versus introversion, openness versus closedness, agreeableness versus antagonism, and conscientiousness versus disinhibition. Bipolarity in the context of personality disorders, refers to the notion that both extremely low *and* extremely high scores on these dimensions are indicative of personality dysfunction (Widiger & Costa, 2012). Trait-based taxonomies of personality dysfunction are not necessarily bipolar; for example the most recent proposals for DSM-5 (APA, 2012) are, with the exception of disinhibition vs constraint, based on unipolar constructs: high scores indicate more dysfunction and low scores less.

What does the difference between unipolar and bipolar conceptions mean for the practicing clinician faced with an individual FFM/NEO-PI-R protocol characterized by extreme scores? A strong bipolarity hypothesis would hold that *"the FFM has bipolar dimensions in which there are maladaptive variants at both ends of each pole"* (Widiger, 2011). Thus, for example, both extreme Introversion *and* Extraversion would indicate dysfunction, while in a unipolar interpretation only one extreme (e.g. Introversion) would. The bipolarity hypothesis is often discussed in the context of correlations between specific PD's and FFM-traits or facets (e.g. Samuel & Widiger, 2008). However, such correlations can also be explained by a much weaker bipolarity hypothesis: if and only if abnormal personality functioning is evident, extreme scores at either end of the FFM predict the specific symptomatology of personality dysfunction. Therefore, a practicing clinician is faced with ambiguity in interpreting FFM/NEO-PI-R-scores: are extremes generally associated with dysfunctions, or are some extremes associated with adequate functioning instead?

The aim of the present research was to investigate whether in a naturalistic clinical sample the association between FFM-traits, and personality dysfunction is best understood as unipolar or bipolar. To this end we tested whether extreme scores at both ends or only one end of the FFM were associated with personality dysfunctions. We explored the associations of the FFM (as operationalized by the NEO-PI-R) with general personality dysfunction (GPD). GPD was operationalized in two ways: a) as the SCID-II based symptom counts of the DSM-IV PD's, and b) as the total score of the General Assessment of Personality Disorder (GAPD; Livesley, 2006; Berghuis et al., 2013), rooted in Livesley's model of general personality dysfunction. Consistent with a general bipolarity hypothesis, we expected that both extremes of the FFM traits would be positively associated with GPD.

Method

Participants

The study included a sample of 291 psychiatric in- and outpatients, for whom additional personality assessment had been requested because of clinical questions about personality functioning. Of these, 72.2 % were female, and the mean age was 34.2 years (*SD* = 11.9, range = 17-66). As might be expected, personality pathology was rather prevalent, with 40.5% of cases meeting criteria for at least one DSM-IV PD, as measured by the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First et al., 1997). The most frequent Axis II diagnoses were Avoidant PD (20.5%) and Borderline PD (20.2%); 88% also met the criteria for one or more comorbid Axis I disorders (clinical diagnosis), the majority of which were mood disorders (41.6%) or anxiety disorders (11.7%).

Measures

NEO-Personality Inventory-Revised (NEO-PI-R). The 240 item NEO-PI-R (Costa & McCrae, 1992b; Hoekstra et al., 2007, Dutch version) is a widely used operationalization of the Five-Factor Model (FFM) of personality. Five point Likert items map onto the five personality domains: Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness. Hoekstra et al. (2007) reviewed the reliability and validity data on the Dutch version of the NEO-PI-R.

Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). The SCID-II (First et al*,* 1997; Weertman et al., 2000, Dutch version) is a widely used 134-item semi-structured interview for the assessment of Axis II PDs. Interviewers were master-level psychologists who were trained by one of the authors (H.B.) and who attended monthly refresher sessions to promote consistent adherence to study protocol. Several studies documented high interrater reliability of the SCID-II (e.g. the Dutch study of Lobbestael et al., 2010 [from .78 to .91]). Each item is scored as 1 (absent), 2 (subthreshold), or 3 (threshold). The dimensional total-score (i.e. symptom count) was obtained by calculating the number of present traits (scores '3').

General Assessment of Personality Disorders (GAPD). The GAPD (Livesley, 2006) is a 142-item self-report measure operationalizing the two core components (Self- and Inpersonal dysfunction) of personality pathology proposed by Livesley (2003). A totalscore is calculated by adding both primary scales. The present study used the authorized Dutch translation (Berghuis, 2007). The GAPD has favorable psychometric properties (Berghuis et al., 2013).

Analytical strategy

Both linear and quadratic regression lines were computed for each of the scatterplots crossing the NEO-PI-R domains and the SCID-II symptom counts and GPD total scores, respectively. Linear regression lines would support unipolarity (i.e. pathology at one pole), whereas quadratic regression lines would support the strong bipolarity hypothesis (i.e., pathology at both poles). As an additional test, we di-

vided the NEO-PI-R scores into three categories: low-scores (< 20th percentile of the scores in the study sample), medium-scores (between 20th and 80th percentile), and high-scores (> 80th percentile). To be at least minimally consistent with strong bipolarity, SCID-II symptom counts, and GAPD total scores should be higher in the low and high groups as compared to the medium scores, as determined by ANOVA contrasts.

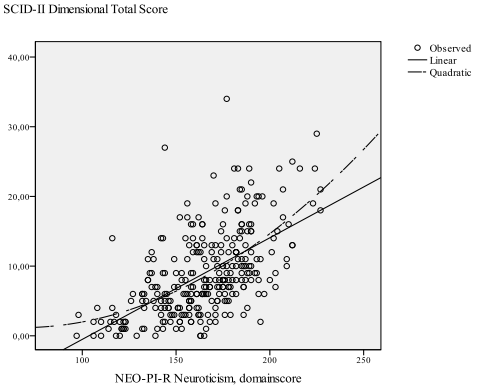
Results

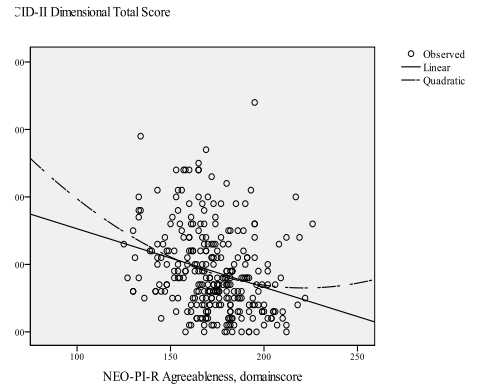
Figures 1-5 illustrate the relation between the scores on the NEO-PI-R domains and the SCID-II total scores [2]. Visual inspection suggests that none of the scatter plots approximated a U-shaped curve, which would be predicted by the strong bipolarity hypothesis. The scatter plots of the NEO-PI-R domains Neuroticism (N), Extraversion (E), Agreeableness (A), and Conscientiousness (C) clearly showed a linear relationship. Openness to Experience (O) appeared essentially independent of either measure of GPD.

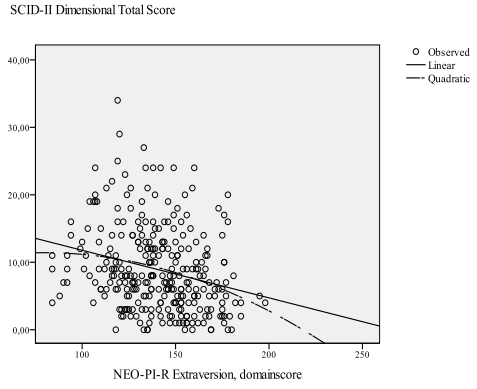
One-way ANOVA-analyses (Table 1) showed significant effects of NEO-PI-R based categories ('low', 'medium', 'high') on SCID-II total scores and GAPD-scores for N [GAPD: $F(2, 288)= 17.79$, $p < .05$; SCID-II: $F(2, 288) = 59.32$, $p < .05$], for E [GAPD: $F(2, 288) = 33.43$, $p < .05$; SCID-II: $F(2, 288) = 11.11$, $p < .05$], for A [GAPD: $F(2, 288) = 16.01$, $p < .05$; SCID-II: $F(2, 288) = 6.54$, $p < .05$], and for C [GAPD: $F(2, 288) = 33.84$, $p < .05$; SCID-II: $F(2, 288) = 17.37$, $p < .05$], but not O [GAPD: $F(2, 288) = .65$, n.s.; SCID-II: $F(2, 288) = .58$, n.s.]. For all these four scales and on both SCID-II and GAPD, contrast analyses consistently showed a unipolar rather than bipolar ordering of differences in SCID-II scores between the three groups: High > Medium > Low for N, and Low > Medium > High for E, A and C (for all contrasts $p < .05$; means are reported in Table 1).

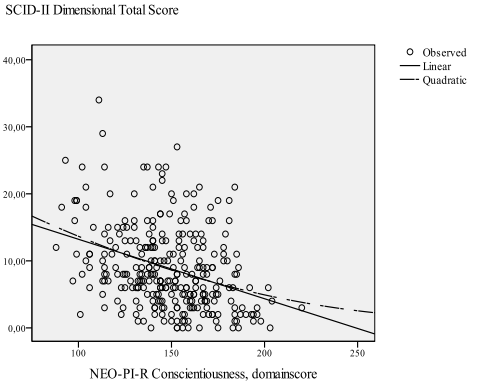
[2] Scatterplots of the NEO-PI-R * DSM-IV symptom counts and NEO-PI-R * GAPD Total scores showed identical patterns.

Figures 1-5: Scatterplots of the relation between NEO-PI-R domainscores and SCID-II dimensional total scores (N=291)









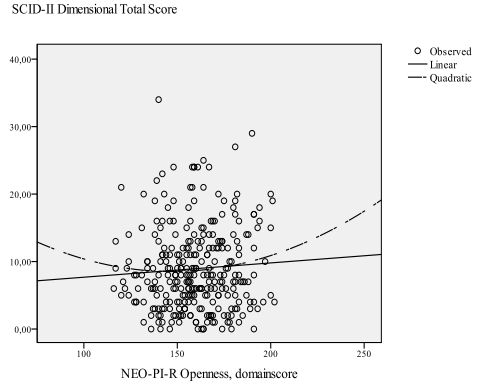


Table 1. The association between low, medium, and high NEO-PI-R domainscores and GAPD totalscore, and SCID-II totalscore (N=291)

NEO-PI-R domains	GAPD Totalscore	SCID-II # Criteria	*F* (2, 288) GAPD	*F* (2, 288) SCID-II	Post Hoc test
Neuroticism			117.79***	59.32***	
Low (*n*=58)	36.08	4.34			Low < Medium***
Medium (*n*=147)	50.95	7.98			
High (*n*=86)	61.54	13.69			High > Medium***
Extraversion			33.43***	11.11***	
Low (*n*=57)	60.41	11.86			Low > Medium***
Medium (*n*=174)	51.05	8.78			
High (*n*=60)	42.47	6.63			High < Medium***
Openness			.65	.58	
Low (*n*=29)	52.57	7.79			
Medium (*n*=203)	51.37	8.92			
High (*n*=59)	49.52	9.49			
Agreeableness			16.01***	6.54***	
Low (*n*=28)	59.26	11.57			Low > Medium***
Medium (*n*=231)	51.49	9.04			
High (*n*=32)	41.26	5.91			High < Medium***
Conscientiousness			33.84***	17.37***	
Low (*n*=32)	63.29	13.81			Low > Medium***
Medium (*n*=229)	51.06	8.77			
High (*n*=30)	38.52	5.07			High < Medium***

Note. *** $p < .001$. GAPD: General Assessment of Personality Disorder; NEO-PI-R: NEO-Personality Inventory Revised; SCID-II: Structured Clinical Interview for DSM-IV Axis II Personality Disorders. # Criteria: Sumscore of criteria SCID-II PDs.

Discussion

This short report examined whether extreme scores at both poles of FFM-traits, as operationalized by the NEO-PI-R, indicate personality dysfunction. Our findings do not support such a strong bipolarity hypothesis, but on the contrary are fully consistent with a unipolar association between traits and dysfunctions. That is, for Neuroticism, high scores were associated with worse and low scores with better personality functioning, while the opposite was found for Extraversion, Conscientiousness and Agreeableness.

These findings are in line with earlier research, that has shown that the NEO-PI-R assesses a considerable amount of maladaptivity with respect to high N and low E, A, and C (Trull, 2012; Samuel et al., 2010). Also, they suggest that the bipolar correlations reported in, for example (Samuel & Widiger, 2008) may be best interpreted from the perspective of a weak bipolarity hypothesis. That is, if and only if abnormal personality functioning is evident, extreme scores at either end of the FFM are associated with specific symptomatology. Weak bipolarity was not tested in the presented research, but might be useful for cases in which other in-

formation (e.g. Livesley's GAPD; see Berghuis et al., 2012, or other sources) points to personality dysfunction (Livesley & Jang, 2000).

We emphasize that our conclusions are very sensitive to sampling variation. The present sample did not include all categorical DSM-IV PDs, whereas borderline PD and avoidant PD were predominant. Different compositions may of course yield different scatterplots. However, we hold the present composition to be relatively representative for standard clinical practice, which should make our findings informative for clinicians working in similar settings.

Taken together, our findings suggest that the strong bipolarity hypothesis does not hold in standard clinical practice. To the extent our sample is representative for the population a particular clinician is serving, (extreme) low scores of N, or high scores of E, C, and A are not likely to be indicative of personality pathology, while O may not be very useful for this appraisal at all.

Part III

8

General discussion

Background and aims of this thesis

The main objective of this thesis was to contribute to the understanding of the core features of personality disorders (i.e., General Personality Disorder) and its assessment procedures. The assumed underlying structure of a personality disorder (PD), as a functional or structural impairment, was investigated in part I of this thesis. In addition, the convergent and divergent validity of General PD models versus personality trait models was empirically evaluated in part II of this thesis.

Models of General PD and personality trait models are relevant in the context of an integrative approach to the assessment of personality and PDs (Hopwood et al., 2011; Huprich & Bornstein, 2007; Stepp et al., 2011), and with respect to the recently developed Alternative model for PDs in DSM-5 Section III (APA, 2013).

In order to appraise the findings of this thesis, we first summarize and discuss its main findings, present relevant methodological limitations, and consider its clinical implications. Finally, we suggest directions for further research.

Overview and discussion on the main findings

The structure of General PD

In **part I** of this thesis we examined the structure of various models of core features and severity levels of PDs. The findings indicated that it is possible to identify a global dimension of personality pathology, which also can serve as a dimension of personality pathology severity. The main components within this dimension consist of impairments related to the self and interpersonal functioning. Both components were an integral part of all models investigated in this thesis (Kernberg & Caligor, 2005; Livesley, 2003; Verheul et al., 2008), and also matched with various other models of General PD (e.g. Bornstein & Huprich, 2011; Cloninger, 2000; Lowyck et al., 2013; Luyten & Blatt, 2011; Parker et al., 2004) and with the Alternative DSM-5 Model for PDs in Section III (APA, 2013). We found that both components were associated with comprehensive models of personality and personality pathology, and were able to differentiate between patients with and without PD, and between patients and the general population. The psychometric properties of the questionnaires we used with respect to General PD (i.e. IPO and GAPD) were in line with findings in other studies (Hentschell & Livesley, 2013a,b; Lenzenweger et al., 2001; Smits, Vermote, Claes, & Vertommen, 2009).

The self-pathology factor emerged as the strongest and most univocal factor in our studies. This factor could be divided in the lower-order factors Identity and Self-direction. Identity is related to the structure of the self (Jørgensen, 2010; Kernberg, 1984; Kohut, 1971; Livesley, 2003; Wilkinson-Ryan & Westen, 2000); i.e., a separate (from others), differentiated and integrated (within oneself) sense of self. Self-direction is related to self-control (cognitive, behavioral, and emotional) and to goal-oriented behavior, to moral values that give meaning to life, and to the concept of primitive defenses (Cloninger, Svrakic, & Przybeck, 1993; Kernberg &

Caligor, 2005; Parker et al., 2004; Verheul et al., 2008). In the present study, Self-direction showed overlap with the factor of Interpersonal functioning, in that Self-control and Moral values also had a direct impact on pro-social behavior and social concordance. In our factor analyses these lower-order factors therefore loaded on both main dimensions, i.e. Self and Interpersonal functioning.

The factor of Interpersonal (dys)functioning refers to the (in-)capacity to form and maintain close, reciprocal, and intimate relationships (e.g., friends, partner, and kinship relationships), and the capacity for cooperative behavior (i.e. working together with others in personal or occupational relationships). Interpersonal (dys)function is recognized as a central domain in personality pathology across distinct theoretical models (Hopwood, Wright, Ansell, & Pincus, 2013).

Given these assumptions and findings, it stands to reason that the therapeutic relationship, and aspects of identity and self-control are primary treatment targets in patients with PDs (e.g. Benjamin, 2005; Clarkin, Yeomans, & Kernberg, 2006; Fonagy & Bateman, 2006; Linehan, 1993; Livesley, 2003, 2012).

A severity dimension of PD

In addition to the support for the underlying structure of General PD models, we also found that the components of these models could be used as an overall dimensional PD severity measure. The main components of General PD were significantly associated with the probability of being assigned to one or more DSM-IV PD diagnosis, and with the total number of criteria or DSM-IV PD diagnosis. As stated, these components also differentiated between patients with and without PD, and between patients and non-patients.

These findings are relevant as they may help to identify and operationalize a clinically useful, meaningful and measurable dimensional severity measure. It is stated that distinguishing PD severity (as quantification of dysfunction) and PD style (as the specific manner in which PD dysfunction is expressed) is important for the understanding of PDs (Hopwood et al., 2011; Livesley, 1998; Widiger & Trull, 2007; Parker & Hadzi-Pavlovic, 2001; Parker, 2002). Several dimensional severity measures have been proposed from different theoretical perspectives (e.g. Karterud et al., 1995; Lowyck et al., 2013; Tyrer & Johnson, 1996; Tyrer et al., 2011), or severity measures are suggested in terms of their relations with social costs (Krueger & Eaton, 2010), or defined in more statistical terms by using empirically based cut points on specific dimensional scorings (Kamphuis & Noordhof, 2009). However, none of these proposals have been extensively used, probably because each has an exclusive focus on just one specific aspect of severity. The lack of a widely accepted, or DSM-adapted, dimensional severity measure is considered a major deficit in the clinical and research literature, as severity of PD has not only appeared to be one of the best predictors of the course of PDs (e.g., Barnicot et al., 2012; Gunderson et al., 2006; Yang, Coid, & Tyrer, 2010; Zanarini, Frankenburg, Reich, & Fitzmaurice, 2012), but is also considered one of the most promising diagnostic features in the context of treatment assignment (van Manen et al., 2011, 2012).

General PD versus personality traits

In **Part II** of this thesis we investigated the validity of models of General PD in relation to existing models of personality traits. In general, General PD models were distinguishable from (FFM) personality traits, and General PD showed incremental validity relative to trait models in predicting the severity and presence of PDs.

More specifically, we found that two main components of General PD, i.e. Self-pathology, and Interpersonal functioning, were clearly differentiated from (FFM) personality traits. This finding is in line with the above stated distinction between PD dysfunction and PD style. From this point of view, PD dysfunction refers to a general dimensional severity measure of impairment, and can be used to understand the adaptive or maladaptive expression of personality traits. Personality style, or a personality trait-profile, represents the most likely manifestation form of pathology. This distinction between PD dysfunction and PD style may for instance help to determine to what extent problems of living associated with elevated scores on a specific trait domain reach clinical significance (see: Widiger et al., 2002; Widiger & Mullins-Sweatt, 2009), and to understand how the severity of a specific profile of maladaptive trait expression may lead to specific treatment selection in terms of school of therapy and intensity of treatment (Hopwood et al., 2011; Mullins-Sweatt, & Lengel, 2012).

Furthermore, we found that General PD significantly added to both normal and pathological personality traits in the prediction of the presence and severity of PD. A clear differentiation between models of General PD and trait models was observed. We consider this result as notable with respect to the Alternative model of PDs in DSM-5 Section III (APA, 2013), since both personality dysfunction and personality traits are used independently in this model. We also think that incremental value of personality dysfunction over and beyond personality traits (and vice versa) provides evidence in support of the notion of a hybrid and integrative approach to the assessment of PDs (Hopwood et al., 2011; Huprich & Bornstein, 2007; Stepp et al., 2011).

The alternative model of PD in DSM-5

Over the course of this thesis, the DSM-5 was developed, and ultimately published in 2013. Interestingly, but not entirely accidentally, the P&PD workgroup worked on a proposal to identify and measure core components and severity levels of PD (APA, 2010, 2011). The subsequent versions of the proposals received major criticisms from clinical and empirical perspectives (e.g. Clarkin & Huprich, 2011; Livesley, 2010, 2012; Pilkonis, Hallquist, Morse, & Stepp, 2011; Ronningstam, 2011; Shedler et al., 2010; Tyrer, 2012; Verheul, 2012; Widiger, 2011; Zimmerman, 2011) and the field trials showed mixed reliability results in empirical tests of the proposals. Based on these criticisms and results of reliability studies, the DSM-5 task force decided to place the Alternative DSM-5 model for PD in Section III of the DSM-5 (APA, 2013). After many years of widespread criticism on the

categorical DSM-IV model, and the loud call for a dimensional, prototypic or hybrid model of PD diagnosis of many researchers (Clark, 2007; Huprich & Bornstein, 2007; Krueger & Markon, 2006; Krueger & Eaton, 2010; Livesley et al.,1998; Samuel & Widiger, 2004; Trull & Durrett, 2005; Westen, Shedler, & Bradley, 2006; Widiger et al., 2009; Widiger & Samuel, 2005), it is regrettable that the workgroup has not been able to find sufficient clinical consensus and empirical support for a worthy successor for the current model. This is particularly regrettable as the Alternative model consisted of various components that were the result of thorough fundamental and empirical research into personality pathology in the last decades. Nevertheless, the Alternative DSM-5 model for PD has been published in Section III, and we hope that it can serve as a blueprint for research into the final acceptance of an integrative model of personality disorders in future revisions of the DSM system.

In the Alternative DSM-5 model for PD, the diagnosis of PD consists of several parts. First, levels of personality functioning are determined based on the assessment of elements and aspects of Self- and Interpersonal functioning. Impairments in self functioning are reflected in elements of Identity and Self-direction. Interpersonal impairments consist of impairments in the capacities for Empathy and Intimacy. These core components serve both for the new general criteria for the presence of a PD, and a severity dimension of personality dysfunction (the Levels of Personality Functioning Scale; APA, 2013). In addition, pathological personality traits are defined. These traits are mapped according to a model with five trait domains (negative affectivity, detachment, antagonism, disinhibition, and psychoticism) divided in 25 lower order facets. Finally, specific personality disorders are defined by typical impairments in personality functioning and characteristic pathological personality traits. Six specific personality disorder types are defined: antisocial, avoidant, borderline, narcissistic, obsessive-compulsive, and schizotypal PD. The diagnosis of Personality Disorder Trait Specified (PDTS) can be made when a PD is considered present, but the criteria for a specific disorder are not met. PDTS is also defined by significant impairment in personality functioning, and one or more pathological personality trait domains or trait facets.

Our study found a solid foundation for the Self and Interpersonal factors as criteria for the overall functioning of personality. These components can also be used in a dimensional severity scale on personality functioning. In this sense we consider these main factors of personality function in the Alternative DSM-5 model for PD as promising. However, as has already been noted, the combination of General PD with pathological personality traits as a predictor of specific PDs was less clear in our study. This part of the Alternative DSM-5 PD model (i.e. the newly defined specific PDs), was also under strong criticism during the development of the Alternative model (Clarkin, & Huprich, 2011; Gunderson, 2010; Ronningstam, 2011; Zimmerman, 2011). Therefore, further research should reveal whether this method of defining specific PD by combining personality dysfunction and personality traits is the most optimal.

In our view, the fundamental difference between the present categorical model and the Alternative DSM-5 model for PD emerges most strongly in this part of the proposed personality types. A strict dimensional approach would actually imply the absence of categories. Or, as stated by Hopwood and colleagues: "*Given that dimensional models are more likely to stand up to formal tests of psychometric adequacy than categorical, and clinicians may be increasingly comfortable with dimensional models, practically speaking the DSM-5 as proposed would appear to be an intermediary step toward replacing PD constructs with trait dimensions. In other words, from a clinical perspective it might be simplest to diagnose every PD patient PDTS (*Personality Disorder Trait Specific*), and thus PDs in the DSM-5 appear to function primarily as a means for clinicians to become accustomed to a new and more efficient pathological trait system* (Hopwood et al., 2012, p. 429). It should be noticed that the removal of existing specific PDs might lead to a complicated break with the existing scientific knowledge and existing forms of psychotherapy based on specific PD, in particular borderline PD, such as Dialectical Behavior Therapy (DBT), Mentalization Based Therapy (MBT), Schema Focused Therapy (SFT), and Transference Focused Therapy (TFT). However, at the same time there is a movement towards integration of common factors in all specific PD-psychotherapy models (Livesley, 2013a,b; Clarkin, 2013; Bateman & Krawitz, 2013), which can be interpreted as a clear movement away from PD-category forms of treatment and as a movement towards a dimensional conceptualization PD.

Methodological considerations

Overall, this series of investigations have several strengths and limitations. First, our study was conducted with relatively large samples of both general populations in two different countries (Canada and the Netherlands), and PD patients samples relatively representative for standard clinical practice, which should make our findings informative for clinicians working in similar settings. Also our study made use of both well validated and existing measurements (DAPP-BQ, NEO-PI-R, SCID-II) and newly most promising instruments (GAPD, IPO, SIPP-118). We consider the use of semi-structured interview (SCID-II) based ratings of diagnostic criteria of DSM-IV PDs also as a strength, as it bypasses method variance inflated correlations. SCID-II interviewers were unaware of the results of the self-report questionnaires. Finally, a non-methodological strength is the timely character of this investigation with respect to the simultaneous development of the DSM-5 proposals for PD diagnosis, and therefore an important contribution to a relatively new area of research.

Several limitations are worth mentioning as well. First, the current research relied exclusively on self-report measures for the assessment of personality dysfunction and personality traits. The limitations of self-report instruments are extensively discussed (Ganellen, 2007; Huprich et al., 2011; Paulhus & Vazire, 2007),

and it has been suggested that there are limitations in the capacity for psychological insight and awareness in patients with personality pathology (Shedler et al.,1993). Likewise, it is open to question whether self-report is suitable to cover complex concepts like identity and relational functioning, since it is also stated that clinical judgment remains crucial in PD assessment (Westen & Weinberger, 2005). Although we recognize these being important general issues, the use of self-reports made it possible to collect relatively large data samples to increase power, and self-report is a widely used method in both PD research and clinical practice. Moreover, an interview procedure to measure impairments in the level of personality dysfunction with sufficient feasibility, reliability and validity, was not yet available at the time of the present study.

Second, we did not collect data for establishing the interrater reliability of the SCID-II. Resolving concerns about the absence of interrater reliability data, we calculated internal consistencies for the SCID-II dimensional scores, which appeared to be adequate. In addition, other studies (Lobbestael et al., 2010; Maffei et al., 1997) have reported that the SCID-II is a reliable instrument.

Another possible limitation is the use of exploratory factor analytic (EFA) techniques to gain insight in the relation between the models of general personality dysfunction and a model of normal personality traits. In further research we should also make use of Confirmative Factor Analysis (CFA) to further analyze the structure of models of core features of PD, in particular the GAPD model. The CFA procedure is generally more appreciated to test different and competing existing models. In line with this, we regard the use of IRT-analyses in our study described in chapter 3 of interest, since it adds to the EFA techniques and generate differentiating items for a global dimension of personality pathology.

With regard to our analyses of personality trait models in relation to models of general personality dysfunction, we made almost solely use of domain scores. It is stated that facet-scores may be more powerful predictors of personality pathology (Reynolds & Clark, 2001; Samuel & Widiger, 2008). Further research should replicate our findings also at the facet level of measurement of personality traits.

Finally, although we consider the composition of our clinical sub-samples as representative for general metal health care as a strong point, we are aware that some PDs (e.g. antisocial, and histrionic PD) were relatively underrepresented. This means that some of our findings needs to be replicated in other groups of patients.

Clinical implications

Three relevant clinical implications can be distinguished based on our study: this study contributes to a more clinically applicable and a more 'theory-driven' model of General PD, it provides an overall dimensional severity measure of PD suitable for screening of PD, and the model of general personality dysfunction can be used in a two-step assessment or PD.

First, the core features of PD or the model of general personality dysfunction described in the present study, generates a more 'theory-driven' model of General PD. The existing general criteria of the DSM-IV (and DSM-5, Section II) are criticized for their lack of specificity for PDs, and for their lack of clinical relevance. The core features of PD as they emerge in our study are more inspired by theoretically based personality pathology models and therefore related to existing treatment models.

Second, in our view, the main factors and the general severity dimension are best used in clinical practice for the purpose of the diagnosis of personality disorders. Using these main factors of General PD for a severity dimension of personality pathology is, as previously stated, relevant with respect to the prediction of the course of PDs. Patients who are assessed with more severe personality can be assigned to appropriate therapy programs. However, the exact relationship between severity of personality pathology and a specific therapy program needs further investigation (van Manen et al., 2011). The GAPD, as self-report questionnaire, is in this context suitable for screening purpose to investigate whether severe personality pathology is present or absent, and may lead in combination with a clinical interview to a specific diagnosis of PD as defined in the Alternative DSM-5 model for PD.

Finally, Livesley (2003) and Pincus (2005) described a two-step procedure for the assessment of PD. In this two-step diagnostic process, the general definition of PD (step 1) is distinguished from the description of individual differences in PD phenomenology (step 2). Creating a clear context of presence or absence of PD (step 1) is relevant in the practice of personality assessment. The interpretation of (extreme) test results is different in a context of low pathology (e.g. general mental healthcare) than of severe personality pathology (e.g. specialized mental health care). Also the differentiation between test results of patients with and without PD is necessary. As demonstrated in our paper on the bi-polarity of normal personality traits, an extreme score on a given trait does not necessarily mean that maladaptive personality traits are present. The models of general personality dysfunction described in our study and the corresponding measurement instruments can be used to define the context of the severity of personality pathology.

Future directions

Because the models of general personality dysfunction or core features of PD described in our study are still relatively new in the field of personality disorder research, further research should involve a further refinement of the operationalization of the concepts used. For example, the dimension Interpersonal (dys)function is, on the conceptual level, a clear concept, but our study showed that at the level of operationalization there was overlap with concepts and scales from trait models (e.g. Extraversion and Agreeableness).

Next, a challenge can be to relate the levels of personality dysfunction, as distinguished in the present study and operationalized in the Levels of Personality Functioning Scale for the DSM-5 (APA, 2013), to existing treatment programs (e.g., DBT, MBT, SFT, TFP) or treatment modules as part of existing programs.

Finally, the objective of our study is related to the Alternative DSM-5 Model for PD. Further research is needed to empirically validate this Alternative model, and to make this model clinically applicable. Since the categorical DSM-IV has been widely and systematically criticized in literature and no update of this model is available, we should support the further development of an alternative (dimensional) model. An important question is whether dimensions of this model can be assessed by clinicians with reasonable interrater reliability (Morey et al., 2011).

Developing an assessment instrument which the clinician can provide a weighted assessment of the level of personality functioning of the patient (Berghuis, Hutsebaut, Kaasenbrood, de Saeger, & Ingenhoven, 2013) is the next research step to be taken.

References

American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorder (3rd ed.).* Washington, DC: American Psychiatric Press.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC: Author.

American Psychiatric Association. (2000). *Diagnostic and statistical manual-IV-TR.* Washington, DC: Author.

American Psychiatric Association (2010, 2011). *DSM-5 Development.* Versions February, 2010, January, and June, 2011. Retrieved May, 29, 2010, February, 14, 2011, and August,1, 2011 from the American Psychiatric Association Website: http://www.dsm5.org/ProposedRevisions/ Pages/Personality and Personality Disorders .aspx.

American Psychiatric Association (2012). *Rational for the proposed changes to the personality disorders classification in DSM-5.* Retrieved from the American Psychiatric Association Website: http://www.dsm5. org/ Proposed Revisions/Pages/ PersonalityandPersonalityDisorders .aspx.

American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5™), Section III: Alternative DSM-5 model for PD.* Washington, DC: Author.

Allport, G.W. (1961). *Pattern and growth in personality.* New York: Holt, Rinehart & Winston.

Arnevik, E., Wilberg, T., Monsen, J. T., Andrea, H., & Karterud, S. (2009). A cross-national validity study of the Severity Indices of Personality Problems (SIPP-118). *Personality and Mental Health, 3,* 41-55.

Arrindell, W., & Ettema, H. (2003). *Symptom Checklist: Nederlandse versie. Handleiding bij een multidimensionele psychopathologie indicator* [Symptom Checklist: Dutch version]. Lisse: Swets & Zeitlinger B.V.

Arntz, A. & Bernstein, D. (2006). Can personality disorders be changed? *Netherlands Journal of Psychology, 62,* 9-18.

Bagby, R.M., Marshall, M.B., & Georgiades, S. (2005). Dimensional personality traits and the prediction of DSM-IV personality symptom counts in a nonclinical sample. *Journal of Personality Disorders, 19,* 53-67.

Bagge, C.L., & Trull, T.J. (2003). DAPP-BQ: Factor structure and relations to personality disorder symptoms in a non-clinical sample. *Journal of Personality Disorders, 17,* 19-32.

Barnicot, K., Katsakou, C., Bhatti, N., & Savill, M. (2012). Factors predicting the outcome of psychotherapy for borderline personality disorder: a systematic review. Clinical Psychology Review 32, 400-412.

Bateman, A. W., & Fonagy, P. (2004). *Psychotherapy for borderline personality disorder*. Oxford: Oxford University Press.

Bateman, A. W., & Krawitz, R. (2013*). Borderline Personality Disorder. An Evidence-based Guide for Generalist Mental Health Professionals.* Oxford: Oxford University Press.

Bender, D. S., Morey, L. C., & Skodol, A. E. (2011). Toward a model for assessing level of personality functioning in DSM-5, Part I: A review of theory and meth-

ods. *Journal of Personality Assessment, 93,* 332-346.
Benjamin, L.S. (2003). *Interpersonal diagnosis and treatment of personality disorders.* New York: the Guilford Press.
Benjamin, L. S. (2005). Interpersonal theory of personality disorders: The structural analysis of social behavior and interpersonal reconstructive therapy. In J. F. Clarkin & M. F. Lenzenweger (Eds.). *Major theories of personality disorder* (2nd ed., pp. 157-230). New York: Guilford Press.
Berghuis, H. (2007). *General Assessment of Personality Disorder (GAPD)*. Version 2007. Amersfoort: Symfora groep.
Berghuis, H., Hutsebaut, J., Kaasenbrood, A., de Saeger, H., & Ingenhoven, T. (2013). *Semi-structured Interview for Personality functioning DSM-5 (STiP-5).* The Podium DSM-5 research group of the Netherlands Centre of Expertise on Personality Disorders. Utrecht: Trimbos Institute.
Berghuis, H., Kamphuis, J.H., & Verheul, R. (2012). Core features of personality disorder: Differentiating general personality dysfunctioning from personality traits. *Journal of Personality Disorders, 26*, 704-716.
Berghuis, H., Kamphuis, J.H., Verheul, R., Larstone, R. & Livesley, J. (2013). The General Assessment of Personality Disorder (GAPD) as an instrument for assessing the core features of personality disorders. *Clinical Psychology and Psychotherapy, 20,* 544-557.
Bernstein, D.P., Iscan, C., & Maser, J. (2007). Opinions of Personality Disorder Experts Regarding The *DSM-IV* Personality Disorders Classification System. *Journal of Personality Disorders, 21,* 536-551.
Blatt, S. J., & Auerbach, J. S. (2003). Psychodynamic measures of therapeutic change. *Psychoanalytic Inquiry, 23,* 268-307.
Bornstein, R. F. (1998). Reconceptualizing personality disorder diagnosis in the DSM-V: The discriminant validity challenge. *Clinical Psychology: Science and Practice, 5,* 333-343.
Bornstein, R.F., & Huprich, S.K. (2011). Beyond dysfunction and threshold-based classification: A multidimensional model of PD diagnosis. *Journal of Personality Disorders, 25,* 331-337.
Buchheim, P., Clarkin, J.F., Kernberg, O.F., & Doering, S. (2006). Das strukturelle und das strukturierte interview zur psychodynamischen diagnostik der persönlichkeitsorganisation [The structural and the structured interview in psychodynamic diagnostics of personality organization]. *Persönlichkeitsstörungen, 10,* 43-54.
Buss, A., & Plomin, R. (1984). *Temperament: Early personality traits.* Hillsdale, NJ: Erlbaum.
Cantor, N. (1990). From thought to behavior: "Having" and "doing" in the study of personality and cognition. *American Psychologist, 45,* 735-750.
Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. Cambridge, UK: Cambridge University Press.
Cervone, D., & Shoda, Y. (1999). Social-cognitive theories and coherence of personality. In D. Cervone & Y. Shoda (Eds.), *The coherence of personality*

(pp. 3-33). New York: Guilford Press.
Clark, L.A., McEwen, J.L., Collard, L., & Hickok, L.G. (1993). Symptoms and traits of personality disorder: Two new methods for their assessment. *Psychological Assessment, 5,* 81-91.
Clark, LA. (2007). Assessment and diagnosis of personality disorder: Perennial issues and an emerging reconceptualization. *Annual Review of Psychology, 58,* 227-257.
Clarkin, J.F. (2013, September). An integrated approach to the therapeutic relationship. In W.J. Livesley (Chair), *Integrated treatment for personality disorders: Going beyond specialized treatments - meeting the needs of the individual.* Symposium conducted at the XIIIth International Congress on the Disorders of Personality (International Society for the Study of Personality Disorders, ISSPD), Copenhagen, Denmark.
Clarkin, J.F., Foelsch, P.A., & Kernberg, O.F. (2001). *The inventory of personality organization*. New York: The Personality Disorder Institute, Cornell University.
Clarkin, J.F., & Huprich, S.K. (2011). Do DSM-5 personality disorder proposals meet criteria for clinical utility? *Journal of Personality Disorders, 25,* 192-205.
Clarkin, J.F., Koenigsberg, H., Yeomans, F., Selzer, M., Kernberg, P., & Kernberg, O.F. (1994). Psychodynamische psychotherapie bij de borderline patiënt [Psychodynamic psychotherapy with the borderline patient]. In J.J.L. Derksen & H. Groen (Eds.), *Handboek voor de behandeling van borderline patiënten.* Utrecht: De Tijdstroom.
Clarkin, J.F., Yeomans, F.E., & Kernberg, O. F. (2006). *Psychotherapy for borderline personality: Focussing on object relations.* Washington, DC: American Psychiatric Publishing.
Cleckly, H. (1976). *The mask of insanity.* (5th ed.). St. Louis, MO: Mosby.
Cloninger, C. R. (2000). A practical way to diagnose personality disorder: A proposal. *Journal of Personality Disorders, 14,* 99-108.
Cloninger, C. R., Svrakic, D.M., & Przybeck, T.R. (1993). A psychobiological model of temperament and character. *Archives of General Psychiatry, 50,* 975-990.
Costa, P.T., & McCrae, R.R. (1992a). The five-factor model of personality and its relevance to personality disorders. *Journal of Personality Disorders, 6,* 343-359.
Costa, P.T., & McCrae, R.R. (1992b). *Revised NEO Personality Inventory (NEO-PI-R) and the Five Factor Inventory (NEO-FI): Professional Manual*. Odessa, Florida: Psychological Assessment Resources Inc.
Costa, P.T. Jr., & Widiger, T.A. (2002). *Personality disorders and the five-factor model of personality (2nd Ed.).* Washington, DC: American Psychological Association.
Derksen, J.J.L., Hummelen, J.W., & Bouwens, J.M.P (1989). Tussenbeoordelaarsbetrouwbaarheid van het structurele interview [Interrater reliability of the structural interview]. *Tijdschrift voor psychiatrie, 31,* 662-674.
Derogatis, L.R. (1994). *SCL-90-R: Administration, Scoring and Procedures Manu-*

al (3rd ed.). Minneapolis, MN: National Computer Systems.

Diguer, L., Pelletier, S., Hebert, E., Descoteaux, J., Rousseau, P., & Daoust, J. P. (2004). Personality organizations, psychiatric severity, and self and object representations. *Psychoanalytic Psychology, 21,* 259-275.

Dimaggio, G., Semerari, A., Carcione, A., Procacci, M., & Nicolò, G. (2006). Toward a model of self pathology underlying personality disorders: narratives, meta representation, interpersonal cycles and decision-making processes. *Journal of Personality Disorders*, *20*, 597-617.

Dyce, J. A., & O'Connor, B. P. (1998). Personality disorders and the five-factor model: A test of facet-level predictions. *Journal of Personality Disorders, 12*, 31-45.

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

Feenstra, D. J., Hutsebaut, J., Verheul, R., & Busschbach, J.J.V. (2011). Severity Indices of Personality Problems (SIPP-118) in adolescents: Reliability and validity. *Psychological Assessment, 23,* 646-655.

First, M.B., Gibbon, M., Spitzer, R.L., Williams, J.B.W., & Benjamin, L. (1997). *Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II).*

Foelsch, A., Clarkin, J.F., Kernberg, O.F., Somavia, J., Normandin, L., & Lenzenweger, M.F. (2000). *The inventory of personality organisation: Initial psychometric properties*. Unpublished manuscript.

Fonagy, P., & Bateman, A. (2006). Mechanism of change in mentalization based treatment of borderline personality disorder. *Journal of Clinical Psychology, 62,* 411-430.

Fonagy, P., & Target, M. (2006). The mentalization-focused approach to self-pathology. *Journal of Personality Disorders, 20,* 544-576.

Ganellen, R.J. (2007). Assessing normal and abnormal personality functioning: Strengths and weaknesses of self-report, observer and performance-based methods. *Journal of Personality Assessment, 89,* 30-40.

Gunderson, J.G., Daversa, M.T., Grilo, C.M., McGlashan, T.H., Zanarini, M.C., Shea, M.T., Skodol, A.E., Yen, S., Sanislow, C.A., Bender, D.S., Dyck, I.R., Morey, L.C., & Stout, R.L.(2006). Predictors of 2-Year Outcome for Patients With Borderline Personality Disorder. *American Journal of Psychiatry, 163,* 822-826.

Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of item response theory.* Newbury Park, CA: Sage.

Harkness, A.R., & McNulty, J.L. (1994). The Personality Psychopathology Five (PSY-5): Issue from the pages of a diagnostic manual instead of a dictionary. In S. Strack & M. Lorr (Eds.), *Differentiating normal and abnormal personality*. (pp. 291-315). New York: Springer.

Harkness, A.R., Finn, J.A., McNulty, J.L., & Shields, S.M. (2011). The Personality Psychopathology-Five (PSY-5): Recent constructive replication and assessment literature review. *Psychological Assessment, 24,* 432-443.

Harter, S. (1999). *The construction of the self.* New York; Guilford Press.

Hentschel, A. G., & Livesley, W.J. (2013a). Differentiating normal and disordered personality using the General Assessment of Personality Disorder (GAPD). *Personality and Mental Health, 7,* 133-142.

Hentschel, A. G., & Livesley, W.J. (2013b). The General Assessment of Personality Disorder (GAPD): factor structure, incremental validity of self-pathology, and relations to DSM-IV personality disorders. *Journal of Personality Assessment, 95,* 479-485.

Helzer, J.E., Kraemer, H.C., & Krueger, R.F. (2006). The feasibility and need for dimensional psychiatric diagnosis. *Psychological Medicin, 36,* 1671-1680.

Hoekstra, H.A., Ormel, J., & de Fruyt, F. (1996, 2007). NEO-PI-R: Dutch version. Amsterdam: Hogrefe.

Hopwood, C.J. (2011). Personality traits in the DSM-5. *Journal of Personality Assessment, 93*, 398-405.

Hopwood, C. J., Malone, J. C., Ansell, E. B., Sanislow, C. A., Grilo, C. M., Pinto, A., Markowitz, J. C., Shea, M. T., Skodol, A. E., Gunderson, J. G., Zanarini, M. C., & Morey, L. C. (2011). Personality Assessment in DSM-5: Empirical support for rating severity, style, and traits. *Journal of Personality Disorders, 25,* 305-320.

Hopwood, C.J., Thomas, K.M., Markon, K.E., Wright, A.G.C., & Krueger, R.F. (2012). DSM-5 personality traits and DSM-IV personality disorders. *Journal of Abnormal Psychology, 121,* 424-432.

Hopwood, C.J., Wright, A.G.C., Ansell, E. B., & Pincus, A.L. (2013). The inter-personal core of personality pathology. *Journal of Personality Disorders, 27.* 270-295.

Horn, J.L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrica*, *30*, 179-185.

Horowitz, M. J. (1998). *Cognitive psychodynamics*. New York: Wiley and Sons.

Huprich, S. K., & Greenberg, R. P. (2003). Advances in the assessment of object relations in the 1990s. *Clinical Psychology Review, 23,* 665-698.

Huprich, S. K., & Bornstein, R. F. (2007). Categorical and dimensional assessment of personality disorders: A consideration of the issues**.** *Journal of Personality Assessment, 89,* 3-15.

Huprich, S.H., Bornstein, R.F., & Schmitt, T.A. (2011). Self-report methodology is insufficient for improving assessment and classification of axis-II personality disorders. *Journal of Personality Disorders, 25,* 557-570.

Ingenhoven, T., Poolen, F., & Berghuis, H. (2004). *The inventory of personality organisation: Dutch translation.* Amersfoort: Psychiatrisch Centrum Symfora Groep.

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

Johnson, J.G., First, M.B., Cohen, P., & Kasen, S. (2008). Development and validation of a new procedure for the diagnostic assessment of personality disorder: The Multidimensional Personality Disorder Rating Scale (MPDRS). *Journal of Personality Disorders, 22,* 246-258.

Jørgensen, C.J. (2010). Invited Essay: Identity and Borderline Personality Disorder. *Journal of Personality Disorders, 24,* 344-364.

Kampen, D. van (2002). The DAPP-BQ in the Netherlands: Factor Structure and Relationship with basic personality dimensions. *Journal of Personality Disorders, 16,* 235-254.

Kampen, D. van (2006). The Dutch DAPP-BQ: Improvements, lower- and higher-order dimensions, and relationship with the 5DPT. *Journal of Personality Disorders, 20,* 81-101.

Kamphuis, J.H., & Noordhof, A. (2009). On categorical diagnosis in *DSM-V*: Cutting dimensions at useful points? *Psychological Assessment, 21,* 294-301.

Karterud, S., Friis, S., Irion, T., Mehlum, L., Vaglum, P., & Vaglum, S. (1995). A SCL-90-R derived index of the severity of personality disorders. *Journal of Personality Disorders, 9,* 112-123.

Kernberg, O.F. (1984). *Severe personality disorders.* New Haven, CT: Yale University Press.

Kernberg, O. F. (1996). A psychoanalytic model for the classification of personality disorders. In: M. Achenheil, B. Bondy, E. Engle, M. Ermann, & N. Nedopil (Eds.), *Implications of psychopharmacology to psychiatry* (pp. 66-78). New York, NY: Springer.

Kernberg, O. F., & Caligor, E. (2005). A psychoanalytic theory of personality disorders. In J. F. Clarkin & M. F. Lenzenweger (Eds.), *Major theories of personality disorder* (pp. 114-156). New York, NY: Guilford.

Kohut, H. (1971). *The analysis of the self.* New York: International Universities Press.

Krueger, R.F. (2005). Continuity of Axes I and II: Toward a unified model of personality, personality disorders, and clinical disorders. *Journal of Personality Disorders, 19,* 233-261.

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.

Krueger, R.F., & Eaton, N.R. (2010). Personality traits and the classification of mental disorders: Toward a more complete integration in DSM-5 and an empirical model of psychopathology. *Personality Disorders: Theory, Research, and Treatment, 1,* 97-118.

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

Krueger, R.F., Skodol, A.E., Livesley, W.J., Shrout, P.E., Huang, Y. (2007). Synthesizing dimensional and categorical approaches to personality disorders: refin-

ing the research agenda for DSM-V Axis II. *International Journal of Methods in Psychiatric Research,16,* S65-73.

Laverdière, O., Gamache, D., Diguer, L., Hébert, E., Larochelle, S., & Descôteaux, J. (2007). Personality organization, five-factor model, and mental health. *Journal of Nervous and Mental Disease, 195*, 819-829.

Lenzenweger, M.F., Clarkin, J.F., Kernberg, O.F., & Foelsch, P.A. (2001). The inventory of personality organization: Psychometric properties, factorial composition, and criterion relations with affect, aggressive dyscontrol, psychosis proneness and self-domains in a nonclinical sample. *Psychological Assessment, 13,* 577-591.

Levy, K. N., Clarkin, J. F., Yeomans, F. E., Scott, L. N., Wasserman, R. H., & Kernberg, O. F. (2006).The mechanisms of change in the treatment of borderline personality disorder with transference focused psychotherapy. *Journal of Clinical Psychology, 62,* 481-501.

Linehan, M.M. (1993). *Cognitive-behavioral treatment for borderline personality disorder.* New York: Guilford.

Livesley, W.J. (1998). Suggestions for a framework for an empirically based classification of personality disorder. *Canadian Journal of Psychiatry, 43,* 137-147.

Livesley, W.J. (2003). *Practical management of personality disorders.* New York: Guilford Press.

Livesley, W.J. (2006). *General Assessment of Personality Disorder (GAPD).* Department of Psychiatry, University of British Columbia.

Livesley, W.J. (2007). A framework for integrating dimensional and categorical classifications of personality disorder. *Journal of Personality Disorders, 21,* 199-224.

Livesley, W.J.. (2010). Confusion and incoherence in the classification of personality disorder: Commentary on the preliminary proposals for DSM-5. *Psychological Injury and Law, 3,* 304-313.

Livesley, W.J. (2012). Integrated treatment: A conceptual framework for and evidence-based approach to the treatment of personality disorder. *Journal of Personality Disorders, 26,* 17-42.

Livesley, W.J. (2012). Disorder in the proposed DSM-5 classification of personality disorders. *Clinical Psychology and Psychotherapy, 19,* 364-368.

Livesley, W.J. (2013a, September). *Where is the person in personality disorders? Integrating diagnosis, assessment and treatment.* Keynote lecture at the XIIIth International Congress on the Disorders of Personality (International Society for the Study of Personality Disorders, ISSPD), Copenhagen, Denmark.

Livesley, W.J. (2013b, September). Integrated modular treatment: Moving beyond specialized therapies for borderline personality disorder. In: W.J. Livesley (Chair), *Integrated treatment for personality disorders: Going beyond specialized treatments - meeting the needs of the individual.* Symposium conducted at the XIIIth International Congress on the Disorders of Personality (International Society for the Study of Personality Disorders, ISSPD), Copenhagen, Denmark.

Livesley, W. J., & Bromley, D. B. (1973). *Person perception in childhood and adolescence*. Chichester: Wiley.

Livesley, W.J., & Jackson, D.N. (2009). *Manual for the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ).* Port Huron, MI: Sigma Assessment Systems.

Livesley, W.J., & Jang, K.L. (2000). Toward an empirically based classification of personality disorder. *Journal of Personality Disorders, 14,* 137-151.

Livesley, W.J., Jang, K.L., & Vernon, P.A. (1998). The phenotypic and genetic structure of traits delineating personality disorder. *Archives of General Psychiatry, 55,* 941-948.

Livesley, W. J., Schroeder, M. L., Jackson, D. N., & Jang, K. L. (1994). Categorical distinctions in the study of personality disorder: Implications for classification. *Journal of Abnormal Psychology, 103*, 6-17.

Lobbestael, J., Leurgans, M., & Arntz, A. (2010). Inter-rater reliability of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Axis II Disorders (SCID II). *Clinical Psychology & Psychotherapy, 18*, 75-79.

Lord, F. M. (1980). *Applications of item response theory to practical testing problems.* Hillsdale, NJ: Erlbaum.

Lowyck, B., Luyten, P., Verhaest, Y., Vandeneede, B., & Vermote, R. (2013). Levels of Personality Functioning and Their Association With Clinical Features and Interpersonal Functioning in Patients With Personality Disorders. *Journal of Personality Disorders, 3*, 320-336.

Luyten, P., & Blatt, S. J. (2011). Integrating theory-driven and empirically-derived models of personality development and psychopathology: proposal for *DSM-V*. *Clinical Psychology Review, 31,* 52-68.

Maffei, C., Fossati, A., Agostoni, I., Barraco, A., Bagnato, M., Deborah, D., Namia, C., Novella, C., & Petrachi, M. (1997). Interrater reliability and internal consistency of the structured clinical interview for DSM-IV axis II personality disorders (SCID-II), version 2.0. *Journal of Personal Disorders, 11,* 279–284.

Manen, J.G. van, Andrea, H., van den Eijnden, E., Meerman, A.M.M.A., Thunnissen, M.M., Hamers, E.F.M., Huson, N., Ziegler, U., Stijnen, T., Busschbach, J.J.V., Timman, R., & Verheul, R. (2011). Relationship between patient characteristics and treatment allocation for patients with personality disorders. *Journal of Personality Disorders, 25,* 656-667.

Manen, J.G. van, Kamphuis, J.H., Goossensen, A., Timman, R., Busschbach. J.J.V., & Verheul, R. (2012). In search of patient characteristics that may guide empirically based treatment selection for personality disorder patients - a concept map approach. *Journal of Personality Disorders, 26,* 481-497.

Masterson, J.F., & Klein, R. (1995) (Editors). *Disorders of the self*. Leittown, PA: Brunner/Mazel.

McAdams, D.P. (1996). Personality, modernity, and the storied self: A contemporary framework for studying persons. *Psychological Inquiry, 7,* 295-321.

Meyer, G.J. (1997). On the integration of personality assessment methods: The Rorschach and MMPI. *Journal of Personality Assessment, 68,* 297-330.

Millon, T. (1981). *Disorder of personality: DSM-III Axis II*. New York: Wiley

Millon, T. (1996) *Personality and psychopathology.* New York: Wiley.

Millon, T. & Davis, R. (1996). *Disorders of personality: DSM-IV and Beyond.* New York: Wiley.

Morey, L. C. (2005). Personality pathology as pathological narcissism. In: M. Maj, H. S. Akiskal, J. E. Mezzich, & A. Okasha, *World Psychiatric Association series: Evidence and experience in psychiatry* (pp. 328-331). New York: Wiley.

Morey, L.C., Gunderson, J.G., Quigley, B.A.,& Lyons, M .(2000). Dimensions and categories: The "big five" factors and the DSM personality disorders. *Assessment, 7,* 203-216.

Morey, L. C., Gunderson, J. G., Quigley, B. D., Shea, M. T., Skodol, A. E., McGlashan, T. H., & Zanarini, M. C. (2002). The representation of borderline, avoidant, obsessive-compulsive and schizotypal personality disorders by the Five-factor model. *Journal of Personality Disorders, 16,* 215-234.

Morey, L. C., Shea, M. T., Markowitz, J. C., Stout, R. L., Hopwood, C. J., Gunderson, J. G., .& Skodol, A. E. (2010). State effects of Major Depression on the assessment of personality and personality disorder. *American Journal of Psychiatry, 167*, 528-535.

Motowidlo, S. J., Dunnette, M. D., & Carter, G. W. (1990). An alternative selection procedure: The low-fidelity simulation. *Journal of Applied Psychology, 75,* 640-647.

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

Normandin, L., Sabourin, S., Diguer, L., Dupont, G., Poitras, K., & Foelsch, P. (2002). Évaluation de la validité théorique de l'inventaire de l'organisation de la personnalité. *Revue Canadienne des Sciences du Comportement, 34*, 59-65.

O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instrumentation, and Computers, 32,* 396-402.

Pagan, J. L., Oltmanns, T. F., Whitmore, M. J., & Turkheimer, E. (2005). Personality disorder not otherwise specified: Searching for an empirically-defined diagnostic threshold. *Journal of Personality Disorder, 19,* 674-689.

Parker, G., & Barrett, E. (2000). Personality and personality disorder: Current issues and directions. *Psychological Medicine, 30,* 1-9.

Parker, G., Both, L., Olley, A., Hadzi-Pavlovic, D., Irvine, P. & Jacobs, G. (2002). Defining disordered personality functioning. *Journal of Personality Disorders, 16,* 503-522.

Parker, G., & Hadzi-Pavlovic, D. (2001). A question of style: Refining the dimensions of personality disorder style. *Journal of Personality Disorders, 15*, 300-318.

Parker, G., Hadzi-Pavlovic, D., Both, L., Kumar, S., Wilhelm, K., & Olley, A (2004). Measuring disordered personality functioning: to love and work reprised. *Acta Psychiatrica Scandinavica, 110,* 230-239.

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In: R. W. Robins, R. C. Fraley, and R. Krueger (Eds.), *Handbook of Research Methods in Personality Psychology* (pp. 224-239). New York: Guilford Press.

Pfohl, B., Blum, N., & Zimmerman, M. (1997). *Structured Interview for DSM-IV Personality: SIDP-IV.* Washington, DC: American Psychiatric Press.

Pilkonis, P.A., Hallquist, M.N., Morse, J.Q., & Stepp, S.D. (2011). Striking the (im)proper balance between scientific advances and clinical utility: Commentary on the DSM-5 proposal for personality disorders. *Personality Disorders: Theory, Research, and Treatment, 1,* 68-82.

Pincus, A.L. (2005). A contemporary integrative interpersonal theory of personality disorders. In: J.F. Clarkin & M.F. Lenzenweger (Eds.), *Major theories of personality disorder* (2nd ed., pp. 282-331). New York: Guilford Press.

Piper, W. E., Ogrodniczuk, J. S., & Joyce, A. S. (2004). Quality of object relations as a moderator of the relationship between pattern of alliance and outcome in short-term individual psychotherapy. *Journal of Personality Assessment, 83,* 345-356.

Plutchik, R. (1980). A general Psycho evolutionary theory of emotion. In R. Plutchik & H. Kellerman (Eds.). *Emotion, psychopathology, and psychotherapy* (pp. 3-33). New York: Academic Press.

Pukrop, R., Gentil, I., Steinbring, I., & Steinmeyer, E. (2001). Factorial structure of the German version of the Dimensional Assessment of Personality Pathology-Basic Questionnaire in clinical and nonclinical samples. *Journal of Personality Disorders, 15,* 450-456.

Reich, J., & Francis, A. (1984). The structural interview method for diagnosing borderline disorders: A critique. *Psychiatric Quarterly, 56,* 229-235.

Reynolds, S.K., & Clark, L.A. (2001). Predicting dimensions of personality disorders from domains and facets of the Five-Factor Model. *Journal of Personality, 69,* 199-222.

Ro, E., & Clark, L. A. (2009). Psychosocial functioning in the context of diagnosis: Assessment and theoretical issues. *Psychological Assessment, 21*, 313-324.

Ronningstam, E. (2011). Narcissistic Personality Disorder in DSM-V. In support of retaining a significant diagnosis. *Journal of Personality Disorders, 25*, 248-259.

Rutter, M. (1987). Temperament, personality, and personality disorder. *British Journal of Psychiatry, 150,* 443-458.

Ryle, A. (Ed.) (1995). *Cognitive analytic therapy*. Chichester, England: John Wiley & Sons.

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., & 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.

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.

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.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Test of significance and descriptive goodness- of-fit measures. *Methods of Psychological Research Online, 8,* 23-74.

Scientific Software International. (2003). *Multilog 7.0* [Software]. Available from http://www.ssicentral.com/

Schneider, K. (1923/1950). *Psychopathic personalities* (9th ed). London: Cassell.

Shapiro, D. (1981). *Autonomy and rigid character*. New York: Basic Books.

Shedler, J., Beck, A., Fonagy, P., Gabbard, G., Gunderson, J., Kernberg. O., Michels, R. & Westen, D. (2010). Personality disorders in DSM-5. *American Journal of Psychiatry, 167,* 1026-1028.

Shedler, J., Mayman, M., & Manis, M. (1993). The illusion of mental health. *American Psychologist, 48,* 1117-1131.

Shedler, J., & Westen, D. (2004). Refining personality disorder diagnosis: Integrating science and practice. *American Journal of Psychiatry, 161,* 1350-1365.

Sheldon, K.M., & Elliot, A.J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, 76, 482-497.

Simonsen, S., & Simonsen, E. (2009). The Danish DAPP-BQ: Reliability, factor structure, and convergence with SCID-II and IIP-C. *Journal of Personality Disorders, 23,* 629-646.

Siever, L.J., & Davis, K.L. (1991). A psychobiological perspective on the personality disorders. *American Journal of Psychiatry,148*, 1647–1658.

Skodol, A. E., Clark, L. A., Bender, D. S., Krueger, R. F., Livesley, W. J., Morey, L. C., & Bell, C. C. (2011). Proposed changes in personality and personality disorder assessment and diagnosis for DSM-5: Part I: Description and rationale. *Personality Disorders: Theory, Research and Treatment, 2*, 4-22.

Smits, D. J. M., Vermote, R. Claes, L., & Vertommen, H. (2009). The Inventory of Personality Organization-Revised: Construction of an abridged version. *European Journal of Psychological Assessment, 25*, 223-230

Spitzer, C., Barnow, S., Armbruster, J., Kusserow, S., Freyberger, H.J., & Grabe, H.J. (2006). Borderline personality organization and dissociation. *Bulletin of the Menninger Clinic, 70,* 210-221.

Starcevic, V., Bogojevic, G., & Marinkovic, J. (2000). The SCL-90-R as a screening instrument for severe personality disturbance among outpatients with mood and anxiety disorders. *Journal of Personality Disorders, 14,* 199-207.

Stepp, S.D., Lan Yu, Miller, J.D., Hallquist, M.N., Trull, T.J., & Pilkonis, P.A (2011). Integrating competing models of personality: Linking the SNAP, TCI, and NEO using Item Respons Theory. *Personality Disorders: Theory, Research and Treatment, 3,* 107-126.

Stevens, J.P. (2002). *Applied multivariate statistics for the social sciences*. London: Lawrence Erlbaum.

Tellegen, A., & Waller, N. G. (2008). Exploring personality through test construction: Development of the multidimensional personality questionnaire. In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.). *Handbook of personality theory and testing: Vol.II Personality measurement and assessment.* London: Sage.

Toulmin. S. (1978). Self-knowledge and knowledge of the "self." In T. Mischel (Ed.)., *The self: Psychological and philosophical issues* (pp.291-317). Oxford: Oxford University Press.

Trull, T. (2005). Dimensional models of personality disorder: coverage and cutoffs. *Journal of Personality Disorder, 19,* 262-282.

Trull, T.J. (2012). The Five-Factor Model of personality disorder and *DSM-5*. *Journal of Personality, 80,* 1697-1720.

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

Tyrer, P. (2012). Diagnostic and Statistical Manual of Mental Disorders: A classification of personality disorders that has had its day. *Clinical Psychology and Psychotherapy, 19,* 372-374.

Tyrer, P., Crawford, M., Mulder, R., Blashfield, R., Farnam, A., Fossati, A., Kim, Y.-R., Koldobsky, N., Lecic-Tosevski, D., Ndetei, D., Swales, M., Clark, L. A., & Reed, G. M. (2011), The rationale for the reclassification of personality disorder in the 11th revision of the International Classification of Diseases (ICD-11). *Personality and Mental Health, 5,* 246-259.

Tyrer, P., & Johnson, T. (1996). Establishing the severity of personality disorder. *American Journal of Psychiatry, 153,* 1593-1597.

Vaillant, G.E., & Perry, J.C. (1980). Personality disorders. In H.I. Kaplan, A.M. Freedman, B.J Sadock, (Eds.,). *Comprehensive Textbook of Psychiatry/III* (Volume Two; pp. 1562-1590). Baltimore: Williams & Wilkins.

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

Verheul, R. (2012). Personality Disorder Proposal for DSM-5: A heroic and innovative but nevertheless fundamentally flawed attempt to improve DSM-IV. *Clinical Psychology & Psychotherapy, 19,* 363–458.

Verheul, R., Andrea, H., Berghout, C., Dolan, C.C., Busschbach, J.J.V., Van der Kroft, P.J.A., Bateman, A.W., & Fonagy, P. (2008). Severity Indices of Personality Problems (SIPP-118): Development, factor structure, reliability and validity. *Psychological Assessment,* 20, 23-34.

Verheul, R., Bartak, A. & Widiger, T. (2007). Prevalence and construct validity of Personality Disorder Not Otherwise Specified (PDNOS). *Journal of Personality Disorders, 21*, 359-370.

Vermote, R., Vertommen, H., Verhaest, Y., Maes, E., Sauviller, N., & Peuskens, J. (2003, October). *A Dutch version of the Inventory of Personality Organization.* Poster presented at the 8th ISSPD Congress, Florence, Italy.

Wakefield, J.C. (1992). The concept of mental disorder: On the boundary between biological facts and social values. *American Psychologist, 47,* 373-388.

Wakefield, J.C. (2008). The perils of dimensionalization: Challenges in distinguishing negative traits from personality disorders. *Psychiatric Clinics of North America, 31,* 379-393.

Watson, D., Clark, L. A., & Cmielewski, M. (2008). Structures of personality and their relevance to psychopathology: II. Further articulation of a comprehensive unified trait structure. *Journal of Personality, 76,* 1545-1585

Weertman, A., Arntz, A., & Kerkhofs, M.L M. (2000). *SCID-II. Gestructureerd Klinisch Interview DSM-IV As-II Persoonlijkheidsstoornissen.* Amsterdam: Pearson.

Westen, D., & Shedler, J. (2000). A prototype matching approach to diagnosing personality disorders toward DSM-V. *Journal of Personality Disorders, 14,* 109-126.

Westen, D., Shedler, J., & Bradley, R. (2006). A prototype approach to personality disorders diagnosis. *American Journal of Psychiatry, 163,* 846-856.

Westen, D., & Weinberger, J. (2005). In praise of clinical judgment: Meehl's forgotten legacy. *Journal of Clinical Psychology, 61,* 1257-1276.

Widiger, T.A. (1993). The DSM-III-R categorical personality disorder diagnosis: A critique and alternative. *Psychological Inquiry, 4,* 75-90.

Widiger, T.A. (2011). A shaky future for personality disorders. *Personality Disorders: Theory, Research and Treatment, 2,* 54-67.

Widiger, T.A. (2011). The DSM-5 dimensional model of personality disorder: rationale and empirical support. *Journal of Personality Disorder, 25,* 222-234.

Widiger, T.A., & Costa, P.T. (2002). Five-factor model personality disorder research. In P.T. Costa & T.A. Widiger (Eds.), *Personality disorders and the five-factor model of personality* (2nd ed., pp. 55–87). Washington DC: American Psychological Association.

Widiger, T.A., & Costa, P.T. (2012). Integrating normal and abnormal personality structure: The Five Factor Model. *Journal of Personality, 80,* 1471-1506.

Widiger, T.A., Costa, P.T., & McCrae, R.R. (2002). A proposal for Axis II: Diagnosing personality disorders using the Five Factor Model. In: P.T. Costa & T.A. Widiger (Eds.), *Personality disorders and the five-factor model of personality* (pp. 431-452). Washington DC: American Psychological Association.

Widiger, T.A., & Lowe, J.R. (2007). Five-factor model assessment of personality disorder. *Journal of Personality Assessment, 89,* 16-29.

Widiger, T.A., Livesley, W.J., & Clark, L.A. (2009). An integrative dimensional classification of personality disorder. *Psychological Assessment, 21,* 243-255.

Widiger, T.A. & Mullins-Sweatt, S.N. (2009). Five-factor model of personality disorder: A proposal for DMS-V. *Annual Review of Clinical Psychology*, *5*, 197-220.

Widiger, T.A. & Samuel, D.B. (2005). Evidence-based assessment of personality disorders. *Psychological Assessment, 17,* 278-287.

Widiger, T.A., & Simonsen, E. (2005). Alternative dimensional models of personality disorder. *Journal of Personality Disorder, 19,* 110-130.

Widiger, T. A., Simonsen, E. M. D., Krueger, R., Livesley, W. J., & Verheul, R. (2005). Personality disorder research agenda for DSM-V. *Journal of Personality Disorders, 19*, 315-338.

Widiger, T. A., Simonsen, E., Sirovatka, P. J., & Regier, D. A. (2006). *Dimensional models of personality disorders: Refining the research agenda for DSM-V.* Washington, DC: American Psychiatric Press.

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. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In: W. M. Grove & D. Ciccetti (Eds.). *Thinking clearly about psychology: Vol. 2. Personality and psychopathology* (pp. 89-113). Minneapolis, MN: University of Minnesota Press.

Wilkinson-Ryan, T., & Westen, D. (2000). Identity disturbance in borderline personality disorder: An empirical investigation. *Americam Journal of Psychiatry, 157, 528-54.*

Yang, M., Coid, J. & Tyrer, P. (2010). Personality pathology recorded by severity: national survey. *British Journal of Psychiatry, 197*, 193-199.

Zanarini, M.C., Frankenburg, F.R., Reich, D.B., & Fitzmaurice, G. (2012). Attainment and stability of sustained symptomatic remission and recovery among patients with borderline personality disorder and axis II comparison subjects: a 16-year prospective follow-up study. *American Journal of Psychiatry, 169,* 476-483.

Zimmerman, M. (2011). A critique of the proposed prototype rating system for personality disorders in DSM-5. *Journal of Personality Disorders, 25,* 206-221.

Zimmerman, M., Chelminski, I., & Young, D. (2008). The frequency of personality disorders in psychiatric patients. *Psychiatric Clinics of North America, 31,* 405-420.

Zimmerman, M., Rothschild, L. & Chelminski, I. (2005). The prevalence of DSM-IV personality disorders in psychiatric outpatients. *American Journal of Psychiatry, 162,* 1911-1918.

Zweig-Frank, H., & Paris, J. (1995). The five-factor model of personality in borderline and nonborderline personality disorders. *Canadian Journal of Psychiatry, 40,* 523-526.

Summary

Chapter 1 presents the introduction of this thesis and briefly describes the different models of general and specific personality pathology selected for further study. Moreover, it presents the main research questions of this thesis.

Chapter 2 presents Livesley's (2003) *Adaptive Failure Model*. This model of general personality dysfunction is discussed from a theoretical perspective, in comparison with other models of personality pathology. This chapter also presents the psychometric evaluation of the *General Assessment of Personality Disorders* (GAPD). The GAPD is developed as a self-report questionnaire for assessing core features of personality dysfunction, as operationalized from Livesley's adaptive failure model. The presumed underlying factor structure was confirmed by an exploratory factor analysis, and corresponded with the factor structure as found in a Canadian general population and a group of Dutch psychiatric patients. Correlations with the DSM-IV personality disorders (as measured by the SCID-II) and with a pathological trait model *Dimensional Assessment of Personality Pathology – Basic Questionnaire* (DAPP-BQ) suggest partial conceptual overlap between these instruments. Especially, the DAPP-BQ trait domain Emotional dysregulation and the GAPD primary scale Self-pathology showed relatively high associations. This study provides evidence for the assumption that core features of personality dysfunction can be defined as disorders in the self, and in the capacity for interpersonal functioning. Especially self-pathology appeared to be a strong factor that differentiated between clinical and non-clinical populations, and between levels of personality dysfunction severity in a sample of psychiatric patients.

Chapter 3 describes a study on the psychometric qualities and validity of a Dutch translation of the *Inventory of Personality Organization* (IPO-NL). The IPO was constructed by Kernberg and associates as a self-report instrument to measure underlying dimensions of Kernberg's structural model of personality organization. The reliability and validity of the IPO-NL proved to be satisfactory in the study group, which consisted of both a general population and psychiatric patients. Exploratory factor analyses showed a clear four-factor solution: General Personality Pathology, Reality Testing, Aggression, and Sadistic Aggression. From a theoretical point of view, the latter factor can also be seen as a sub-factor of the trait aggression. The General Personality Pathology factor consisted mainly of items which were associated with the constructs of identity diffusion, primitive defenses, and moral values. As expected, this study also found that scores on the IPO-NL scales were associated with a specific Five Factor Model profile. More specifically, higher IPO-NL scores were correlated with higher scores on the *Revised NEO Personality Inventory* (NEO-PI-R) domain Neuroticism, and with lower scores on the NEO-PI-R domains Agreeableness, and Conscientiousness.

Chapter 4 describes research on key markers of a general level of personality functioning. In this study the Item Response Theory (IRT) was used to identify markers of this global dimension of personality pathology. The GAPD and the

Severity Indices of Personality Pathology-118 (SIPP-118) were used as measures of general personality dysfunction. The markers of this global dimension of personality pathology were defined as functions related to self (e.g. identity integration, integrity of self-concept), and interpersonal (e.g. capacity for empathy and intimacy). The dimension of levels of personality dysfunction was significantly associated with the probability of being assigned any DSM-IV PD diagnosis, and with the severity of a DSM-IV PD diagnosis. The relevance of these findings with regard to the proposals for the alternative model for personality disorders in the DSM-5 is discussed.

The studies described in the first three chapters, which together form **Part I** of this thesis, can be considered as an attempt to examine underlying models of core features of personality pathology / personality functioning, as well as the operationalization of these models within subsequent assessment procedures.

The factors Identity-integration or Identity diffusion, Interpersonal and Societal (dys)function, and Self-direction (coping, primitive defenses, regulation of aggression) emerged as univocal and strongly differentiating factors. Kernbergs model distinguishes in addition to these mentioned dimensions also the factor Reality Testing. These factors are comparable to core features of PD as defined in other studies (e.g. Parker & Barret, 2000; Cloninger, 2000; Bornstein & Huprich, 2011; see also Table 1, Chapter 6 of this thesis), and emerged as the core dimensions in the proposed new general criteria of PD by the DSM-5 P&PD workgroup.

To further substantiate the investigated models of core features of PD, these models were in **Part II,** chapters five, six and seven, compared with dimensional trait models. A second research question was examined, that is to explore the relation of these models of core features of PD with the dimensional trait models.

With respect to this second research question, **chapter 5** describes a factor-analytical study towards the differentiation between models of general personality dysfunction and specific personality traits. The GAPD and SIPP-118 were used as instruments for assessing general personality dysfunction, and the NEO-PI-R was used as an instrument to measure specific personality traits. A seven-factor structure emerged after exploratory factor analyses with these three instruments. As expected, three factors were associated with factors as defined in models of general personality dysfunction (see chapter 1 to 3): Self-identity functioning, Relational functioning, and Self-direction/Self-control or Pro-social functioning. The other four factors were clearly associated with four domains of the Five Factor Model. Apart from a factor Conscientiousness, and a factor Openness, we found factors which we named Inactivity and Obliging. These last two factors were associated with the FFM domains (low) Extraversion and Agreeableness, respectively. Of note was the observation that facets of the NEO-PI-R domain Neuroticism were scattered over different factors, that included both specific trait-factors and general dysfunction-factors.

While in chapter 5 we investigated whether specific personality traits could be differentiated from general personality dysfunction, in **chapter 6** we explored how these models might predict the presence and severity of PD, both as independent measurements and as a combination of trait- and dysfunction measurements. Since some PDs were only minimal represented in our sample, our analyses were limited to paranoid PD, borderline PD, avoidant PD, and obsessive-compulsive PD. A constructed Total dimensional PD-*score* was used as measure of severity of PD. This study used instruments that are operationalizations of both normal and pathological personality traits: the NEO-PI-R was selected as a measure of normal personality traits, and the DAPP-BQ was selected as a measure of pathological personality traits. In addition, the GAPD and the SIPP-118 were used as measures of general personality dysfunction.

This study showed that correlational patterns between these models, and of these models with PD's, were largely as expected. That is, models of general personality dysfunction, and the pathological trait Emotional Dysregulation were strongly associated with all selected PD's in this study group, and most associations of other specific dimensional traits were PD-specific (e.g. DAPP-BQ facet Compulsivity and DSM-IV obsessive-compulsive PD).

With respect to the predictive validity, this study showed that both models of general personality dysfunction and models of specific personality traits predicted the presence and severity of PDs. Moreover, the combination of general personality dysfunction models and personality trait models provided incremental information over and beyond each of them separately, about the presence and severity of PDs. These findings suggest that an integrative approach of multiple conceptual perspectives, within the advocated hybrid model, may serve a comprehensive assessment of PDs.

Chapter 7 can be seen as a study on an additional research question that emerged during the ongoing project, and which is relevant in the discussion on the use of measurements of core features of PDs for determining pathology of trait extremities. We investigated whether extreme scores at both poles of FFM traits (as operationalized by the NEO-PI-R) were indications of general personality dysfunction. Our findings clearly did not supported a strong bipolar hypothesis, but instead that only high Neuroticism, low Extraversion, low Agreeableness, and low Conscientiousness were indicative of general personality dysfunction in our treatment seeking sample of psychiatric patients.

In **chapter 8,** we summarize and discuss the main findings of our study. The chapter discusses methodological limitations of this body of research as well as its specific clinical implications. Finally, we suggest directions for further research.

Samenvatting

Hoofdstuk 1 is de inleiding van dit proefschrift. Hier worden in het kort de in deze studie gebruikte modellen betreffende algemeen persoonlijkheidsfunctioneren en specifieke persoonlijkheidstrekken (*traits*) beschreven. Daarnaast komen ook de belangrijkste onderzoeksvragen van deze promotiestudie aan de orde.

In **hoofdstuk 2** wordt het zogenaamde *Adaptive Failure Model* van Livesley beschreven. Dit model betreft het algemene functioneren van de persoonlijkheid. Het model wordt besproken vanuit een theoretisch kader en vergeleken met andere persoonlijkheidspathologie modellen. Dit hoofdstuk presenteert tevens de studie naar de psychometrische eigenschappen van de *General Assessment of Personality Disorders* (GAPD). De GAPD is een zelfrapportage vragenlijst waarmee de kernfactoren van het disfunctioneren van de persoonlijkheid, zoals geoperationaliseerd in Livesley's *Adaptive Failure Model,* worden gemeten. In een explorerende factoranalyse werd bij een groep (Nederlandse) psychiatrische patiënten de veronderstelde onderliggende factorstructuur gevonden, welke tevens overeenkwam met de gevonden factorstructuur in een Canadese algemene populatie. De correlaties van de GAPD met DSM-IV persoonlijkheidsstoornissen (gemeten met de SCID-II) en met facetten van een model van pathologisch geformuleerd persoonlijkheidstrekken (gemeten met de *Dimensional Assessment of Personality Pathology – Basic Questionnaire:* DAPP-BQ) gaven aanleiding om een gedeeltelijke conceptuele overlap tussen de onderscheiden concepten en instrumenten te veronderstellen. Vooral het domein Emotionele disregulatie van de DAPP-BQ en de hoofdschaal Self-pathology van de GAPD vertoonden een relatief hoge mate van associatie. De conclusie van hoofdstuk 2 is dat kernfactoren van persoonlijkheidsfunctioneren kunnen worden gedefinieerd als stoornissen van het zelf, en als stoornissen in het vermogen tot interpersoonlijk functioneren. Met name de factor zelf-pathologie bleek in sterke mate te kunnen differentiëren tussen een klinische en niet-klinische populatie, en tussen de niveaus van ernst van persoonlijkheidsdisfunctioneren in de steekproef van psychiatrische patiënten.

In **hoofdstuk 3** wordt het onderzoek beschreven naar de psychometrische kwaliteiten en validiteit van de Nederlandse vertaling van de *Inventory of Personality Organization* (IPO-NL). De IPO is door Kernberg en collega's ontworpen als zelfrapportage instrument, en beoogt de onderliggende dimensies van Kernberg's structurele model van persoonlijkheidsorganisatie te meten. In de gebruikte onderzoeksgroep, die bestond uit een algemene en psychiatrische populatie, bleken de betrouwbaarheid en validiteit van de IPO-NL bevredigend. Explorerende factoranalyses toonden een duidelijke vier-factor oplossing: Algemene Persoonlijkheidspathologie, Realiteitstoetsing, Agressie, en Sadistische Agressie. Vanuit een theoretisch gezichtspunt zou de laatste factor ook gezien kunnen worden als een sub-factor van de trait agressie. De factor Algemene Persoonlijkheidspathologie bestond overwegend uit items die geassocieerd waren met de constructen identeitsdiffusie, primitieve afweer, en morele waarden. De factoren Realiteitstoetsing en Agressie bleken tamelijk unidimensionele factoren. Uit deze studie kwam tevens

een verwachtte associatie van de IPO-NL schalen met een specifiek Vijf Factoren Model profiel naar voren. Meer in het bijzonder bleek dat hogere IPO-NL scores significant gecorreleerd waren met hogere scores op het domein Neuroticisme, en met lagere scores op de domeinen Altruïsme en Consciëntieusheid van de *Revised NEO Personality Inventory* (NEO-PI-R).

In **hoofdstuk 4** wordt het onderzoek naar de kernfactoren van niveau's van persoonlijkheidsfunctioneren beschreven. In deze studie werd gebruik gemaakt van de *Item Response Theory* (IRT) om markers van deze globale persoonlijkheidspathologie dimensie te identificeren. De GAPD en de *Severity Indices of Personality Pathology* (SIPP-118) werden in deze studie gebruikt als meetinstrumenten van het persoonlijkheids(dis)functioneren. De markers van deze persoonlijkheidspathologie dimensie werden gedefinieerd als functies met betrekking tot het zelf (bijvoorbeeld identiteits-integratie, en integriteit van het zelf-concept), en het interpersoonlijk functioneren (bijvoorbeeld het vermogen tot empathie en intimiteit). Deze dimensie van niveaus van persoonlijkheidsdisfunctioneren was significant geassocieerd met de kans op de aanwezigheid van een gediagnosticeerde DSM-IV persoonlijkheidsstoornis, en met de ernst van een DSM-IV persoonlijkheidsstoornis. In de discussie-sectie van dit hoofdstuk wordt de betekenis van deze bevindingen met betrekking tot de voorstellen voor het Alternatieve DSM-5 model voor persoonlijkheidsstoornissen besproken.

De onderzoeken uit de eerste drie hoofdstukken (deel 1) van het proefschrift, zijn studies naar modellen van kernfactoren van persoonlijkheidspathologie / persoonlijkheidsfunctioneren, alsook naar de operationalisatie van deze modellen in verschillende psychologische meetinstrumenten. De factoren Identiteitsintegratie of Identiteitsdiffusie, Interpersoonlijk en Sociaal-maatschappelijk (dis)functioneren, en Zelfsturing (coping, primitieve afweer, regulatie van agressie) kwamen naar voren als eenduidige en krachtig differentiërende factoren. In aanvulling op deze factoren kon daarbij de factor Realiteitstoetsing uit het model van Kernberg worden genoemd. Alle factoren waren vergelijkbaar met kernfactoren van persoonlijkheidsstoornissen die in andere studies worden beschreven (bijvoorbeeld Parker & Barret, 2000; Cloninger, 2000; Bornstein & Huprich, 2011; zie ook Tabel 1 uit het zesde hoofdstuk van dit proefschrift), en met de hoofdimensies van de algemene criteria van persoonlijkheidsstoornissen van het Alternatieve DSM-5 model van persoonlijkheidsstoornissen (APA, 2013).

Om de onderzochte modellen van de kernfactoren van persoonlijkheidspathologie verder te onderbouwen, werden deze modellen in deel 2 van dit proefschrift, in hoofdstuk vijf, zes en zeven, vergeleken met dimensionele trait-modellen. Hiermee werd tevens een tweede onderzoeksvraag onderzocht. Dit betrof de vraag hoe de modellen van kernfactoren van persoonlijkheidsfunctioneren en dimensionele trait-modellen zich tot elkaar verhouden.

In **hoofdstuk 5** werd daartoe een factor-analytische studie naar de differentiatie tussen de modellen van algemeen persoonlijkheidsdisfunctioneren en van specifieke persoonlijkheidstrekken gedaan. De GAPD en SIPP-118 werden gebruikt als instrumenten voor de beoordeling van het persoonlijkheidsdisfunctioneren, en de NEO-PI-R werd gebruikt als een instrument om specifieke persoonlijkheidstrekken te meten. Op basis van exploratieve factoranalyses met deze drie instrumenten werd een zeven-factor structuur gevonden. Drie van deze factoren hingen samen met factoren zoals gedefinieerd in bestaande modellen van algemeen persoonlijkheidsdisfucntioneren (zie hoofdstuk 1-3): Zelf-functioneren / Identiteit, Relationeel functioneren, en Zelfsturing / Zelfcontrole of Pro-sociaal functioneren. De andere vier factoren waren duidelijk geassocieerd met vier domeinen van het Vijf Factoren Model (VFM). Afgezien van een factor Consciëntieusheid, en een factor Openheid, welke duidelijk overeenkwamen met de overeenkomstige VFM domeinen, vonden we twee andere factoren die we Inactiviteit (*Inactivity)* en Vriendelijke bereidwilligheid (*Obliging)* noemden. Deze laatste twee factoren zijn weliswaar te vergelijken met de VFM domeinen (laag) Extraversie en Altruïsme, maar bestonden ook uit facetten uit andere (niet VFM) schalen. Opmerkelijk was de constatering dat facetten van het NEO-PI-R domein Neuroticisme waren verspreid over verschillende factoren, die zowel gerelateerd waren aan het persoonlijkheidsdisfunctioneren als aan specifieke persoonlijkheidstrekken.

Terwijl we in hoofdstuk 5 onderzochten of specifieke persoonlijkheidstrekken konden worden onderscheiden van persoonlijkheidsdisfunctioneren, werd in **hoofdstuk 6** onderzocht op welke wijze deze modellen de aanwezigheid en de ernst van persoonlijkheidsstoornissen voorspellen. We onderzochten dit voor zowel de unieke modellen op zich (dat wil zeggen, persoonlijkheidsdisfunctioneren en persoonlijkheidstrekken onafhankelijk van elkaar), als ook voor de combinatie van beide modellen. Aangezien sommige persoonlijkheidsstoornissen slechts minimaal vertegenwoordigd waren in de gebruikte steekproef, werden de analyses beperkt tot de paranoïde, de borderline, de vermijdende, en de obsessieve-compulsieve persoonlijkheidsstoornis. De totale (opgetelde) dimensionele SCID-II score werd gebruikt als maat voor de ernst van persoonlijkheidspathology. De GAPD en de SIPP-118 werden gebruikt als meetinstrumenten van persoonlijkheidsdisfunctioneren. De NEO-PI-R werd gekozen als maat voor normale persoonlijkheidskenmerken, en de DAPP-BQ als vragenlijst naar pathologische persoonlijkheidstrekken. De correlationele patronen tussen de onderscheiden modellen, en de correlaties van deze modellen met de onderzochte persoonlijkheidsstoornissen, waren grotendeels zoals verwacht op basis van uitkomsten van andere studies. Dat betekende onder andere dat modellen van persoonlijkheidsdisfunctioneren en de persoonlijkheidstrek *Emotionele Dysregulation* in sterke mate geassocieerd waren met alle geselecteerde persoonlijkheidsstoornissen in deze onderzoeksgroep, en dat correlaties van andere, specifieke, dimensionele persoonlijkheidstrekken eveneens meer persoonlijkheidsstoornis specifiek waren (bijvoorbeeld: het DAPP-BQ facet Dwangmatig-

heid was in hoge mate geassocieerd met de DSM-IV obsessieve-compulsieve persoonlijkheidsstoornis).

Met betrekking tot de predictieve validiteit toonde deze studie aan dat beide modellen (van persoonlijkheidsdisfunctioneren en van specifieke persoonlijkheidstrekken) de aanwezigheid en ernst van persoonlijkheidsstoornissen voorspelden. Bovendien was er sprake van incrementele validiteit boven de unieke verklaarde variantie van de afzonderlijke modellen, wanneer beide modellen in combinatie werden gebruikt, bij het voorspellen van de aanwezigheid en ernst van persoonlijkheidsstoornissen. Deze bevindingen onderstrepen het principe van een geïntegreerde benadering van persoonlijkheidsdiagnostiek, waarbij gebruik wordt gemaakt van meerdere conceptuele perspectieven. Een principe dat ook bepleit wordt in het hybride Alternatieve DSM-5 model voor persoonlijkheidsstoornissen.

Hoofdstuk 7 kan worden gezien als een studie over een aanvullende onderzoeksvraag die ontstond tijdens het lopende project, en die relevant is in de discussie over het gebruik van meetinstrumenten voor persoonlijkheidsfunctioneren ten behoeve van de bepaling van disadaptiviteit van extreme persoonlijkheidstrekken. In dit hoofdstuk werd in dit kader de zogenaamde 'bipolariteitshypothese' onderzocht. Dit behelst de vraag of extreme scores op beide polen van domeinen van het Vijf Factoren Model (in onze studie geoperationaliseerd door de NEO-PI-R) per definitie wijzen op persoonlijkheidsdisfunctioneren. De uitkomsten van onze studie ondersteunden duidelijk niet een sterke bipolariteitshypothese, maar toonden aan dat in onze steekproef van in behandeling zijnde psychiatrische patiënten, alleen hoog Neuroticisme, laag Extraversie, laag Altruïsme en laag Consciëntieusheid (en dus niet de andere polen van de betreffende domeinen) indicatief waren voor persoonlijkheidsdisfunctioneren.

In **hoofdstuk 8** worden de belangrijkste bevindingen uit deze studie samengevat en kritisch beschouwd. Er wordt ingegaan op methodologische beperkingen van dit onderzoek, alsmede op de specifieke klinische implicaties. Tot slot geven we richting aan voor verder onderzoek.

Appendix

General Assessment of Personality Disorder (GAPD): Scales and scale definitions.

(GAPD)	Scale definition[1]	# items
Primary scale:		
Self-pathology		
Poorly delineated interpersonal boundaries	Difficulty differentiating self from others; allows others to define self experience; confuses others' feelings with own.	7
Lack of self clarity	Difficulty identifying and describing feelings and other experiences; uncertain about personal qualities and characteristics.	7
Sense of inner emptiness	Feels empty inside.	4
Context dependent self-definition	Sense of self depends on who he or she is with; monitors others carefully to decide how he or she should feel or act.	5
Poorly differentiated images of others	Feelings about other people are disturbed; other people all look the same.	4
Lack of history and continuity	Feels as if he or she does not have a past; difficulty recalling impressions of self only a few years ago; self-images are unstable and change from day to day.	6
Fragmentary self-other representations	Inconsistent and contradictory images and feelings about the self and other persons; lacks a sense of whole-ness; feels fragmented.	11
Self-state disjunctions	Feels as if there are several different self-states; people tell them that they change so much that it sometimes seems as if they are a different person.	5
False self/real self disjunctions	Feels as if the "real me" is trapped inside and not able to get out; when he or she talks about self, it feels as if he or she is describing someone else.	6
Lack of authenticity	Feelings and experiences feel unreal and not genuine; feels like a fake or sham.	7
Defective sense of self	Sense of being flawed, as if something is fundamentally wrong with self.	3
Poorly developed understand-ing of human behavior	Does not understand people at an intuitive level; does not have a good sense of how to relate to other people.	6
Lack of autonomy and agency	Unable to influence events or control own life and destiny.	5
Lack of meaning, purpose, and direction	Lacks a clear sense of direction; feels actions are purposeless and pointless.	7
Difficulty setting and attaining goals	Low self-directedness; derives little satisfaction from goal attainment; has difficulty integrating goals with other parts of self.	8

GAPD continued

Primary scale: Interpersonal dysfunction		
Intimacy and attachment	Impaired capacity for close intimate relationships of mutuality; lacks capacity to form attachment relationships and to function adaptively in attachment relationships; avoids attachments; unable to tolerate someone being dependent on him or her.	10
Affiliation	Inability to establish affiliative relationships; disinterest in social contact; solitary and spends most time alone; inability to establish friendships.	9
Prosocial	Would never sacrifice self to help someone else; avoids helping other people; does not see anything wrong with taking advantage of someone who is easily conned.	17
Cooperativeness	Capacity to work together with other people, as part of a team.	15

Note. [1] Derived from: Livesley (2003). *Practical management of personality disorders.* pp. 121-122. Guilford Press: New York.

Dankwoord

Hoewel een promotietraject soms wordt vergeleken met een eenzame *queeste* van de promovendus op zoek naar de heilige graal van de wetenschap, blijkt uit alle dankwoorden altijd weer hoe anderen, in de vorm van samenwerking en steun, meegeholpen hebben aan de totstandkoming van het eindresultaat. Op deze plaats wil ook ik graag iedereen bedanken die, op welke manier dan ook, actief betrokken is geweest bij deze dissertatie. Een aantal van deze mensen wil ik in het bijzonder noemen.

In de eerste plaats gaat mijn grote dank uit naar mijn promotoren prof. dr. Roel Verheul en prof. dr. Jan Henk Kamphuis. Roel, ik herinner me nog goed hoe jij bij onze kennismaking in 2006, op de zolder van de Viersprong-villa in Halsteren, de contouren schetste van wat de nieuwe algemene definitie voor persoonlijkheidsstoornissen zou moeten worden. Een definitie die inmiddels onderdeel is van het Alternatieve DSM-5 model voor persoonlijkheidsstoornissen, en die de basis vormt van deze dissertatie. Ik ben je zeer erkentelijk voor de stevige basis die jij legde onder dit project. Niet alleen in inhoudelijke zin, maar ook in de mogelijkheden die ik kreeg om samen te werken met (internationale) onderzoekers uit jou indrukwekkende netwerk. Jan Henk, jij stapte op de al rijdende trein en voegde op het inhoudelijke vlak het *trait*-model nadrukkelijker toe aan het project. Je hebt erg veel voor me betekend bij het schrijven van de artikelen. Mijn associatieve stijl van schrijven werd daardoor veel meer gefocussed, wetenschappelijk en 'APA-style', en inhoudelijk verdiepte je mijn kennis door steeds kritische vragen te blijven stellen.

Next, I am grateful that I could cooperate with prof. dr. W.J. Livesley in this study. John, already in the years prior to this project and till now, you inspired me with your work and lectures. I am grateful that we were allowed to use the *General Assessment of Personality Disorders* (GAPD) in this study, and that you were co-author of one of the chapters of my thesis. Also, I thank you for your kind attention to the progress of the project in the recent years.

At this point I would also like to thank the other co-authors for the opportunity to collaborate with you: Donna Bender, Gerard Boedijn, Les Morey, Robert Krueger, Roseann Larstone, Arjen Noordhof, and Andy Skodol.

Theo Ingenhoven en Meinte Vollema, paranimfen, verdienen een speciale plek. Jullie bleven onvoorwaardelijk aanwezig in de goede èn slechte tijden van dit gehele traject. Meinte als soul-mate in de psychodiagnostiek. Theo als *'Maat'* niet alleen zeer betrokken op dit project, maar ook in ISSPD, blind-case, STiP-5, RINO, voorjaarscongressen, handboeken en andere DSM-5 avonturen.

Dank aan de Raden van Bestuur van de Symforagroep / GGz Centraal en onderhavige directies die mij de gelegenheid boden om mijn promotietraject grotendeels als werknemer van deze instelling te kunnen uitvoeren. Speciaal dank aan

prof. dr. Peter van Harten, eerst als voorzitter van de commissie wetenschappelijk onderzoek van de Symforagroep en later als directeur van Innova van GGz Centraal, voor het faciliteren van mijn onderzoek. Erik de Groot en later Anne Willems, dank voor jullie fijne persoonlijke interesse in het project, en voor alle logistieke en andere zaken die jullie als onderzoekscoördinatoren voor me regelden. En dank aan alle onderzoeksmedewerkers voor de nauwgezette hulp in de dataverzameling en afnemen van SCID's.

Paul van de Heijden (Reinier van Arkelgroep), Dina Mazzolari (Eliagg), Hilde de Saeger (de Viersprong), Wim Snellen (Altrecht), Tony Spermon (Prins Claus Centrum), en Aaltje Visscher (Eleos) wil ik hartelijk bedanken voor hun bijdrage in de dataverzameling. En dank aan Liesbeth Eurelings voor de 'Parnassia-data' voor de IPO studie. Daarbij ook dank aan alle GGz Centraal collega's die patiënten uit hun case-load 'ronselden' voor mijn project.

Op deze plaats wil ik ook alle patiënten bedanken die meegeholpen hebben aan de dataverzameling door over zichzelf te rapporteren in een interview of op de vragenlijsten. Daarbij ben ik als clinicus al mijn cliënten erkentelijk voor de openheid tijdens psychodiagnostische onderzoeken, mede waardoor ik wetenschappelijke inzichten kon toetsen aan de klinische praktijk en vice versa.

Dank aan de leden van de promotiecommissie, Prof. dr. Arnoud Arntz, Prof. dr. Wim van de Brink, Prof. dr. Jack Dekker en Prof. dr. Patrick Luyten voor het kritisch lezen en beoordelen van mijn proefschrift.
Arnoud Arntz, Wim van de Brink en Meinte Vollema dank ik tevens voor het kritisch reviewen van het oorspronkelijke onderzoeksplan, en Joost Hutsebaut en Theo Ingenhoven voor het kritisch reviewen van de general discussion.

Mijn teams psychodiagnostiek en de opleidelingen uit Amersfoort en Hilversum wil ik bedanken dat ik naast de psychodiagnostiek ook nog heel druk met dit project bezig mocht zijn. Fijn hoe jullie enthousiast waren om uitkomsten en nieuwe meetinstrumenten uit dit project te gaan gebruiken in de psychodiagnostiek. Dat laatste geldt voor mijn nieuwe team psychodiagnostiek van Pro Persona in Tiel. In mijn team van het behandelprogramma Persoonlijkheidsstoornissen in Tiel vind ik nieuwe uitdaging en inspiratie om theoretische diagnostische concepten te verbinden met de dagelijkse werkelijkheid van psychotherapie en behandeling.

Astrid, jou wil ik hier speciaal noemen, hoe je samen met mij de afdeling in Hilversum draaiende hield, en hoe we samen vele fijne gesprekken hebben gehad.

Lieve mamma en pappa (†), ik wil jullie bedanken voor de ruimte die ik heb gekregen om mijn eigen weg te gaan. Tegelijkertijd volgde ik, als zoon van een eeuwig studerende dominee, en van een oud-secretaresse van de geneesheer-directeur van wat tegenwoordig de Van Mesdagkliniek heet, het voorbeeld dat

werd gegeven: het bloed kruipt waar het niet gaan kan. Mam, terwijl ik dit dankwoord herschrijf is het inmiddels duidelijk dat je de uiteindelijke promotieplechtigheid niet meer zult meemaken. We hebben het eindresultaat gelukkig nog kunnen delen. Het was heel fijn dat je tot op zo'n hoge leeftijd heel belangstellend was naar mijn vak en de vorderingen in mijn promotietraject.

En natuurlijk Ina, Nienke, Wouter en Anne. Jullie zijn de bron en de basis om altijd weer naar terug te keren. Jullie liefde en ons gezinnetje is de echte inspiratie van mijn leven. Ien, bij jou begint het: de liefde, de ruimte en het relativeren - daarom sta jij ook voorin dit proefschrift. Nienke, Wouter en Anne, jullie draag ik in mijn hart - ook voor jullie een speciaal plekje in dit proefschrift.

Curriculum Vitae

Han Berghuis werd in 1962 geboren te Grootegast. Na de lagere school en middelbare school (VWO) in respectievelijk Leens, Breda, Delfzijl, Groningen en Amersfoort, begon hij een studie aan de Sociale Academie, richting Maatschappelijk werk. Harry Tijssen leerde hem hier de liefde voor het hulpverlenersvak. In aansluiting op deze opleiding was hij werkzaam in het algemeen maatschappelijk werk (Wijk bij Duurstede). Tevens startte hij de deeltijdstudie klinische psychologie aan de Universiteit van Utrecht. Hij studeerde af binnen het tracé seksualiteit en relaties, waar Luc Gijs hem de beginselen van het kritisch wetenschappelijk denken bijbracht.

Onmiddellijk na zijn studie klinische psychologie stroomde hij door in de postdoctorale opleidingen tot Klinisch Psycholoog en Psychotherapeut bij de Centrale RINO groep / Universiteit Leiden & Utrecht. Zijn opleidingsplaats in dit kader was bij de H.C. Rümke Groep (later Altrecht), locaties Willem Arntsz Hoeve en het Regionaal Psychiatrisch Centrum Nieuwegein, en de Centrale Afdeling Psychodiagnostiek. Zijn opleider, Wim Snellen, inspireerde hem hier in de (psycho)diagnostiek van de persoonlijkheid.

Nadat hij zijn KP-opleiding had afgerond ging hij werken als hoofd van de afdeling(en) psychodiagnostiek van de Symfora groep (later GGz Centraal) in Amersfoort en Hilversum. Bij GGz Centraal / Innova was hij tevens coördinator van de wetenschappelijke onderzoekslijn Persoonlijkheidsstoornissen. Ook was hij praktijkopleider van psychologen in opleiding tot gz-psycholoog of klinisch psycholoog en supervisor psychodiagnostiek. In deze periode (sinds 2006) startte hij met zijn promotie-traject onder supervisie van Roel Verheul en Jan Henk Kamphuis, beide als hoogleraar verbonden aan de Universiteit van Amsterdam.

Sinds februari 2013 is hij werkzaam bij Pro Persona, locatie Tiel, als hoofd van het Diagnostisch Centrum Rivierenland en als klinisch psycholoog bij het zorgprogramma Persoonlijkheidsstoornissen. Hij is praktijkopleider van de klinisch psycholoog i.o. en supervisor psychodiagnostiek.

Naast zijn reguliere werkzaamheden verzorgt Han Berghuis onderwijs aan de verschillende opleidingen tot Gezondheidszorg- of Klinisch psycholoog. Tevens verzorgt hij workshops en symposia op het gebied van integratieve persoonlijkheids (psycho) diagnostiek, de laatste jaren nadrukkelijk in het perspectief van het Alternatieve DSM-5 model voor persoonlijkheidsstoornissen. Hij is lid van het Podium DSM-5 van het Kenniscentrum Persoonlijkheidsstoornissen. Hij reviewde manuscripten voor het Journal of Personality Disorders, het Journal of Personality Assessment en voor Personality and Mental Health.

Han is getrouwd met Ina Krechting, en samen hebben ze drie kinderen: Nienke, Wouter en Anne.

Publicaties

Beek, W. van, Berghuis, H. Kerkhof, A., & Beekman, A. (2011). Time perspective, personality and psychopathology Zimbardo's time perspective inventory in psychiatry. *Time and Society, 20,* 364-374.

Berghuis, H. (2007). Classificatie van persoonlijkheidsstoornissen: naar een algemene ernstdimensie In: R. Verheul & J.H. Kamphuis (Eds). *De toekomst van persoonlijkheidsstoornissen*. Houten/Diegem: Bohn Stafleu Van Loghum.

Berghuis, H., Kamphuis, J.H., Boedijn, G., & Verheul., R. (2009). Psychometric Properties and Validity of the Dutch Inventory of Personality Organization (IPO-NL). *Bulletin of the Menninger Clinic, 73,* 44-60.

Berghuis, H., Kamphuis, J.H., & Verheul., R. (2014). Specific Personality Traits and General Personality Dysfunction as Predictors of the Presence and Severity of Personality Disorders in a Clinical Sample. *Journal of Personality Assessment, 96,* 410-416..

Berghuis, H., Kamphuis, J.H., & Verheul., R. (2012). Core features of personality disorder: differentiating general personality dysfunctioning from personality traits. *Journal of Personality Disorders, 26,* 704-716.

Berghuis, H., Kamphuis, J.H., Verheul., R, Larstone, R., & Livesley, W.J. (2013). The General Assessment of Personality Disorder (GAPD) as an Instrument for Assessing the Core Features of Personality Disorders. *Clinical Psychology & Psychotherapy, 20,* 544-557.

Berghuis, J.G. (2005). Profielinterpretatie van de Nederlandse verkorte MMPI (NVM). *Tijdschrift voor Psychotherapie, 31, 3,* 230-238.

Berghuis, J.G. (2005). Referaat: Dialectische Gedragstherapie effectief bij patiënten met zeer ernstig zelfbeschadigend gedrag. *Tijdschrift voor Psychiatrie, 47, 8,* 557.

Ingenhoven, T., Berghuis, H., Thunissen, M., & de Saeger, H. (2011). De borderline persoonlijkheidsstoornis in de DSM-5. In: T. Ingenhoven, A. van Reekum, B. van Luyn, P.Luyten (Red.). *Handboek Borderline persoonlijkheidsstoornis.* Utrecht: De Tijdstroom.

Morey, L.C., Berghuis, H., Bender, D.S., Verheul, R., Krueger, R.F., & Skodol, A.E. (2011).Toward a Model for Assessing Level of Personality Functioning in DSM-5, Part II: Empirical Articulation of a Core Dimension of Personality Pathology. *Journal of Personality Assessment, 4,* 347-353.

Zwanepol, F., Berghuis, J.G., de Groot. E., & Luteijn, F. (2002). Vergelijkend onderzoek tussen WAIS-III en de verkorte GIT. *De Psycholoog, 37,* 581-587.