

**Evaluating the DSM-5 Alternative Model of Personality Disorders for
Obsessive-Compulsive Personality Disorder**



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Statement of Originality

This thesis is submitted to The Australian National University in fulfilment of the requirements for the degree of Doctor of Philosophy (Clinical Psychology). The work presented in this thesis is, to the best of my knowledge, original, except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or part, for a degree at this or any other institution.

Jacqueline Liggett

30 November 2017

Thesis Style Statement

This thesis has been prepared in a journal article compilation format. This format was deemed appropriate due to the continuity between research papers presented in the body of work. The following publications appear chronologically in the thesis body:

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Abstract

Obsessive-compulsive personality disorder (OCPD) is a severe mental health condition estimated to affect 2-7% of the population (American Psychiatric Association [APA], 2013; Grant et al., 2004), making it one of the most common personality disorders (PDs). It is currently operationalised by reference to several behavioural symptoms, including a preoccupation with details, rules and orderliness, over-conscientiousness, perfectionism, hoarding, excessive devotion to work and productivity, reduced capacity to express warmth and emotion, and mental and interpersonal control at the expense of flexibility, openness and efficiency (APA, 2013). The disorder has a long history in the clinical literature, being included in all versions of the Diagnostic and Statistical Manual of Mental Disorders (DSM) (APA, 1952|2013). Despite its history, prevalence and severity, OCPD has been the subject of only limited research. DSM-5 Section III (APA, 2013) includes a newly-developed hybrid dimensional-categorical diagnostic model for PDs: the Alternative Model of Personality Disorders (AMPD). The AMPD operationalises PDs using disorder-specific constellations of maladaptive personality traits and functional impairment. Studies assessing the personality traits relevant to OCPD have had inconsistent results, and research into the impairment profile of OCPD is limited. Additional research is required to refine the alternative model of OCPD. This research project aimed to help meet this need. Study One examined the validity of a newly-developed disorder-specific impairment scale for OCPD. Although the measure showed initial promise in its ability to measure-disorder specific impairment, results indicated that it may not be useful to maintain the distinction, made in the AMPD, between personality impairment in the self and interpersonal domains. Study Two evaluated the extent to which specific personality traits, and scores on the measure of OCPD-specific impairment from Study One, accounted for variance in scores on measures of traditional OCPD (as operationalised in DSM-5 Section II). Results showed

that three of the four AMPD traits, as well as two additional traits uniquely accounted for a large proportion of variance in a latent variable of traditional OCPD. Study Three examined the extent to which the trait criteria in the alternative model of OCPD corresponded with the traditional operationalisation of OCPD with a particular focus on the individual OCPD criteria, in a Danish clinical sample. Results revealed that the AMPD traits aligned only partially with the traditional conceptualisation of OCPD, and that additional traits may be relevant to further capture the nuances of this personality disorder. Study Four investigated the extent to which self-report and informant data of personality psychopathology correspond, the optimal trait profile for OCPD in the AMPD, and whether an OCPD-specific measure of impairment is more diagnostically useful than measures of general impairment in personality functioning. Results showed that self-report data moderately corresponded with informant data and that rigid perfectionism can be considered a core trait of OCPD. OCPD-specific impairment accounted for more variance in traditional OCPD than general measures of impairment. While additional research into the utility of the AMPD is required, taken together, these studies generally support the use of the hybrid dimensional-categorical approach in the assessment and diagnosis of OCPD.

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List of Abbreviations and Symbols

APA	American Psychiatric Association
AvPD	Avoidant personality disorder
CAT-PD-SF	Computerized Adaptive Test of Personality Disorder-Static Form
β	Beta: Regression coefficient, the average amount by which the dependent variable increases with unit increases in the independent variable
d	Cohen's d ; An effect size indicating the standardised difference between two means
DSM-5	<i>Diagnostic and Statistical Manual of Mental Disorders - 5th Edition</i> (American Psychiatric Association, 2013)
DSM-IV-TR	<i>Diagnostic and Statistical Manual of Mental Disorders - 4th Edition - Text Revision</i> (American Psychiatric Association, 2000)
FFM	Five Factor Model
LPFS	<i>Level of Personality Functioning Scale</i> (Bender et al., 2011)
MDPF	<i>Measure of Disordered Personality Functioning</i> (Parker et al., 2004)
NEO-PI-R	<i>Revised NEO Personality Inventory</i> (Costa & McCrae, 1992)
OCPD	Obsessive-compulsive personality disorder
OCPD-IS	<i>Obsessive-Compulsive Personality Disorder – Impairment Scale</i>
p	p -value; The level of marginal significance within a statistical hypothesis test, representing the probability of the occurrence of a given result
P&PD	Personality and personality disorders
PD	Personality disorder
PDQ-4+	<i>Personality Diagnostic Questionnaire-4+</i> (Hyler, 1994)
PID-5	<i>Personality Inventory for DSM-5</i> (Krueger, et al., 2012)
PID-5-BF	<i>Personality Inventory for DSM-5-Brief Form</i> (Krueger, Derrigner, Markon, Watson, & Skodol, 2013)
PID-5-IRF	<i>Personality Inventory for DSM-5-Informant Rating Form</i> (Markon, Quilty, Bagby, & Krueger, 2013)
r	Correlation coefficient; The measure of strength of a linear relationship between two variables

R^2	The proportion of variability that is accounted for by a statistical model
RMSEA	Root mean square error of approximation (Brown & Cudeck, 1993); Measure of the discrepancy between a hypothesised model and the population covariance matrix
SCID-II	<i>Structured Clinical Interview for the DSM-IV Axis II Disorders</i> (First et al., 1997)
SCID-II-PQ	<i>Structured Clinical Interview for the DSM-IV Axis II Disorders- Personality Questionnaire</i> (First et al., 1997)
SD	Standard deviation; A measure of the amount of variation or dispersion within a set of data
SFQ	<i>Social Functioning Questionnaire</i> (Tyrer et al, 2005)
WHODAS-2	<i>World Health Organization Disability Assessment Schedule – 2</i> (World Health Organization, 1998)
WHOQOL-BREF	<i>World Health Organization Quality of Life – BREF</i> (World Health Organization, 1998)
χ^2	Chi-square; Evaluation of whether distributions of categorical variables differ from one another
z	z -score; A measure of a score's relationships to the mean in a group of scores
%	Percentage
α	Coefficient alpha; A measure of the internal consistency reliability of a scale.

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Chapter One – Introduction

Evaluating the DSM-5 Alternative Model of Personality Disorders for Obsessive-Compulsive Personality Disorder

Personality is an important determinant of human behaviour and mental health outcomes (Costa & McCrae, 1980; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Personality dysfunction can contribute to problems at work (Judge, Martocchio, & Thoresen, 1997) and in relationships (Caughlin, Huston, & Houts, 2000), to suicidality (Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994), criminality (Miller & Lynam, 2001) and mortality (Roberts et al., 2007). With personality disorders (PDs) estimated to affect between nine and 14 per cent of adults in the community (Grant et al., 2004; Lenzenweger, 2008; Samuels et al., 2002; Torgersen, 2005; Torgersen, Kringlen, & Cramer, 2001), they represent a major public health concern.

Evidence suggests that those with maladaptive personality styles and PD diagnoses are at increased risk of numerous negative social, occupational and interpersonal outcomes. For example, PDs have been linked to lower levels of social functioning (Grant et al., 2004), with personality disordered individuals at increased risk of generating distress among family, friends and colleagues (Miller, Campbell, & Pilkonis, 2007), divorce (Disney, Weinstein, & Oltmanns, 2012) and occupational dysfunction (Hengartner, Müller, Rodgers, Rössler, & Ajdacic-Gross, 2014) such as problems with co-workers and employers (Ettner, Maclean, & French, 2011). Additionally, individuals with PD diagnoses are at increased risk of suicide (Trull, Jahng, Tomko, Wood, & Sher, 2010) and lower quality of life (Cramer, Torgersen, & Kringlen, 2006). Given the wide-ranging effects of personality dysfunction, the accurate assessment and diagnosis of PDs is important not only for individuals with PDs, but for society as a whole.

The significance of personality functioning in these areas appears to be constant across cultures. A large twin study from Canada, Germany and Japan found that personality traits have a solid biological basis which may represent a common heritage among humans (Yamagata et al., 2006). McCrae and Terracciano's (2005) study of nearly 12,000 participants from 50 different cultures also supports the hypothesis that personality traits are a feature of human experience common to all cultural groups – that is, all personality traits can be found in all cultures. The cross-cultural significance of personality traits is also supported by cross-cultural studies focused on the influence of personality on particular domains. For example, personality traits have been found to be significantly related to the quality of social interactions in both American and German populations (Nezlek, Schütz, Schröder-Abé, & Smith, 2011), to relationship satisfaction and stability across Australian, German and American samples (Dyrenforth, Kashy, Donnellan, & Lucas, 2010) and to work ethic in Greek and British individuals (Furnham, Petrides, Tsaousis, Pappas, & Garrod, 2005).

While there is widespread agreement that personality is an important determinant of mental health, there are different views on whether it is appropriate to conceptualise PDs as the product of “extreme” levels of the same personality traits that define “normal” personality functioning (Widiger & Trull, 2007), or whether a clear distinction should be maintained between normal and maladaptive personality traits. The balance of authors prefer the former “dimensional” approach (Markon, Krueger, & Watson, 2005; Widiger & Trull, 2007).

There are also different views on how best to measure and conceptualise particular personality disorders. This thesis examines competing ways of measuring and conceptualising Obsessive-Compulsive PD (OCPD). It argues that a hybrid dimensional-categorical model, combined with the collection of data from various sources including self and informant reports, results in a more empirically grounded

operationalisation than the currently utilised categorical model. This introductory chapter begins with an outline of the historical origins of OCPD and a discussion of the way it is currently operationalised in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5; American Psychiatric Association [APA], 2013). Criticisms of this categorical model of diagnosis are discussed before attention is given to an alternative hybrid dimensional categorical model, which focusses less on behavioural criteria and more on impaired personality functioning and personality traits. The chapter concludes with a discussion of the relevance of measurement method to the diagnosis of OCPD.

Obsessive-Compulsive Personality Disorder

OCPD is one of 10 theoretically distinct PDs currently recognised in the DSM-5, which are grouped together into three thematic clusters. Cluster A is comprised of paranoid, schizoid and schizotypal PDs – disorders characterised by odd or eccentric thoughts or behaviours. Cluster B is made up of disorders characterised by dramatic, emotional and erratic behaviour: antisocial, borderline, histrionic and narcissistic PDs. OCPD sits with avoidant and dependent PDs within the Cluster C disorders, which are characterised by anxiety, fear and behavioural inhibition (APA, 2013).

OCPD is acknowledged as one of the most prevalent PDs currently recognised in the DSM-5 (APA, 2013). Estimates of the prevalence of OCPD in the community vary, ranging from 2% in a Norwegian sample (Torgersen et al., 2001) to 3.2% in an Australian sample (Jackson & Burgess, 2000) and up to as high as 7.9% in a U.S. sample (APA, 2013; Grant et al., 2004).

Origins of the disorder. OCPD has a long history in the clinical literature (Samuels & Costa, 2012). Notably, it has been included in all editions of the DSM to date, though sometimes by a different name (e.g. “compulsive personality” (DSM-I; APA, 1952; DSM-III, APA, 1980)). OCPD was initially defined by Freud, who

described the “anal character” as orderly, parsimonious and obstinate, with each of these descriptors covering a subset of related character traits (Freud, 1908). “Orderliness” referred to notions of bodily cleanliness, conscientiousness and trustworthiness. “Parsimony” signified an exaggerated form of avarice, and “obstinacy” captured the broader terms of defiance, rage and resentment.

Freud’s (1908) characterisation of the disorder has been enduring. The general concept of orderliness has been included in the definition of OCPD in every version of the DSM, albeit in different terms, e.g. “chronic or excessive concern with adherence to standards of conscience or of conformity” (DSM-I; APA, 1952, p. 37), “excessive concern with conformity” (DSM-II; APA, 1968, p. 43) and “preoccupation with rules, efficiency, trivial details, procedures” (DSM-III; APA, 1980, p. 326). Similarly, “obstinacy” featured as a relevant trait in the first two manuals, and then from DSM-IV (APA, 1994) onwards, has been expressed as “rigidity”. “Parsimony” featured in DSM-II (APA, 1968) and DSM-III (APA, 1980) as “stingy”, and then again from DSM-III-R onwards as a “lack of generosity in giving time, money or gifts when no personal gain is likely to result” (APA, 1987, p. 356) and the adoption of a “miserly spending style towards both self and others” (DSM-IV; APA, 1994, p. 673).

Over time, various behavioural criteria have been added to definitions of OCPD (Samuels & Costa, 2012). Additions that remain today include perfectionism that interferes with task completion, a reluctance to delegate tasks or to work closely with others (unless they submit exactly to the individual’s way of doing things), and an inability to discard worn-out or worthless items, even when they hold no sentimental value to the person (DSM-5; APA, 2013). Behavioural criteria introduced into, then removed from, the definition, include: a lack of moral capacity for relaxation (APA, 1952); a sense of “over-inhibition” (DSM-I and DSM-II); a restricted ability to express emotions such as warmth (DSM-III and III-R); and indecisiveness where the individual

ruminate, avoids or postpones making a decision for fear of making a mistake (DSM-III and III-R).

As the foregoing demonstrates, while the contours of OCPD have changed over time, a core component of orderliness and inflexibility has always been present. Another constant has been the use of behaviours, rather than personality traits, as the means by which the disorder is diagnosed. Behaviourally defined inflexibility has featured in all DSM operationalisations of OCPD and, at least historically, in the literature more broadly. For example, Millon's (1996) evolutionary-neurodevelopmental model conceptualises the obsessive-compulsive personality type ("reliable, constricted and compulsive personality" in his terms) as someone with highly regulated expression and appearance, a formal interpersonal manner, a strong sense of morality, and rigidity in observing and following rules and schedules. Additionally, he viewed this personality type as asserting an inflated sense of personal responsibility and self-discipline, dedication to perfection and productivity, subjugation of socially unacceptable thoughts and impulses, and displeasure and uneasiness in managing negative emotional responses.

OCPD in the Current Diagnostic System. OCPD is currently characterised in Section II of the DSM-5 (the section of the manual in which PDs are formally operationalised, and commonly referred to as the "traditional" model) by impairment and distress related to: a preoccupation with orderliness; perfectionism; and mental and interpersonal control, at the expense of flexibility, openness, and efficiency (APA, 2013). This PD is diagnosed via a polythetic categorical model, meaning a diagnosis requires the presence of any combination of four of eight behavioural criteria (Criterion A). The behavioural criteria are:

1. A preoccupation with details, rules, lists, order, organisation or schedules to the extent that the main point of the activity is lost;

2. Perfectionism that interferes with task completion (for example, being unable to complete a project due to not meeting their own excessively high expectations);
3. Excessive devotion to work and productivity to the exclusion of leisure and friendships;
4. Over-conscientiousness and inflexibility in relation to morality, ethics or values;
5. An inability to discard worn-out or useless objects, even when they hold no sentimental value;
6. A reluctance to delegate tasks to others unless they commit to completing things in exact accordance with the person's instructions;
7. The adoption of a miserly spending style towards self and others; and
8. Demonstrating rigidity and stubbornness (APA, 2013).

The other criteria for OCPD are common to all PDs. They comprise an enduring pattern of inner experience and behaviour that: is inflexible and pervasive across personal and social situations (Criterion B); leads to clinically significant distress or impairment (Criterion C); is stable, of long duration, and can be traced back to adolescence or early adulthood (Criterion D); is not better explained by another mental disorder (Criterion E); and is not attributable to the physiological effects of a substance or another medical condition (e.g. head trauma) (Criterion F).

Problems with the Traditional Model of Personality Disorders

Despite its high prevalence and debilitating symptoms, in the century that OCPD has been documented, it has been the subject of only limited research (relative to other disorders). As with PDs generally, the conceptualisation and measurement of OCPD remains a contentious topic.

Conceptual Problems. Since the release of DSM-III in 1980, the traditional categorical model of personality disorders (retained in Section II of the DSM-5) has been widely criticised (Clark, 2007; Skodol, 2012; Widiger & Mullins-Sweatt, 2010). Widiger and colleagues (2002) have observed that under the current categorical model, official diagnoses are largely arbitrary, frequently unreliable, overlapping, incomplete, and provide only limited utility in treatment planning.

One enduring criticism relates to the extent to which supposedly distinct categories of PD overlap. It is common for individuals to meet the criteria for more than one PD (Zimmerman, Rothschild, & Chelminski, 2005) and convergent and discriminant validity across PDs is poor (Skodol, 2012). This consanguinity is almost inevitable given the similarity between the criteria used to define different PDs (Tyrer et al., 2007). For example, criteria for antisocial PD and borderline PD include “impulsivity or failure to plan ahead” (DSM-5; APA, 2013, p. 659) and “impulsivity in at least two areas that are potentially self-damaging” (DSM-5; APA, 2013, p. 663), respectively. The conclusion reached by many is that the factor structure of personality pathology cannot be cleanly divided into 10 separate groups and that the present system involves the splitting of several common conditions into 10 largely arbitrary categories (Krueger & Eaton, 2010; Widiger, Simonsen, Krueger, Livesley, & Verheul, 2005). While grouping PDs into three clusters goes some way to reducing the resulting confusion (Tyrer et al., 2007), it does not address the more fundamental problem that there is limited justification for the categories within clusters.

The frequency with which the “Personality Disorder Not Otherwise Specified” label is applied provides further evidence of the inadequacy of the current categorical approach. This catch-all category accounts for 41% of all PD diagnoses made (Verheul, Bartak, & Widiger, 2007; Verheul & Widiger, 2004). That a plurality of individuals with personality psychopathology are not encapsulated by any of the 10 diagnostic

categories indicates that the Section II model does not adequately cover the domain of personality psychopathology (Skodol, 2012).

Another major problem associated with the traditional model is the use of polythetic criteria; diagnoses require that a minimum number of a given set of criteria are met, with no single criterion being necessary for a diagnosis. Not only are the cut off points (i.e. the minimum number of criteria required) arbitrary (Kamphuis & Noordhof, 2009), but the system results in excessive heterogeneity within disorders (Skodol, 2012). This issue is particularly relevant for OCPD, a diagnosis of which requires an individual to meet four out of a possible eight behavioural criteria. There are, therefore, 163 different combinations of behavioural symptoms that can give rise to a diagnosis of OCPD. Furthermore, it is possible for two people to share an OCPD diagnosis but to have no symptoms in common. This extreme heterogeneity makes it very difficult to generalise about the disorder, with obvious negative implications for research on and treatment of the disorder.

Finally, one of the main defining characteristics of PDs in the traditional model is that they are “pervasive” and “inflexible”. Research, however, suggests that this assumption of stability in personality is incorrect, and that personality status is in fact unstable, changing over time (Paris, 2003; Shea & Yen, 2003). There is therefore little justification for making an unchanged personality over time a requirement for a PD diagnosis. Further, a categorical model is poorly suited to measuring change in personality over time. It is only capable of indicating when certain thresholds have been crossed. A dimensional system that allows for gradated assessments would be better able to track changes over time.

Problems of Assessment. Other problems relate to the way in which personality pathology is assessed. Tyrer and colleagues have characterised the assessment of PDs as “inaccurate, largely unreliable, frequently wrong and in need of improvement” (2007, p.

s51). One significant cause of these problems is the traditional model's reliance on binary criteria – the assessor must make a subjective judgement about whether the client does or does not exhibit particular behaviours. This system does not permit gradated assessments and clinicians can often differ in their assessment of whether the relevant thresholds are met; the level of agreement between clinicians in the assessment of personality pathology has been found to be moderate at best (Tyrer et al., 2007).

The problem of agreement among assessors is amplified by the lack of agreement between different measures of personality. There are over 60 different interview assessments and self-report questionnaires for the measurement of PDs, and agreement between these instruments is extremely poor. This issue is highlighted in a study by Clark and colleagues (1997), who found a grand median kappa agreement of 0.27 for comparisons of self-report and interview assessments, despite the fact that these instruments are supposedly assessing the same personality pathology.

The Development of an Alternative Model of Personality Disorders

Responding to the criticisms of the traditional model discussed above, the Personality and Personality Disorders (P&PD) Work Group developed an alternative system for the diagnosis of PDs, prior to the publication of the DSM-5. This alternative model was not, however, operationalised and did not replace the existing model. The categorical diagnostic approach of the DSM-IV-TR (APA, 2000) was reproduced in Section II of the DSM-5. The P&PD Work Group's newly developed model was relegated to Section III of the DSM (titled "Emerging Models and Measures") for further research. The inclusion of two PD models in the DSM-5 was an attempt to maintain continuity in clinical practice, while at the same time progressing the

development of a new diagnostic system to address the numerous shortcomings of Section II (APA, 2013).¹

The AMPD (or the Section III model) includes several significant revisions aimed at improving the shortcomings of the current diagnostic model and realigning the diagnostic system with the existing personality psychopathology literature (APA, 2013; Skodol, 2012). Most importantly, the AMPD views personality as a continuum, with normal variation at one end of the spectrum, and disordered personality at the other. Acknowledging the significant overlap of the traditional and alternative models, the AMPD reduces the number of distinct PD diagnoses from ten to six: Antisocial, avoidant, borderline, narcissistic, obsessive-compulsive and schizotypal PDs. Each of these is defined not by reference to the behavioural criteria used in the traditional model, but through a dimensional system of personality. Diagnoses are made by identifying particular constellations of personality traits (Criterion B) in combination with disorder-specific types of impairment (Criterion A). Personality impairment must be relatively pervasive and stable over time (Criteria C and D) (the introduction of the qualifier “relatively” goes some way to addressing criticism of the requirement of unchanging impairment in the traditional model), and not better explained by a normal developmental stage, or the physiological effects of a substance or another medical condition, such as head trauma (Criteria E, F and G) (APA, 2013). For individuals who exhibit trait constellations that are not captured by these PD categories, but who are nonetheless impaired as a result of their personality, the additional PD diagnosis of “Personality Disorder: Trait Specified” can be assigned.

¹ When this research program began, the traditional model of PDs was commonly referred to as “Section II”, and the alternative model of personality disorders was widely referred to as the “Section III” model. This is the terminology used in this thesis’ first three studies. More recently, however, the field has adopted the terms “traditional model” and “alternative model of personality disorders” (AMPD; Krueger & Markon, 2014) to refer to the Section II and Section III models respectively. This updated language is used in the fourth study, as well as the thesis’ introduction and discussion chapters.

Criterion A (Impairment). In addition to being characterised by particular trait constellations, PDs are also defined in the AMPD by reference to impairment (Criterion A). This criterion is not a complete innovation, as the traditional model also includes an impairment requirement. A diagnosis of any PD in the traditional model requires the presence of “clinically significant distress or impairment in social, occupational, or other important areas of functioning” (Criterion C; APA, 2013, p. 646). This is a rather general requirement. In two key ways, the impairment criteria in the AMPD are much more specific. First, the AMPD introduces a 5-point scale for impairment with possible scores ranging from 0 (“healthy functioning”) to 4 (“extreme impairment”). A rating of 2 (“moderate impairment”) or more is required for a PD diagnosis.

The AMPD’s second innovation is the specification of different types of impairment for different types of PD. The AMPD divides personality impairment into two domains: self and interpersonal functioning. Self-functioning includes the facets of identity and self-direction, and interpersonal functioning includes the facets of empathy and intimacy (APA, 2013). For all PDs, Criterion A (impairment) is met when an individual demonstrates “moderate or greater impairment” manifested by characteristic difficulties in two or more of the facets of identity, self-direction, intimacy, and empathy (APA, 2013, p. 761). The AMPD presupposes that impairment in the self and interpersonal functioning domains is idiosyncratic to particular PDs. For example, impairment associated with OCPD in the intimacy facet is described as “relationships seen as secondary to work and productivity” and “rigidity and stubbornness negatively affects relationships with others” (APA, 2013, p. 768). For avoidant personality disorder (AvPD), however, impairment in the intimacy facet is defined by a “reluctance to get involved with people unless certain of being liked” and “diminished mutuality within intimate relationships because of fear of being shamed or ridiculed” (APA, 2013,

p. 765). In developing the disorder-specific impairment criteria, Work Group members considered a range of factors including: the strength of the correlation between the criteria and the traditional definition of the PD, the extent to which the criteria reproduced expected prevalence rates, high correlations with role impairment and low correlations with other PDs (Morey & Skodol, 2013).

Measurement of Criterion A. The inclusion of PD-specific impairment criteria in the AMPD signifies a change in direction from the traditional diagnostic model codified in Section II of the DSM-5 and its earlier versions. Under the traditional model, a PD diagnosis only requires the presence of “clinically significant distress or impairment in social, occupational or other important areas of functioning” (APA, 2013, p. 646). Disorder-specific impairment in the AMPD has been included to better differentiate between PDs, in an attempt to address the high degree of consanguinity among the traditional model of PDs. Although many PDs in the AMPD share personality traits, they are now better distinguished from each other by reference to distinct forms of impairment.

The DSM-5 P&PD Work Group did not, however, develop instruments to measure disorder specific types of impairment. Instead, the Work Group developed a general, non disorder-specific, clinician-rated measure of personality functioning, known as the Level of Personality Functioning Scale (LPFS; APA, 2013). Since the development of the LPFS, additional instruments have been created to measure the severity of personality pathology. These include the Semi-Structured Interview for Personality Functioning DSM-5 (Hutsebaut, Kamphuis, Feenstra, Weekers, & De Saeger, 2017), and a self-report form of the LPFS (Morey, 2017). These measures assess general levels of impairment in the areas of identity, self-direction, intimacy, and empathy. They do not, however, differentiate between the disorder-specific types of impairment outlined in the AMPD. Measures of disorder-specific impairment must

therefore be developed to help realise the objective of better differentiation between PDs.

Criterion B (Personality Traits). Whereas PDs in the traditional model are defined by reference to behavioural criteria, the AMPD defines PDs by particular constellations of personality traits (examples of “personality traits” include impulsivity, anxiousness and hostility). Drawing on literature demonstrating that four to five broad trait domains can reliably be distinguished in personality psychopathology (De Clercq, De Fruyt, Van Leeuwen, & Mervielde, 2006; Harkness & McNulty, 1994; Krueger et al., 2011; Livesley, Jang, & Vernon, 1998; Rossi, Elklit, & Simonsen, 2010; Wright et al., 2012), the AMPD utilises a dimensional personality trait model comprised of five broad domains (antagonism, detachment, disinhibition, negative affectivity, and psychoticism). Under these five domains sit a total of 25 trait facets, with each domain containing between three and seven facets (see Table 1.1; APA, 2013). These 25 trait facets have been found to represent the maladaptive extremes of the traits used in the five-factor model of personality (the most widely used model of personality and individual differences in the literature (Widiger & Costa, 2012)).

Table 1.1

Definitions of DSM-5 Personality Disorder Trait Domains and Facets

DOMAINS (Polar Opposites) and Facets	Definitions
NEGATIVE AFFECTIVITY (vs. Emotional Stability)	Frequent and intense experiences of high levels of a wide range of negative emotions (e.g., anxiety, depression, guilt/shame, worry, anger) and their behavioral (e.g., self-harm) and interpersonal (e.g., dependency) manifestations.

Emotional lability	Instability of emotional experiences and mood; emotions that are easily aroused, intense, and/or out of proportion to events and circumstances.
Anxiousness	Feelings of nervousness, tenseness, or panic in reaction to diverse situations; frequent worry about the negative effects of past unpleasant experiences and future negative possibilities; feeling fearful and apprehensive about uncertainty; expecting the worst to happen.
Separation insecurity	Fears of being alone due to rejection by – and/or separation from – significant others, based in a lack of confidence in one's ability to care for oneself, both physically and emotionally.
Submissiveness	Adaptation of one's behavior to the actual or perceived interests and desires of others even when doing so is antithetical to one's own interests, needs, or desires.
Hostility	Persistent or frequent angry feelings; anger or irritability in response to minor slights and insults; mean, nasty, or vengeful behavior. See also Antagonism.
Perseveration	Persistence at tasks or in a particular way of doing things long after the behavior has ceased to be functional or effective; continuance of the same behavior despite repeated failures or clear reasons for stopping.
Depressivity	See Detachment.
Suspiciousness	See Detachment.
Restricted affectivity (lack of)	Little reaction to emotionally arousing situations; constricted emotional experience and expression; indifference and aloofness in normatively engaging situations.
DETACHMENT (vs. Extraversion)	Avoidance of socioemotional experience, including both withdrawal from interpersonal interactions (ranging from casual, daily interactions to friendships to intimate relationships) and restricted affective experience and expression, particularly limited hedonic capacity.

Withdrawal	Preference for being alone to being with others; reticence in social situations; avoidance of social contacts and activity; lack of initiation of social contact.
Intimacy avoidance	Avoidance of close or romantic relationships, interpersonal attachments, and intimate sexual relationships.
Anhedonia	Lack of enjoyment from, engagement in, or energy for life's experiences; deficits in the capacity to feel pleasure and take interest in things.
Depressivity	Feelings of being down, miserable, and/or hopeless; difficulty recovering from such moods; pessimism about the future; pervasive shame and/or guilt; feelings of inferior self-worth; thoughts of suicide and suicidal behavior.
Restricted affectivity	Little reaction to emotionally arousing situations; constricted emotional experience and expression; indifference and aloofness in normatively engaging situations.
Suspiciousness	Expectations of – and sensitivity to – signs of interpersonal ill-intent or harm; doubts about loyalty and fidelity of others; feelings of being mistreated, used, and/or persecuted by others.
ANTAGONISM (vs. Agreeableness)	Behaviors that put the individual at odds with other people, including an exaggerated sense of self-importance and a concomitant expectation of special treatment, as well as a callous antipathy toward others, encompassing both an unawareness of others' needs and feelings and a readiness to use others in the service of self-enhancement.
Manipulativeness	Use of subterfuge to influence or control others; use of seduction, charm, glibness, or ingratiation to achieve one's ends.
Deceitfulness	Dishonesty and fraudulence; misrepresentation of self; embellishment or fabrication when relating events.

Grandiosity	Believing that one is superior to others and deserves special treatment; self-centeredness; feelings of entitlement; condescension toward others.
Attention seeking	Engaging in behavior designed to attract notice and to make oneself the focus of others' attention and admiration.
Callousness	Lack of concern for the feelings or problems of others; lack of guilt or remorse about the negative or harmful effects of one's actions on others.
Hostility	See Negative Affectivity.
DISINHIBITION (vs. Conscientiousness)	Orientation toward immediate gratification, leading to impulsive behavior driven by current thoughts, feelings, and external stimuli, without regard for past learning or consideration of future consequences.
Irresponsibility	Disregard for – and failure to honor – financial and other obligations or commitments; lack of respect for – and lack of follow through on – agreements and promises; carelessness with others' property.
Impulsivity	Acting on the spur of the moment in response to immediate stimuli; acting on a momentary basis without a plan or consideration of outcomes; difficulty establishing and following plans; a sense of urgency and self-harming behavior under emotional distress.
Distractibility	Difficulty concentrating and focusing on tasks; attention is easily diverted by extraneous stimuli; difficulty maintaining goal focused behavior, including both planning and completing tasks.
Risk taking	Engagement in dangerous, risky, and potentially self-damaging activities, unnecessarily and without regard to consequences; lack of concern for one's limitations and denial of the reality of personal danger; reckless pursuit of goals regardless of the level of risk involved.
Rigid perfectionism (lack of)	Rigid insistence on everything being flawless, perfect, and without errors or faults, including one's own and others'

	performance; sacrificing of timeliness to ensure correctness in every detail; believing that there is only one right way to do things; difficulty changing ideas and/or viewpoint; preoccupation with details, organization, and order. The <i>lack of this facet characterizes low levels of Disinhibition.</i>
PSYCHOTICISM (vs. Lucidity)	Exhibiting a wide range of culturally incongruent odd, eccentric, or unusual behaviors and cognitions, including both process (e.g. perception, dissociation) and content (e.g., beliefs).
Unusual beliefs and Experiences	Belief that one has unusual abilities, such as mind reading, telekinesis, thought-action fusion, unusual experiences of reality, including hallucination-like experiences.
Eccentricity	Odd, unusual, or bizarre behavior, appearance, and/or speech; having strange and unpredictable thoughts; saying unusual or inappropriate things.
Cognitive and perceptual Dysregulation	Odd or unusual thought processes and experiences, including depersonalization, derealization, and dissociative experiences; mixed sleep-wake state experiences; thought-control experiences.

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The AMPD uses different combinations of trait facets to define different PDs. For OCPD, the relevant AMPD facets are rigid perfectionism (from the disinhibition vs. compulsivity domain), perseveration (from the negative affectivity domain), intimacy avoidance and restricted affectivity (both from the detachment domain). More specifically, a diagnosis of OCPD will be made if an individual exhibits elevated levels of rigid perfectionism, in addition to two of the three other facets.

Measurement of Criterion B. In order to operationalise the facets associated with this dimensional personality model, members of the P&PD Work Group developed the Personality Inventory for DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, &

Skodol, 2012). This self report measure includes scales for each of the 25 trait facets used in the AMPD.

The PID-5 has demonstrated acceptable internal consistency for all domain and trait facet scales, and been found to be a reliable measure for use with community samples, with Cronbach's alpha values greater than 0.70 for trait facet scales, and greater than 0.90 for domain scales (Fossati, Krueger, Markon, Borroni, & Maffei, 2013). Some PID-5 scales (such as the suspiciousness scale) have demonstrated lower alphas in some studies (De Clercq et al., 2013), suggesting that the scale should potentially be lengthened in future PID-5 revisions. Variants of the PID-5, such as an informant form (PID-5 IRF; Markon, Quilty, Bagby, & Krueger, 2013), and brief form (PID-5-BF; Krueger, Derringer, Markon, Watson, & Skodol, 2013) have also been developed.

Overall, the PID-5 has also demonstrated good construct validity, overlapping with personality constructs assessed using established models of personality (Al-Dajani, Gralnick, & Bagby, 2016). For example, the PID-5 has demonstrated convergence with the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992) scales (Quilty, Ayearst, Chmielewski, Pollock, & Bagby, 2013), the NEO-PI-3 (De Fruyt et al., 2013; McCrae, Costa, & Martin, 2005), the Five Factor Model Rating Form (Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006; Thomas et al., 2013), the HEXACO model (Ashton, Lee, de Vries, Hendrickse, & Born, 2012), and the Minnesota Multiphasic Personality Inventory-2-Restructured Form based Personality Psychopathology Five (Anderson et al., 2013).

Limitations of the Alternative Model of Personality Disorders

While generally well received, the AMPD has been the subject of limited criticism. Some researchers have argued that the hybrid categorical-dimensional form of the AMPD did not go far enough, and that the literature suggests that a wholly

dimensional model should have been adopted (Miller & Lynam, 2013). One response to this criticism is that while the long-term goal should be the adoption of a fully dimensional model, a hybrid categorical-dimensional model is a useful transitional step, as it provides a “bridge” between traits and the traditional PD categories (Miller, 2012). Others have questioned the AMPD’s ability to be applied in a clinical setting (Pull, 2014; Verheul, 2012), as well as the model’s reliability and validity (Porter & Rislér, 2014; Verheul, 2012). For example, Verheul (2012) argues that it is difficult for those without extensive knowledge of particular theoretical frameworks (including trait psychology) to apply Criterion B. He suggests that this difficulty is likely to lead to poor inter-rater reliability.

The way in which the AMPD incorporates impairment into the definition of PDs has also been the subject of criticism. The role of personality dysfunction or impairment has been a contentious issue since the publication of DSM-III, which introduced a formal impairment criterion for PDs. This impairment criterion related to the “external” consequences of personality, i.e. “significant impairment in social or occupational functioning or subjective distress” (APA, 1980, p. 305). A similar formulation was used in the DSM-IV (APA, 1994) and in Section II of DSM-5 (APA, 2013). By contrast, the AMPD impairment criterion is largely directed at internal dysfunction within the individual (Clark & Ro, 2014). Critics warn that assessing internal dysfunction relies more heavily on the drawing of inferences and the formation of subjective evaluations than does assessing external consequences, leading to problems of inter-rater reliability (Leising & Zimmermann, 2011; Porter & Rislér, 2014).

These criticisms notwithstanding, the AMPD is widely perceived as an improvement on the traditional model, offering a more comprehensive and accurate system for PD diagnosis (Anderson, Sellbom, Sansone, & Songer, 2016; Krueger & Markon, 2014; Morey, Skodol, & Oldham, 2014; Widiger, 2013), as well as providing

more clinically useful information for treatment planning (Morey & Benson, 2016). Recognising this potential, researchers are conducting a growing number of studies aimed at improving, validating and operationalising the AMPD, with a focus on Criteria B (traits) and A (impairment) (Gunderson, 2013; Miller & Lynam, 2013; Porter & Risler, 2014; Skodol, Morey, Bender, & Oldham, 2013).

Traits (Criterion B). As mentioned above, this research has included studies psychometrically validating the PID-5 (Quilty et al., 2013; Wright et al., 2012). Research has also shown strong associations between the constellations of traits used in the AMPD to define PDs and the corresponding traditional PD criteria for those PDs (Anderson, Snider, Sellbom, Krueger, & Hopwood, 2014; Bach, Anderson, & Simonsen, 2017; Few et al., 2013; Hopwood, Thomas, Markon, Wright, & Krueger, 2012; Morey, Benson, & Skodol, 2016; Sellbom, Sansone, Songer, & Anderson, 2014), suggesting continuity between the two models.

A recent review by Al-Dajani et al. (2016), however, highlights potential problems with the measure designed to operationalise Criterion B. These authors acknowledge that the psychometric properties of the PID-5 show some promise and that the measure demonstrates convergence with existing personality instruments. However, the authors also note possible issues related to the measure's discriminant validity and clinical utility, which are yet to be addressed. Specifically, the authors suggest that future research should focus on providing clinicians with standardised methods of scoring, ways of evaluating profile accuracy, as well as norms against which clinicians can effectively interpret scores.

Impairment (Criterion A). As already mentioned, the AMPD ascribes much more significance to impairment than does the traditional model, and introduces the concept of disorder specific impairment. This aspect of the AMPD has received much less critical attention than has the shift in Criterion B from behaviours to traits. There is,

however, an important question about the extent to which maladaptive personality traits can be meaningfully distinguished from personality impairment. Such differentiation can be difficult because, empirically speaking, traits and impairment have common components (Clark & Ro, 2014). For instance, problems relating to the development and maintenance of close interpersonal relationships (a form of Criterion A impairment) is also characteristic of intimacy avoidance (a Criterion B trait from the detachment domain). While the evidence base is not extensive, the balance of research suggests that traits and functional personality impairment can be considered as separate constructs (Clark & Ro, 2014; Ro & Clark, 2013). This finding has been replicated in both clinical and community samples (Berghuis, Kamphuis, & Verheul, 2012; Calabrese & Simms, 2014; Zimmermann et al., 2015). The degree to which impairment can be separated from personality traits, however, remains unclear, as does the value of seeking to further differentiate disorder specific impairment from general impairment.

General Impairment. Using the PID-5 and the LPFS, Few et al. (2013) examined the predictive utility of both traits and impairment in a clinical sample ($n = 109$). They found that dimensional traits demonstrated incremental validity in the prediction of traditional PDs, but that LPFS impairment ratings did not. This result may, however, be related to the use of the LPFS. Other studies, using different measures of Criterion A, have reached different conclusions. In a study of 159 Belgian psychiatric patients, personality traits and impairment criteria (measured by the Severity Indices of Personality Problems (SIPP)) were strongly correlated with each other, but showed significant incremental validity over and above each other (Bastiaansen, De Fruyt, Rossi, Schotte, & Hofmans, 2013). This finding was replicated by Hentschel and Pukrop (2014), who found that both traits and impairment (measured using the General Assessment of Personality Disorder) provided mutual incremental validity over one another among 149 patients from rural German psychiatric clinics. A similar pattern has

been found in university samples. For example, Calabrese and Simms (2014) found that baseline ratings for a measure of general impairment (the SIPP) added to the prediction of future psychosocial dysfunction above and beyond personality traits among 333 undergraduates. In combination, these studies suggest that general measures of personality dysfunction represent a construct distinct from that which is encapsulated by personality traits.

Disorder-Specific Impairment. As previously indicated, the AMPD assumes that each of the six PDs will be associated with specific types of impairment. At the time of writing, however, relatively few studies have examined the extent to which particular PDs are associated with particular types of personality impairment. The findings of those studies which have examined this relationship are inconsistent. Wygant and colleagues (2016) observed that measures of disorder specific impairment added incrementally to the prediction of Antisocial PD and psychopathy above and beyond the AMPD traits, among inmates in the United States. These findings, however, were not replicated by Anderson and Sellbom (2016), who found that with the exception of AvPD, self-reported disorder-specific impairment was unable to contribute to the prediction of traditional PDs in a large American university sample ($n = 347$). Furthermore, Sellbom, Carmichael, and Liggett (2017) found support for the use of a general measure of impairment to augment the prediction of AvPD, but did not find support for the use of a disorder-specific measure of impairment.

OCPD in the Alternative Model of Personality Disorders

As mentioned above, the AMPD recognises six PDs. Criteria C to G are common to all PDs. The six PDs are differentiated by disorder-specific constellations of trait facets (Criterion B) and disorder-specific forms of impairment (Criterion A). OCPD is defined in this schema as follows.

Personality Trait Facets Relevant to OCPD (Criterion B). Criterion B is met for OCPD when the individual demonstrates elevated levels of rigid perfectionism, in addition to at least two of the following pathological personality traits: perseveration, intimacy avoidance and restricted affectivity. Defining OCPD by reference to this constellation of trait facets has received limited supported in several studies using community and clinical samples. There is strong support for the inclusion of rigid perfectionism and, to a lesser extent, perseveration. The evidence for the inclusion of intimacy avoidance and restricted affectivity is more equivocal. Some studies have also suggested that other traits, outside the four traits currently proposed in the AMPD for OCPD, should be included.

Using the PID-5 among a large undergraduate sample of 808 participants, Hopwood and colleagues (2012) found that, generally, the constellations of traits used to define specific PDs in the AMPD adequately described the corresponding disorders in the traditional model. With regard to OCPD, however, only two of the four proposed AMPD traits (rigid perfectionism and perseveration) were moderately correlated with the traditional model of OCPD, as indexed by the Personality Disorder Questionnaire-4+ (PDQ-4+; Hyler, 1994). The remaining two facets (restricted affectivity and intimacy avoidance) were not found to be meaningfully associated with the traditional model of OCPD (Hopwood et al., 2012). Two additional trait facets not included in the proposed constellation for OCPD – emotional lability and distractibility – were also significantly correlated with OCPD. In another landmark study, Anderson and colleagues (2014) revealed similar results among 463 American university students. They also found that rigid perfectionism and perseveration predicted traditional OCPD scores, but that intimacy avoidance and restricted affectivity did not. An additional three facets (anxiousness, hostility and submissiveness) were also found to be correlated with traditional OCPD. However, of these three additional traits, only anxiousness and

hostility were found to uniquely increment the prediction of OCPD in a regression model (Anderson, Snider, et al., 2014).

In a large Italian study of 710 community dwelling participants, rigid perfectionism, perseveration and suspiciousness predicted a substantial amount of variance in traditional OCPD, as indexed by the PDQ-4+. Restricted affectivity and intimacy avoidance, however, were not found to be meaningfully associated with traditional OCPD (Fossati et al., 2013).

In a more recent study, the ability of the AMPD personality traits to predict traditional personality disorders was tested among a Finnish community sample of 509 participants (Bastiaens, Smits, De Hert, Vanwallegem, & Claes, 2016). Using the PID-5 and the Assessment of DSM-IV Personality Disorders (ADP-IV; Schotte, De Doncker, Vankerckhoven, Vertommen, & Cosyns, 1998) all four traits were correlated with traditional OCPD, with rigid perfectionism and perseveration having the strongest associations. Furthermore, in a regression model, the traits of submissiveness, withdrawal and depressivity were also found to augment the prediction of OCPD.

There have been fewer studies conducted using clinical samples. Those that have been conducted confirm, in general terms, the patterns observed in non-clinical samples. In a sample of 454 current or recent psychiatric patients, all four traits were associated with traditional OCPD, with rigid perfectionism being strongly, and perseveration being moderately correlated (Yam & Simms, 2014). Anxiousness was also found to be moderately correlated with traditional OCPD. Rigid perfectionism, however, was the only trait to predict traditional OCPD scores in a regression model. In another clinical sample (one relied upon by the DSM-5 Work Group in determining the trait profile for OCPD in the AMPD), Morey et al. (2016) obtained data from 337 clinicians, each of whom rated one of their patients on all aspects of both the DSM-IV and DSM-5 models of personality. Results revealed that the four traits that came to be proposed for OCPD

in the AMPD demonstrated higher correlations with traditional OCPD traits than all other traits. Rigid perfectionism was also found to have the largest effect size magnitude.

As the foregoing demonstrates, rigid perfectionism and perseverance are the two trait facets most relevant to OCPD. Additional research is required to determine the significance of the other traits currently included in the alternative model of OCPD, and whether other traits may also be relevant. Such research could help improve the AMPD operationalisation of OCPD and achieve the desired continuity between the traditional and alternative models.

OCPD Specific Impairment (Criterion A). In order to meet Criterion A for OCPD, particular, disorder-specific, forms of “[m]oderate or greater impairment in personality functioning, manifested by characteristic difficulties” in two or more of the four areas of identity, self-direction, empathy and intimacy must be shown (APA, 2013, p. 768). The required forms of impairment are outlined in Table 1.2.

Table 1.2

Section III OCPD-Specific Impairment (Criterion A)

Identity	Sense of self derived predominantly from work or productivity; constricted experience and expression of strong emotions.
Self-direction	Difficulty completing tasks and realizing goals, associated with rigid and unreasonably high and inflexible internal standards of behavior; overly conscientious and moralistic attitudes.
Empathy	Difficulty understanding and appreciating the ideas, feelings, or behaviors of others.
Intimacy	Relationships seen as secondary to work and productivity; rigidity and stubbornness negatively affect relationships with others.

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As discussed above, relatively few studies have examined the extent to which PDs are associated with disorder-specific types of impairment. To the authors' knowledge, Anderson and Sellbom (2016) is the only study to have investigated the relationship between the traditional model of OCPD and the OCPD specific impairment described in the AMPD. That study found that a measure of OCPD specific impairment did not augment the prediction of traditional OCPD beyond traits.

Self-Report and Informant Measures of Personality

The method by which data is collected is an important factor in the assessment of personality dysfunction. At present, most research into personality pathology is based on self-report measures only (for example, questionnaires and diagnostic interviews) (Clark, 2007). While reliance on self-report data is common in many domains of psychological research, it creates particular problems in the area of personality research (Clark, 2007; Biesanz, West, & Millevoi, 2007; Watson, Hubbard, & Wiese, 2000; Widiger & Samuel, 2005). Personality disordered individuals often experience impairment in the domain of interpersonal functioning, which can bring them into regular and repeated conflict with other people. Interpersonal problems are frequently exacerbated when the personality disordered individual is inflexible, rigid, and unable to adapt to various social situations or challenges. Furthermore, it is not uncommon for individuals with PDs to be unable to see themselves as having interpersonal difficulties, instead ascribing responsibility for their social difficulties to those around them. As a result, personality disordered individuals can be unreliable narrators of their own experience, and there is, at best, only a modest correlation between the ways in which individuals with PDs view themselves and the ways in which others view them (Bernstein et al., 1997; Dreessen, Hildebrand, & Arntz, 1998; Klonsky, Oltmanns, & Turkheimer, 2002). There is also evidence that informant reports may demonstrate greater criterion-related validity in specific situations (Connelly & Ones, 2010;

Duckworth & Kern, 2011; Oh, Wang, & Mount, 2011). As such, when seeking to form a picture of an individual's personality pathology, it may be inappropriate to rely solely on self-report measures, and informant reports assume a pronounced significance.

The over-reliance on self-report data in the field of personality research likely results in biased and misleading information and in the exclusion of potentially relevant information; informant reports provide insights different to those provided by self-report data. Correlations between self and informant reports of individual personality traits are often modest. A meta-analysis investigating this found that the median correlations for individuals with both Cluster A and Cluster C PDs was .35, and for individuals with Cluster B PDs was .45 (Klonsky et al., 2002), suggesting that there can be considerable differences in the way that personality disordered individuals view themselves in comparison to how others view them. Differences have also been observed at the level of individual personality traits. For example, better agreement between self and informant reports has been established for extraversion, than for the other Big-Five personality traits (Kenny, 1994). Only limited research has been conducted into the concordance between self and informant reports for the AMPD traits relevant to OCPD (Ashton, Vries, & Lee, 2017; Jopp & South, 2015; Markon et al., 2013). Additional research into this question is required.

The complexity of personality structure makes comprehensive assessment from a single perspective difficult (Clark, 2007). A more comprehensive understanding of PDs requires the integration of numerous sources of information such as self-report measures, well-known informant reports and objective assessments by clinicians with a broad knowledge of the PD literature. The integration of these sources of information has the potential to reduce bias and improve the clinical picture of PDs.

Rationale for Research Program

As outlined above, there are a wide range of views on how best to conceptualise PDs generally, and OCPD specifically. The AMPD represents only one of many alternative conceptualisations. While acknowledging that the debate about how best to conceptualise PDs is broader than the debate about the adequacy of the AMPD, this thesis does not attempt to settle the broader debate. Rather, its focus is on the alternative model currently most likely to attain widespread acceptance – the AMPD.

For certain PDs, particularly borderline and antisocial PDs, the research on the AMPD is well developed (Anderson, Sellbom, Wygant, Salekin, & Krueger, 2014; Miller, Morse, Nolf, Stepp, & Pilkonis, 2012; Sellbom et al., 2014; Wygant et al., 2016). For other PDs, including OCPD, the research base is more limited. Additional research into the alternative model of OCPD is therefore required.

One area requiring further research is the question of the extent to which the traits specified in the alternative model for OCPD (Criterion B) predict traditional OCPD. This question can be extended to investigate whether additional traits not currently incorporated in the alternative model for OCPD could augment the prediction of traditional OCPD scores. Due to the inconsistent answers to these questions in the literature, it will be important to address this research question in both community and clinical samples. It is important to understand the degree of continuity between the two models of OCPD, as the extent of the continuity will dictate the extent to which researchers and clinicians can continue to rely on the existing OCPD literature if the alternative model is adopted.

Additional research on Criterion A (functional impairment) is also needed. Specifically, an OCPD-specific measure of impairment needs to be developed and validated to address the question of whether disorder specific impairment adds predictive utility above and beyond that of the trait facets specified for OCPD. The

development of an OCPD-specific measure of impairment will also help to address the question of whether disorder-specific impairment is a necessary feature of the AMPD, or whether a general measure of impairment (such as the LPFS) is sufficient.

Finally, the existing OCPD literature (and PD literature more broadly) is over-reliant on self-report measures. Current understandings of the disorder need to be confirmed using a wider array of data sources, including data obtained using informant report measures. To the author's knowledge, there is no literature on the extent to which scores on self-report and informant measures of the alternative model of OCPD correspond. The following four studies are directed at filling these gaps in the literature.

Study One, titled "Validation of self-report impairment measures for section III obsessive-compulsive and avoidant personality disorders", examined the validity of two newly developed disorder-specific impairment scales for OCPD and AvPD. This study investigated the extent to which it is useful to measure disorder-specific impairment, and whether it is useful to maintain a distinction between personality impairment in the self and interpersonal domains. Study Two, titled "Examining the DSM-5 section III criteria for obsessive-compulsive personality disorder in a community sample" evaluated the extent to which the trait-based operationalisation of the alternative model of OCPD describes the same construct as that captured by the traditional model. This study also evaluated the unique contributions of individual personality traits to scores on measures of traditional OCPD. Furthermore, the study examined whether scores on the measure of OCPD specific impairment validated in Study One augmented personality traits in predicting traditional OCPD. Study Three, titled "Continuity between DSM-5 section II and section III personality traits for obsessive-compulsive personality disorder", built upon Study Two by using a clinical sample to investigate the continuity between the traditional and alternative operationalisations of OCPD. This study also explored whether additional traits could be incorporated into the alternative

model of OCPD to improve the conceptualisation of the disorder. Finally, Study Four, titled “Examining the DSM-5 alternative model of personality disorders’ operationalisation of obsessive-compulsive personality disorder in a mental health sample” considered the relationship between self-report and informant reports of the traditional and alternative models of OCPD among a sample of individuals who were currently seeking, or had sought treatment in the previous 12 months for mental health conditions. This study evaluated the optimal trait profile for OCPD, and the extent to which self-report and informant measures of personality corresponded. Extending the findings of Study One, this study also investigated whether measures of OCPD-specific impairment were better than general measures of impairment of personality functioning at predicting traditional OCPD.

Each study targeted specific gaps in the literature, and Studies Two to Four built upon the findings of earlier studies in the research program. Collectively, these four studies sought to broaden and improve our understanding and conceptualisation of OCPD.

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Chapter Two – Study One**Validation of Self-Report Impairment Measures for Section III****Obsessive–Compulsive and Avoidant Personality Disorders**

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J. Liggett	65%	Planning, designing, data collection, statistical analysis, interpreting results, drafting and revising of manuscript.
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A. Smith	4%	Statistical analysis.
M. Sellbom	25%	Planning, designing, interpreting results, comments on manuscript drafts.

Abstract

This study examined the validity of newly developed disorder-specific impairment scales (IS), modeled on the Level of Personality Functioning Scale, for obsessive-compulsive (OCPD) and avoidant (AvPD) personality disorders. The IS focused on content validity (items directly reflected the disorder-specific impairments listed in DSM-5 Section III) and severity of impairment. A community sample of 313 adults completed personality inventories indexing the DSM-5 Sections II and III diagnostic criteria for OCPD and AvPD, as well as measures of impairment in the domains of self- and interpersonal functioning. Results indicated that both impairment measures (for AvPD in particular) showed promise in their ability to measure disorder-specific impairment, demonstrating convergent validity with their respective Section II counterparts and discriminant validity with their noncorresponding Section II disorder and with each other. The pattern of relationships between scores on the IS and scores on external measures of personality functioning, however, did not indicate that it is useful to maintain a distinction between impairment in the self- and interpersonal domains, at least for AvPD and OCPD.

Introduction

Section III of the Diagnostic and Statistical Manual for Mental Disorders (5th ed. [DSM-5]; American Psychiatric Association, 2013), outlines an alternative model for the diagnosis of personality disorders (PDs). This model proposes a shift from the categorical diagnostic approach adopted in previous iterations of the DSM (and retained in Section II of DSM-5), to a hybrid dimensional-categorical model that places less emphasis on behaviors associated with PDs, and greater emphasis on dimensional personality traits and impairments in functioning (Krueger et al., 2011; Skodol, 2012). In Section III, the presence of both Criterion A (impaired functioning) and Criterion B (pathological personality traits) is required for a PD diagnosis.

Although the association between Section III personality traits and Section II PDs has been the focus of numerous recent studies (Anderson, Snider, Sellbom, Krueger, & Hopwood, 2014; Fossati, Krueger, Markon, Borroni, & Maffei, 2013; Sellbom, Sansone, Songer, & Anderson, 2014), the relevance of impairment to PDs has received less attention. Section III parses impairment in personality functioning into self-functioning and interpersonal functioning. The former encapsulates impairment in the areas of identity and self-direction, whereas the latter includes impairment in the areas of empathy and intimacy (American Psychiatric Association, 2013). Section III makes the assumption that each PD causes idiosyncratic impairments to self- and interpersonal functioning (American Psychiatric Association, 2013). For example, the impairment associated with obsessive–compulsive personality disorder (OCPD) in the area of identity is described as “Sense of self derived predominantly from work or productivity” and “having constricted experience and inhibited expression of strong emotions” (American Psychiatric Association, 2013, p. 768), whereas for avoidant personality disorder (AvPD), impairment in the area of identity is described as “Low self-esteem associated with self-appraisal as socially inept, personally unappealing, or

inferior” and “excessive feelings of shame” (American Psychiatric Association, 2013, p. 765).

Section III specifies six PD diagnoses (antisocial, avoidant, borderline, narcissistic, obsessive–compulsive, and schizotypal), which are operationalized based on elevated levels of certain dimensional personality trait facets (from the Section III trait model; Criterion B) in conjunction with the aforementioned impairment in functioning. For trait facet constellations that do not correspond with one of the aforementioned PD types, but nonetheless result in impairment, an additional PD diagnosis, personality disorder: trait specified, can be applied. In the Section III model, Criterion A (impairment) aims to capture the type and severity of personality dysfunction, whereas Criterion B (pathological traits) aims to provide information regarding personality style and trait levels (American Psychiatric Association, 2013).

For all PDs, to meet Criterion A, an individual must demonstrate “moderate or greater impairment” manifested by characteristic difficulties in two or more of the areas of identity, self direction, intimacy, and empathy (American Psychiatric Association, 2013, p. 761). However, whereas an instrument has been developed for the personality facets relevant to Criterion B (the Personality Inventory for the DSM-5 [PID-5]; Krueger, Derringer, Markon, Watson, & Skodol, 2012), no instrument currently exists to measure the disorder-specific impairment associated with each of the six PDs. The DSM-5 Personality and Personality Disorder Work Group did develop a clinician-rated measure of personality functioning, known as the Level of Personality Functioning Scale (LPFS; American Psychiatric Association, 2013), which measures impairment levels in the areas of identity, self-direction, intimacy, and empathy. This instrument, however, is a general measure of impairment, which does not provide disorder-specific information regarding an individual’s personality impairment.

The inclusion of PD-specific impairment criteria in Section III represents a departure from the diagnostic model codified in earlier versions of the DSM, as previously, a PD diagnosis simply required the presence of “clinically significant distress or impairment in social, occupational or other important areas of functioning” (American Psychiatric Association, 2013, p. 646). One reason for the inclusion of disorder-specific impairment in Section III is to enable better differentiation between PDs. The boundaries drawn around specific PD types in Section II have been criticized, given the high degree of comorbidity of PDs. One reason for this high degree of comorbidity is the transdiagnostic nature of the criteria used to define PDs. Thus, although many PDs in Section III continue to share traits, they are now better distinguished from each other by reference to distinct forms of impairment, which are not explicitly shared across disorders. No doubt some of these forms of impairment will be more closely related than others, but the inclusion of disorder-specific impairment should, to some extent, enable better differentiation of PDs. Of course, this remains an empirical question.

Only limited research, however, has explored the significance of impairment as a predictor of the presence of a PD, or the extent to which particular PDs are associated with particular impairment profiles. In a study comparing the level of psychosocial functioning in patients with four different PDs (schizotypal, borderline, avoidant, and obsessive–compulsive), different PDs were found to have different relationships to impairment in the domains of interpersonal, home, study, and recreation (Skodol et al., 2002). One difference observed was the strength of the relation. For example, OCPD was associated with a lower level of overall impairment (although still being sufficient to warrant a PD diagnosis) compared to schizotypal, borderline, and avoidant PDs. Further differences were observed in the type of impairment. Patients with schizotypal PD, for example, displayed greater interpersonal impairment than did patients with

borderline PD, but less impairment in the home, study, and recreation domains (Skodol et al., 2002). These results highlight the importance of measuring the type and strength of impairment across the various PDs.

The research into whether or not general impairment adds above and beyond the contribution of traits in the conceptualization of PDs is mixed. In one study involving 159 psychiatric patients, Bastiaansen, De Fruyt, Rossi, Schotte, and Hofmans (2013) endeavored to determine the incremental validity of functional impairment in relation to trait domains in explaining Section II PD variance. Personality traits and impairment were strongly correlated with one another, but also demonstrated significant incremental validity over and above each other. Similarly, researchers examined the relationship between Five-Factor Model personality traits and two general impairment inventories in a psychiatric sample of 424 patients (Berghuis, Kamphuis, & Verheul, 2012). This study found that traits and impairment could be distinguished from one another, but the researchers did not assess the incremental validity of impairment over traits. In contrast to these two studies, Calabrese and Simms (2014) found that broad dimensions of psychosocial dysfunction significantly overlapped with PD traits when simultaneously measured through self report methods in a study using 333 undergraduate student participants. Importantly, there are currently no self-report methods for indexing Criterion A or impairments specifically related to any PD, including OCPD or AvPD. This current inability to measure disorder-specific impairment makes it difficult, if not impossible, to operationalize the Section III PD model in practice.

The division of Criterion A's impairment into the domains of self- and interpersonal functioning is based on research findings that impairment in personality can be meaningfully divided into such domains (e.g., Ro & Clark, 2013). Impairment in the self- and interpersonal domains is considered distinct from impairment in basic

functioning (basic living skills; Ro & Clark, 2013). The latter has not been considered relevant to the diagnosis of PDs, and so is not referred to in Criterion A.

The DSM-5 Personality and Personality Disorder Work Group considered that all PDs can be conceptualized as involving distorted conceptions of the self and of others (Bender, Morey, & Skodol, 2011). Indexing these distortions, then, should provide a means of determining the presence and severity of a PD. A review of personality psychopathology measures bore out this hypothesis, finding support for the utility of measures that discriminate between the self and other domains in PD diagnosis (Bender et al., 2011). This finding was supported by subsequent studies. In one study, scores on a questionnaire (comprised of items from existing instruments on personality pathology related to self- and interpersonal functioning) were significantly related to DSM–IV PD diagnoses and PD comorbidity (Morey et al., 2011). In another, levels of impairment, as measured by the LPFS (American Psychiatric Association, 2013), correlated with DSM–IV PD diagnoses in a U.S. sample of 337 patients whose mental health was assessed by clinicians (Morey, Bender, & Skodol, 2013).

In a recent study, Clark and Ro (2014) questioned the empirical basis for a conventional division of impairment into three domains (basic living skills, quality of life, and personality). In a mixed community–patient sample of 402 participants, they conducted factor analyses and investigated interrelations among these domains of impairment using multiple self-report measures. Their data suggested that quality of life and personality can be collapsed into a single domain. To the extent that further meaningful distinctions can be made, they suggested that this domain can be broken down into self- and interpersonal domains. Although conceptually clear, the distinction between the self- and interpersonal domains received only limited support in their results.

This Study

The aim of this study was to develop and examine the utility of disorder-specific impairment measures for two PDs: OCPD and AvPD. We chose to focus on OCPD and AvPD for two main reasons. First, these two PDs are thematically linked (they are the only Cluster C PDs from the DSM–IV to be included in Section III). Second, they are two of the more prevalent PDs in both community and mental health settings (Ekselius, Tillfors, Furmark, & Fredrikson, 2001; Torgersen, Kringlen, & Cramer, 2001); indeed, Jackson and Burgess (2000) indicated that OCPD and AvPD account for over 80% of persons with PDs in the community. In a Norwegian community sample, Torgersen et al. (2001) found the prevalence rates for AvPD and OCPD to be 5% and 2%, respectively. In developing the OCPD and AvPD Impairment Scales, we focused on two areas: (a) content validity (the items included in the scales for each disorder were directly reflective of the specific impairments listed in DSM-5 Section III), and (b) severity of impairment (the scales included items that assessed the severity level for each specific type of impairment). Broadly, the development was modeled after the structure of the LPFS.

The following hypotheses were tested. First, we hypothesized that there would be observable differences between scores on the OCPD Impairment Scale (OCPD–IS) and the AvPD Impairment Scale (AvPD–IS), demonstrating discriminant validity. More specifically, we expected that the OCPD–IS scale scores would be more strongly correlated with each other than with those of the AvPD–IS, and vice versa. Second, we hypothesized that OCPD–IS and AvPD–IS scores would be positively associated with measures of Section II OCPD and AvPD, respectively. The remainder of our hypotheses related to expected relationships between the impairment scales and external measures of functioning in the self-, interpersonal, and basic living skills domains. Table 2.1 indicates the scales used to measure impairment in each of these domains. Our third

hypothesis was that, in accordance with the observations of the differences between self- and interpersonal functioning found by Clark and Ro (2014), scores on the OCPD–IS and AvPD–IS Self domains (and corresponding facets, identity and self-direction) would be meaningfully associated with external criterion measures of impairment in self-functioning, and that scores on the OCPD–IS and AvPD–IS Interpersonal domains (and corresponding facets, empathy and intimacy) would be meaningfully associated with external criterion measures of impairment in interpersonal functioning (demonstrating convergent validity). The OCPD–IS and AvPD–IS Self domain scales should be less strongly correlated with external criteria reflecting interpersonal functioning and vice versa (demonstrating discriminant validity). Finally, we hypothesized that scores on the OCPD–IS and AvPD–IS Self and Interpersonal domains would be less strongly correlated with external criterion measures of basic living scales than with measures of self- and interpersonal functioning, again demonstrating discriminant validity (see Table 2.1).

Table 2.1

Impairment Classifications for External Criterion Measures

Measure	Scale	Self	Interpersonal	Basic living skills
SFQ	Social functioning	+	+	
MDPF	Non-cooperativeness		+	
	Non-coping	+		
WHO-QOL	Physical health			+
BREF	Psychological	+		
	Social relationships		+	
	Environment			+
WHODAS-2	Understanding and communicating			+
	Getting around			+
	Self-care			+
	Getting along with people			+
	Life activities			+
	Participation in society			+

Note. WHO-QOL BREF: World Health Organization Quality of Life-Brief Form, WHODAS-2: World Health Organization Disability Assessment Scale 2.0, SFQ: Social Functioning Questionnaire, MDPF: Measure of Disordered Personality Functioning.

+: indicates the domain(s) of impairment assessed by each scale.

Method

Participants

This study employed two participant samples: first-year psychology students from the Australian National University (ANU, $n = 42$), and a general population from the United States ($n = 271$). This sample of 313 participants was initially derived from a total of 459 participants who completed the survey; however, due to inconsistencies

observed in validity scale scores, 146 participants were excluded from the data set. More specifically, an infrequent item scale was used to exclude participants who endorsed two or more highly improbable survey items; for example, “When I see the color orange I taste mustard,” and “I enjoy stealing from graves.” Variable Response and True Response Inconsistency Scales from the Multidimensional Personality Questionnaire–Brief Form (Patrick, Curtin, & Tellegen, 2002) were also employed to identify and exclude participants who scored above 2 SD from the mean in this sample. In addition, a self-rated measure of English proficiency was used to identify individuals who were unable to understand the survey content, despite all inventories being written at the levels of sixth-grade English. Participants who endorsed their level of English at Level 5 or below (out of a maximum of 7) had their responses removed from the data set. This provided more generalizable and valid results via the removal of measurement error due to uncooperative, inconsistent, or English proficiency difficulties.

U.S. participants completed the survey online, and ANU students completed the survey on designated Research School of Psychology computers in person. The survey was designed in Qualtrics, and all participants were directed to the survey via URL link. This project was granted approval from the ANU Human Research Ethics Committee.

Individuals recruited from the ANU chose to receive either a financial incentive or course credit for their participation in the study. Individuals from the U.S. sample were recruited via Amazon’s Mechanical Turk (MTurk) and received a financial reward for their participation. The sample consisted of 161 men and 152 women, with a mean age of 33.48 years ($SD = 11.51$). The majority of participants were White American or White Australian (52.4%), with 22% from other English-speaking countries and 25.6% from non-English-speaking countries. The most commonly endorsed level of education

was bachelor's degree (44.4%), and 40.25% earned an annual salary of less than \$10,000.¹

In terms of diagnostic status, we considered the proportion of individuals who would score above cutoff on both of our Section II PD measures (described later); this resulted in 38% ($n = 119$) for AvPD and 33% ($n = 103$) for OCPD. However, self-report measures are notorious for substantial false positive rates; as such, we also examined the proportion of these individuals who also scored in the moderate range of our disorder specific impairment measures (described later). These procedures resulted in 11% ($n = 34$) for AvPD and 4% ($n = 13$) for OCPD, which are somewhat higher than community studies (Torgersen et al., 2001), and indicate a clear dysfunctional range on these constructs in this sample.

Measures

Table 2.2 shows the descriptive statistics and internal consistency reliabilities of all study measures.

¹ The two samples were initially analyzed independently. However, a similar pattern of results was found between the ANU student and U.S. community samples, and no meaningful differences were identified. The two samples were therefore combined. Correlation matrices from both samples can be provided on request.

Table 2.2

Means, Standard Deviations, Ranges, and Internal Consistency Estimates for all Scales

Variable	M	SD	Min	Max	AIC	α	Skew	Kurtosis
OCPD-IS								
Identity	0.83	0.89	0.00	4.00	.29	.44	1.04	0.77
Self Direction	0.97	0.96	0.00	4.00	.38	.55	0.94	0.39
Intimacy	0.81	0.84	0.00	4.00	.48	.65	1.50	2.20
Empathy	0.56	0.98	0.00	4.00	– ^a	–	1.90	2.70
Self	0.89	0.77	0.00	3.75	.29	.62	0.91	0.73
Interpersonal	0.68	0.75	0.00	3.50	.37	.64	1.40	1.61
Total	5.77	4.67	0.00	23.00	.29	.74	0.91	0.14
AvPD-IS								
Identity	0.94	1.04	0.00	4.00	.69	.81	1.20	0.86
Self Direction	1.20	1.02	0.00	4.00	.43	.60	0.76	-0.03
Intimacy	0.91	1.02	0.00	4.00	.55	.71	1.09	0.49
Empathy	0.93	0.95	0.00	4.00	.51	.68	1.13	0.86
Self	1.07	0.96	0.00	4.00	.56	.83	0.96	0.51
Interpersonal	0.92	0.90	0.00	4.00	.81	.52	1.10	1.09
Total	7.98	6.99	0.00	32.00	.52	.90	0.99	0.70
Sec-II OCPD	3.57	1.53	0.00	7.50	.12	.68	-0.01	-0.32
Sec-II AvPD	3.58	1.87	0.50	7.00	.29	.84	0.15	-1.03
WHOQOL-BREF								
Physical health	71.87	18.09	7.14	100.00	.39	.80	-0.79	0.85
Psychological	85.86	21.58	18.75	118.75	.53	.87	-0.78	0.34
Social relationships	87.01	23.03	18.75	118.75	.52	.76	-0.82	0.64
Environment	86.69	16.59	28.13	118.75	.42	.85	-0.41	0.43
WHODAS-2								
Understanding and communicating	2.03	1.02	1.00	5.00	.75	.94	0.86	-0.27
Getting around	1.73	0.90	1.00	5.00	.73	.91	1.20	0.39
Self-care	1.47	0.79	1.00	4.75	.76	.88	1.90	2.81
Getting along with people	1.78	0.88	1.00	5.00	.66	.86	1.01	0.33
Life activities	2.27	0.98	1.00	5.14	.74	.94	0.95	0.10

Variable	M	SD	Min	Max	AIC	α	Skew	Kurtosis
Participation in society	1.81	0.87	1.00	4.50	.68	.93	0.97	-0.19
Total	1.85	0.78	1.00	4.62	.62	.98	1.20	0.39
SFQ	1.46	0.58	0.50	3.13	.25	.73	0.39	-0.35
MDPF								
Non-cooperativeness	0.96	0.51	0.20	2.80	.41	.88	0.29	-0.06
Non-coping	1.53	0.57	0.50	3.40	.30	.85	0.21	-0.08
Total	1.25	0.47	0.35	2.50	.32	.90	-0.12	-0.66

Note. AIC = Average inter-item correlation. OCPD-IS: Obsessive-Compulsive Personality Disorder Impairment Scale, AvPD-IS: Avoidant Personality Disorder Impairment Scale, Sec-II OCPD: Section II OCPD, Sec-II AvPD: Section II AvPD, WHO-QOL BREF: World Health Organization Quality of Life-Brief Form, WHODAS-2: World Health Organization Disability Assessment Scale 2.0, SFQ: Social Functioning Questionnaire, MDPF: Measure of Disordered Personality Functioning.

^a As this variable was comprised of one item only, Cronbach's alpha and mean inter-item correlations were unable to be calculated.

Structured Clinical Interview for the DSM–IV Axis II Disorders–

Personality Questionnaire. The Structured Clinical Interview for the DSM–IV Axis II Disorders–Personality Questionnaire (SCID–II–PQ; First, Gibbon, Spitzer, Williams, & Benjamin, 1997) is a self-report inventory that consists of 120 true–false items. For this study, however, only 7 items reflecting the diagnostic criteria for AvPD and 9 items reflecting the OCPD diagnostic criteria were administered. The agreement between diagnostic assignments based on the SCID–II–PQ and clinician-rated diagnoses is high (e.g., $k = .78$; Ekselius, Lindström, von Knorring, Bodlund, & Kullgren, 1994).

Personality Diagnostic Questionnaire–Version 4. The Personality Diagnostic Questionnaire–Version 4 (PDQ-4+; Hyler, 1994) is a 99-item self-report questionnaire. For this study, however, only 7 items reflecting the AvPD criteria and 8 items reflecting OCPD criteria were administered. Item responses to this measure use the past several

years as a time frame, and true–false response options. The PDQ-4+ has a low false-negative rate, moderate kappa scores with clinician-rated diagnoses, and has good sensitivity for AvPD (e.g., 0.7; Abidin et al., 2011; Fossati et al., 1998).

Obsessive–Compulsive Personality Disorder Impairment Scale. The OCPD–IS is based on the four proposed diagnostic facets for impairment (Criterion A) in Section III (identity, self-direction, empathy, and intimacy). The OCPD–IS has two domains (Self and Interpersonal), each having two facets (identity and self-direction for Self; empathy and intimacy for Interpersonal). A total score was generated using all OCPD–IS items. Each facet had two corresponding items on the impairment scale, except empathy, which had only one. The items were independently reviewed by Section III PD model experts who provided feedback on the measure’s content validity. Using a 5-point scale reflecting increasing levels of impairment, the instructions ask participants to rate their level of impairment on seven items specific to the self- and interpersonal functioning associated with OCPD in Section III. Scores are averaged, with higher scores indicating greater levels of self- and interpersonal impairment. The full OCPD–IS is shown in Appendix G.²

Avoidant Personality Disorder Impairment Scale. The AvPD–IS is based on the four proposed diagnostic facets for impairment (Criterion A) in Section III (identity, self-direction, empathy, and intimacy). The AvPD–IS has two domains (Self and Interpersonal), each with two facets (identity and self direction for Self; empathy and intimacy for Interpersonal). A total score was generated using all AvPD–IS items. Each facet had two corresponding items on the impairment scale. The self-report measure contains eight items that assess impairment in self- and interpersonal functioning. The items of the AvPD–IS were independently reviewed by Section III PD model experts who provided feedback on the measure’s content validity. Using a 5-point scale, it asks

² Referred to as “Appendix A” in published manuscript.

participants to rate their level of impairment across various aspects of self- and interpersonal functioning proposed as relevant in Section III of the DSM-5. Scores are averaged, with higher scores indicating greater levels of self- and interpersonal impairment. The full AvPD–IS is shown in Appendix H.³

World Health Organization Quality of Life–Brief Form. The World Health Organization Quality of Life–Brief Form (WHO–QOL BREF; Bonomi, Patrick, Bushnell, & Martin, 2000; WHOQOL Group, 1998) is a 26-item questionnaire that measures general satisfaction (e.g., the extent to which one feels life is meaningful), satisfaction with health (general, psychological, and physical), and satisfaction with one’s environment (e.g., satisfaction with health services access, information availability). Using a 5-point format, it asks participants to rate their satisfaction over the past 2 weeks by responding along continuums such as 5 (*completely*) to 1 (*not at all*), and 5 (*always*) to 1 (*never*). This measure has shown adequate to good internal consistency (Skevington, Lotfy, & O’Connell, 2004), and good construct validity in a clinical sample (Mas-Expósito, Amador-Campos, Gómez-Benito, & Lalucat-Jo, 2011).

The World Health Organization Disability Assessment Scale 2.0. The World Health Organization Disability Assessment Scale-2 (WHODAS-2; World Health Organization, 1988) is a 36-item self-report questionnaire that assesses impairment in the following domains: communication and interpersonal skills (e.g., difficulty starting and maintaining conversation, making friends), basic life activities (e.g., self-care, mobility), household responsibilities, and difficulties related to poor health (e.g., financial drain, affected emotionally). Participants rate their degree of difficulty performing tasks in each domain over the past month using a 5-point scale, ranging from 0 (*no difficulty*) to 4 (*extreme/cannot do*). The WHODAS-2 has demonstrated good test–retest reliability and good concurrent validity when compared with the WHO

³ Referred to as “Appendix B” in published manuscript.

Quality of Life Scale (WHOQOL Group, 1995), the London Handicap Scale (Harwood, Rogers, Dickinson, & Ebrahim, 1994), the Functional Independence Measure (Granger, Hamilton, Linacre, Heinemann, & Wright, 1993), and the Short Form Health Survey (Ustün et al., 2010; Ware, Kosinski, & Keller, 1996).

Social Functioning Questionnaire. The Social Functioning Questionnaire (SFQ; Tyrer et al., 2005) is an 8-item self-report measure to assess general social functioning (e.g., interpersonal relations, finances, leisure activities) over the previous 2 weeks. It uses a 4-point Likert scale, with scale points adjusted for each question (e.g., 3 [*severe problems*] to 0 [*no problems*]; and 3 [*most of the time*] to 0 [*not at all*]). This measure has shown acceptable internal consistency (Ro & Clark, 2013), and good construct validity evidenced by its agreement with the observer-rated Social Functioning Schedule (Tyrer et al., 1990). Furthermore, this measure has been found to load on both the Self and Interpersonal domains of personality functioning (Clark & Ro, 2014). For example, items such as “I have difficulties in getting and keeping close relationships” reflect the Interpersonal domain, and items such as “I find my tasks at work and home very stressful” index the Self domain.

Measure of Disordered Personality Functioning. The Measure of Disordered Personality Functioning (MDPF; Parker et al., 2004) is a 20-item measure of “noncoping” (e.g., failing more often than succeeding, coping poorly) and “noncooperativeness” (e.g., difficulty dealing with others compared with being nice, good-hearted, and caring). The MDPF uses a 4-point Likert-type format from 0 (*definitely false*) to 3 (*definitely true*), using a general time frame, with higher scores indicating worse functioning (Parker et al., 2004). Items within the MDPF are grouped in to the two higher order domains of noncoping and noncooperativeness. These higher order domains are analogous to the DSM-5’s Section III Self and Interpersonal conceptualization of personality functioning (Shapiro, 2013). For example, items such

as “I can be somewhat difficult in dealing with others” and “People at work see me as cooperative and agreeable” load on the Noncooperativeness/Interpersonal domains, and items such as “I know I cope poorly with things” and “I feel like I am going around in circles in life” load on the Noncoping/Self domains.

Results

First, we investigated the within-disorder and between-disorder relationships between the total, domain (i.e., Self and Interpersonal), and facet (i.e. identity, self-direction, empathy, and intimacy) scores of the OCPD and AvPD Impairment Scales to examine whether there were observable intra- versus interassociations across the two measures. Table 2.3 shows these results. Correlations were large between all AvPD–IS scores, ranging from $r = .60$ to $.95$ ($Mdn = .78$), whereas the correlations between the OCPD–IS scores were moderate to large, ranging from $r = .31$ to $.92$ ($Mdn = .53$). Correlations between AvPD–IS and OCPD–IS scores ranged from $r = .15$ to $.58$ ($Mdn = .39$) and were thus notably smaller relative to the within-disorder measures, providing evidence for discriminant validity.

Table 2.3

Correlations Between Obsessive-Compulsive and Avoidant Personality Disorder Impairment Scale Scores

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. OCPD Total	-													
2. OCPD Self	.92**	-												
3. OCPD Interpersonal	.81**	.53**	-											
4. OCPD Identity	.79**	.82**	.48**	-										
5. OCPD Self Direction	.75**	.85**	.40**	.40**	-									
6. OCPD Empathy	.61**	.41**	.85**	.33**	.35**	-								
7. OCPD Intimacy	.74**	.47**	.80**	.48**	.31**	.36**	-							
8. AvPD Total	.52**	.41**	.50**	.41**	.28**	.24**	.51**	-						
9. AvPD Self	.42**	.32**	.41**	.35**	.19**	.27**	.42**	.95**	-					
10. AvPD Interpersonal	.58**	.46**	.54**	.44**	.34**	.37**	.54**	.94**	.78**	-				
11. AvPD Identity	.37**	.28**	.35**	.33**	.15**	.21**	.39**	.90**	.93**	.77**	-			
12. AvPD Self Direction	.40**	.31**	.41**	.31**	.21**	.29**	.39**	.86**	.93**	.68**	.73**	-		
13. AvPD Empathy	.53**	.44**	.50**	.38**	.36**	.35**	.47**	.84**	.68**	.91**	.67**	.60**	-	
14. AvPD Intimacy	.52**	.40**	.50**	.41**	.26**	.33*	.52**	.87**	.73**	.92**	.73**	.64**	.67**	-

** $p < .01$. Note. OCPD: Obsessive-Compulsive Personality Disorder, AvPD: Avoidant Personality Disorder. Within-construct coefficients appear in bold.

Next, we examined the associations between the facets of the OCPD–IS and AvPD–IS. We assessed whether there were meaningful differences between the way facets were associated with facets of the same domain (e.g., OCPD–IS Self facets and AvPD–IS Self facets) and the way facets were associated with facets from the same disorder (e.g., OCPD–IS Self facets and OCPD–IS Interpersonal facets). Correlations between scores on scales measuring impairment in the same domain (e.g., OCPD–IS Self and AvPD–IS Self) did not show meaningfully different patterns of association to correlations between scores on scales measuring impairment in different domains (e.g., OCPD–IS Self and AvPD–IS Interpersonal). These findings were further supported by a maximum likelihood exploratory factor analysis, with oblique (promax) rotation. The four specific impairment scores from each PD measure showed a clear two-factor structure, $\chi^2(13) = 22.27, p = .051$, in which scales loaded together on AvPD and OCPD latent disorder domains, respectively, rather than with their conceptual impairment domains (e.g., Self and Interpersonal latent domains). Table 2.4 shows these loadings. This finding adds further support to the proposition that intercorrelations among impairment scale facets are PD-specific rather than impairment-domain specific.

Table 2.4

Factor Loadings for Exploratory Factor Analysis of OCPD-IS and AvPD-IS Facet Scales

	Factor 1: AvPD	Factor 2: OCPD
AvPD Identity	1.012	-0.164
AvPD Self Direction	0.773	0.021
AvPD Empathy	0.705	0.204
AvPD Intimacy	0.619	0.267
OCPD Identity	0.109	0.669
OCPD Self Direction	-0.094	0.594
OCPD Empathy	0.008	0.579
OCPD Intimacy	0.214	0.552

Note. AvPD = Avoidant Personality Disorder, OCPD = Obsessive-Compulsive Personality Disorder.

Second, we expected that OCPD–IS and AvPD–IS scores would be positively associated with measures of Section II OCPD and AvPD, respectively. For this purpose, the SCID–II–PQ and PDQ-4+ measures of both AvPD and OCPD were aggregated into overall scores to provide a more reliable measurement of each PD.⁵ Zero-order correlations between Section II OCPD and AvPD, and the OCPD and AvPD Impairment Scales are shown in Table 2.5; Steiger’s *t* tests for dependent correlations were calculated for significance testing. In general, these results indicate that both the OCPD and AvPD Impairment Scales are associated with their respective Section II disorder counterparts, as hypothesized. Overall, OCPD was somewhat more strongly associated with the OCPD–IS than with the AvPD–IS, although not all of these differences were significant. AvPD, on the other hand, was more strongly correlated

⁵ A similar pattern of results was found when results were analyzed separately.

with the AvPD–IS than with the OCPD–IS, indicating evidence for both convergent and discriminant validity.

Table 2.5

Correlations Between Obsessive-Compulsive and Avoidant Personality Disorder

Section II PD Scores and Section III Impairment Scale Scores

	OCPD	AvPD	Steiger's <i>t</i> -test	<i>p</i>	Cohen's <i>q</i>
OCPD Total	.45**	.35**	1.88	.06	0.12
OCPD Self	.39**	.29**	1.81	.07	0.11
OCPD Interpersonal	.36**	.33**	0.54	.59	0.14
OCPD Identity	.31**	.29**	0.35	.73	0.02
OCPD Self Direction	.35**	.20**	2.66*	.01	0.16
OCPD Empathy	.20**	.24**	-0.69	.49	0.04
OCPD Intimacy	.42**	.31**	2.02*	.04	0.13
AvPD Total	.26**	.67**	-9.02*	<.001	0.55
AvPD Self	.20**	.63**	-9.14*	<.001	0.54
AvPD Interpersonal	.30**	.64**	-7.23*	<.001	0.45
AvPD Identity	.21**	.64**	-9.22*	<.001	0.55
AvPD Self Direction	.19**	.53**	-6.62*	<.001	0.40
AvPD Empathy	.28**	.58**	-6.05*	<.001	0.38
AvPD Intimacy	.26**	.59**	-6.71*	<.001	0.41

**p* < .05

Note. OCPD: Obsessive-Compulsive Personality Disorder, AvPD: Avoidant Personality Disorder.

Next, the convergent and discriminant validity of the OCPD and AvPD

Impairment Scales were examined independently, to determine whether each of their domain and facet scores were associated with external criterion measures of self- and interpersonal functioning. Pearson zero-order correlations were calculated between the PD impairment scales and external impairment criterion measures. In addition, we

conducted multiple regression analyses for two sets of scores (one in which we used Self and Interpersonal scores as predictors and one using identity, self-direction, empathy, and intimacy scores as predictors) in which each criterion measure was regressed onto each set (in separate equations). The correlations and standardized beta coefficients derived from these analyses as well as overall coefficients of determination are also reported in Tables 2.6 and 2.7.

Table 2.6

Correlation and Multiple Regression Results for OCPD-IS Scales Prediction Scores on External Criterion Measures

Variable	<i>r</i>		<i>r</i> / β		<i>R</i> ²	<i>r</i> / β			<i>R</i> ²
	Total	Self	Interpersonal	Identity		Self Direction	Empathy	Intimacy	
SFQ	.48**	.42**/.29**	.40**/.25**	.22**	.42**/.26**	.29**/.09	.28**/.09	.39**/.21**	.24**
MDPF									
Non-co-operative	.46**	.33**/.09	.51**/.47**	.27**	.33**/.11	.24**/.01	.45**/.33**	.39**/.22**	.27**
Non-coping	.41**	.34**/.19**	.39**/.29**	.18**	.32**/.16**	.25**/.08	.32**/.18**	.32**/.16*	.18**
Total	.49**	.39**/.16**	.51**/.42**	.28**	.37**/.15**	.28**/.05	.43**/.29**	.41**/.21**	.28**
WHOQOL BREF									
Physical Health	-.35**	-.30**/-.19**	-.31**/-.21**	.12**	-.33**/-.22**	-.18**/-.01	-.23**/-.01	-.29**/-.14*	.14**
Psychological	-.31**	-.24**/-.12	-.29**/-.23**	.10**	-.30**/-.19*	-.11*/.05	-.16**/-.03	-.33**/-.24**	.14**
Social Relationships	-.25**	-.19**/-.10	-.22/-.17*	.06*	-.22**/-.13	-.10/.02	-.11/.01	-.28**/-.23**	.09*
Environment	-.33**	-.26**/-.13*	-.31**/-.24**	.11**	-.28**/-.14*	-.16**/-.01	-.19**/-.05	-.33**/-.24**	.13**
WHODAS-2									
Understanding and Communicating	.41**	.37**/.26**	.36**/.22**	.17**	.33**/.17*	.30**/.15*	.31**/.17*	.28**/.09	.18**
Getting Around	.38**	.34**/.23**	.34**/.22**	.15**	.30**/.15*	.28**/.13*	.30**/.18*	.25**/.07	.15**
Self Care	.42**	.37*/.21**	.41**/.30**	.20**	.29**/.10	.32**/.16**	.39**/.28**	.27**/.07	.21**

Variable	<i>r</i>		<i>r</i> / β		<i>R</i> ²	<i>r</i> / β			<i>R</i> ²	
	Total	Self	Interpersonal		Identity	Self Direction	Empathy	Intimacy		
Getting Along With People	.43**	.37**/.22**	.39**/.27**		.19**	.33**/.14*	.28**/.11*	.28**/.12	.36**/.22**	.19**
Life Activities	.41**	.38**/.29**	.33**/.18**		.17**	.34**/.19**	.30**/.16*	.27**/.12	.28**/.10	.17**
Participation in Society	.46**	.43**/.32**	.38**/.21**		.22**	.36**/.17*	.37**/.22**	.33**/.16*	.30**/.09	.22**
Total	.49**	.44**/.30**	.42**/.27**		.24**	.38**/.18**	.36**/.18**	.36**/.19**	.34**/.12*	.24**
Medians										
Convergent	.44	.37	.51		.18	.35	.27	.43	.39	.18
Discriminant ₁ (S&I)		.36	.40			.35	.28	.30	.36	
Discriminant ₂ (BLS)	.42	.37	.37		.19	.33	.30	.31	.29	.19

* $p < .05$. ** $p < .01$.

Note. SFQ: Social Functioning Questionnaire, MDPF: Measure of Disordered Personality Functioning, WHOQOL BREF: World Health Organization Quality of Life-Brief Form, WHODAS-2: World Health Organization Disability Assessment Scale 2.0, Convergent = Median Convergent Validity Coefficient, Discriminant₁ (S&I) = Median Discriminant Validity Coefficient for Self and Interpersonal Functioning, Discriminant₂ (BLS) = Median Discriminant Validity Coefficient for Basic Living Skills. Coefficients shown in bold are hypothesized (per Table 2.1).

Table 2.7

Correlation and Multiple Regression Results for AvPD-IS Scales Prediction Scores on External Criterion Measures

Variable	<i>r</i>	<i>r</i> / β		<i>R</i> ²	<i>r</i> / β			<i>R</i> ²	
	Total	Self	Interpersonal	Identity	Self Direction	Empathy	Intimacy		
SFQ	.61**	.55**/.23**	.59**/.41**	.37**	.56**/.23**	.47**/.04	.54**/.23**	.54**/.20**	.38**
MDPF									
Non-co-operative	.40**	.34**/.02	.43**/.41**	.18**	.32**/-.05	.31**/.06	.39**/.23**	.39**/.23**	.18**
Non-coping	.59**	.55**/.27**	.57**/.36**	.35**	.54**/.21**	.48**/.09	.52**/.22**	.51**/.15*	.35**
Total	.57**	.51**/.17**	.57**/.44**	.34**	.50**/.10	.45**/.09	.52**/.26**	.52**/.22**	.34**
WHOQOL BREF									
Physical Health	-.55**	-.52**/-.30**	-.52**/-.29**	.30**	-.49**/-.14	-.48**/-.18*	-.48**/-.19**	-.47**/-.12	.30**
Psychological	-.63**	-.62**/-.45**	-.57**/-.23**	.41**	-.64**/-.46**	-.51**/-.06	-.51**/-.10	-.53**/-.10	.43**
Social Relationships	-.54**	-.51**/-.30**	-.50/-.27**	.29**	-.54**/-.37**	-.41**/.01	-.44**/-.10	-.48**/-.15*	.31**
Environment	-.52	-.49**/-.27**	-.50**/-.28**	.28**	-.49**/-.25**	-.42**/-.07	-.46**/-.20**	-.44/-.09	.28**
WHODAS-2									
Understanding and Communicating	.37**	.32**/.04	.40**/.36**	.15**	.31**/.03	.29**/.02	.39**/.30**	.32**/.09	.16**
Getting Around	.29**	.24**/-.01	.31**/.32**	.10*	.19**/-.19*	.26**/.17*	.36**/.42**	.21**/-.04	.15**
Self Care	.26**	.19**/-.08	.30**/.35**	.09*	.17**/-.14	.19**/.06	.34**/.42**	.19**/-.03	.13**
Getting Along With People	.54**	.48**/.15*	.54**/.42**	.30**	.48**/.14	.41**/.03	.50**/.27**	.48**/.18*	.30**

Variable	<i>r</i>		<i>r</i> / β	<i>R</i> ²		<i>r</i> / β			<i>R</i> ²
	Total	Self	Interpersonal	Identity	Self Direction	Empathy	Intimacy		
Life Activities	.34**	.29**/.03	.35**/.33**	.12**	.27**/-.03	.26**/.07	.36**/.30**	.28**/.06	.14**
Participation in Society	.38**	.32**/.03	.40**/.37**	.16**	.29**/-.09	.31**/.12	.42**/.36**	.32**/.06	.18**
Total	.42**	.37**/.03	.44**/.42**	.20**	.33**/-.05	.33**/.09	.46**/.40**	.35**/.07	.22**
Medians									
Convergent	.58	.55	.54	.34	.55	.48	.48	.50	.34
Discriminant ₁ (S&I)		.51	.57		.52	.46	.52	.53	
Discriminant ₂ (BLS)	.38	.32	.40	.16	.30	.30	.41	.32	.17

* $p < .05$. ** $p < .01$.

Note. SFQ: Social Functioning Questionnaire, MDPF: Measure of Disordered Personality Functioning, WHOQOL BREF: World Health Organization Quality of Life-Brief Form, WHODAS-2: World Health Organization Disability Assessment Scale 2.0, Convergent = Median Convergent Validity Coefficient, Discriminant₁ (S&I) = Median Discriminant Validity Coefficient for Self and Interpersonal Functioning, Discriminant₂ (BLS) = Median Discriminant Validity Coefficient for Basic Living Skills. Coefficients in bold are hypothesized (per Table 2.1).

It was expected that scores on the OCPD–IS and AvPD–IS Self domain, and facets within that domain, would be associated with scores on scales conceptually related to functioning in the Self domain: SFQ, MDPF Noncoping scale, and the WHO–QOL BREF Psychological scale (see Table 2.1). The OCPD–IS Self domain and identity facet demonstrated moderate median associations with these scales (*Mdn* $|r| = .37$ and *Mdn* $|r| = .35$, respectively). The OCPD–IS self-direction facet showed a small median association with the same scales (*Mdn* $|r| = .27$). The AvPD–IS Self domain and identity facet had strong median associations with these scales (*Mdn* $|r| = .55$ and *Mdn* $|r| = .55$, respectively). The AvPD–IS self-direction facet had a moderate to large median association with the same scales (*Mdn* $|r| = .48$).

Contrary to our hypothesis, for both impairment scales the strength of the association of the Self domain with these scales was generally equivalent to the strength of the association of the Interpersonal domain with the same scales. The strength of the association between OCPD Self, identity, and self-direction with external measures of self-functioning (ranging from $|r| = .11$ – $.42$, *Mdn* $|r| = .31$) was equivalent to the strength of the association between OCPD Interpersonal, empathy, and intimacy with external measures of self-functioning (ranging from $|r| = .16$ – $.51$, *Mdn* $|r| = .36$). The strength of the association between AvPD Self, identity, and self-direction with external measures of self-functioning (ranging from $|r| = .47$ – $.64$, *Mdn* $|r| = .53$) was equivalent to the strength of the association between AvPD Interpersonal, empathy, and intimacy with external measures of self-functioning (ranging from $|r| = .51$ – $.59$, *Mdn* $|r| = .54$).

It was also expected that scores on the OCPD–IS and AvPD–IS Interpersonal domains would be associated with scores on scales conceptually related to functioning in the interpersonal domain: SFQ, the MDPF Noncooperative scale, and the WHO–QOL BREF Social Relationships scale (see Table 2.1). Of these, the SFQ was moderately associated ($r = .40$) and the MDPF Noncooperative scale was strongly

associated ($r = .51$) with the OCPD–IS Interpersonal domain, whereas the WHO–QOL BREF Social Relationships scale was not significantly associated with the OCPD–IS Interpersonal domain. For the AvPD–IS Interpersonal domain, the SFQ scale showed a strong association ($r = .59$). The MDPF Noncooperative scale was moderately associated ($r = .43$) with the AvPD–IS Interpersonal domain. Again, the WHO–QOL BREF Social Relationships scale was not significantly associated with the AvPD–IS Interpersonal domain.

Consistent with our hypothesis, the strength of the association between OCPD Interpersonal, empathy and intimacy with external measures of interpersonal functioning (ranging from $|r| = .28$ – $.51$, *Mdn* $|r| = .41$) was greater than the strength of the association between OCPD Self, identity, and self-direction with external measures of interpersonal functioning (ranging from $|r| = .19$ – $.42$, *Mdn* $|r| = .33$). A different pattern was observed for AvPD. The strength of the association between AvPD Interpersonal, empathy, and intimacy with external measures of interpersonal functioning (ranging from $|r| = .39$ – $.59$, *Mdn* $|r| = .51$) was generally equivalent to the strength of the association between AvPD Self, identity, and self-direction with external measures of interpersonal functioning (ranging from $|r| = .31$ – $.56$, *Mdn* $|r| = .49$).

Finally, it was predicted that scores on the impairment scales would exhibit smaller correlations with the external criterion measures of basic living skills than they would with the external criterion measures of self- and interpersonal personality functioning, providing further evidence of discriminant validity. This hypothesis was supported for the AvPD–IS but only partially for the OCPD–IS. The median correlations between measures of basic living skills and AvPD–IS total (*Mdn* = $.38$), AvPD–IS Self (*Mdn* = $.32$), and AvPD–IS Interpersonal (*Mdn* = $.40$) were all smaller than the correlations between existing measures of self- and interpersonal functioning

and AvPD–IS total ($Mdn = .58$), AvPD–IS Self (Mdn self = $.55$; Mdn interpersonal = $.51$), and AvPD–IS Interpersonal (Mdn self = $.57$; Mdn interpersonal = $.54$).

The median correlations between OCPD–IS total and measures of basic living skills ($Mdn = .42$) were somewhat smaller than the median correlations between OCPD–IS total and extratest measures of self- and interpersonal functioning ($Mdn = .44$). Likewise, the median correlation between OCPD–IS Interpersonal and measures of basic living skills ($Mdn = .37$) was smaller than the median correlations between OCPD–IS Interpersonal and extratest measures of self- and interpersonal functioning (Mdn self = $.40$, Mdn interpersonal = $.51$), indicating that the hypothesis was not borne out in the OCPD–IS Self domain. The median correlation between OCPD–IS Self and measures of basic living skills ($Mdn = .37$) was not smaller than the median correlations between OCPD–IS Self and existing measures of self and interpersonal functioning (Mdn self = $.37$, Mdn interpersonal = $.36$).

Finally, given the questionable discriminant validity findings just reported, we conducted post-hoc analyses to determine whether these results were a product of our impairment measurement (i.e., the impairment scales) or consistent with the broader PD constructs themselves. For this purpose, intraclass correlation coefficients (ICCs) were calculated to determine the level of agreement of association between AvPD or OCPD Impairment Scales and the Section II disorder counterparts on the external criterion measures (see Supplementary Table S.1 for details), which were SFQ, MDPF (Noncooperativeness and Noncoping), WHO–QOL BREF, and WHODAS-2. When calculating the associations between Section II OCPD and the OCPD–IS, Section II AvPD and the AvPD–IS were also used. When calculating the association between Section II AvPD and the AvPD–IS, Section II OCPD and the OCPD–IS were also included. The ICC for Section II OCPD and OCPD–IS was $.94$ ($p < .001$, 95% CI [.83, .98]), whereas the ICC for Section II AvPD and AvPD–IS was $.99$ ($p < .001$, 95% CI

[.97, .99]), indicating high levels of agreement between impairment scales and traditional Section II diagnostic constructs for their relative associations with external criteria.

Supplementary Table S.1

	Section II OCPD	OCPD-IS	Section II AvPD	AvPD-IS
Section II OCPD	-	-	.44*	.26*
OCPD IS	-	-	.35*	.52*
Section II AvPD	.44*	.35	-	-
AvPD IS	.26*	.52*	-	-
SFQ Total	.31*	.48*	.58*	.61*
MDPF				
Non-cooperativeness	.25*	.46*	.40*	.40*
Non-coping	.32*	.41*	.59*	.59*
WHOQOL-BREF				
Physical health	-.20*	-.35*	-.47*	-.55*
Psychological	-.18*	-.31*	-.55*	-.63*
Social relationships	-.18*	-.25*	-.48*	-.54*
Environment	-.26*	-.33*	-.47*	-.52*
WHODAS				
Understanding and communicating	.22*	.41*	.34*	.37*
Getting around	.24*	.38*	.24*	.29*
Self-care	.23*	.42*	.17*	.26*
Getting along with people	.30*	.43*	.45*	.54*
Life activities	.29*	.41*	.30*	.34*
Participation in society	.33*	.46*	.36*	.37*
Total	.31*	.49*	.36*	.42*
Intraclass correlation coefficient	.94**		.99**	

* $p < .001$. ** $p < .001$ (two-tailed F -test for Type C [consistency] intraclass correlation coefficients).

Discussion

The goal of this study was to examine the validity of disorder specific impairment measures for Section III OCPD and AvPD. Both impairment scales demonstrated promising convergent and discriminant validity. The impairment scales were developed to reflect the typology of impairment deployed in the DSM-5 Section III; that is, they were designed to detect specific types of impairment in the Self and Interpersonal domains and within the facets of those domains; however, despite careful attention to such differentiation, the impairment scales were not able to meaningfully distinguish between the domains or facets. The patterns of relationships between scores on the impairment scales and scores on external measures of personality functioning suggest that it is perhaps more useful to measure disorder-specific impairment as a total score, rather than seeking to differentiate impairment by domain or facet. For AvPD, a distinction between impairment in personality functioning and basic living skills was observed. This pattern, however, was less pronounced for OCPD, suggesting that it might not always be helpful to maintain a conceptual distinction between impairment in personality functioning and basic living skills.

More specifically, our findings demonstrated moderate support for our initial hypothesis that we would observe statistically significant differences between scores on the OCPD-IS and AvPD-IS, indicating that the two impairment measures were indeed disorder-specific; that is, the domains (Self, Interpersonal) and facets (identity, self-direction, empathy, and intimacy) of the OCPD-IS were all more strongly associated with one another than they were with the AvPD-IS domains and facets, and vice versa. Although some large correlations across constructs were indeed observed, these were the exception rather than the rule. These findings support those of Skodol and colleagues (2002), reinforcing the notion that different PDs are associated with different

types of impairment. Taken together, these results provide additional evidence for disorder-specific discriminant validity.

Our results also provided moderate support for our second hypothesis that scores on measures of Section II OCPD would be positively correlated with scores on the OCPD–IS, and that scores of measures of Section II AvPD would be positively correlated with scores on the AvPD–IS. Furthermore, impairment scale scores were more strongly correlated with their corresponding Section II disorder (e.g., OCPD–IS and OCPD) than they were with their noncorresponding Section II disorder (e.g., OCPD–IS and AvPD). This provides some evidence for convergent and discriminant validity. However, the AvPD–IS scale scores were as (or almost as for some facets) strongly correlated with Section II OCPD as were the OCPD–IS scale scores, which has implications for the convergent validity for the latter.

Overall, however, the results demonstrate the relevance of impairment to PD diagnoses (Skodol, 2012) and the potential for disorder-specific impairment as a means of better differentiating PDs. In general, these findings indicate that both of the impairment scales show initial promise in their ability to measure the disorder-specific impairment described in Section III of the DSM-5.

Our prediction that the AvPD–IS and OCPD–IS Self and Interpersonal domains would be correlated with external impairment criterion measures of self- and interpersonal functioning, respectively, was only partially borne out; there was not always a clear distinction between the self and interpersonal domains for either measure. This confusion is consistent with the relationships observed within the impairment scales. The expected pattern, for example, of OCPD–IS Self scores being more strongly correlated with other OCPD–IS Self scores than with OCPD–IS Interpersonal scores, was not clearly present.

For AvPD, scores on the AvPD–IS Self and Interpersonal domains were strongly correlated with external measures of self and interpersonal functioning, respectively. However, there was no meaningful differentiation between different types of personality functioning (e.g., whereas AvPD–IS Self was strongly correlated with external measures of self-functioning, it was also strongly correlated with external measures of interpersonal functioning). The same pattern was evident at the facet level (the median association of a facet with external measures of impairment in the same domain as the facet tended to be of a similar strength to the median association of the facet with external measures of impairment in the other domain). Contrary to our hypothesis, and to the conclusions of Bender et al. (2011), whose review of the personality pathology literature validated the distinction between impairment in self- and other functioning, our results did not support the maintenance of a distinction between impairment in the Self and Interpersonal domains. Notably, Bender and colleagues (2011) reached their conclusions after considering PDs as a whole. Our contrary findings are at the level of individual PDs.

For OCPD, a somewhat different pattern of results was observed. Although the OCPD–IS Interpersonal domain was strongly correlated with external measures of interpersonal functioning (and only moderately correlated with external measures of self-functioning), the OCPD–IS Self domain was only moderately correlated with external measures of self-functioning (and moderately correlated with external measures of interpersonal functioning). At the facet level, empathy, intimacy, and identity were all moderately correlated with external measures of interpersonal functioning and with external measures of self-functioning, whereas self-direction was weakly correlated with external measures of self-functioning and with external measures of interpersonal functioning. Thus, there was no difference between (a) the pattern of association between the facets and external measures of self-functioning, and (b) the pattern of

association between the facets and external measures of interpersonal functioning, which was contrary to our hypothesis.

A major question becomes whether this lack of differentiation is solely specific to our impairment measurement or is also observed in the extant literature. The findings of Clark and Ro (2014), for instance, indicated two separate factors of self- and interpersonal personality functioning, but it is important to note that these two factors were not clearly distinct from one another. That is, many of the scales used in their research loaded meaningfully and strongly ($> .50$) on both the self and interpersonal latent factors. Therefore, despite our results failing to replicate the same two-factor differentiation elucidated by Clark and Ro (2014), the same phenomenon was observed in their study and our results, whereby no clear separation between the two domains was identified. It is possible that part of the reason no discrimination across impairment types was observed is that self- and interpersonal functioning are too intertwined from a causal perspective. For example, disturbances in the Self domain are likely to generate disturbances in interpersonal functioning. To this extent, our findings are consistent with those of Bender and colleagues (2011), whose review of clinician-rated measures of personality pathology emphasized this interplay of impairment in the self and interpersonal domains in PD diagnoses. This interplay is also recognized in various models of personality, including cognitive-behavioral, interpersonal, psychodynamic, attachment, developmental, social cognitive, and evolutionary theories (Clarkin & Huprich, 2011; Pincus, 2011). Where our findings differ from those of Bender and colleagues (2011) is in the extent to which they suggest that it is possible to isolate and measure the unique contribution of impairment in each of the self and interpersonal domains. It might be that a hierarchical model provides a better fit, whereby identity

disturbance is primary, which influences the lower order facets of self-direction, empathy, and intimacy.⁶

More broadly, the inherent difficulty in differentiating between self- and interpersonal pathology in practice has contributed to the proposed changes to personality in the upcoming *International Classification of Diseases* (11th revision; Tyrer, Reed, & Crawford, 2015). In this proposal, PDs are first assessed by identifying the presence or absence of a PD, followed by its degree of severity (by reference to impairment), and, if relevant, the domain trait features. This proposal contains no assessment of impairment in the self domain, as it is considered to be highly complex and difficult to directly assess (e.g., Tyrer et al., 2015).

Our findings might suggest that the OCPD–IS, in particular, is not adept at distinguishing between impairment in different domains and thus indicate poor psychometric properties associated with the scale. Alternatively, it could also be the case that the external measures of impairment suffer from the same deficiency (similar to results reported by Clark & Ro, 2014).⁷ Absent agreed-on definitions, concepts such as self- and interpersonal impairment are capable of describing an array of dysfunctionalities, and could be operationalized differently in different instruments. It might be that our results reflect this lack of conceptual clarity.

⁶ We thank an anonymous reviewer for suggesting this final point.

⁷ The correlations between external measures of impairment in the Self and Interpersonal domains did not reveal a clear distinction between the two domains. Please see Table S.2 (online supplement) for more detail.

Supplementary Table S.2

*Correlations Among External Measures used to Assess the Self and Interpersonal**Domains*

	1	2	3	4	5
1. SFQ	1				
2. MDPF Non-cooperative	.48**	1			
3. MDPF Non-coping	.69**	.53**	1		
4. WHO-QOL BREF Psychological	-.70**	-.33**	-.60**	1	
5. WHO-QOL BREF Social Relationships	-.60**	-.24**	-.45**	.70**	1

** $p < .01$.

Note. SFQ: Social Functioning Questionnaire, MDPF: Measure of Disordered Personality Functioning, WHO-QOL BREF: World Health Organization Quality of Life-Brief Form.

The observed pattern of results might also be explained, in part, by the heterogeneous nature of OCPD (Hummelen, Wilberg, Pedersen, & Karterud, 2008). For instance, Section II OCPD as a construct is typified by eight maladaptive personality symptoms. For a diagnosis to be made, any four of the eight criteria must be met, resulting in 163 different ways in which a person could meet criteria for an OCPD diagnosis; in addition, two people could be diagnosed with the disorder without sharing a single feature. Several studies employing factor analysis have confirmed the heterogeneous nature of OCPD, and have indicated that OCPD might be better conceptualized as a constellation of maladaptive personality traits (Grilo, 2004; Hummelen et al., 2008). The heterogeneity of the disorder therefore makes it a difficult disorder to assess and might, in part, explain our findings. Despite this inability to distinguish impairment by domain, the OCPD–IS was moderately associated with measures of Section II OCPD, which indicates that it might not be necessary to maintain

a distinction between impairment in the Self and Interpersonal domains when defining OCPD as a construct.

Any or all of the preceding factors could have contributed to the inability of the impairment scales to meaningfully distinguish between impairment in the Self and Interpersonal domains. This might cast some doubt on the scales' discriminant validity (especially for the OCPD–IS). However, the aforementioned intraclass correlations indicate that the most likely explanation for the results observed is related to a problem with the way OCPD and AvPD are conceptualized within Section II. The significance of the scales' inability to distinguish impairment by domain is attenuated by the fact that the impairment scales closely map onto the nomological networks associated with the traditional disorder constructs in question. The pattern of associations between measures of Section II OCPD and external measures of impairment was almost identical to those of OCPD–IS scores and external measures of impairment ($ICC = .94$). Similarly, the relationships between measures of Section II AvPD and external measures of impairment almost perfectly agreed with the observed correlations between AvPD–IS scores and external measures of impairment ($ICC = .99$). These findings indicate that the imperfect discriminant validity of the impairment scales reflects problems associated with the traditional Section II OCPD and AvPD diagnostic constructs more than poor psychometric measurement.

Finally, it was expected that scores on the impairment scales would be less strongly associated with external measures of basic living skills than with external measures of personality functioning (see Table 2.1). Again, the results were different as between OCPD and AvPD. Consistent with our hypothesis, scores on the AvPD–IS were more strongly correlated with external measures of personality functioning than they were with external measures of basic living skills. This relationship was true at the domain and facet level. For OCPD, on the other hand, the strength of the association

between external measures of basic living skills and OCPD–IS was similar to that of the strength of association between external measures of personality functioning and OCPD–IS. External criterion measures of basic living skills were moderately correlated with OCPD–IS at both the domain and facet levels (with the exception of intimacy). Despite our initial hypothesis, on further consideration, perhaps this result is not so surprising. The (unexpectedly strong) correlation between OCPD personality impairment and basic living skills might be explained by core elements of OCPD, such as perfectionism, rigidity, and stubbornness, which are likely to disrupt aspects related to basic living skills, such as those measured by the WHODAS-2 (e.g., getting along with others, understanding and communication, life activities).

Implications

Both the OCPD–IS and AvPD–IS demonstrated promising convergent validity with their respective Section II counterparts and discriminant validity with their noncorresponding Section II disorder and with each other. The impairment scales thus show promise in their ability to measure disorder-specific impairment. The pattern of relationships between scores on the impairment scales and scores on external measures of personality functioning did not support the maintenance of a distinction between impairment in the Self and Interpersonal domains. For OCPD, the relevance of distinguishing between impairment in personality functioning and basic living skills might also be doubted. Taken together with our findings confirming the existence of disorder-specific impairment, these results suggest that it is the differences in impairment between disorders, rather than between domains, that should be the focus of diagnostic tools. Subject to further research, these impairment scales, used in conjunction with personality traits, can be said to adequately represent the Section II disorders of OCPD and AvPD. Acknowledging the need for future research to provide

greater clarity around the relevance of these distinctions, the impairment scales show initial promise in operationalizing the Section III models of OCPD and AvPD.

Limitations and Future Directions

This study's conclusions must be considered in light of its limitations. First, a large proportion of the data were collected online, a method that provides limited control over participant selection and internal states. Despite this, the findings from the online community sample did not differ meaningfully from those observed in the university sample (which was conducted in a university computer lab in the presence of a researcher), indicating that this concern is unlikely to have influenced study results. Second, the exclusive use of self-report questionnaires could have artificially inflated correlation magnitudes between constructs due to monomethod variance. Third, although the external measures used in this study are well-established measures of functioning, some items might make it difficult to fully differentiate between personality traits and impairment. These findings should therefore be replicated using other measures. Finally, a mixed community and university population, as opposed to a clinical population, was sampled, which likely resulted in a restriction of the range of impairment severity and personality traits measured, and potentially causing our findings not to be generalizable to clinical populations. However, it should be emphasized that community and university samples are not "healthy" samples; the prevalence rates for psychopathology in young to middle-aged adults are quite high (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006; Jackson & Burgess, 2000; Samuels et al., 2002; Torgersen et al., 2001), including for the PDs in question (Jackson & Burgess, 2000; Torgersen et al., 2001). Moreover, although we used screening measures, there was a high prevalence of OCPD and AvPD in our community sample. As such, examination on dimensional constructs in a sample with a small but notable pathological range is a defensible methodological approach. Nevertheless, it is

important that future research using a clinical population be conducted to determine the extent to which the findings of this study can be generalized. Future research could also employ alternative means of measuring impairment other than self-report measures, such as interviews, peer ratings, and clinician ratings, which might better differentiate between the Self and Interpersonal domains. Given that the results did not support the maintenance of existing impairment categories, future research could also examine whether there are different, more salient, ways of delineating different impairment manifestations. Furthermore, it would be useful to validate these impairment scales against additional measures of OCPD and AvPD.

Acknowledgment

The authors would like to acknowledge the World Health Organization for the use of their psychological measures.

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Appendices

Appendix A

Ethics Approval (Studies One and Two)

28 April 2014

Dear Ms Jacqueline Liggett,

Protocol: 2014/121

An examination of avoidant and obsessive personality styles

I am pleased to advise you that your Human Ethics application received approval by the Chair of the Science and Medical DERC on 28 April 2014.

For your information:

1. Under the NHMRC/AVCC National Statement on Ethical Conduct in Human Research we are required to follow up research that we have approved. Once a year (or sooner for short projects) we shall request a brief report on any ethical issues which may have arisen during your research or whether it proceeded according to the plan outlined in the above protocol.
2. Please notify the committee of any changes to your protocol in the course of your research, and when you complete or cease working on the project.
3. Please notify the Committee immediately if any unforeseen events occur that might affect continued ethical acceptability of the research work.
4. Please advise the HREC if you receive any complaints about the research work.
5. The validity of the current approval is five years' maximum from the date shown approved. For longer projects you are required to seek renewed approval from the Committee.

All the best with your research,

Kim

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Appendix B

Participant Information Sheet – Australian Version

(Studies One and Two)

**Researchers:**

The current study is being undertaken by Jacqueline Liggett (DPsych. candidate), Kieran Carmichael (Hons. candidate) and Dr Martin Sellbom (Senior Lecturer) from the Research School of Psychology at the Australian National University (ANU) College of Medicine, Biology & Environment.

Project Title:

An examination of personality styles.

General Outline of the Project:

This project contains an assortment of online personality and clinical questionnaires. Data from approximately 300 participants will be collected from a combination of first year psychology students and the general Australian population. Individuals will be offered either \$10 or ANU psychology course credit for their participation. All participants recruited by the researchers are required to complete the survey on designated computers within the Research School of Psychology, regardless of whether they choose the \$10 or course credit.

Participants recruited through Qualtrics can complete the online survey from any location. All responses to this survey will be non-identifiable, which means that no information gathered from survey responses will reveal participant identity. As such, participants will not be advised of their individual results. The de-identified results of this study will be used for both honours and post-graduate research projects, and may be disseminated through academic journal publication.

Participant Involvement:

This survey will take between 50 and 80 minutes to complete. It consists of validated measures of personality style, personal and interpersonal functioning and clinical questionnaires.

You will be offered \$10 for your participation.

If you are a first year psychology student at the ANU, you may choose to receive first year psychology course credit instead of \$10. You will receive 90 minutes course credit regardless of how long it takes you to complete the survey. You must complete the survey either in Dr Sellbom's lab or a designated Research School of Psychology computer lab.

If you are recruited through Qualtrics, the survey can be completed online at any time. Completion of the survey is voluntary, and it is possible to withdraw without penalty at any stage. No explanations for withdrawal are required. However participants will only be given the reward of remuneration (i.e. \$10 or course credit) upon completion of the survey.

While it is not expected, some survey questions may lead to discomfort or distress. If you experience discomfort or distress as a result of completing the survey, you are encouraged to contact Lifeline Crisis Support on 13 11 14, Beyond Blue on 1300 22

4636, or if you are an ANU student, the Australian National University counselling service on 02 6125 2442.

Exclusion criteria:

You must be over 18 years of age to participate in this study.

Confidentiality:

The confidentiality of all participants will be upheld to the full extent of the law. No identifying information will be collected. As such no identifying information will be used in any publications or dissemination of this research.

Data Storage:

Data management procedures will be in compliance with the Privacy Act 1988 (*Cth*) and the ANU policy for the Responsible Practice of Research. Data will be stored on a password-protected laptop, locked in secure premises, and be kept for a minimum of 5 years after it has been used for theses or publication. Only the nominated researchers listed above will have access to the survey data.

Queries and Concerns:

Please contact Dr Martin Sellbom (02 6125 2067; martin.sellbom@anu.edu.au) or Jacqueline Liggett (jacqueline.liggett@anu.edu.au) should you have any concerns regarding the study.

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee.

If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

T: +61 (0) 2 6125 3427

E: Human.Ethics.Officer@anu.edu.au

Appendix C

Participant Information Sheet – U.S. Version.

(Studies One and Two).

**Researchers:**

The current study is being undertaken by Jacqueline Liggett (DPsych. candidate), Kieran Carmichael (Hons. candidate) and Dr Martin Sellbom (Senior Lecturer) from the Research School of Psychology at the Australian National University (ANU) College of Medicine, Biology & Environment.

Project Title:

An examination of personality styles.

General Outline of the Project:

This project contains an assortment of online personality and clinical questionnaires. All responses to this survey will be non-identifiable, and no information gathered from survey responses will reveal participant identity. The de-identified results of this study will be used for both honours and post-graduate research projects, and may be disseminated through academic journal publication.

Participant Involvement:

This survey will take approximately 60 minutes to complete. It consists of validated measures of personality style, personal and interpersonal functioning, and clinical questionnaires.

You will be offered \$3 for your participation.

Completion of the survey is voluntary, and it is possible to withdraw without penalty at any stage. No explanation for withdrawal is required.

While it is not expected, some survey questions may lead to discomfort or distress. If you experience discomfort or distress as a result of completing the survey, you are encouraged to contact the National Suicide Prevention Lifeline service on 1-800-273-TALK (8255).

Exclusion criteria:

You must be over 18 years of age to participate in this study.

Confidentiality:

The confidentiality of all participants will be upheld to the full extent of the law. No identifying information will be collected. As such no identifying information will be used in any publications or dissemination of this research.

Data Storage:

Data management procedures will be in compliance with the Privacy Act 1988 (*Cth*) and the ANU policy for the Responsible Practice of Research. Data will be stored on a password-protected laptop, locked in secure premises, and be kept for a minimum of 5 years after it has been used for theses or publication. Only the nominated researchers listed above will have access to the survey data.

Queries and Concerns:

Please contact Dr Martin Sellbom (02 6125 2067; martin.sellbom@anu.edu.au) or Jacqueline Liggett (jacqueline.liggett@anu.edu.au) should you have any concerns regarding the study.

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee.

If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

T: +61 (0) 2 6125 3427

E: Human.Ethics.Officer@anu.edu.au

Appendix D

Demographic Questionnaire

(Studies One and Two).

1. Please indicate your age
2. Please indicate your gender
 - a. Female
 - b. Male
 - c. Other
3. Please indicate your country of origin
 - a. Australia
 - b. China
 - c. United States of America
 - d. Other English speaking country
 - e. Other non-English speaking country
4. Please indicate whether you identify as
 - a. Caucasian/White
 - b. African-American/Black
 - c. Asian
 - d. American Indian
 - e. Bi-racial
 - f. Other
5. Do you identify as Hispanic?
 - a. Yes
 - b. No
6. Is English your native language?
 - a. Yes
 - b. No
7. How proficient do you consider your English language skills compared to your English speaking peers?
Seven point scale ranging from 1 (*Not proficient*) to 7 (*Fluent*)
8. Have you even been diagnosed with a mental illness?
 - a. Yes
 - b. No
9. Did you seek treatment?
 - a. Yes, counselling
 - b. Yes, psychotropic medication
 - c. Yes, another form of treatment
 - d. No, I did not seek treatment
10. What is your current relationship status?
 - a. Single
 - b. De-facto
 - c. Married
 - d. Separated
 - e. Divorced
 - f. Widowed

11. Are you employed?
 - a. Yes, full time (more than 30 hours per week)
 - b. Yes, part time (less than 30 hours per week)
 - c. No

12. What is the highest level of education you have completed?
 - a. Less than year 12 or equivalent
 - b. Year 12 or equivalent
 - c. Diploma
 - d. Bachelor's degree (including honours)
 - e. Master's degree
 - f. Doctorate or PhD

13. What is your annual personal income before tax?
 - a. Less than \$10,000
 - b. \$10,000 to \$29,999
 - c. \$30,000 to \$49,999
 - d. \$50,000 to \$69,999
 - e. \$70,000 to \$89,999
 - f. \$90,000 to \$99,999
 - g. \$100,000 to \$149,999
 - h. \$150,000 or more

Appendix E

Structured Clinical Interview for the DSM-IV Axis II Disorders –

Personality Questionnaire (SCID-II-PQ).

OCPD Questions (Studies One, Two and Four).

AvPD Questions (Study One).

Structured Clinical Interview for the DSM-IV Axis II Disorders –

Personality Questionnaire – Informant Version.

(For the informant version used for the OCPD items in Study Four, “you” was replaced with “he/him” or “she/her” in all questions).

Please respond true or false as applies to you.

(OCPD)

1.	Are you the kind of person who focuses on details, order, and organization, or who likes to make lists and schedules?	T	F
2.	Do you have trouble finishing jobs because you spend so much time trying to get things exactly right?	T	F
3.	Do you or other people feel that you are so devoted to work (or school) that you have no time left for anyone else or for just having fun?	T	F
4.	Do you have very high standards about what is right and what is wrong?	T	F
5.	Do you have trouble throwing things out because they might come in handy some day?	T	F
6.	Is it hard for you to let other people help you unless they agree to do things exactly the way you want?	T	F
7.	Is it hard for you to spend money on yourself and other people even when you have enough?	T	F
8.	Are you often so sure you are right that it doesn't matter what other people say?	T	F
9.	Have other people told you that you are stubborn or rigid?	T	F

Please respond true or false as applies to you.

(AVPD)

1.	Have you avoided jobs or tasks that involved having to deal with a lot of people?	T	F
2.	Do you avoid getting involved with people unless you are certain they will like you?	T	F
3.	Do you find it hard to be “open” even with people you are close to?	T	F
4.	Do you often worry about being criticized or rejected in social situations?	T	F
5.	Are you usually quiet when you meet new people?	T	F
6.	Do you believe that you’re not as good, as smart, or as attractive as most other people?	T	F
7.	Are you afraid to try new things?	T	F

Appendix F

Personality Diagnostic Questionnaire for DSM-IV (PDQ-4+).

OCPD Questions (Studies One, Two and Four).

AvPD Questions (Study One).

The purpose of this questionnaire is for you to describe the kind of person you are. When answering the questions, think about how you have tended to feel, think, and act over the past several years. To remind you of this, on the top of each page, you will find the statement: “Over the past several years...”

T (True) means that the statement is generally true for you.

F (False) means that the statement is generally false for you.

Even if you are not entirely sure about the answer, indicate “T” or “F” for every question.

For example, for the question:

I tend to be stubborn. T F

If, in fact, you have been stubborn over the past several years, you would answer True by circling T.

If this is not true of you, you would answer False by circling F.

There are no correct answers. You may take as much time as you wish.

(OCPD)

Over the last several years . . .

1. I often get lost in details and lose sight of the “big picture.”	T	F
2. I waste time trying to make things perfect.	T	F
3. I put my work ahead of being with my family and friends or having fun.	T	F
4. I have a higher sense of morality than other people.	T	F
5. I have accumulated lots of things I don’t need that I can’t bear to throw out.	T	F
6. If others can’t do things correctly, I would prefer to do them myself.	T	F
7. I see myself as thrifty, but others see me as being cheap.	T	F
8. People complain that I’m “stubborn as a mule.”	T	F

(AvPD)

Over the last several years . . .

1. I avoid working with others who may criticize me.	T	F
2. I make friends with people only when I am sure they like me.	T	F
3. I am inhibited in my intimate relationships because I am afraid of being ridiculed.	T	F
4. I am more sensitive to criticism or rejection than most people.	T	F
5. I am afraid to meet new people because I feel inadequate.	T	F
6. Being around other people makes me nervous.	T	F
7. In new situations I fear being embarrassed.	T	F

Appendix G

Obsessive-Compulsive Personality Disorder Impairment Scale.

(Studies One, Two and Four).

Obsessive-Compulsive Personality Disorder Impairment Scale – Informant Version.

(Study Four).

(For the informant version, “you” was replaced with “he/him” or “she/her” in all questions).

For the following set of statements please choose the option that describes you best.

Item 1

0. I have an appropriate work–life balance.
 1. I sometimes get caught up in my work at the expense of other activities.
 2. I often spend time working at the expense of other activities.
 3. More often than not, I spend time working at the expense of other activities.
 4. I have been described as a “workaholic,” and always give 100% to my work at the complete expense of all other activities.
-

Item 2

0. I have no difficulties expressing a range of emotions.
 1. Occasionally, I don't feel as strongly about things as others seem to.
 2. In most situations, I don't feel as strongly about things as others seem to.
 3. I rarely feel as strongly about things as others seem to.
 4. I don't feel strong emotions about anything.
-

Item 3

0. I prefer to achieve my goals and tasks on time even if it's not perfect, rather than not achieving them at all.
 1. I sometimes have a hard time achieving my goals and tasks on time because of my high standards.
 2. I often have a hard time achieving my goals and tasks on time because of my high standards.
 3. I almost always have a hard time achieving my goals and tasks on time because of my high standards.
 4. I do not achieve my tasks or goals unless they are completed with absolute perfection.
-

Item 4

-
0. I have personal values and standards, but I am flexible across situations.
1. I am guided by my values and standards and always try to adhere to them.
2. It is very important for me to lead a life in accordance with my personal values and standards.
3. I take great pride in my values and standards, and rigidly adhere to them.
4. I strictly adhere to my values and standards regardless of the outcome.
-

Item 5

-
0. I generally understand and consider other people's ideas and feelings.
1. I sometimes find it challenging to understand and/or consider other people's ideas and feelings.
2. I often find it challenging to understand and/or consider other people's ideas and feelings.
3. I usually find it challenging to understand and/or consider other people's ideas and feelings.
4. I always find it challenging to understand and/or consider other people's ideas or feelings.
-

Item 6

-
0. Developing relationships is more important to me than work and being productive.
1. My work and productivity sometimes interferes with my relationships.
2. My work and productivity frequently interferes with my relationships.
3. My work and productivity almost always interferes with my relationships.
4. My work and productivity always interferes with my relationships.
-

Item 7

-
0. I am not particularly stubborn, and I tend to have positive relationships with others.
1. My close friends and family sometimes seem upset that I am too stubborn and rigid.
2. My close friends and family usually seem upset that I am too stubborn and rigid.
3. My close friends and family almost always seem upset that I am too stubborn and rigid.
4. My close friends and family always seem upset that I am too stubborn and rigid.
-

Appendix H

Avoidant Personality Disorder Impairment Scale.

For the following set of statements please choose the option that describes you best.

Item 1

0. I am confident in my ability to socialize with others.
 1. I occasionally feel anxious and have low confidence in social situations because I feel I am socially inept, personally unappealing, or inferior.
 2. I regularly feel anxious and have low confidence in social situations because I feel I am socially inept, personally unappealing, or inferior.
 3. Most of the time, I feel anxious and have low confidence in social situations because I feel I am socially inept, personally unappealing, or inferior.
 4. I always feel anxious and worthless in social situations because I am socially inept, personally unappealing, or inferior.
-

Item 2

0. I never, or rarely, feel ashamed or humiliated due to my social skills.
 1. I sometimes feel ashamed or humiliated due to my social skills.
 2. I often feel ashamed or humiliated due to my social skills.
 3. Most of the time, I feel ashamed or humiliated due to my social skills.
 4. I always feel ashamed and humiliated due to my social skills.
-

Item 3

0. I often make plans that involve other people, such as working with others at a job, living in share houses, or going on holiday with a friend or family member.
 1. I only occasionally make plans that involve other people, such as working with others at a job, living in share houses, or going on holiday with a friend or family member.
 2. It is not often that I make plans that involve other people, such as working with others at a job, living in share houses, or going on holiday with a friend or family member.
 3. I very rarely make plans that involve other people, such as working with others at a job, living in share houses, or going on holiday with a friend or family member.
 4. I never make plans that involve other people, such as working with others at a job, living in share houses, or going on holiday with a friend or family member.
-

Item 4

0. I do not avoid meeting new people, going to parties, or making plans with old friends.

1. I occasionally avoid meeting new people, going to parties, or meeting with old friends, even if I want to do those things.

2. I regularly try to avoid meeting new people, going to parties, or making plans with old friends, even if I want to do those things.

3. I rarely attempt to meet new people, go to parties, or make plans with old friends, even if I want to do those things.

4. I never attempt to meet new people, go to parties, or meet with old friends, even if I want to do those things.

Item 5

0. I do not worry about how others may judge me, nor do I worry about how they could criticize me in everyday situations.

1. I occasionally worry about how others may judge or criticize me, even with friends.

2. I often worry about how others may judge or criticize me, even with friends.

3. In most situations I worry how others may judge or criticize me, even with friends, to the point where I occasionally become lost in my own worrying.

4. I constantly worry how others may judge or criticize me, even with friends, to the point where I become lost in my own worrying.

Item 6

0. People do not seem to have/rarely have critical or negative attitudes toward me.

1. Occasionally other people seem to have critical and negative perspectives of how I act, look, talk, or smell.

2. People regularly seem to have critical and negative perspectives of how I act, look, talk, or smell.

3. Most of the time, people seem to have critical and negative perspectives of how I act, look, talk, or smell.

4. People almost always have critical and negative perspectives of how I act, look, talk, or smell.

Item 7

0. I am happy interacting with people regardless of knowing whether they will like me or not.

1. I prefer only interacting with people if I have some way of knowing that they will like me.

2. Only occasionally will I interact with someone unless I am sure they will like me.

3. I rarely interact with anyone unless I am sure that they will like me.

4. I only ever interact with people when I am sure that they will like me.

Item 8

0. I am comfortable in intimate relationships and typically do not fear being shamed or ridiculed in these relationships.

1. In intimate relationships, I will typically reveal secrets about myself and/or express my feelings and thoughts openly, although sometimes I worry about being shamed or ridiculed.

2. In intimate relationships, I don't very often reveal secrets about myself and/or express my feelings and thoughts openly, for fear of being shamed or ridiculed.

3. In intimate relationships, I rarely reveal secrets about myself and express my feelings and thoughts openly, for fear of being shamed or ridiculed.

4. In intimate relationships I will never let myself reveal secrets about myself and/or express my feelings and thoughts openly, for fear of being shamed or ridiculed.

Appendix I

World Health Organization Quality of Life – Brief Form (WHOQOL-BREF).

This questionnaire asks how you feel about your quality of life, health and other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the ONE that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks. For example, thinking about the last two weeks, a question might ask:

1.	How would you rate your quality of life?	Very poor	Poor	Neither poor nor good	Good	Very good
2.	How satisfied are you with your health?	Very dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very Satisfied

The following questions ask about how much you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	How much do you feel that pain prevents you from doing what you need to do?	1	2	3	4	5
4.	How much do you need medical treatment to function in your daily life?	1	2	3	4	5
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel life to be meaningful?	1	2	3	4	5
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last two weeks.

	Not at all	A little	Moderately	Mostly	Completely
10. Do you have enough energy for everyday life?	1	2	3	4	5
11. Are you able to accept your bodily appearance?	1	2	3	4	5
12. To what extent do you have enough money to meet your needs?	1	2	3	4	5
13. How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14. To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the last two weeks.

	Very poor	Poor	Neither poor nor good	Good	Very good
	Very dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very Satisfied
15. How well are you able to get around?					
16. How satisfied are you with your sleep?	1	2	3	4	5
17. How satisfied are you with your ability to perform daily living activities?	1	2	3	4	5
18. How satisfied are you with your capacity for work?	1	2	3	4	5
19. How satisfied are you with yourself?	1	2	3	4	5
20. How satisfied are you with your personal relationships?	1	2	3	4	5

21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5
The following question refers to how often you have felt or experienced certain things in the last two weeks.						
26.	How often do you have negative feelings, such as blue mood, despair, anxiety, depression?	Never	Seldom	Quite Often	Very Often	Always

Appendix J

The World Health Organization Disability Assessment Scale 2.0 (WHODAS-2).

This questionnaire asks about difficulties due to health conditions. Health conditions include diseases or illnesses, other health problems that may be short or long lasting, injuries, mental or emotional problems, and problems with alcohol or drugs.

Think back over the past 30 days and answer these questions, thinking about how much difficulty you had doing the following activities. For each question, please circle only one response.

In the past 30 days, how much difficulty did you have in:						
Understanding and communicating						
1.	Concentrating on doing something for ten minutes?	None	Mild	Moderate	Severe	Extreme or cannot do
2.	Remembering to do important things?	None	Mild	Moderate	Severe	Extreme or cannot do
3.	Analyzing and finding solutions to problems in day-to-day life	None	Mild	Moderate	Severe	Extreme or cannot do
4.	Learning a new task, for example, learning how to get to a new place?	None	Mild	Moderate	Severe	Extreme or cannot do
5.	Generally understanding what people say?	None	Mild	Moderate	Severe	Extreme or cannot do
6.	Starting and maintain a conversation	None	Mild	Moderate	Severe	Extreme or cannot do
Getting Around						
7.	Standing for long periods such as 30 minutes?	None	Mild	Moderate	Severe	Extreme or cannot do
8.	Standing up from sitting down?	None	Mild	Moderate	Severe	Extreme or cannot do
9.	Moving around inside your home?	None	Mild	Moderate	Severe	Extreme or cannot do
10.	Getting out of your home?	None	Mild	Moderate	Severe	Extreme or cannot do
11.	Walking a long distance (such as a mile)?	None	Mild	Moderate	Severe	Extreme or cannot do
Self Care						
12.	Washing your whole body?	None	Mild	Moderate	Severe	Extreme or cannot do
13.	Getting dressed?	None	Mild	Moderate	Severe	Extreme or cannot do
14.	Eating?	None	Mild	Moderate	Severe	Extreme or cannot do
15.	Staying by yourself for a few days?	None	Mild	Moderate	Severe	Extreme or cannot do
Getting along with people						
16.	Dealing with people you do not know?	None	Mild	Moderate	Severe	Extreme or cannot do
17.	Maintaining a friendship?	None	Mild	Moderate	Severe	Extreme or cannot do

18.	Getting along with people who are close to you?	None	Mild	Moderate	Severe	Extreme or cannot do
19.	Making new friends?	None	Mild	Moderate	Severe	Extreme or cannot do
20.	Sexual activities?	None	Mild	Moderate	Severe	Extreme or cannot do
Life Activities						
21.	Taking care of your household responsibilities?	None	Mild	Moderate	Severe	Extreme or cannot do
22.	Doing most important household tasks well?	None	Mild	Moderate	Severe	Extreme or cannot do
23.	Getting all the household work done that you needed to do?	None	Mild	Moderate	Severe	Extreme or cannot do
24.	Getting your household work done as quickly as needed?	None	Mild	Moderate	Severe	Extreme or cannot do
Because of your health condition, in the past 30 days, how much difficulty did you have in:						
25.	Your day-to-day work/school?	None	Mild	Moderate	Severe	Extreme or cannot do
26.	Doing your most important work/school tasks well?	None	Mild	Moderate	Severe	Extreme or cannot do
27.	Getting all the work done that you need to do?	None	Mild	Moderate	Severe	Extreme or cannot do
28.	Getting your work done as quickly as needed?	None	Mild	Moderate	Severe	Extreme or cannot do
Participation in Society						
In the past 30 days:						
29.	How much of a problem did you have in joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	None	Mild	Moderate	Severe	Extreme or cannot do
30.	How much of a problem did you have because of barriers or hindrances in the world around you?	None	Mild	Moderate	Severe	Extreme or cannot do
31.	How much of a problem did you have living with dignity because of the attitudes and actions of others?	None	Mild	Moderate	Severe	Extreme or cannot do
32.	How much time did you spend on your health condition, or its consequences?	None	Mild	Moderate	Severe	Extreme or cannot do
33.	How much have you been emotionally affected by your health condition?	None	Mild	Moderate	Severe	Extreme or cannot do

34.	How much has your health been a drain on the financial resources of you or your family?	None	Mild	Moderate	Severe	Extreme or cannot do
35.	How much of a problem did your family have because of your health problems?	None	Mild	Moderate	Severe	Extreme or cannot do
36.	How much of a problem did you have in doing things by yourself for relaxation or pleasure?	None	Mild	Moderate	Severe	Extreme or cannot do
37.	Overall, in the past 30 days, how many days were these difficulties present?				Record number of days	
38.	In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?				Record number of days	
39.	In the past 30 days, not counting the days that you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?				Record number of days	

Appendix K

Social Functioning Questionnaire (SFQ).

(Studies One and Four).

Social Functioning Questionnaire – Informant Version.

(Study Four).

(For the informant version, “you” was replaced with “he/him” or “she/her” in all questions).

Please look at the statements below and tick the reply that comes closest to how you have been recently.

- | | |
|---|---|
| 1. I complete my tasks at work and home satisfactorily.
Most of the time (0)
Quite often (1)
Sometimes (2)
Not at all (3) | 5. I have problems in my sex life.
Severe problems (3)
Moderate problems (2)
Occasional problems (1)
No problems at all (0) |
| 2. I find my tasks at work and at home very stressful.
Most of the time (3)
Quite often (2)
Sometimes (1)
Not at all (0) | 6. I get on well with my family and other relatives.
Yes, definitely (0)
Yes, usually (1)
No, some problems (2)
No, severe problems (3) |
| 3. I have no money problems.
No problems at all (0)
Slight worries only (1)
Definite problems (2)
Very severe problems (3) | 7. I feel lonely and isolated from other people.
Almost all of the time (3)
Much of the time (2)
Not usually (1)
Not at all (0) |
| 4. I have difficulties in getting and keeping close relationships.
Severe difficulties (3)
Some problems (2)
Occasional problems (1)
No problems at all (0) | 8. I enjoy my spare time.
Very much (0)
Sometimes (1)
Not often (2)
Not at all (3) |

Appendix L

Measure of Disordered Personality Functioning (MDPF).

(Studies One and Four).

Measure of Disordered Personality Functioning – Informant Version

(Study Four)

(For the informant version, “you” was replaced with “he/him” or “she/her” in all questions).

Please choose the answers which describe you best.

Item	Defin- itely False	Mostly False	Mostly True	Defin- itely True
1 Even when I have to, I am unable to get along with family or people at work.	0	1	2	3
2 I am generally described as a nice person.	0	1	2	3
3 I can be somewhat difficult in dealing with others.	0	1	2	3
4 In general, I will listen to and understand the other person's point of view.	0	1	2	3
5 Friends see me as cooperative and agreeable.	0	1	2	3
6 People at work see me as cooperative and agreeable.	0	1	2	3
7 I tend to be very understanding of other people's feelings and problems.	0	1	2	3
8 I am generally ready and willing to lend an ear.	0	1	2	3
9 People see me as good-hearted.	0	1	2	3
10 People who know me well would describe me as a caring person.	0	1	2	3
11 I seem to fail more often than I succeed in life.	0	1	2	3
12 My personality often causes me to lose out.	0	1	2	3
13 I know I cope poorly with things.	0	1	2	3
14 When things go wrong I am generally able to bounce back.	0	1	2	3
15 I feel confident in my ability to size up and deal with any situation.	0	1	2	3
16 I learn from the mistakes I make.	0	1	2	3
17 I am really resourceful in tackling problems.	0	1	2	3
18 Others see me as a reliable person.	0	1	2	3
19 I feel I have little control over where my life is headed.	0	1	2	3
20 I feel like I am going around in circles in life.	0	1	2	3

Appendix M

Validity Items.

(Studies One, Two and Four).

Low frequency items

- | | | |
|----------------------------------|-----|----|
| 1. I enjoy stealing from graves. | Yes | No |
| 2. I am allergic to water. | Yes | No |

Inconsistency items

(Opposite wording)

- | | | |
|--|-----|----|
| 3a. I feel really happy most of the time | Yes | No |
| 3b. Most of the time I feel down or depressed. | Yes | No |

(Congruent wording)

- | | | |
|---|-----|----|
| 4a. I identify closely with my nationality. | Yes | No |
| 4b. My nationality is an important part of my identity. | Yes | No |

Affirmative Responses

5. If you read this, please select “Sometimes or Somewhat True”.
6. If you read this, please select “Sometimes or Somewhat False”.
7. If you read this, please select “Mostly False or Disagree”.

Chapter Three – Study Two

The previous study examined the validity of newly developed disorder-specific impairment scales for obsessive-compulsive and avoidant PDs. Results indicated that the OCPD-IS showed initial promise in its ability to measure personality impairment specific to OCPD. Study Two evaluated the unique contributions of specific personality traits to scores on measures of traditional OCPD. Using the OCPD-IS, the study also aimed to examine the degree to which OCPD personality impairment scores augmented personality traits in the operationalisation of traditional OCPD.

**Examining the DSM-5 Section III Criteria for
Obsessive-Compulsive Personality Disorder in a Community Sample**

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Itemised Work Contribution:

J. Liggett	70%	Planning, designing, data collection, statistical analysis, interpreting results, drafting and revising of manuscript.
M. Sellbom	25%	Planning, designing, interpreting results, comments on manuscript drafts
K. Carmichael	5%	Planning, designing, data collection.

Abstract

The current study examined the extent to which the trait-based operationalization of obsessive-compulsive personality disorder (OCPD) in Section III of the DSM-5 describes the same construct as the one described in Section II. A community sample of 313 adults completed a series of personality inventories indexing the DSM-5 Sections II and III diagnostic criteria for OCPD, in addition to a measure of functional impairment modelled after the criteria in Section III. Results indicated that latent constructs representing Section II and Section III OCPD overlapped substantially ($r = .75, p < .001$). Hierarchical latent regression models revealed that at least three of the four DSM-5 Section III facets (Rigid Perfectionism, Perseveration, and Intimacy Avoidance) uniquely accounted for a large proportion of variance (53%) in a latent Section II OCPD variable. Further, Anxiousness and (low) Impulsivity, as well as self and interpersonal impairment, augmented the prediction of latent OCPD scores.

Introduction

Obsessive-compulsive personality disorder (OCPD) is a severe and debilitating mental health condition. The disorder has a long history in the clinical literature and has been included in all previous diagnostic manuals. OCPD was first depicted by Freud, who described the “anal character” as orderly, parsimonious and obstinate, conscientious, trustworthy, avaricious, and as having the potential to become defiant and revengeful (Freud, 1908). From Millon’s (1996) evolutionary-neurodevelopmental perspective, the obsessive-compulsive personality type has a highly regulated expression and appearance, a formal interpersonal manner, a highly developed sense of morality, rigid adherence to rules and schedules, an inflated sense of personal responsibility and self-discipline, dedication to perfection and productivity, defensiveness of socially unacceptable thoughts and impulses, discomfort with negative emotional responses, and an overly sensitive or anhedonic temperament. Over time, the conceptualization has been further developed to include symptoms such as deriving pleasure from indexing, classifying, and compiling lists, a tendency to arrange things symmetrically, a preoccupation with rules, a reluctance to discard worn out or worthless items, workaholism and over-conscientiousness (American Psychiatric Association [APA], 2000). Despite these crippling effects, in the century that OCPD has been recognized, it has been the subject of only limited research.

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5; APA, 2013) currently operationalizes OCPD as being characterized by impairment and distress related to a preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency (APA, 2013). The way in which OCPD and other personality disorders are operationalized as diagnoses in the DSM-5 has long been criticized for numerous reasons, including the use of arbitrary polythetic criterion sets, the loss of potentially

important clinical information due to an all-or-nothing categorical diagnostic system, the high comorbidity of supposedly distinct diagnostic categories, incomplete coverage of personality pathology, and blurred boundaries between normal personality and psychopathology (e.g., Clark, 2007; Trull & Durrett, 2005; Widiger & Samuel, 2005). At present, a diagnosis of OCPD requires the presence of four of eight symptoms, resulting in extreme heterogeneity among individuals diagnosed with this disorder. There are thus 163 possible ways in which an individual can be diagnosed with OCPD, and it is possible for two OCPD patients to not share a single symptom (Samuel, Riddell, Lynam, Miller, & Widiger, 2012). Other criticisms of the diagnostic criteria include complaints that they are highly comorbid with other mental disorders, describe too large a population, and have arbitrary and inconsistent diagnostic boundaries (Clark, 2007; Widiger & Samuel, 2005).

Indeed, in light of the comorbidity criticism, some scholars have proposed radically revisiting the way OCPD is categorized. Rather than grouping OCPD with other personality disorders (PDs), De Caluwé, Rettew, and De Clercq (2014) suggest that it may be more useful to locate OCPD on a spectrum of obsessive-compulsive related disorders. De Caluwé and colleagues found in a large sample of adolescents that OCPD and obsessive-compulsive disorder (OCD) can be positioned along a single dimension, with OCD being considered more severe than OCPD. This approach, however, has not yet received widespread support. The more widely supported reform is a move from a categorical model of PD diagnosis to a hybrid categorical-dimensional model, as set out in Section III of the DSM-5.

DSM-5 Section III

The DSM-5 is divided into three sections, (I) the introduction, (II) the formal diagnostic criteria for mental disorders, and (III) emerging models and measures, which outlines newly developed alternative diagnostic models that could come to serve as the

main operationalizations in the future. At present, personality disorders are operationalized according to diagnostic models in both Sections II and III. The Section II model is identical to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (DSM-IV-TR) model. Section III, however, proposes a shift from the categorical diagnostic approach used in Section II to a hybrid dimensional-categorical model with less emphasis on behaviors and a greater emphasis on dimensional personality traits and impairment in functioning (Krueger et al., 2011; Skodol, 2012). The Section III personality trait model configures traits into five broad domains (Antagonism, Detachment, Disinhibition, Negative Affectivity, and Psychoticism), with 3–7 trait facets each (25 facets in total) (APA, 2013). The six specific PD diagnoses (including OCPD) are based on an individual’s personality profile (the presence or absence of elevated levels of specific trait facets) coupled with associated impairment in functioning. Different constellations of personality facets are grouped in Section III to define six PDs: Antisocial, Avoidant, Borderline, Narcissistic, Obsessive-Compulsive, and Schizotypal. For facet constellations that do not correspond with one of the aforementioned PD types, but nonetheless are accompanied by impairment, an additional PD diagnosis, Personality Disorder: Trait Specified, is available.

The four trait facets in the Section III operationalization of OCPD are Rigid Perfectionism (from the Disinhibition vs. Compulsivity domain), Perseveration (Negative Affectivity), Intimacy Avoidance (Detachment), and Restricted Affectivity (Detachment). More specifically, a person meets the diagnostic criteria for OCPD if they exhibit elevated levels of Rigid Perfectionism in addition to two of the three remaining facets (Criterion B), and if they are functionally impaired in two of four areas: Identity, Self-Direction, Empathy, and Intimacy (Criterion A). The first two of these areas are located within the “self” domain of personality impairment, whereas the

latter two are located within the “interpersonal functioning” domain. The impairment must be relatively pervasive and stable over time (Criteria C and D) and not better explained by a normal developmental stage or the physiological effects of a substance or another medical condition, such as head trauma (Criteria E, F, and G) (APA, 2013).

Criterion B Personality Traits in OCPD

A self-report inventory has been developed to assess the DSM-5 traits, Personality Inventory for the DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012), which has shown substantial promise in university, community, and patient samples (Anderson et al., 2013; Anderson, Snider, Sellbom, Krueger, & Hopwood, 2014; Hopwood, Thomas, Markon, Wright, & Krueger, 2012; Morey, Benson, & Skodol, 2016; Quilty, Ayearst, Chmielewski, Pollock, & Bagby, 2013; Wright et al., 2012). The trait profiles in Section III were developed to, amongst other aims, maintain a degree of continuity with the DSM-IV models of personality disorders. Using the PID-5, Hopwood and colleagues (2012) found in a large sample of undergraduate students that, generally, the constellations of facets Section III uses to diagnose disorders are adequate to describe the disorders they are assigned to. For OCPD specifically, however, only two (Rigid Perfectionism and Perseveration) of the four Section III traits correlated moderately with Section II OCPD, as indexed by the Personality Diagnostic Questionnaire-4 (PDQ-4+; Hyler, 1994), whereas the other two (Restricted Affectivity and Intimacy Avoidance) were not meaningfully associated with Section II OCPD (Hopwood et al., 2012). They also found two facets not in the Section III facet list, Emotional Lability and Distractability, which were meaningfully correlated with OCPD. Anderson and colleagues (2014) found similar results in a university sample; Rigid Perfectionism and Perseveration predicted Section II OCPD, but Intimacy Avoidance and Restricted Affectivity did not. In addition, they found three facets (Anxiousness, Hostility, and Submissiveness) beyond the Section III constellation that

were correlated with Section II OCPD. Of these three traits, only Anxiousness and Hostility uniquely incremented the prediction of OCPD in a regression model (Anderson et al., 2014). In a large Finnish community sample where all four proposed traits were correlated with OCPD, Rigid Perfectionism and Perseveration were found to have the strongest association (Bastiaens, Smits, De Hert, Vanwalleghem, & Claes, 2016). Further, they found that the additional traits of Submissiveness, Withdrawal, and Depressivity also augmented the prediction of OCPD in a regression model.

In a clinical sample, Morey and colleagues (2016) found that the Section III OCPD traits demonstrated higher correlations with Section II OCPD than all other traits, though Rigid Perfectionism was associated with the largest effect size magnitude. In a large Italian community sample, Rigid Perfectionism, Perseveration, and Suspiciousness (but not Restricted Affectivity or Intimacy Avoidance) predicted a substantial amount of variance in Section II OCPD as indexed by the PDQ-4+ (Fossati, Krueger, Markon, Borroni, & Maffei, 2013). Although, in general terms, the Section III alternative model of PDs appears to be finding support, there is room for improvement in the way the personality trait profiles (i.e., Criterion B) for individual disorders are defined. The specific facets for OCPD require further study to improve the model's operationalization of OCPD, to achieve the desired continuity between the Section II and III models.

The above-mentioned studies examined the personality traits considered relevant to OCPD using the PID-5. A more comprehensive understanding of the disorder could be achieved by using other dimensional trait models to conceptualize and operationalize OCPD. The need to refer to multiple measures of personality was highlighted in a meta-analysis by Samuel and Widiger (2008) who found considerable variability in the relationships between personality traits and PDs depending on the measures used. Moreover, they used the five-factor model (FFM; McCrae & Costa, 1987) of

personality, which is the most widely cited in the literature. The FFM conceptualizes personality using the broad domains of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. From a conceptual standpoint, FFM traits within the Conscientiousness domain would appear to be related to OCPD. Lynam and Widiger (2001) asked experts in the field of OCPD to rate a prototypic case of the disorder using the 30 facets of the FFM. Unsurprisingly, the experts rated traits within the domain of Conscientiousness, such as Order, Achievement Striving, Self-Discipline, Competence, Dutifulness, and Deliberation as being most prototypical of OCPD. Further, traits from the Extraversion domain ([low] Excitement Seeking), the Neuroticism domain (Anxiousness, Angry Hostility and [low] Impulsivity), and the Openness to Experience domain, including (low) Actions, (low) Ideas, (low) Feelings, (low) Values, were also deemed relevant (Lynam & Widiger, 2001).

Samuel and Widiger's (2008) meta-analysis found limited support for a correlation between OCPD and the six facets of the FFM Conscientiousness domain. The correlation was supported by the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) and the Five Factor Model Rating Form (Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006) measures, but not by the Structured Interview: Five-Factor Model of Personality (Trull & Widiger, 1997). Samuel and Widiger hypothesized that this variance was related to variability in measures of OCPD.

In another study examining the FFM trait facets and their associations with PDs, Samuel and Widiger (2011) found a link between Conscientiousness and OCPD. They also examined the relevance of specific components of Conscientiousness to OCPD. Using the NEO-PI-R on an undergraduate sample, they found that Order, Dutifulness, Achievement Striving, and Deliberation all had small but significant correlations with OCPD (measured using seven different OCPD scales). Large correlations were identified between OCPD and Competence and Achievement Striving using the

Experimentally Manipulated NEO PI-R (Haigler & Widiger, 2001) measure (Samuel & Widiger, 2011). In 2012, they developed a FFM-specific measure of OCPD (Samuel et al., 2012).

Criterion A Impairment in OCPD

While the relationship between personality traits and OCPD has been the focus of a number of studies, the relevance of impairment has received less attention. Section III of the DSM-5 makes the assumption that each personality disorder will be associated with idiosyncratic impairments to self and interpersonal functioning (APA, 2013). For OCPD, impairment in the “self” domain includes impairment in the areas of Identity (an identity or sense of self derived predominantly from work or productivity; having constricted experience and inhibited expression of strong emotions) and Self-Direction (difficulty completing tasks and realizing goals; rigid and unreasonably high and inflexible internal standards of behavior; and overly conscientious and moralistic attitudes). Impairment in the “interpersonal” domain includes impairment in the areas of Empathy (difficulty understanding and appreciating the ideas, feelings, or behaviors of others) and Intimacy (relationships viewed as secondary to work and productivity; rigidity and stubbornness negatively affecting relationships with others) (APA, 2013). In order to meet Criterion A, an individual must demonstrate “moderate or greater impairment” manifested by characteristic difficulties in two or more of these areas (APA, 2013). However, whereas an instrument has been developed to measure trait domains and facets with good support for its psychometric properties (Criterion B, the PID-5), very few studies have investigated impairment criteria specific to Section III (Criterion A). Further, to date, no research has evaluated the incremental utility of measuring impairment in addition to traits in the context of Section III OCPD. To the authors’ knowledge, the current study will be the first to incorporate a Section III

OCPD-specific impairment scale to measure impairment in the self and interpersonal functioning domains associated with OCPD.

The inclusion of PD-specific impairment criteria in Section III represents a departure from earlier diagnostic models codified in the DSM. (A diagnosis of Section II OCPD simply requires the presence of “clinically significant distress or impairment in social, occupational or other important areas of functioning” [APA, 2013, p. 646].) Only limited research, however, has been conducted into the significance of impairment as a predictor of the presence of a PD, or into the extent to which particular PDs are associated with particular impairment profiles. On the basis of the research which has been conducted, the evidence for the utility of impairment as a diagnostic criterion is mixed.

Few and colleagues (2013) evaluated the incremental validity of impairment criteria using the SCID-II in a community sample. They found that while dimensional traits demonstrated incremental validity in predicting Section II PDs above impairment criteria, impairment was unable to add incrementally above that of dimensional traits. Henschel and Pukrop (2014) replicated this finding in a German psychiatric sample. Using the Level of Personality Functioning Scale (LPFS; Bender, Morey, & Skodol, 2011), Zimmermann and colleagues (2015) evaluated the joint factor structure of Section III PD impairment criteria (Criterion A) and traits (Criterion B) together, and failed to find a distinction.

Other studies have found evidence for the inclusion of impairment criteria in Section III. In a study of 159 psychiatric patients, Bastiaansen, De Fruyt, Rossi, Schotte, & Hofmans, (2013) found that personality traits and impairment were strongly correlated, but also showed significant incremental validity over and above each other in explaining Section II PD variance. In a similar study using a psychiatric sample of 424 patients, FFM personality traits and two general impairment inventories were

investigated. Berghuis, Kamphuis, and Verheul (2012) found that traits and impairment could be distinguished from one another, as measures of general personality dysfunction remained intact when combined with specific personality traits. In a more recent study, using an undergraduate sample of 333 participants, researchers found that baseline impairment ratings (measured using general impairment measures) predicted future psychosocial dysfunction beyond maladaptive personality traits (Calabrese & Simms, 2014). Finally, using the LPFS as a model, Wygant and colleagues (2016) examined the incremental utility of interview-rated Antisocial PD–specific impairment in predicting Section II Antisocial PD and psychopathy in a sample of 200 male inmates. They found that impairment incrementally predicted Antisocial PD and psychopathy above and beyond the Section III traits.

Importantly, only one study to date has examined self-report methods for indexing Criterion A impairment specifically related to Section III OCPD in a community sample (Liggett, Carmichael, Smith, & Sellbom, 2017). However, that study did not involve an evaluation of any association between impairment and the Section III trait conceptualization of OCPD.

The Current Study

The current study aimed to add to the empirical literature on DSM-5 Section III with a specific evaluation of OCPD. First, the study examined the continuity in diagnostic operationalizations for OCPD across Sections II and III as, if Section III is to be used in the future, clinicians will then need an understanding of the degree and nature of the overlap of the population captured by each Section’s diagnostic approach. The second aim of the study was to investigate whether additional personality trait facets augment the operationalization of OCPD. More specifically, we examined traits we deemed conceptually relevant to the diagnostic construct of OCPD based on the existing literature reviewed earlier. Anxiousness and Hostility were included as the only two

PID-5 traits to demonstrate medium strength correlations with OCPD in the two leading studies in this area (Anderson et al., 2014; Hopwood et al., 2012). The PID-5 traits of (low) Impulsivity and (low) Irresponsibility were included, as Samuel and Widiger (2011) demonstrated a moderate correlation between OCPD and the FFM domain of Conscientiousness, to which (low) Impulsivity and (low) Irresponsibility are conceptually related. This examination is an important increment to the literature, as previous studies have found conflicting evidence for which facets best predict OCPD, and have not incorporated other personality facets to conceptualize the optimal trait profile. The final aim of the study was to examine whether the OCPD-specific impairment criteria contribute uniquely to the prediction of Section II OCPD above and beyond the specified facets, which would indicate validity for their inclusion in the Section III diagnostic model. Such research will inform the way in which OCPD is conceptualized in future iterations of the DSM, if these categories are to be retained at all, and lead to a more developed understanding of which aspects of personality are most relevant to the disorder, and of the relevance of impairment to the disorder.

Compliance With Ethical Standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Method

Participants

Two participant samples were used for this research. First-year psychology students from the Australian National University (ANU) ($n = 42$) and the general population from the United States ($n = 271$) were sampled. Initially, a total of 459

participants completed the survey, however, 146 were excluded from the data set based on validity scale scores. More specifically, an infrequency scale was used to exclude participants who endorsed two or more highly improbable survey items, for example, “When I see the color orange, I taste mustard” and “I am allergic to water.” Variable Response and True Response Inconsistency Scales from the Multidimensional Personality Questionnaire Brief Form (Patrick, Curtin, & Tellegen, 2002) were also used to exclude participants who were above two standard deviations from the mean in the current sample. Finally, a self-rated measure of English proficiency was used to identify those individuals who were unable to comprehend the survey questions, despite all inventories being written at a sixth-grade English level. Individuals who endorsed their level of English at a 5 or below out of a maximum of 7 had their responses removed from the data set. The exclusion of these participants provided more generalizable and valid results by the removal of measurement error due to inconsistent, uncooperative, and/or English proficiency difficulties. Participants recruited from the ANU chose to receive either course credit or financial incentive for their participation, whereas participants from the U.S. sample were recruited by Amazon’s Mechanical Turk (MTurk) and received financial reward for their completion of the survey.

The final sample consisted of 152 women and 161 men, with a mean age of 33.48 years ($SD = 11.51$). The majority of participants were White Australian or American (52.4%), with 22% from other English-speaking countries and 25.6% from non-English-speaking countries. The most commonly endorsed level of education was a bachelor’s degree (44.4%), with 65.1% having a college education or higher.¹

¹ Analyses for the two samples were initially conducted independently; however, a similar pattern of results was found, and no meaningful differences were identified between the two samples. The ANU students and the U.S. community samples were therefore combined. Correlation matrices from both samples can be provided upon request.

Measures

Personality Inventory for DSM-5 (PID-5). The PID-5 (Krueger et al., 2012) is a 220-item self-report questionnaire used in Section III of the DSM-5 to measure personality traits. A 4-point scale of “*very false*,” “*often false*,” “*very true*,” and “*often true*” is used to record responses to statements about personality functioning. The PID-5 has demonstrated good construct validity with respect to internal structure (Wright et al., 2012) as well as good convergent and discriminant validity with other models of personality, such as the Personality Psychopathology Five (Anderson et al., 2013) and the five-factor model (Thomas et al., 2013).

Personality Diagnostic Questionnaire, 4th ed. (PDQ-4+). The PDQ-4+ (Hyler, 1994) is a 99-item questionnaire used to assess personality disorders in non-clinical samples, and its items directly correspond to the DSM-IV PDs. Each statement requires participants to indicate whether the statement is true (score of 1) or false (score of 0), based on how they think, feel, or behave. Higher scores indicate higher levels of symptomatology. Only the eight items pertaining to OCPD were incorporated into the questionnaire inventory. The PDQ-4+ has demonstrated a low false-negative rate (Fossati et al., 1998), moderate (0.41 to 0.60) kappa scores with the SCID-II, and adequate sensitivity for OCPD (0.59; Abidin et al., 2011).

Structured Clinical Interview for the DSM-IV Axis II Disorders–

Personality Questionnaire (SCID-II-PQ). The OCPD scale of the SCID-II-PQ (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) is a nine-item true/false self-report measure that assesses OCPD according to the DSM-IV (APA, 1994) diagnostic criteria. The SCID-II-PQ has an overall kappa agreement of .78 with clinician-rated diagnoses (Ekselius, Lindström, von Knorring, Bodlund, & Kullgren, 1994), and it has demonstrated its utility as an independent diagnostic tool for PDs (Germans, Van Heck, Masthoff, Trompenaars, & Hodiament, 2010).

Obsessive-Compulsive Personality Disorder Impairment Scale. The OCPD Impairment Scale (Liggett et al., 2017) is grounded in the four proposed diagnostic facets for impairment (Criterion A) in Section III (identity, self-direction, empathy, and intimacy). The scale has two domains (Self and Interpersonal), each of which has two facets (Identity and Self-Direction for Self; and Empathy and Intimacy for Interpersonal). Each facet had two corresponding items on the impairment scale, except empathy, which only had one. Using a 5-point scale reflecting increasing levels of impairment, the instructions ask participants to rate their level of impairment on seven items specific to the self and interpersonal functioning associated with OCPD in Section III. Scores are averaged, with higher scores indicating greater levels of impairment. Liggett and colleagues (2017) provide promising validity data, in that the scale scores are associated with a range of extra-test impairment criterion measures reflecting self, interpersonal, and basic living skills impairment.

Procedure

ANU students completed the survey on designated Research School of Psychology computers in person, whereas U.S. participants completed the survey online. All participants were directed to the survey designed in Qualtrics by a URL link. This project received approval from the ANU Human Research Ethics Committee.

Results

Table 3.1 shows the descriptive statistics, reliability estimates, and zero-order correlations among all study measures. As expected, the correlations indicate that the two DSM-5 Section II measures are associated to a large degree. The DSM-5 Section III traits used to define the alternative version of OCPD were also strongly associated with each other, and were also significantly associated with the PDQ-4+ and SCID-II-PQ OCPD scale scores to a moderate to large degree.

Table 3.1

Descriptive Statistics, Reliabilities, and Inter-Correlations Among Study Measures

	<i>M</i>	<i>SD</i>	Range	1	2	3	4	5	6	7	8
1. PDQ-4+	3.53	1.84	0-8	(.48/.13)	.51**	.54**	.52**	.37**	.26**	.34**	.33**
2. SCID-II-PQ	3.61	1.68	0-7		(.55/.12)	.42**	.32**	.29**	.30**	.34**	.29**
3. Rigid Perfectionism	1.3	.68	0-3			(.88/.43)	.58**	.34**	.29**	.36**	.25**
4. Perseveration	1.01	.64	0-2.89				(.87/.43)	.55**	.48**	.38**	.37**
5. Intimacy Avoidance	.77	.66	0-3					(.81/.41)	.45**	.31**	.36**
6. Restricted Affectivity	1.07	.64	0-3						(.80/.37)	.32**	.36**
7. Self	.91	.77	0-3.75							(.62/.23)	.52**
8. Interpersonal	.72	.77	0-3.5								(.64/.37)

Note. Internal consistency reliabilities (coefficient alpha/inter-item correlations) are in parentheses.

PDQ-4+ = Personality Diagnostic Questionnaire, 4th ed.; SCID-II-PQ = Structured Clinical Interview for the DSM-IV Axis II Disorders–Personality Questionnaire.

** $p < 0.01$

To address the primary research questions, structural equation modelling was used; maximum likelihood estimation with robust scaling (MLR in *Mplus 7*) was used as the estimator for all models.² First, we estimated a measurement model to determine the association between latent constructs representing Section II and Section III OCPD, respectively. In this model, the PDQ-4+ and SCID-II-PQ total scores served as indicators for the Section II OCPD, whereas the four PID-5 traits scores served as indicators for the Section III OCPD factors. After applying two conceptually defensible modification indices, model fit was generally acceptable, $\chi^2 = 44.003$, $df = 7$, $p < .0001$, confirmatory fit index (CFI) = 0.925, root mean square error of approximation (RMSEA) = 0.130, and standardized root mean residual (SRMR) = 0.044. Despite the mediocre RMSEA value, this statistic has shown to be highly sensitive to small models (MacCallum, Browne, & Sugawara, 1996). Figure 3.1 shows the final measurement model, indicating a strong association between the two latent constructs ($r = .75$, $p < 0.001$). Next, we calculated the associations between individual DSM-5 Section III OCPD traits and the latent Section II OCPD factor. These correlations are shown in Table 3.2 and indicate large effect sizes, with the exception of PID-5 Restricted Affectivity, which was considered medium ($r = .40$). Following this, we examined the degree to which the four PID-5 scores uniquely contributed to this prediction by regressing the latent Section II OCPD variable onto the four traits. The overall model fit was generally acceptable $\chi^2 = 15.289$, $df = 3$, $p = 0.002$, SRMR = 0.021. Although a large proportion of variance was accounted for in latent OCPD scores, only three of the four PID-5 scores contributed uniquely to this prediction (Rigid Perfectionism, Perseveration, and Intimacy Avoidance). In conjunction, these three facets accounted

² Skewness and kurtosis values, as well as histograms for all variables included in our models, were examined. Only one variable (Interpersonal impairment) was associated with skewness and/or kurtosis statistics above |1.00|; these were 1.4 and 1.6, respectively. Histograms all supported the “normal” shape.

for 53% of variance in this latent variable. This model is shown in Figure 3.2, including standardized beta weights associated with each predictor.

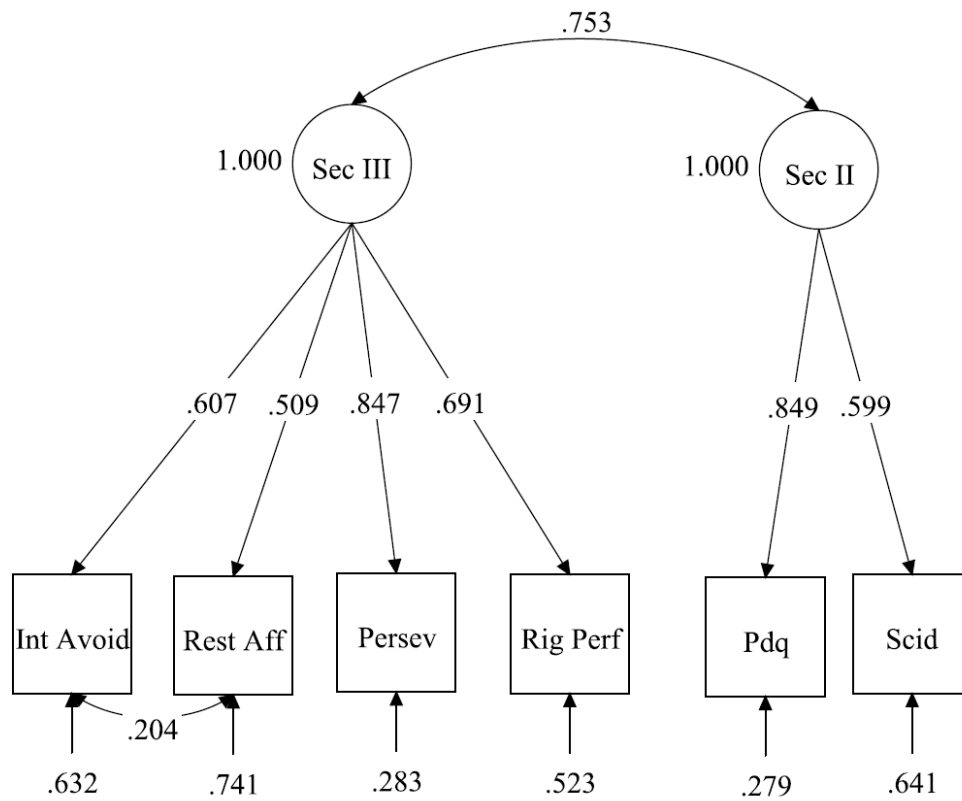


Figure 3.1. All covariance parameters are statistically significant ($p < 0.001$). Sec II: DSM-5 Section II OCPD; Sec III: DSM-5 Section III OCPD; Rig Perf: Rigid Perfectionism; Persev: Perseveration; Rest Aff: Restricted Affectivity; Int Avoid: Intimacy Avoidance; Scid: Structured Clinical Interview for DSM-IV Axis II Disorders – Personality Questionnaire; Pdq; Personality Diagnostic Questionnaire-4+.

Table 3.2

Correlations Between PID-5 Trait Facet Scores and Latent Section II OCPD Scores

PID-5 scale	Latent OCPD score
Rigid Perfectionism	.66**
Perseveration	.68**
Intimacy Avoidance	.50**
Restricted Affectivity	.40**
Anxiousness	.50**
Impulsivity	.28**
Hostility	.54**
Irresponsibility	.39**
Self	.43**
Interpersonal	.40**

Note. PID-5: Personality Inventory for DSM-5; OCPD: Obsessive-compulsive personality disorder.

* $p = 0.05$, ** $p = 0.01$

As evidenced in Table 3.2, the four additional PID-5 traits of Anxiousness, Hostility, Impulsivity, and Irresponsibility showed weak to moderate (Impulsivity, Irresponsibility) to large (Anxiousness, Hostility) correlations with this latent variable. We then examined whether these additional trait scores could augment the prediction of latent Section II OCPD scores. Therefore, in addition to the original four Section III traits, the four conceptually related traits were also tested, resulting in a total of eight predictors in the model. The overall model fit was acceptable: $\chi^2 = 11.963$, $df = 5$, $p = .035$, CFI = 0.977, TLI = 0.941, RMSEA = 0.067, SRMR = 0.017. Hostility and Irresponsibility, however, did not uniquely contribute to the prediction.

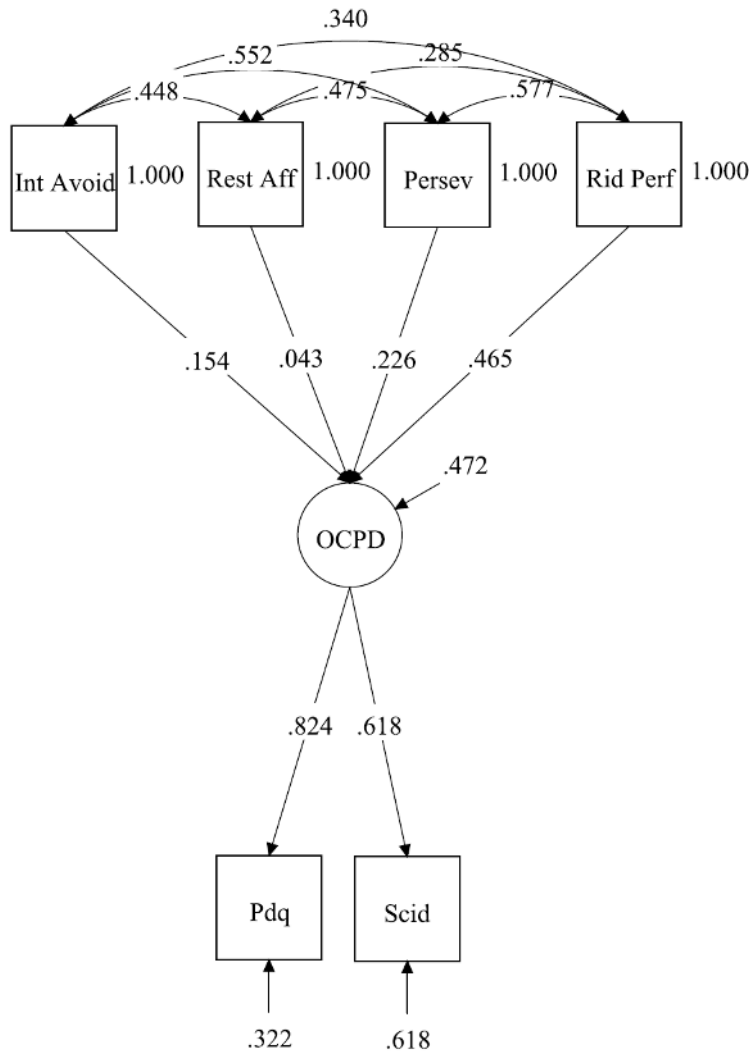


Figure 3.2. All regression parameters are statistically significant ($p < 0.001$). (OCPD: Section II Obsessive-Compulsive Personality Disorder; Sec III: DSM-5 Section III OCPD; Rid Perf: Rigid Perfectionism; Persev: Perseveration; Rest Aff: Restricted Affectivity; Int Avoid: Intimacy Avoidance; Scid: Structured Clinical Interview for DSM-IV Axis II Disorders – Personality Questionnaire; Pdq; Personality Diagnostic Questionnaire-4.)

We then pruned the model by fixing the parameter of the smallest magnitude (PID-5 Irresponsibility) to zero, which did not significantly reduce model fit ($\Delta \chi^2 = 23.19, df = 8, p > .05$). At this point, four of the remaining seven parameters were statistically significant predictors of the latent OCPD variable. We pruned the model again by fixing the parameter currently associated with the smallest effect size (PID-5

Hostility) to zero, which did not result in a significant decrement of model fit relative to the original model ($\Delta \chi^2 = 23.79$, $df = 9$, $p > .05$). Following this re-specification, four of the six remaining PID-5 scales were unique predictors of latent Section II OCPD scores (Perseveration and Restricted Affectivity were not) and, in combination, accounted for 56% of variance in the latent variable. The final model (which includes the four original traits in conjunction with Anxiousness and Impulsivity) is shown in Figure 3.3, including standardized beta weights associated with each predictor.

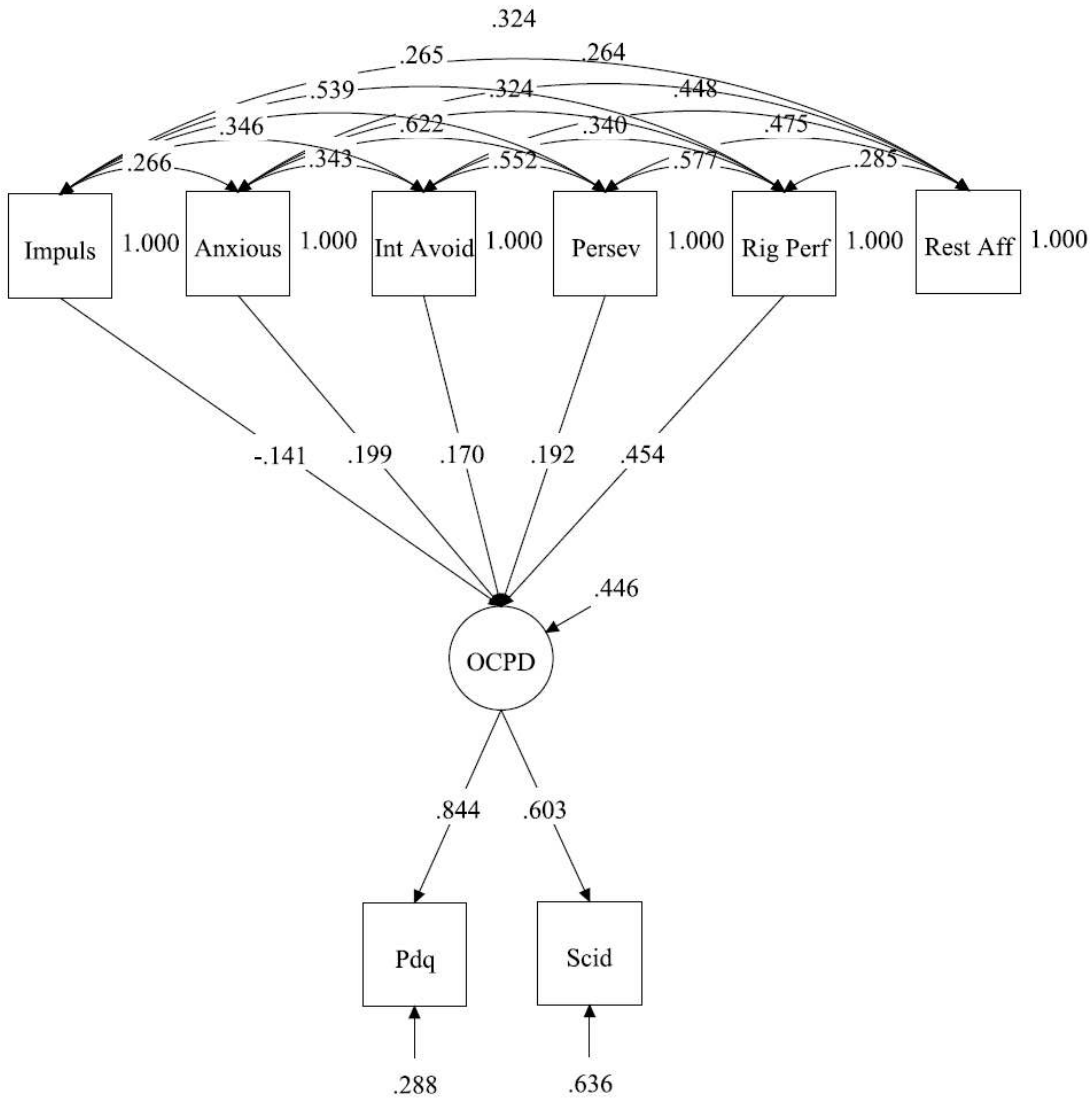


Figure 3.3. All regression parameters are statistically significant ($p < 0.001$). (OCPD: Section II Obsessive-Compulsive Personality Disorder; Impuls: Impulsivity; Anxious: Anxiousness; Int Avoid: Intimacy Avoidance; Persev: Perseveration; Rig Perf: Rigid Perfectionism; Rest Aff: Restricted Affectivity; Scid: Structured Clinical Interview for DSM-IV Axis II Disorders – Personality Questionnaire; Pdq; Personality Diagnostic Questionnaire-4.)

The final model explored whether functional impairment in the domains of self and interpersonal impairment could augment the prediction of latent Section II OCPD scores. We estimated the original model with four original PID-5 trait facets compared to a full model that included two self and interpersonal impairment criterion scores in order to test whether the impairment criteria accounted for incremental variance in

OCPD scores. The overall model fit was acceptable: $\chi^2 = 11.963$, $df = 5$, $p = .035$, CFI = 0.977, TLI = 0.941, RMSEA = 0.067, SRMR = 0.017. An incremental *R*-squared *F*-test revealed that both self and interpersonal impairment added significantly to the original four traits for OCPD ($F_{\text{change}} = 42.29$, $R^2_{\text{change}} = .103$, $p < .0001$). When self and interpersonal functioning were included in the model, only Rigid Perfectionism and Perseveration remained significant in the prediction of latent OCPD Section II scores.

Discussion

The goals of the current study were to examine the extent to which the trait based operationalization of OCPD in Section III of the DSM-5 overlaps with its Section II counterpart, to evaluate the unique contributions of specific personality facets to scores on measures of Section II OCPD, and to measure how strongly scores on a functional impairment measure correlated with measures of Section II and III OCPD.

Continuity Between Section II and Section III

The present study contributes to the growing literature that the DSM-5 Section III personality trait criteria encapsulate a considerable proportion of variance in the traditional or Section II conceptualization of the OCPD construct. Latent Section II and Section III OCPD constructs share 53% of variance, indicating that the nominated personality traits outlined for Section III OCPD do indeed provide a degree of continuity between the outdated categorical model of PD diagnosis and the alternative hybrid categorical-dimensional model.

From the point of view of practitioners, this continuity may be welcome. The fact that there is significant overlap in the populations described by the diagnostic models for OCPD in Section II and Section III minimizes the disruption that may occur in any future move to a dimensional system; research on and treatment options developed for people with OCPD as defined in Section II should remain generally applicable to people with OCPD as defined in Section III. Too much continuity,

however, will frustrate the aims of those developing Section III, that is, to avoid the problems of heterogeneity, diagnostic overlap, and so forth that plague Section II. These problems are serious and well documented. It is essential that the profession develop new and better ways of understanding and measuring personality dysfunction.

There is much to recommend an approach in which the existing PD categories are discarded, and in which different forms of personality dysfunction are instead conceptualized as specific combinations of traits and impairment. Indeed, the framers of Section III adopted a pragmatic, incremental approach to change. Section III takes a number of positive steps (introducing a trait-based dimensional model, emphasising the importance of impairment, reducing some diagnostic overlap) while retaining most of the diagnostic labels used in Section II. Once this approach to diagnosis is more widely accepted and understood, and especially as the flaws of the traditional system are further exposed in light of dimensional traits, more radical change may be possible.

Optimal OCPD Trait Profile

As well as considering the extent to which the four trait criteria in Section III describe the population defined by the Section II definition of OCPD, the current study investigated the unique contributions of the individual Section III traits in accounting for variance in the traditional (Section II) conceptualization of OCPD. The zero-order correlations indicate that the four Section III traits used to define the alternative version of OCPD were associated with the PDQ-4+ and SCID-II-PQ OCPD scale scores to a moderate to large degree. Further, the conceptually relevant traits of Anxiousness and Hostility were strongly correlated with Section II OCPD, and Irresponsibility and (low) Impulsivity were weakly but significantly associated with Section II OCPD.

In contrast to the findings of the zero-order correlations, results from the regression analysis suggest that a smaller set of traits are relevant to OCPD, with only three of the four traits (Rigid Perfectionism, Perseveration, and Intimacy Avoidance, but

not Restricted Affectivity) making a unique contribution to the prediction of OCPD; this is consistent with previous research (Anderson et al., 2014). It may be that not all traits currently proposed as relevant to the traditional conceptualization of OCPD are required to capture the Section II conceptualization. For example, the limited reaction to emotionally arousing situations and constricted emotional experience associated with Restricted Affectivity may largely overlap with the avoidance of close relationships or interpersonal attachments associated with Intimacy Avoidance, thereby negating the need for both of these traits from the Detachment domain to be included in Criterion B. However, the zero-order association was significant and meaningful, and Type II error may also have contributed to this result. Therefore, these findings should be interpreted with caution until they have been replicated in other studies, preferably using clinical samples.

Two additional traits (Anxiousness and [low] Impulsivity) were also found to increment the prediction of the latent OCPD construct. The association of (low) Impulsivity with a disorder characterized by rigidity and orderliness is not surprising. Moreover, that Anxiousness also uniquely contributed to this prediction is consistent with what might reasonably be expected amongst a population defined, in part, by unrealistically high standards. The anxiety may be related to the anticipation of the inevitable failure associated with unobtainable high standards. This result supports previous research, reinforcing the association between anxiousness and OCPD (Anderson et al., 2014; Bastiaens et al., 2016; Hopwood et al., 2012) (though in the studies of Morey and colleagues (2016) and Bastiaens et al., (2016), Anxiousness and [low] Impulsivity did not statistically augment the four assigned traits in operationalising OCPD).

Interestingly, when Anxiousness was included in the model, Perseveration no longer uniquely contributed to the latent Section II OCPD construct. This finding may

be due to Anxiousness and Perseveration both being encapsulated within the Negative Affect domain. It may therefore be difficult for both traits to add significantly in the prediction of OCPD given their shared higher-order factor. It was also hypothesized that Hostility would uniquely predict OCPD; however, this hypothesis was not borne out in the current study. Like Anxiousness and Perseveration, Hostility also falls within the Negative Affect domain. It may therefore be difficult for both Anxiousness and Hostility to uniquely add to the prediction of OCPD.

The inclusion of Rigid Perfectionism in the optimal trait model is consistent with both Freud's (1908) description of people with this type of personality as being "conscientious" in their attention to detail and with Millon's (1996) conceptualization of OCPD as involving a dedication to perfectionism and productivity. While Rigid Perfectionism is common to both Freud (1908) and Millon's (1996) conceptualizations of the disorder, and to the Section III operationalization of this disorder, there is less agreement on the relevance of other traits. Perseveration could be viewed as analogous to Freud's description of obstinacy, but Millon did not suggest that this was a relevant trait to OCPD. Millon's description of a highly regulated expression and appearance, formal interpersonal manner, and discomfort with negative emotional responses could have analogues in the PID-5 traits Restricted Affectivity and Intimacy Avoidance. Freud's description of OCPD, however, did not suggest that any of these traits were relevant to the disorder. Contrary to the current study's findings, neither Freud (1908) nor Millon (1996) deemed anxiousness or low levels of impulsivity relevant to OCPD. Previous studies (Anderson et al., 2014; Hopwood et al., 2012), however, have identified Anxiousness as a trait relevant to OCPD, a finding confirmed by the present study. In contrast to the present study, neither Anderson and colleagues (2014), Fossati and colleagues (2013), nor Hopwood and colleagues (2012) found significant associations between the trait of (low) Impulsivity and OCPD. This is an interesting

finding, given that a high level of the trait Impulsivity is defined in part by “acting on the spur of the moment in response to immediate stimuli,” “acting on a momentary basis without a plan or consideration of outcomes,” and having “difficulty establishing and following plans” (APA, 2013, p. 780). As this description appears to depict the opposite of an individual with OCPD, it seems likely that someone with OCPD would display low levels of this trait. Should the finding of a connection between (low) Impulsivity and OCPD be replicated in other studies, it is suggested that Anxiousness, and (low) Impulsivity be considered as relevant traits in the Section III model of diagnostic criteria.

In sum, the findings of this study, along with those of others, confirm that three of the four traits (Rigid Perfectionism, Perseveration, and Intimacy Avoidance) in Section III appear relevant to OCPD. The evidence for the inclusion of Restricted Affectivity is more equivocal. There is better evidence to suggest that Anxiousness should be added to the list of relevant traits. Further research is needed to determine whether (low) Impulsivity should also be added in light of the aforementioned inconsistent findings. Consideration also needs to be given to whether other traits, not currently tested for in the PID-5 but considered relevant in the major conceptualizations of the disorder (orderliness, self-discipline, etc.), should also be included.

Some caution needs to be exercised in generalizing these findings concerning the optimal trait profile for OCPD. Our study – and all but one other study on this topic – relies on self-report measures. Student and community populations are also over-represented in the samples used. While some findings are consistent across studies using different samples and research methods (e.g., the relevance of Rigid Perfectionism and Perseveration as core features of OCPD), other results vary with the sample type and methodologies used. For instance, the traits of Withdrawal, Suspiciousness, and Impulsivity were only found to augment the prediction of OCPD in a study using a

clinical sample and clinician-rated assessment tools (Morey et al., 2016). Studies using a student or community sample and self-report measures do not replicate this finding. Similarly, Anxiousness was not significantly associated with OCPD in studies using a community sample (e.g., Fossati et al., 2013; Bastiaens et al., 2016), whereas it was in studies using student and clinical samples (Anderson et al., 2014; Hopwood et al., 2012; Morey et al., 2016). Without a larger number of studies, especially those using clinical samples and non-self-report methods, it is difficult to assess the extent to which the over-reliance on self-report methods and non-clinical samples affects the pattern of results. Further research in this regard would be beneficial.

Utility of OCPD Impairment

We also examined whether the combination of Criterion A (impairment) and Criterion B (personality traits) provided incremental utility in operationalizing OCPD. Our findings indicate that Criterion A indeed does provide incremental utility above and beyond Criterion B, consistent with previous research by Bastiaansen and colleagues (2013), Calabrese and Simms (2014), and Wygant and colleagues (2016). Our findings thus support the DSM-5 Section III structure for the diagnosis of OCPD. The difference between our findings and those of Few and colleagues may be due to the reliance of the latter study on information obtained through the SCID-II, which is not particularly explicit in its rating of personality impairment. Like Wygant and colleagues (2016), the present study used a measure specifically designed to rate impairment associated with a particular PD. It may therefore be the case that measures of impairment associated with specific PDs add incremental utility above and beyond that of traits, but more general impairment measures (such as the SCID-II) do not. Further research is needed to test this hypothesis.

Limitations and Future Directions

Our findings and associated conclusions must be considered with some limitations of the study in mind. The data collection relied entirely on self-report measures (including the PDQ-4+, which has a somewhat high false positive rate; Fossati et al., 1998); this likely inflated the magnitude of associations across constructs to an unknown degree due to mono-method bias. In addition, the use of a community sample limits the generalizability of these findings to broader clinical populations due to the potential for range restriction. In particular, the mixed nature of our sample (Australian students and North American community residents) provide for a somewhat unclear population with respect to generalizability, though it is noteworthy that the patterns of results were quite similar across the individual samples. In addition to sampling from a clinical population, future research should consider alternative ways of measuring personality traits and impairment relevant to DSM-5 Section III beyond self-report measures, such as interviews, clinician ratings, and peer ratings.

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Appendices

Appendix A

Personality Inventory for the DSM-5 (PID-5).

(Studies Two and Three).

This is a list of things different people might say about themselves. We are interested in how you would describe yourself. There are no right or wrong answers. So you can describe yourself as honestly as possible, we will keep your responses confidential. We'd like you to take your time and read each statement carefully, selecting the response that best describes you.

Item	Very False or Often False	Some- times or Some- what False	Some- times or Some- what True	Very True or Often True
1 I don't get as much pleasure out of things as others seem to.	0	1	2	3
2 Plenty of people are out to get me.	0	1	2	3
3 People would describe me as reckless.	0	1	2	3
4 I feel like I act totally on impulse.	0	1	2	3
5 I often have ideas that are too unusual to explain to anyone.	0	1	2	3
6 I lose track of conversations because other things catch my attention.	0	1	2	3
7 I avoid risky situations.	0	1	2	3
8 When it comes to my emotions, people tell me I'm a "cold fish".	0	1	2	3
9 I change what I do depending on what others want.	0	1	2	3
10 I prefer not to get too close to people.	0	1	2	3
11 I often get into physical fights.	0	1	2	3
12 I dread being without someone to love me.	0	1	2	3
13 Being rude and unfriendly is just a part of who I am.	0	1	2	3
14 I do things to make sure people notice me.	0	1	2	3
15 I usually do what others think I should do.	0	1	2	3
16 I usually do things on impulse without thinking about what might happen as a result.	0	1	2	3
17 Even though I know better, I can't stop making rash decisions.	0	1	2	3
18 My emotions sometimes change for no good reason.	0	1	2	3
19 I really don't care if I make other people suffer.	0	1	2	3
20 I keep to myself.	0	1	2	3
21 I often say things that others find odd or strange.	0	1	2	3
22 I always do things on the spur of the moment.	0	1	2	3

23	Nothing seems to interest me very much.	0	1	2	3
24	Other people seem to think my behavior is weird.	0	1	2	3
25	People have told me that I think about things in a really strange way.	0	1	2	3
26	I almost never enjoy life.	0	1	2	3
27	I often feel like nothing I do really matters.	0	1	2	3
28	I snap at people when they do little things that irritate me.	0	1	2	3
29	I can't concentrate on anything.	0	1	2	3
30	I'm an energetic person.	0	1	2	3
31	Others see me as irresponsible.	0	1	2	3
32	I can be mean when I need to be.	0	1	2	3
33	My thoughts often go off in odd or unusual directions.	0	1	2	3
34	I've been told that I spend too much time making sure things are exactly in place.	0	1	2	3
35	I avoid risky sports and activities.	0	1	2	3
36	I can have trouble telling the difference between dreams and waking life.	0	1	2	3
37	Sometimes I get this weird feeling that parts of my body feel like they're dead or not really me.	0	1	2	3
38	I am easily angered.	0	1	2	3
39	I have no limits when it comes to doing dangerous things.	0	1	2	3
40	To be honest, I'm just more important than other people.	0	1	2	3
41	I make up stories about things that happened that are totally untrue.	0	1	2	3
42	People often talk about me doing things I don't remember at all.	0	1	2	3
43	I do things so that people just have to admire me.	0	1	2	3
44	It's weird, but sometimes ordinary objects seem to be a different shape than usual.	0	1	2	3
45	I don't have very long-lasting emotional reactions to things.	0	1	2	3
46	It is hard for me to stop an activity, even when it's time to do so.	0	1	2	3
47	I'm not good at planning ahead.	0	1	2	3
48	I do a lot of things that others consider risky.	0	1	2	3

49	People tell me that I focus too much on minor details.	0	1	2	3
50	I worry a lot about being alone.	0	1	2	3
51	I've missed out on things because I was busy trying to get something I was doing exactly right.	0	1	2	3
52	My thoughts often don't make sense to others.	0	1	2	3
53	I often make up things about myself to help me get what I want.	0	1	2	3
54	It doesn't really bother me to see other people get hurt.	0	1	2	3
55	People often look at me as if I'd said something really weird.	0	1	2	3
56	People don't realize that I'm flattering them to get something.	0	1	2	3
57	I'd rather be in a bad relationship than be alone.	0	1	2	3
58	I usually think before I act.	0	1	2	3
59	I often see vivid dream-like images when I'm falling asleep or waking up.	0	1	2	3
60	I keep approaching things the same way, even when it isn't working.	0	1	2	3
61	I'm very dissatisfied with myself.	0	1	2	3
62	I have much stronger emotional reactions than almost everyone else.	0	1	2	3
63	I do what other people tell me to do.	0	1	2	3
64	I can't stand being left alone, even for a few hours.	0	1	2	3
65	I have outstanding qualities that few others possess.	0	1	2	3
66	The future looks really hopeless to me.	0	1	2	3
67	I like to take risks.	0	1	2	3
68	I can't achieve goals because other things capture my attention.	0	1	2	3
69	When I want to do something, I don't let the possibility that it might be risky stop me.	0	1	2	3
70	Others seem to think I'm quite odd or unusual.	0	1	2	3
71	My thoughts are strange and unpredictable.	0	1	2	3
72	I don't care about other people's feelings.	0	1	2	3
73	You need to step on some toes to get what you want in life.	0	1	2	3
74	I love getting the attention of other people.	0	1	2	3

75	I go out of my way to avoid any kind of group activity.	0	1	2	3
76	I can be sneaky if it means getting what I want.	0	1	2	3
77	Sometimes when I look at a familiar object, it's somehow like I'm seeing it for the first time.	0	1	2	3
78	It is hard for me to shift from one activity to another.	0	1	2	3
79	I worry a lot about terrible things that might happen.	0	1	2	3
80	I have trouble changing how I'm doing something even if what I'm doing isn't going well.	0	1	2	3
81	The world would be better off if I were dead.	0	1	2	3
82	I keep my distance from people.	0	1	2	3
83	I often can't control what I think about.	0	1	2	3
84	I don't get emotional.	0	1	2	3
85	I resent being told what to do, even by people in charge.	0	1	2	3
86	I'm so ashamed by how I've let people down in lots of little ways.	0	1	2	3
87	I avoid anything that might be even a little bit dangerous.	0	1	2	3
88	I have trouble pursuing specific goals even for short periods of time.	0	1	2	3
89	I prefer to keep romance out of my life.	0	1	2	3
90	I would never harm another person.	0	1	2	3
91	I don't show emotions strongly.	0	1	2	3
92	I have a very short temper.	0	1	2	3
93	I often worry that something bad will happen due to mistakes I made in the past.	0	1	2	3
94	I have some unusual abilities, like sometimes knowing exactly what someone is thinking.	0	1	2	3
95	I get very nervous when I think about the future.	0	1	2	3
96	I rarely worry about things.	0	1	2	3
97	I enjoy being in love.	0	1	2	3
98	I prefer to play it safe rather than take unnecessary chances.	0	1	2	3
99	I sometimes have heard things that others couldn't hear.	0	1	2	3
100	I get fixated on certain things and can't stop.	0	1	2	3

101	People tell me it's difficult to know what I'm feeling.	0	1	2	3
102	I am a highly emotional person.	0	1	2	3
103	Others would take advantage of me if they could.	0	1	2	3
104	I often feel like a failure.	0	1	2	3
105	If something I do isn't absolutely perfect, it's simply not acceptable.	0	1	2	3
106	I often have unusual experiences, such as sensing the presence of someone who isn't actually there.	0	1	2	3
107	I'm good at making people do what I want them to do.	0	1	2	3
108	I break off relationships if they start to get close.	0	1	2	3
109	I'm always worrying about something.	0	1	2	3
110	I worry about almost everything.	0	1	2	3
111	I like standing out in a crowd.	0	1	2	3
112	I don't mind a little risk now and then.	0	1	2	3
113	My behavior is often bold and grabs peoples' attention.	0	1	2	3
114	I'm better than almost everyone else.	0	1	2	3
115	People complain about my need to have everything all arranged.	0	1	2	3
116	I always make sure I get back at people who wrong me.	0	1	2	3
117	I'm always on my guard for someone trying to trick or harm me.	0	1	2	3
118	I have trouble keeping my mind focused on what needs to be done.	0	1	2	3
119	I talk about suicide a lot.	0	1	2	3
120	I'm just not very interested in having sexual relationships.	0	1	2	3
121	I get stuck on things a lot.	0	1	2	3
122	I get emotional easily, often for very little reason.	0	1	2	3
123	Even though it drives other people crazy, I insist on absolute perfection in everything I do.	0	1	2	3
124	I almost never feel happy about my day-to-day activities.	0	1	2	3
125	Sweet-talking others helps me get what I want.	0	1	2	3

126	Sometimes you need to exaggerate to get ahead.	0	1	2	3
127	I fear being alone in life more than anything else.	0	1	2	3
128	I get stuck on one way of doing things, even when it's clear it won't work.	0	1	2	3
129	I'm often pretty careless with my own and others' things.	0	1	2	3
130	I am a very anxious person.	0	1	2	3
131	People are basically trustworthy.	0	1	2	3
132	I am easily distracted.	0	1	2	3
133	It seems like I'm always getting a "raw deal" from others.	0	1	2	3
134	I don't hesitate to cheat if it gets me ahead.	0	1	2	3
135	I check things several times to make sure they are perfect.	0	1	2	3
136	I don't like spending time with others.	0	1	2	3
137	I feel compelled to go on with things even when it makes little sense to do so.	0	1	2	3
138	I never know where my emotions will go from moment to moment.	0	1	2	3
139	I have seen things that weren't really there.	0	1	2	3
140	It is important to me that things are done in a certain way.	0	1	2	3
141	I always expect the worst to happen.	0	1	2	3
142	I try to tell the truth even when it's hard.	0	1	2	3
143	I believe that some people can move things with their minds.	0	1	2	3
144	I can't focus on things for very long.	0	1	2	3
145	I steer clear of romantic relationships.	0	1	2	3
146	I'm not interested in making friends.	0	1	2	3
147	I say as little as possible when dealing with people.	0	1	2	3
148	I'm useless as a person.	0	1	2	3
149	I'll do just about anything to keep someone from abandoning me.	0	1	2	3
150	Sometimes I can influence other people just by sending my thoughts to them.	0	1	2	3
151	Life looks pretty bleak to me.	0	1	2	3
152	I think about things in odd ways that don't make sense to most people.	0	1	2	3
153	I don't care if my actions hurt others.	0	1	2	3

154	Sometimes I feel "controlled" by thoughts that belong to someone else.	0	1	2	3
155	I really live life to the fullest.	0	1	2	3
156	I make promises that I don't really intend to keep.	0	1	2	3
157	Nothing seems to make me feel good.	0	1	2	3
158	I get irritated easily by all sorts of things.	0	1	2	3
159	I do what I want regardless of how unsafe it might be.	0	1	2	3
160	I often forget to pay my bills.	0	1	2	3
161	I don't like to get too close to people.	0	1	2	3
162	I'm good at conning people.	0	1	2	3
163	Everything seems pointless to me.	0	1	2	3
164	I never take risks.	0	1	2	3
165	I get emotional over every little thing.	0	1	2	3
166	It's no big deal if I hurt other peoples' feelings.	0	1	2	3
167	I never show emotions to others.	0	1	2	3
168	I often feel just miserable.	0	1	2	3
169	I have no worth as a person.	0	1	2	3
170	I am usually pretty hostile.	0	1	2	3
171	I've skipped town to avoid responsibilities.	0	1	2	3
172	I've been told more than once that I have a number of odd quirks or habits.	0	1	2	3
173	I like being a person who gets noticed.	0	1	2	3
174	I'm always fearful or on edge about bad things that might happen.	0	1	2	3
175	I never want to be alone.	0	1	2	3
176	I keep trying to make things perfect, even when I've gotten them as good as they're likely to get.	0	1	2	3
177	I rarely feel that people I know are trying to take advantage of me.	0	1	2	3
178	I know I'll commit suicide sooner or later.	0	1	2	3
179	I've achieved far more than almost anyone I know.	0	1	2	3
180	I can certainly turn on the charm if I need to get my way.	0	1	2	3
181	My emotions are unpredictable.	0	1	2	3
182	I don't deal with people unless I have to.	0	1	2	3
183	I don't care about other peoples' problems.	0	1	2	3

184	I don't react much to things that seem to make others emotional.	0	1	2	3
185	I have several habits that others find eccentric or strange.	0	1	2	3
186	I avoid social events.	0	1	2	3
187	I deserve special treatment.	0	1	2	3
188	It makes me really angry when people insult me in even a minor way.	0	1	2	3
189	I rarely get enthusiastic about anything.	0	1	2	3
190	I suspect that even my so-called "friends" betray me a lot.	0	1	2	3
191	I crave attention.	0	1	2	3
192	Sometimes I think someone else is removing thoughts from my head.	0	1	2	3
193	I have periods in which I feel disconnected from the world or from myself.	0	1	2	3
194	I often see unusual connections between things that most people miss.	0	1	2	3
195	I don't think about getting hurt when I'm doing things that might be dangerous.	0	1	2	3
196	I simply won't put up with things being out of their proper places.	0	1	2	3
197	I often have to deal with people who are less important than me.	0	1	2	3
198	I sometimes hit people to remind them who's in charge	0	1	2	3
199	I get pulled off-task by even minor distractions.	0	1	2	3
200	I enjoy making people in control look stupid.	0	1	2	3
201	I just skip appointments or meetings if I'm not in the mood.	0	1	2	3
202	I try to do what others want me to do.	0	1	2	3
203	I prefer being alone to having a close romantic partner.	0	1	2	3
204	I am very impulsive.	0	1	2	3
205	I often have thoughts that make sense to me but that other people say are strange.	0	1	2	3
206	I use people to get what I want.	0	1	2	3
207	I don't see the point in feeling guilty about things I've done that have hurt other people.	0	1	2	3
208	Most of the time I don't see the point in being friendly.	0	1	2	3
209	I've had some really weird experiences that are very difficult to explain.	0	1	2	3

210	I follow through on commitments.	0	1	2	3
211	I like to draw attention to myself.	0	1	2	3
212	I feel guilty much of the time.	0	1	2	3
213	I often "zone out" and then suddenly come to and realize that a lot of time has passed.	0	1	2	3
214	Lying comes easily to me.	0	1	2	3
215	I hate to take chances.	0	1	2	3
216	I'm nasty and short to anybody who deserves it.	0	1	2	3
217	Things around me often feel unreal, or more real than usual.	0	1	2	3
218	I'll stretch the truth if it's to my advantage.	0	1	2	3
219	It is easy for me to take advantage of others.	0	1	2	3
220	I have a strict way of doing things.	0	1	2	3

Chapter Four – Study Three

The previous study evaluated the unique contributions of specific personality traits to scores on measures of traditional OCPD in a mixed university and community sample. Results indicated that rigid perfectionism, perseveration, and intimacy avoidance uniquely accounted for a large proportion of variance in a latent Section II OCPD variable, and that anxiousness and (low) impulsivity, as well as self and interpersonal impairment, augmented the prediction of latent OCPD scores. Study Three also evaluated the optimal trait profile for OCPD but did so using a clinical sample. The study also examined the relationship between traits and traditional OCPD in greater detail, by investigating the degree to which traits are associated with each of the eight individual Section II OCPD criteria (rather than just a total OCPD score).

**Continuity Between Sections II and III for Obsessive-Compulsive
Personality Disorder**

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J. Liggett	65%	Planning, designing, statistical analysis, interpreting results, drafting and revising of manuscript.
M. Sellbom	25%	Planning, designing, interpreting results, comments on manuscript drafts.
B. Bach	10%	Data collection, processing, manuscript review and editing.

Abstract

Objective: Obsessive–compulsive personality disorder (OCPD) is formally operationalized in Section II of the DSM-5 by a heterogeneous collection of 8 categorical criteria. Section III contains an alternative model operationalizing personality disorders via dimensional personality traits and associated impairment. The extent to which the personality traits used to define OCPD in Section III correspond with the Section II operationalization of the disorder is contested. The current study aims to contribute to the evidence base necessary to solidify the optimal trait profile for this disorder via a more fine-tuned examination of OCPD.

Method: The research questions were examined using a clinical sample of 142 Danish adults who completed the Structured Clinical Interview for DSM-IV Axis II Disorders and the Personality Inventory for DSM-5 to index both the Sections II and III (personality traits) operationalizations of OCPD, respectively.

Results: Bivariate correlations supported Rigid Perfectionism and Perseveration as traits relevant to OCPD; however, hierarchical regression analyses indicated that of the 4 traits used in the Section III operationalization of OCPD, only Rigid Perfectionism uniquely predicted OCPD ($p < .05$). In addition to Rigid Perfectionism, the conceptually relevant traits of Submissiveness, Suspiciousness, and (low) Impulsivity were also found to uniquely predict OCPD and its specific symptoms in a regression model.

Conclusions: These findings indicate that the traits proposed in Section III are only partially aligned with the traditional, Section II conceptualization of OCPD, and may be augmented by incorporating Submissiveness, Suspiciousness, and (low) Impulsivity. In light of the current findings and existing literature, a modified constellation of traits to operationalize OCPD is likely justified.

Keywords: Alternative model for personality disorders, DSM-5 Section III, obsessive–compulsive personality disorder, personality inventory for DSM-5, PID-5

Key Practitioner Message

- Rigid Perfectionism, Perseveration, and Restricted Affectivity emerged as Section III OCPD traits that were substantially associated with the Section II categorical criteria of OCPD.
- Rigid Perfectionism is strongly associated, and Perseveration is moderately associated with Section II OCPD.
- Rigid Perfectionism should be considered the core personality trait underpinning OCPD.

Introduction

Obsessive–compulsive personality disorder (OCPD) has a long history in the clinical literature, having been included in all previous diagnostic manuals. For almost all of its history, OCPD (along with PDs generally) has been defined by reference to behavioural criteria. Since the release of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) third edition (American Psychiatric Association [APA], 1980), these criteria have been operationalized using a polythetic categorical model. This model has been controversial since its inception, with strong arguments being made in favour of an alternative, dimensional model using personality traits. The debate on how best to define PDs is yet to be resolved, and the most recent version of the DSM includes two models. Section II (Diagnostic Criteria and Codes) of the DSM-5 retains the categorical–behavioural approach. Section III (Emerging Models and Measures) introduces an alternative, dimensional model, which, instead of using behavioural traits, uses personality traits and disorder-specific impairment to diagnose PDs. The current study was designed to investigate the associations between the two DSM-5 operationalizations of OCPD presented in Sections II and III, respectively. In particular, the current study sought to examine the extent to which personality traits in Section III correspond with the traditional categorical behavioural criteria retained in Section II.

OCPD is characterized in Section II by impairment and distress related to a preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency. Associated behavioural attributes include perfectionism, preoccupation with details, order and organization, excessive devotion to work and productivity at the exclusion of other important activities, rigidity, and a lack of ability to express warmth or emotion (APA, 2013). A diagnosis of OCPD requires meeting any four of eight possible behavioural symptoms, resulting in substantial heterogeneity among patients. The eight criteria include the following:

1. A preoccupation with details, rules, lists, order, organization or schedules to the point where the primary purpose of the activity is lost;
2. Perfectionism that interferes with task completion (for example, being unable to complete a project due to not meeting their own excessively high expectations);
3. Excessive devotion to work and productivity at the expense of friendships and leisure activities;
4. Over-conscientiousness and inflexibility in relation to morality, ethics or values;
5. An inability to dispose of worn-out or useless objects, even when they hold no sentimental value;
6. A reluctance to delegate tasks to others unless they commit to completing things in exact accordance with the person's instructions;
7. The adoption of a miserly spending style towards both the self and others; and
8. Demonstrating rigidity and stubbornness (APA, 2013).

Other limitations of this polythetic categorical model, highlighted by numerous researchers (e.g., Clark, 2007; Skodol, 2012; Trull & Durrett, 2005; Widiger & Samuel, 2005), include excessive overlap with other disorders and arbitrary diagnostic boundaries.

Section III offers an alternative diagnostic model for PDs, developed by the DSM-5 Work Group to address the problems with Section II. Section III presents a hybrid dimensional–categorical model, which underscores the importance of dimensional personality traits and functional impairment, and de-emphasizes symptomatic behavioural criteria (Krueger et al., 2011; Skodol, 2012). Diagnoses are made based on the presence of elevated levels of trait facets (Criterion B), combined with disorder specific impairment (Criterion A).

A Section III OCPD diagnosis requires elevated levels of Rigid Perfectionism, as well as elevated levels of at least two of three additional traits (Perseveration, Intimacy Avoidance, and Restricted Affectivity; Criterion B), coupled with specific types of functional impairment in two of four areas – Identity and Self-Direction (from the Self-domain), and Empathy and Intimacy (from the Interpersonal domain; Criterion A). The impairment must be longstanding and stable over time and not better explained by the physiological effects of a substance or another medical condition (APA, 2013).

Criterion B Personality Traits for OCPD

The research findings on the extent to which the four trait facets specified in the Section III model for OCPD are conceptually related to Section II OCPD are mixed. Using the *Personality Inventory for DSM-5* (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012) in a large sample of undergraduate students, Hopwood, Thomas, Markon, Wright, and Krueger (2012) found that only two of the four specified traits (Rigid Perfectionism and Perseveration) correlated moderately with Section II OCPD. Two other trait facets not specified in the Section III model of OCPD (Emotional Lability and Distractability) also correlated meaningfully with OCPD. Anderson, Snider, Sellbom, Krueger, and Hopwood (2014) observed similar findings in an independent university sample. More specifically, they found that although Rigid Perfectionism and Perseveration predicted Section II OCPD, Intimacy Avoidance and Restricted Affectivity did not. They also found that Anxiousness and Hostility uniquely incremented the prediction of OCPD (Anderson et al., 2014). In a large Italian community sample, Rigid Perfectionism and Perseveration, as well as Suspiciousness, predicted Section II OCPD (Fossati, Krueger, Markon, Borroni, & Maffei, 2013). It should be noted that all of these studies used nonclinical samples.

In a large Flemish community sample, Bastiaens, Smits, De Hert, Vanwalleghem, and Claes (2016) found that all four proposed Section III traits correlated with Section II OCPD. Rigid Perfectionism and Perseveration had the largest effect sizes. Moreover, in a regression model, they found that Submissiveness, Withdrawal, and Depressivity augmented the prediction of OCPD. In the only study to explicitly focus on OCPD, Liggett, Sellbom, and Carmichael (2017) found that Rigid Perfectionism, Perseveration, and Intimacy Avoidance (but not Restricted Affectivity) predicted a latent Section II OCPD variable in a mixed university and community sample. Furthermore, the additional traits of Anxiousness and (low) Impulsivity augmented the prediction of latent OCPD scores. In the only clinical sample to date, Morey, Benson, and Skodol (2016) found that all four of the trait facets specified in Section III demonstrated higher correlations with Section II OCPD than the 21 other trait facets in the PID-5; Rigid Perfectionism had the largest association.

As the foregoing discussion of the existing literature demonstrates, there is only partial evidence supporting the four traits specified in the Section III model of OCPD. Rigid Perfectionism and Perseveration have consistently been found to be associated with Section II OCPD. Beyond those, there is no clear pattern in the studies conducted to date. These inconsistencies could be due in part to differences in the kinds of samples and types of measurement used, which make direct comparisons of the studies' findings difficult. Additional research using clinical samples on exactly which trait facets are associated with OCPD is required to improve the Section III model's operationalization of OCPD. The current study forms a part of this effort to refine the personality trait criterion within the Section III model of OCPD. Its contribution is particularly significant as it is only the second study to investigate the association between trait facets and Section II OCPD using a clinical sample. Furthermore, the current study is the first to examine the specific associations between the traits associated with this

disorder, and the degree to which they capture each of the eight individual Section II OCPD criteria (as opposed to solely examining the association between traits and a total OCPD score). This analysis allows for a more nuanced evaluation and understanding of the links between the Section II operationalization and the Section III dimensional personality traits, which is an important contribution to the literature, as one of the primary goals of the new model is to promote continuity between Sections II and III.

In light of the literature just reviewed, we hypothesized that only Rigid Perfectionism and Perseveration (but not Restricted Affectivity or Intimacy Avoidance) would be associated with the eight OCPD criteria of DSM-5 Section II (Anderson et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Morey et al., 2016). Furthermore, we tentatively expected that the conceptually relevant traits of Anxiousness, Submissiveness, Hostility, Suspiciousness, and (low) Impulsivity would also uniquely augment the trait-based operationalization of OCPD in a regression model.

Method

Participants

Participants were 142 clinical participants from a Danish outpatient clinic specializing in the assessment and treatment of PDs; this sample has been reported upon in previous research (Bach, Anderson, & Simonsen, 2017; Bach & Sellbom, 2016), but the current analyses and research questions are novel. All participants met the diagnostic criteria for at least one psychiatric disorder as evaluated by a clinical psychologist or psychiatrist, with 32% meeting the diagnostic criteria for OCPD based on a structured interview (described later). The mean age of participants was 29.02 years ($SD = 8.38$). A majority were females (68.3%).¹ Of the participants, 10.5% had a Bachelor's degree or higher, 54.2% reported being in a relationship, and 55% reported

¹ Partial correlation analysis revealed no significant differences between males and females.

being parents. Among the sample, the most common PDs were Borderline PD (71.1%), Avoidant PD (49.3%), Paranoid PD (48.6%), and OCPD. Common psychiatric syndromes included agoraphobia (50%), social phobia (45.1%), panic disorder (38%), post-traumatic stress disorder (33.1%), and obsessive–compulsive disorder (31.7%). Individuals clinically judged to be experiencing a current psychotic, manic, or severe depressive episode were not included. Further, individuals observed to have autism, an organic disorder, or a substance-induced condition based on relevant psychological test results and clinical judgement were also not included.

Measures

The Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1994). The SCID-II interview was administered to all 142 participants and was performed, recorded and scored by the third author, and supervised by an experienced psychiatrist. OCPD was expressed dimensionally by summing the number of endorsed criteria, and all criteria were measured dichotomously (0 = *not present/subclinical*, 1 = *present*). The SCID-II has demonstrated sound psychometric properties (Lobbestael, Leurgans, & Arntz, 2011). Because the criteria for OCPD went unchanged from DSM-IV to DSM-5, the current measurement was deemed appropriate.

Personality Inventory for DSM-5 (Krueger et al., 2012). The PID-5 is a 220-item self-report questionnaire used to measure personality traits as outlined in Section III of the DSM-5. Responses relating to personality functioning are made using a 4-point scale of “*very false*,” “*somewhat false*,” “*somewhat true*,” and “*very true*.” The PID-5 has demonstrated good construct validity, with respect to internal structure (Fossati, Borroni, Somma, Markon, & Krueger, 2017; Wright et al., 2012), good convergent, discriminant, and criterion validity (Yalch & Hopwood, 2016), in addition to good convergent and discriminant validity with other models of personality, such as

the PSY-5 (Anderson et al., 2013) and the Five Factor Model (Thomas et al., 2013). In this study, the Danish version of the PID-5 was used, which has demonstrated sound psychometric properties (Bach, Lee, Mortensen, & Simonsen, 2016; Bach, Maples-Keller, Bo, & Simonsen, 2016; Bo, Bach, Mortensen, & Simonsen, 2016). Internal consistency values for all facets have been reported in Bach, Lee, et al. (2016).

Results

Zero-Order Correlations

First, we aimed to determine the bivariate relationships between Section III personality traits and OCPD symptoms. For this purpose, we estimated point biserial correlations between the eight Section II OCPD criteria and all PID-5 domain and facet scores. Due to the large number of correlations calculated, we corrected for family-wise error. Specifically, we used an alpha value of .002 (.05/30 personality traits for each criterion). These results are shown in Table 4.1. At the higher order trait domain level, none of the domains were significantly associated with total OCPD criteria scores at the corrected alpha level (i.e., $p < .002$). At the lower order trait facet level, only two of the 25 traits (Rigid Perfectionism [$r = .69$] and Perseveration [$r = .42$]) were significantly correlated with total OCPD scores, as hypothesized.

Table 4.1

Bivariate Associations Between 8 Diagnostic Criteria for OCPD and Section III Traits

Section III traits	DSM-5 Section II criteria for OCPD								OCPD Total
	1	2	3	4	5	6	7	8	
Base rates	39%	50%	23%	37%	16%	55%	4%	49%	
Emotional lability	.19	.17	-.03	-.06	.19	.18	.04	.03	.19
Anxiousness	.19	.19	-.03	.03	.01	.19	-.01	.01	.20
Separation insecurity	.17	.16	.01	-.04	.21	.13	.06	.06	.20
Submissiveness	.14	.27*	.14	.31*	.10	.00	-.02	-.25	.20
Hostility	.17	.07	-.01	-.24	.09	.14	.08	.47*	.21
Perseveration	<i>.30*</i>	<i>.32*</i>	.05	.17	.24	<i>.36*</i>	-.05	.03	.42*
Withdrawal	.06	.13	.08	.06	.00	.05	-.11	.08	.12
Intimacy avoidance	.02	.00	-.07	-.08	.03	.08	-.02	.03	.00
Anhedonia	.17	.15	-.02	.02	.03	.14	-.02	.08	.17
Depressivity	.08	.11	-.01	.05	.02	.09	-.02	-.09	.07
Restricted affectivity	-.15	.01	.02	-.09	-.09	.03	.00	.26*	.00
Suspiciousness	.16	.15	.03	-.13	.08	.16	.04	.25	.20
Manipulativeness	.00	.03	.10	-.07	.09	.08	-.02	.29*	.01
Deceitfulness	-.03	.07	.03	-.14	.11	.04	.00	.27*	.09
Grandiosity	.16	.12	.21	.01	.11	-.01	-.06	.29*	.24
Attention seeking	.11	.10	.05	-.02	.19	.16	.02	.11	.20
Callousness	-.01	-.01	.06	-.25	.04	.00	.02	.38*	.05
Irresponsibility	-.05	.03	-.10	-.30*	.12	.01	.03	.24	-.02
Impulsivity	.03	-.05	-.02	-.25	.12	.02	.06	.27*	.03
Distractibility	.10	.21	-.11	-.09	.19	.11	.00	.04	.12
Risk taking	-.10	-.13	.18	-.24	.04	-.03	.00	.16	-.05
Rigid perfectionism	.58*	.44*	.26*	.35*	.21	.54*	-.06	.03	.69*
Unusual beliefs	.15	.14	.18	-.01	.15	.08	-.02	.19	.24
Eccentricity	.12	.17	.04	-.04	.27*	.08	-.04	.16	.21
Perceptual dysregulation	.16	.19	.11	-.02	.16	.06	.02	.06	.20
<i>Negative affectivity</i>	.22	.21	-.02	-.03	.20	.20	.04	.04	.24
<i>Detachment</i>	.09	.11	-.01	.00	.02	.11	-.06	.08	.11
<i>Antagonism</i>	.05	.08	.13	-.08	.12	.05	-.03	.33*	.19
<i>Disinhibition</i>	.04	.07	-.09	-.27*	.18	.06	.04	.23	.05
<i>Psychoticism</i>	.16	.19	.12	-.03	.23	.09	-.02	.16	.25

Note. 1 = Preoccupation with details, 2 = Perfectionism, 3 = Excessive devotion to productivity, 4 = Over-conscientiousness, 5 = Inability to discard worthless objects, 6 = Reluctance to delegate tasks to others, 7 = Miserliness, 8 = Rigidity and stubbornness; Higher order trait domains are italicised. * = correlation coefficient is significant at the .002 level; Criterion trait correlations above .30 are italicised, whereas correlations above 0.40 are boldfaced; Section III OCPD traits are shaded grey. Base rates = prevalence of meeting criterion; OCPD = obsessive-compulsive personality disorder; OCPD total = OCPD total criterion count; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Next, we evaluated the traits specified for Section III OCPD and their associations with individual OCPD criteria. Rigid Perfectionism was also the most strongly correlated trait with individual criteria. It was most strongly associated with Criterion 1 (Preoccupation with details), followed by Criterion 6 (Reluctance to delegate tasks to others), Criterion 2 (Perfectionism), Criterion 4 (Overconscientiousness), and finally, Criterion 3 (Excessive devotion to productivity). Perseveration was significantly associated with Criteria 1 (Preoccupation with details), 2 (Perfectionism), and 6 (Reluctance to delegate tasks to others). As hypothesized, Intimacy Avoidance and Restricted Affectivity were not significantly associated with total OCPD scores, and only Restricted Affectivity was associated with one of the individual criteria, Criterion 8 (Rigidity and stubbornness). Among the additional traits we hypothesized to be conceptually relevant to Section II OCPD, Submissiveness was significantly associated with Criterion 2 (Perfectionism), whereas both Submissiveness and (low) Irresponsibility were significantly associated with Criterion 4 (Overconscientiousness). Hostility and Impulsivity (in the opposite from hypothesized direction) were both significantly associated with Criterion 8 (Rigidity and stubbornness).

Regression Analyses

To examine the degree to which each PID-5 facet uniquely predicted each of the Section II OCPD total score and criteria, we regressed each individual Section II criterion onto conceptually relevant traits. For the individual criteria, a two-step hierarchical logistic regression analysis was conducted, with the four proposed trait facets for OCPD (Rigid Perfectionism, Perseveration, Intimacy Avoidance, and Restricted Affectivity) entered in Step 1. The traits considered conceptually (or empirically, based on consistent findings from previous research) relevant to OCPD – i.e., Anxiousness, (low) Impulsivity, Submissiveness, Hostility, and Suspiciousness –

were entered in Step 2 using a backwards elimination procedure. In addition to using standard likelihood ratio tests to evaluate the incremental contribution of the second step, model fit was evaluated by using Bayesian Information Criterion (Schwarz, 1978) to impose a requirement that the additional traits not detract meaningfully from a parsimonious model. Moreover, because of the small sample size and thus potentially questionable statistical power for the second step, a backwards elimination procedure was used to identify a final set of significant incremental predictors. Only the results for the final step for each OCPD criterion are reported below.² Submissiveness ($b = .68$, $s.e. = .30$, $z = 2.24$, $p = .030$ $OR = 2.0$) was found to increment the prediction of Criterion 2 (Perfectionism; $\chi^2_{\text{change}} = 5.01$, $df = 1$, $p = .030$). For Criterion 4 (Overconscientiousness), Submissiveness ($b = 1.33$, $s.e. = .38$, $z = 3.53$, $p < .001$, $OR = 3.77$), (low) Suspiciousness ($b = -.97$, $s.e. = .35$, $z = -2.76$, $p = .006$, $OR = .38$), and (low) Impulsivity ($b = -.90$, $s.e. = .35$, $z = -2.61$, $p = .009$, $OR = .40$) added incrementally to this prediction ($\chi^2_{\text{change}} = 23.52$, $df = 3$, $p < .001$). For Criterion 6 (Reluctance to delegate to others), (low) Submissiveness ($b = -.77$, $s.e. = .33$, $z = -2.35$, $p = .020$, $OR = .46$) incrementally added to the prediction $\chi^2_{\text{change}} = 5.54$, $df = 1$, $p < .020$). Finally, (low) Submissiveness ($b = -.81$, $s.e. = .29$, $z = -2.78$, $p = .005$, $OR = .45$), Suspiciousness ($b = .66$, $s.e. = .29$, $z = 2.25$, $p = .025$, $OR = 1.94$), and Impulsivity ($b = .59$, $s.e. = .28$, $z = 2.08$, $p = .037$, $OR = 1.80$) all incrementally contributed to the prediction of Criterion 8 (Rigidity and stubbornness; $\chi^2_{\text{change}} = 17.21$, $df = 3$, $p < .001$). Bayesian Information Criterion did not indicate a meaningful decrement in model parsimony with the addition of these traits for the results just reported. Moreover, results indicated that none of the additional traits incrementally added to the prediction of Criterion 1 (Preoccupation with details; $\chi^2_{\text{change}} = 1.62$, $df = 4$, $p = .810$), Criterion 3 (Excessive devotion to productivity; $\chi^2_{\text{change}} = 5.20$, $df = 4$, $p = .270$), Criterion 5

² A detailed step-by-step description of findings is available upon request.

(Inability to discard worthless objects; $\chi^2_{\text{change}} = 1.04$, $df = 4$, $p = .900$), or Criterion 7 (Miserliness; $\chi^2_{\text{change}} = 1.19$, $df = 4$, $p = .880$). Finally, a hierarchical, two-step negative binomial regression analysis revealed that Rigid Perfectionism was the only trait to predict total OCPD scores ($b = .57$, $s.e. = .09$, $z = 6.3$, $p < .001$, $OR = 5.88$). None of the additional traits added incrementally to this prediction ($\chi^2_{\text{change}} = 4.73$, $df = 4$, $p = .316$).

Table 4.2 summarizes these results. More specifically, Rigid Perfectionism was uniquely associated with Criteria 1 (Preoccupation with details), 2 (Perfectionism), 3 (Excessive devotion to productivity), 4 (Overconscientiousness), and 6 (Reluctance to delegate); Perseveration was associated with Criteria 5 (Inability to discard worthless objects) and 6 (Reluctance to delegate), and (low) Intimacy Avoidance was associated with Criterion 4 (Overconscientiousness). Low Restricted Affectivity contributed uniquely to the prediction of Criterion 1 (Preoccupation with details).

Table 4.2

DSM-5 Section III Traits That Uniquely Predict OCPD Criteria Derived From Logistic Regression Analyses

DSM-5 Section III traits (odds ratios)	DSM-IV/DSM-5 OCPD Criteria
Rigid perfectionism (13.0), Restricted Affectivity (.48).	1. Preoccupation with details
Rigid perfectionism (4.16), Submissiveness (2.0).	2. Perfectionism
Rigid perfectionism (3.33).	3. Excessive devotion to productivity
Rigid perfectionism (6.07), Intimacy Avoidance (0.53), Submissiveness (3.77), Suspiciousness (0.38), Impulsivity (.40).	4. Over-conscientiousness
Perseveration (2.83).	5. Inability to discard worthless objects
Rigid perfectionism (8.35), Perseveration (2.68) Submissiveness (0.46).	6. Reluctance to delegate tasks to others
n.s.	7. Miserliness
Submissiveness (0.45), Suspiciousness (1.94), Impulsivity (1.80).	8. Rigidity and stubbornness
Rigid perfectionism (5.88).	Total OCPD criterion count

Note. $n = 142$; all reported coefficients are significant at the 0.05 level. Eight criterion variables: odds ratios derived from a multiple logistic regression model. Total OCPD criterion count: standardized beta weights (bootstrapped standard errors); OCPD = Obsessive-compulsive personality disorder; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; n.s. = not significant.

Discussion

This study aimed to evaluate the associations between the DSM-5 Section III personality trait facets with specific Section II OCPD criteria. Our findings only partially supported the constellation of trait facets proposed in Section III for OCPD and identified three other trait facets that appear relevant to the disorder.

Traits Proposed in Section III

The zero-order correlations indicated that Rigid Perfectionism, Perseveration, and Restricted Affectivity were all significantly associated with specific Section II criteria. Rigid Perfectionism and Perseveration demonstrated the strongest correlations, being significantly associated with 5 and 3 of the Section II OCPD criteria, respectively. The fourth of the proposed traits, Intimacy Avoidance, was not associated with any OCPD Section II criteria. Furthermore, logistic regression analyses revealed that the aforementioned Section III traits were substantially associated with six of the eight categorical criteria for Section II OCPD, with the two exceptions being Criteria 7 and 8 (Miserliness and Rigidity and stubbornness). Furthermore, the Section III trait facets proposed for OCPD uniquely predicted the categorical Section II OCPD criteria, though for Intimacy Avoidance and Restricted Affectivity, the relationship was in an unexpected direction (i.e., low rather than high levels of the trait predicted OCPD criteria). To the extent that these results only partially support the Section III trait operationalization of OCPD (i.e., by finding that Rigid Perseveration is strongly and Perseveration is moderately associated with Section II OCPD), they are consistent with previous research (Anderson et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Liggett et al., 2017; Morey et al., 2016).

The association between Rigid Perfectionism and OCPD is the most consistent finding in the literature on the relationship between trait facets and the disorder. Our results confirm this relationship. Uniquely, our study also assessed the utility of Rigid Perfectionism in predicting individual Section II OCPD criteria. Rigid Perfectionism uniquely predicted total OCPD scores, in addition to five of the eight individual criteria, the most of any trait facet. Combined, these results confirmed that, consistent with the Section III model, Rigid Perfectionism should be considered the core trait facet

underpinning OCPD, which supports the requirement of this specific trait facet for an OCPD diagnosis in Section III.

Perseveration was also meaningfully correlated with the total OCPD score in the zero-order analyses, though it did not contribute significantly in the regression model. This latter finding is inconsistent with previous research (Anderson et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013) and could possibly be explained by lower than desired statistical power for these analyses in light of the sample size. Perseveration also uniquely predicted two criteria in the regression model – Criterion 5, (Inability to discard worthless objects), and 6, (Reluctance to delegate tasks to others). This relationship was contrary to expectations. It was predicted that Perseveration would predict Criteria 2, 3, and 8 (Perfectionism, Excessive devotion to productivity, and Rigidity and stubbornness, respectively). Although the relationship between Perseveration and Section II OCPD is not as strong as the relationship between Rigid Perfectionism and Section II OCPD, the former trait does appear to be an important part of the OCPD construct.

The results with respect to Restricted Affectivity and Intimacy Avoidance were similarly unexpected. Zero-order correlations were nonsignificant for Intimacy Avoidance; however, Intimacy Avoidance predicted Criterion 4 (Overconscientiousness) in the opposite to expected direction. Restricted Affectivity was positively correlated with Criterion 8 (Rigidity and stubbornness), and uniquely predicted Criterion 1 (Preoccupation with details), again, in an unexpected direction. Not only are these findings counter-intuitive, but also in direct opposition to the assumptions made in Section III. However, in light of the zero-order correlations, one must seriously consider the possibility that these findings might be the result of statistical suppression. Overall, our results do not provide support for the inclusion of Restricted Affectivity or Intimacy Avoidance in the Section III model of OCPD. These

findings are consistent with prior research, which found support for the inclusion of Rigid Perfectionism and Perseveration, but not Intimacy Avoidance (Bastiaens et al., 2016) or Restricted Affectivity (Liggett et al., 2017), or both Intimacy Avoidance and Restricted Affectivity (Anderson et al., 2014; Fossati et al., 2013) in the Section III model.

Additional Trait Facets

The other trait facets that predicted individual Section II OCPD criteria were Submissiveness, Suspiciousness, and Impulsivity. Notably, however, both elevated and diminished levels of these trait facets were associated with different OCPD criteria. These findings suggest that OCPD may be best conceptualized as a disorder characterized by Rigid Perfectionism and Perseveration, with other traits being important to the way in which OCPD is expressed in individual cases, if not central to the disorder. Because of the heterogeneous (and in some respects, internally inconsistent) nature of the Section II OCPD construct (Hummelen, Wilberg, Pedersen, & Karterud, 2008), diminished and elevated levels of the same trait facet may each be associated with Section II OCPD. For example, based on these findings, both a highly submissive and a nonsubmissive person could meet diagnostic criteria for Section II OCPD. A person with high levels of Submissiveness could be expected to exhibit Criterion 4 – Overconscientiousness (a pattern confirmed in our results). At the same time, a person with low levels of Submissiveness could be expected to exhibit Criterion 8 – Rigidity and stubbornness. Thus, differential constellations of traits augmenting Rigid Perfectionism and Perseveration might explain (in part) differential manifestations (and criteria) for these patients.

The extreme heterogeneity of the Section II OCPD construct is one of the major reasons the Section II model has been criticized (Hummelen et al., 2008). A diagnosis of OCPD using the Section II model is made when an individual meets any four of eight

behavioural symptomatic criteria. This results in 163 ways in which a person may meet criteria for an OCPD diagnosis, with the possibility of two patients being diagnosed with the disorder without sharing a single behavioural symptom. The heterogeneous nature of OCPD has been confirmed in various studies employing factor analysis, indicating that OCPD may be better conceptualized as a constellation of maladaptive personality traits (Grilo, 2004; Hummelen et al., 2008). The heterogeneity of the disorder therefore makes it a difficult disorder to assess and could, in part, explain the complexity of the pattern of associations suggested by our findings.

Finally, it is notable that none of the 25 PID-5 traits predicted Criterion 7 (Miserliness), which relates to adopting a miserly spending style towards both self and others. This result is somewhat surprising, given that the attribute of miserliness is consistent with other OCPD characteristics (e.g., inability to discard worthless objects, stubbornness, and rigidity). However, due to the low base rate of 4%, this result might be a product of range restriction.

The findings and associated conclusions of this study must be considered with some limitations in mind. First, the study's sample size may have limited its ability to identify a larger range of traits that can uniquely predict OCPD criteria, especially in the regression models. Second, the interviews were conducted by only one interviewer, potentially resulting in bias. Third, several other studies in the literature have used the same sample. One must therefore be cautioned that sampling error may have influenced our interpretation of the broader literature. It is therefore important that the associations between the PID-5 and SCID-II are replicated in other studies. Fourth, only Criterion B (traits) was used in this research, as opposed to the full Section III model, which includes a rating of personality functioning (Criterion A). Future research should consider incorporating a measurement of impairment in personality functioning relevant to Section III OCPD. Further, the literature remains inconsistent on which traits are

most relevant to OCPD. More research using larger sample sizes is required to settle this controversy.

Conclusions

The Section III OCPD traits of Rigid Perfectionism, Perseveration, and Restricted Affectivity appear to be substantially associated with six of the eight categorical criteria for Section II OCPD, with Rigid Perfectionism being strongly associated, and Perseveration being moderately associated with Section II OCPD. Results suggest that Rigid Perfectionism can be considered the core trait underpinning OCPD. Three other trait facets (Submissiveness, Suspiciousness, and Impulsivity) also predicted individual Section II OCPD criteria but did not predict total Section II OCPD scores. Elevated and diminished levels of these trait facets predicted different criteria. Therefore, these trait facets seem relevant to the expression of the disorder in individual cases, rather than being constitutive trait facets of the disorder. OCPD may therefore be best conceptualized as a disorder characterized by Rigid Perfectionism and Perseveration, with other traits influencing how the disorder manifests.

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Chapter Five – Study Four

Study Four continued the research project's examination of the optimal trait profile for OCPD. While already the subject of Studies Two and Three, another examination of the question was warranted given the centrality of the issue to the AMPD and the inconsistencies in the existing literature. Study Four also further investigated the value of disorder-specific impairment in the AMPD. Study Two affirmed the utility of the OCPD-IS. Study Four asked whether this measure of OCPD-specific impairment was better able to account for variance in traditional OCPD scores than measures of general impairment. Finally, responding to the fact that the previous studies (and the literature generally) rely exclusively on self-report data, Study Four also investigated the extent to which self-report and informant data correspond.

**Examining the DSM-5 Alternative Model of Personality Disorders
Operationalisation of Obsessive-Compulsive Personality Disorder
in a Mental Health Sample**

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Itemised Work Contribution:

J. Liggett	80%	Planning, designing, data collection, statistical analysis, interpreting results, drafting and revising of manuscript.
M. Sellbom	20%	Planning, designing, interpreting results, comments on manuscript drafts.

Abstract

The current study evaluated the continuity between the diagnostic operationalisations of Obsessive-Compulsive Personality Disorder (OCPD) in DSM-5, both as traditionally operationalised and from the perspective of the alternative model of personality disorders (AMPD). Using both self-report and informant measures, the study had four aims, (a) to examine the extent to which self report and informant data correspond, (b) to investigate whether both self report and informant measures of the alternative model of OCPD can predict traditional OCPD, (c) to determine if any traits additional to those proposed in the alternative model of OCPD can predict traditional OCPD, and (d) to investigate whether a measure of OCPD-specific impairment is better at predicting traditional OCPD than are measures of general impairment in personality functioning. A mental health sample of 214 participants was recruited and administered measures of both the traditional and alternative models of OCPD. Self report data moderately corresponded with informant data, which is consistent with the literature. Results further confirmed rigid perfectionism as the core trait of OCPD. Perseveration and workaholism were also associated with OCPD. Hostility was identified as a trait deserving further research. A measure of OCPD-specific impairment demonstrated its ability to incrementally predict OCPD over general measures of impairment.

Keywords: Obsessive-Compulsive Personality Disorder; DSM-5 personality traits; PID-5; personality impairment

Introduction

Obsessive-Compulsive Personality Disorder (OCPD) is characterised by perfectionism, a preoccupation with orderliness, and mental and interpersonal control at the expense of flexibility, openness, and efficiency (American Psychiatric Association [APA], 2013). The way in which personality disorders (PDs), including OCPD, have been operationalised in the *Diagnostic and Statistical Manual for Mental Disorders, 5th Edition* (DSM-5; APA, 2013) has been the subject of significant criticism (for example, see Clark, 2007; Skodol, 2012, for reviews). In an attempt to address these criticisms and lay the framework for future scientific inquiry, an alternative hybrid categorical-dimensional model for the diagnosis of PDs, referred to as the *Alternative Model of Personality Disorders* (AMPD; Krueger & Markon, 2014), is outlined in Section III of the DSM-5 (APA, 2013).

Traditional and Alternative Models of OCPD

The traditional model of OCPD, indexed in DSM-5 Section II, requires the presence of four of eight behavioural criteria for a diagnosis. This categorical model of diagnosis has been widely criticised since its introduction in the DSM III, for reasons including extreme heterogeneity, high comorbidity with other mental disorders, arbitrary and inconsistent diagnostic boundaries, and poor coverage of disorders (Clark, 2007; Skodol, 2012). As validity research on the AMPD continues to be produced and the model is further refined, it may come to serve as the primary operationalisation of PDs in future DSM iterations.

The AMPD model uses disorder-specific types of impairment in self and interpersonal functioning (Criterion A) and combinations of dimensional personality traits (Criterion B) to produce a categorical PD diagnosis (APA, 2013; Krueger et al., 2011; Skodol, 2012). For Criterion B to be met for OCPD, an individual must display

clinically elevated levels of rigid perfectionism, as well as two of the following three traits: perseveration, intimacy avoidance, and restricted affectivity.

In order to operationalise Criterion B, Krueger, Derringer, Markon, Watson, and Skodol (2012) developed a self-report inventory of the DSM-5 traits, the *Personality Inventory for the DSM-5* (PID-5). This instrument has demonstrated considerable promise in community, student, and clinical samples (e.g. Anderson et al., 2013; Anderson, Snider, Sellbom, Krueger, & Hopwood, 2014; Morey, Benson, & Skodol, 2016; Quilty, Ayeart, Chmielewski, Pollock, & Bagby, 2013; Wright et al., 2012). Maintaining continuity between the traditional and alternative models of PD diagnosis was, amongst others, a significant aim in the development of the AMPD, in order to minimise the disruption caused by the change to clinicians, and to encourage the model's adoption.

For Criterion A to be met for OCPD, an individual must demonstrate OCPD-specific forms of functional impairment (APA, 2013). The AMPD, however, was not published with accompanying measures of disorder specific impairment. Instead, the APA released a general measure of impairment in personality functioning, known as the Level of Personality Functioning Scale (LPFS; APA, 2013). Subsequently, measures of disorder specific impairment have been developed (including a measure for OCPD; see Liggett, Carmichael, Smith, & Sellbom, 2017), but need to be further validated.

Personality Traits Relevant to OCPD

OCPD is an under-studied disorder (e.g., Diedrich & Voderholzer, 2015). Much of what is known about it comes from studies investigating PDs generally. Using the PID-5 and a large student sample, Hopwood and colleagues (2012) found that the constellations of facets the AMPD uses to define disorders generally correspond with their counterparts in the traditional model. However, of the traits specified for OCPD, only rigid perfectionism and perseveration were moderately correlated with traditional

OCPD, as indexed by the Personality Diagnostic Questionnaire-4 (PDQ-4+; Hyler, 1994). Restricted affectivity and intimacy avoidance were not found to be meaningfully associated with traditional OCPD. Additionally, they found that two facets not originally included in the AMPD facet list for OCPD (emotional lability and distractibility), were significantly correlated with traditional OCPD (Hopwood et al., 2012). Anderson et al. (2014) found similar results in a university sample, where rigid perfectionism and perseveration predicted traditional OCPD, but intimacy avoidance and restricted affectivity did not. Further, they found that three additional facets (anxiousness, hostility and submissiveness) were correlated with traditional OCPD. Of these, only anxiousness and hostility uniquely incremented the prediction of traditional OCPD (Anderson et al., 2014). Crego, Samuel, and Widiger (2015) observed similar results where stronger associations between OCPD were found for rigid perfectionism and perseveration relative to those for intimacy avoidance or restricted affectivity.

In a large Italian community sample, rigid perfectionism, perseveration and suspiciousness were found to predict a substantial amount of variance in traditional OCPD (Fossati, Krueger, Markon, Borroni, & Maffei, 2013). In a study of psychiatric patients, all four proposed traits were associated with traditional OCPD, with rigid perfectionism having the strongest correlation, followed by perseveration (Yam & Simms, 2014). Anxiousness was also moderately correlated with traditional OCPD. In a regression model, however, only rigid perfectionism uniquely predicted traditional OCPD scores. Similarly, all four proposed traits were correlated with OCPD in a large Finnish community sample, with rigid perfectionism and perseveration having the strongest associations (Bastiaens, Smits, De Hert, Vanwalleghem, & Claes, 2016). Submissiveness, withdrawal and depressivity were also found to augment the prediction of OCPD in a regression model.

Morey et al. (2016) found that the traits specified as diagnostic indicators for OCPD in the AMPD demonstrated higher correlations than all other traits in a clinical sample, with rigid perfectionism demonstrating the largest association. In a more recent study, rigid perfectionism, perseveration and intimacy avoidance (but not restricted affectivity) uniquely accounted for a large proportion of variance in a latent traditional OCPD construct (Liggett, Sellbom, & Carmichael, 2017). The traits of anxiousness and (low) impulsivity were also found to augment the prediction of latent OCPD scores.

Other personality traits not operationalised by the PID-5 have also been associated with OCPD. Research and clinical experts in the field of OCPD have, for example, identified workaholism in the CAT-PD (Simms et al., 2011) or achievement striving in the Five-Factor Model as a trait of particular relevance (Lynam & Widiger, 2001; Samuel & Widiger, 2004). Associated behaviours of such traits have a long history in the OCPD literature (APA, 1952).

In general, the AMPD appears to be garnering support. However, for OCPD, there is inconsistent evidence about which traits are most relevant to its operationalisation. The optimal trait profile for OCPD therefore warrants further examination. Better understanding the trait profile of OCPD will enable the alternative model of OCPD to be refined such that it is sufficiently coterminous with the traditional operationalisation. A complete reconceptualisation of the disorder would deny practitioners the benefit of existing research on the disorder. A degree of continuity between the traditional and alternative operationalisations of OCPD is therefore desirable until dimensional models have fully integrated with clinical practice.

Indexing Personality Dysfunction with Impairment

As noted above, one of the main ways in which the AMPD differs from the traditional model is the former's emphasis on disorder specific impairment. This innovation has proved somewhat controversial (Porter & Risler, 2014; Verheul, 2012),

as there is an open question about the extent to which impairment in personality functioning can be meaningfully distinguished from personality traits.

Some scholars have indicated that it is difficult to meaningfully separate traits from impairment (Clark & Ro, 2014). Other research suggests that general impairment criteria can augment personality traits. Bastiaansen and colleagues (2013), for example, found that while normal personality traits and impairment were strongly correlated, they showed significant incremental validity over and above each other among a psychiatric sample. These findings were replicated in a German psychiatric sample, with both traits and impairment found to provide mutual incremental validity over one another in the prediction of personality pathology (Hentschel & Pukrop, 2014). Further, Berghuis, Kamphuis, and Verheul (2014) found that measures of impairment augmented the prediction of maladaptive traits, but only marginally. In an undergraduate sample, researchers found that baseline ratings for a measure of general impairment were able to predict future psychosocial dysfunction beyond maladaptive personality traits (Calabrese & Simms, 2014). Together, these findings indicate that general measures of personality dysfunction represent a construct different from that captured by personality traits. In contrast, Few et al. (2013) evaluated impairment using the LPFS (APA, 2013) in a clinical sample. They found that while traits were able to increment above impairment, impairment did not add incremental validity above that of traits.

Thus, while there is some evidence of the relationship between general impairment and PDs, the AMPD's assumption that each PD is associated with a disorder-specific form of impairment needs to be tested. The four studies to evaluate the extent to which particular PDs are associated with particular impairment profiles have produced conflicting results. Using an adapted version of the LPFS, Wygant and colleagues (2016) found that disorder specific impairment incrementally predicted Antisocial PD and psychopathy above and beyond AMPD traits in a male correctional

sample. A subsequent study found that a measure of OCPD specific impairment augmented the prediction of latent traditional OCPD scores (Liggett, Sellbom, et al., 2017). In contrast, Anderson and Sellbom (2016) found in a large university sample that, with the exception of Avoidant PD, self-reported disorder-specific impairment did not contribute to the prediction of scores on AMPD measures. Similarly, Sellbom, Carmichael, and Liggett (2017), found that general impairment augmented personality traits in predicting Avoidant PD, but that a disorder-specific measure of impairment did not.

Self-Report and Informant Measures of Personality

Studies examining person perception (how an individual's personality characteristics are perceived by others) have the potential to change the way PDs are assessed (Clark, 2007; Widiger & Samuel, 2005). Research suggests that, at best, there is only a modest correlation between how individuals see themselves and how others see them (Biesanz, West, & Millevoi, 2007; Klonsky, Oltmanns, & Turkheimer, 2002; Watson, Hubbard, & Wiese, 2000). A meta-analysis investigating the correlation between self and informant report measures of individual personality traits found that the median correlation was .35 for Cluster C PDs (the cluster within which OCPD sits), .35 for Cluster A PDs, and .45 for Cluster B PDs (Klonsky et al., 2002). These results indicate that there are often substantial differences between how personality disordered individuals see themselves and how others see them.

The concordance between self and informant assessments of personality appears to be marginally higher for Antisocial, Borderline, and Histrionic PDs than for other PDs (Klonsky et al., 2002). Differences have also been noted depending upon the personality trait being investigated. For example, higher levels of agreement have been found for extraversion, than for the other Big-Five personality traits (Kenny, 1994).

Given the potential for significant discrepancies between the way individuals see themselves and the way others see them, it is somewhat surprising that personality research has historically been so exclusively reliant on self-report data (such as questionnaires or diagnostic interviews). This approach likely results in biased, misleading and incomplete information. A more complete analysis of personality would involve a combination of self-report data with data from other sources, such as informant reports. Indeed, evidence suggests that informant reports may demonstrate greater criterion-related validity in specific situations (Connelly & Ones, 2010; Duckworth & Kern, 2011; Oh, Wang, & Mount, 2011).

One reason for this lacuna may be the general lack of informant measures for the major personality inventories. The PID-5 has both a self report and informant version. The latter is known as the Personality Inventory for DSM-5 Informant Report Form (PID-5-IRF; Markon, Quilty, Bagby, & Krueger, 2013). However, to the authors' knowledge, no studies examining the relationship between the traditional and alternative models of PDs have used the PID-5-IRF. This study aims to fill this gap with respect to OCPD specifically.

The Current Study

The current study aimed to contribute to the empirical literature on the alternative model for OCPD by addressing four major research questions among a mental health sample. To the authors' knowledge, it is the first study to investigate the alternative model of OCPD using both informant and self-reports. First, we investigated the extent to which self report and informant data on traits and impairment correspond (i.e. the extent to which people view themselves in the same way that others see them). Second, we evaluated whether self report and informant measures of the four AMPD trait facets could predict traditional OCPD. Third, we examined whether any additional trait facets could augment the prediction of traditional OCPD. Finally, we investigated

whether a measure of OCPD-specific impairment was better able to predict traditional OCPD than were measures of general impairment in personality functioning.

Regarding our first aim, we hypothesised that there would be a weak to moderate correlation between self-report and informant responses on all measures based on previous research which has demonstrated weak to moderate agreement between self report and informant measures of personality, particularly for OCPD (Klonsky et al., 2002; Modestin & Puhan, 2000; Oltmanns & Turkheimer, 2009).

Regarding our second aim, we hypothesised that rigid perfectionism and perseveration would be correlated with and predict traditional OCPD. Based on the findings of previous studies, we hypothesised that rigid perfectionism would have the strongest relationship with traditional OCPD, followed by perseveration (Anderson et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Liggett, Sellbom, et al., 2017; Morey et al., 2016; Yam & Simms, 2014).

Regarding our third aim, we hypothesised that anxiousness, hostility, submissiveness, suspiciousness and (low) impulsivity would all be moderately correlated with traditional OCPD. Reflecting the findings of previous research, which have implicated these traits in OCPD, we also expected that they would augment the prediction of traditional OCPD above and beyond the four traits (Anderson et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Liggett, Sellbom, et al., 2017; Morey & Benson, 2016; Yam & Simms, 2014). Based on its conceptual relevance to the disorder, we also hypothesised that the trait of workaholism would be correlated with and predict traditional OCPD.

Regarding our fourth aim, we tentatively expected that OCPD-specific impairment would provide greater predictive utility than general impairment in the prediction of traditional OCPD. While the broader literature on disorder specific impairment is equivocal (Anderson & Sellbom, 2016; Liggett, Carmichael, Smith, &

Sellbom, 2017; Sellbom et al., 2017; Wygant et al., 2016), the lone study on OCPD specific impairment supported the use of a measure of OCPD-specific impairment (Liggett, Sellbom, et al., 2017); more specifically, it augmented the prediction of traditional OCPD above and beyond the AMPD traits.

Method

Participants

Target participants included 214 individuals who reported being engaged in mental health care support (via pharmacotherapy, psychotherapy, or both) currently or within the previous 12 months. Target participants had a mean age of 22.47 (SD = 8.43), were 72.4% female, and 65.4% identified as Australian. The vast majority of individuals reported engagement in psychotherapy or mental health counselling ($n = 203$, 94.9%), and 97 (45.3%) endorsed being currently prescribed psychotropic medication by a general practitioner or psychiatrist currently or within the past 12 months. Previous hospitalisation due to a mental health condition was reported by 15% of participants, 25% of whom had been hospitalised within the previous 12 months. The most commonly self-reported mental health conditions were mood disorders ($n = 154$, 72%), anxiety disorders ($n = 142$, 66.4%) and eating disorders ($n = 29$, 13.6%). Initially, a total of 247 participants completed the survey, however, 11 were excluded from the data set based on embedded validity scale scores. More specifically, an infrequency scale was used to exclude participants who endorsed two or more highly improbable survey items, for example, “I am allergic to water”. Another 22 participants were removed due to their nominated informants not completing the survey. Additionally, 6 individuals who had not engaged in any mental health treatment in the previous 12 months but nevertheless attempted to complete the survey, were screened out and were not included in the research project.

Informant participants included 214 individuals who were nominated by the target participants, as people who knew the participant well. Of the informant participants, 40.7% identified themselves as a relative, 19.6% as a romantic partner, 37.4% as a friend, and 0.9% as a close colleague. Regarding length of relationship with the target participant, 61.7% reported a relationship of five years or more, 18.2% reported a relationship of between 2 and 5 years, and 6.5% of informants indicated that they had known the target participant for less than 1 year.

Participants chose to receive either course credit or financial incentive for their participation. Informants entered a lottery to win a gift voucher for their participation. Informed consent was obtained from all participants.

Measures

Personality Inventory for DSM-5 – 100 item version (PID-5). The PID-5 (Krueger et al., 2012) is a 220-item self-report questionnaire used to measure the personality domains and facets found in Section III of the DSM-5. Individuals record their responses to statements about personality functioning on a 4-point scale ranging from 0 (“*very false or often false*”) to 3 (“*very true or often true*”). An abbreviated measure of 100 items has been found to reliably and validly assess Section III personality disorder traits (Maples et al., 2015). Reliability coefficients showed good internal consistency for self-report OCPD traits (rigid perfectionism: $\alpha = .82$; perseveration: $\alpha = .79$; intimacy avoidance $\alpha = .85$; restricted affectivity: $\alpha = .77$), as well as the additional traits (anxiousness: $\alpha = .85$; hostility: $\alpha = .80$; submissiveness: $\alpha = .83$; suspiciousness: $\alpha = .70$; impulsivity: $\alpha = .88$).

Personality Inventory for DSM-5 Informant Report Form (PID-5-IRF). The PID-5-IRF (Markon et al., 2013) is a 221-item questionnaire based on the PID-5, with all references to the first person replaced by third person references (e.g. “I” replaced with “he” or “she”). Items retained the same 4-point response format as the self-report

form. Only the 100 items from the PID-5 100 item version were used in this study. The measure's scales have shown adequate psychometric properties, showing a clear five-factor structure resembling the five-factor model, and demonstrating external validity in its relationships with other scales (Markon et al., 2013). Reliability coefficients demonstrated good internal consistency for the OCPD traits (rigid perfectionism: $\alpha = .83$; perseveration: $\alpha = .82$; intimacy avoidance $\alpha = .80$; restricted affectivity: $\alpha = .79$), as well as the additional traits (anxiousness: $\alpha = .86$; hostility: $\alpha = .80$; submissiveness: $\alpha = .82$; suspiciousness: $\alpha = .75$; impulsivity: $\alpha = .85$).

The Personality Diagnostic Questionnaire (4th ed.) (PDQ-4+). The PDQ-4+ (Hyler, 1994) is a 99-item questionnaire measuring DSM-IV (Section II) personality disorders in non-clinical samples, with each item directly corresponding to behavioural criteria associated with each DSM-IV PD. Individuals are asked to endorse (score of 1) or reject (score of 0) statements based on how they think, feel or behave. Lower scores indicate lower levels of symptomatology. Only the items 8 items relating to OCPD were included in the questionnaire. Informants were not asked to complete this measure, in an attempt to reduce the amount of time it would take them to complete the survey (and so increase the survey completion rate). Reliability coefficients showed adequate internal consistency for OCPD ($\alpha = .64$) in light of its heterogeneity.

Structured Clinical Interview for the DSM-IV Axis II Disorders – Personality Questionnaire (SCID-II-PQ). The OCPD scale of the SCID-II-PQ (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) includes 9 true/false self-report questions that assess OCPD according to the DSM-IV diagnostic criteria. Individuals endorse (score of 1) or reject (score of 0) statements based on how they think, feel or behave. Lower scores indicate lower levels of symptomatology. Only the items relating to OCPD were included in the questionnaire. For the current study, we also used an

informant version, where “you” was replaced with “he” or “she” in all questions.

Cronbach’s alpha in the current study was .58 for self-report, and .70 for informants.

Obsessive-Compulsive Personality Disorder Impairment Scale (OCPD-IS).

The OCPD-IS (Liggett, Carmichael, et al., 2017) measures personality impairment specific to the disorder, as outlined in Criterion A of the AMPD. The OCPD-IS asks participants to select 1 of 5 statements of ascending severity (ranging from 0 = no impairment, to 4 = severe impairment). Example items include “I have no difficulties expressing a range of emotions” (0) and “I don’t feel strong emotions about anything” (4). Each item reflects explicit content within DSM-5 Section III Criterion A for OCPD, addressing each of the four facets (identity, self-direction, empathy and intimacy). Scores are averaged, with lower scores indicating lower levels of self and interpersonal impairment. Initial results provide promising validity data, in that the scale scores are associated with a range of extra-test impairment criterion measures reflecting self-, interpersonal, and basic-living skills impairment (Liggett, Carmichael, et al., 2017). This measure was adapted by the authors for informant participants, where “I” was replaced with “he” or “she” in all questions. Cronbach’s alpha for self-report was .68, and .69 for informant report.

The Level of Personality Functioning Scale – Brief Form (LPFS-BF). The LPFS-BF (Hutsebaut, Feenstra, & Kamphuis, 2016) is a 12 item self-report measure of personality dysfunction. Items such as “I often do not know who I really am” are responded to with “yes” (score of 1) or “no” (score of 0). The LPFS-BF has been shown to yield a 2 factor structure, corresponding with self- and interpersonal functioning scales. The LPFS was adapted by the authors for informant participants, where “I” was replaced with “he” or “she” in all questions. Cronbach’s alpha for self-report was .73, and .81 for informant report.

Measure of Disordered Personality Functioning (MDPF). The MDPF (Parker et al., 2004) is a 20-item self-report questionnaire which assesses disordered functioning in personality. The measure indexes the 2 higher-order domains of Non-cooperativeness and Non-coping as well as 7 lower-order scales. Reliability analyses demonstrated good internal consistency for the total self-report score ($\alpha = .87$). This measure was adapted by the authors for informant participants, where “I” was replaced with “he” or “she” in all questions. Cronbach’s alpha for the informant total score was .91.

Social Functioning Questionnaire (SFQ). The SFQ (Tyrer et al., 2005) is an 8-item self-report scale developed to assess social dysfunction over the previous 2 weeks. This measure evaluates social functioning in the areas of work, finance, interpersonal relationships, and home and spare time activities. Items are scored using a 4-point Likert scale, ranging from 0 (no problems) to 3 (severe problems). This measure has demonstrated good inter-rater and test-retest reliability, in addition to good construct validity (Tyrer et al., 2005). Reliability analysis indicated adequate internal consistency ($\alpha = .64$). This measure was adapted by the authors for informant participants, where “I” was replaced with “he” or “she” in all questions. Cronbach’s alpha for the informant version was .72.

Computerized Adaptive Test of Personality Disorder-Static Form (CAT-PD-SF). The CAT-PD-SF is a self-report inventory drawing from the item pool of the CAT-PD (Simms et al., 2011). Responses range from 1 (*very untrue*) to 5 (*very true*) on statements such as “I work too much”. Only the 6 items from the workaholism scale were included, and the measure was only administered to target participants. Cronbach’s alpha was .91.

Procedure

This research was approved by the Australian National University Human Research Ethics Board.

Target participants were recruited via flyers located in private psychological and medical practices, and the university psychology clinic. Electronic notices were also placed on online community mental health notice boards. Interested individuals contacted the lead author by email and were provided with an information sheet about the research project.

Target participants completed the survey on a computer via a Qualtrics URL link under the supervision of the lead researcher. At the end of the survey, participants nominated the names and email addresses of two individuals who knew them well. The first-listed informant was contacted via email and invited to complete a shortened version of the survey on their personal devices. If the first-listed informant did not respond within a week, the second-listed informant was contacted.

Results

For all analyses involving self-reported OCPD symptoms, an aggregate score of the PDQ-4+ and the SCID-II-PQ was used to provide a more reliable measure of OCPD. In all scenarios involving general impairment we used an aggregate measure comprised of data from the LPFS-BF, SFQ and the MDPF.

Our first research question examined the extent to which our self-report measures were correlated with informant measures. An aggregate measure of self-reported traditional OCPD was moderately correlated with informant SCID-II-PQ OCPD scores ($r = .40$). Similarly, 3 of the 4 self-report traits were moderately correlated with their informant counterparts, (rigid perfectionism, intimacy avoidance and restricted affectivity. Self-reported perseveration, however, was only weakly correlated with informant reported perseveration. The self-report measures of OCPD-specific and general impairment were moderately correlated with their informant counterparts. See Table 5.1 for further details.

Table 5.1

Correlations Between Self-Report and Informant Measures of all Variables

Measure	<i>R</i>
SCID-II-PQ	.40**
Rigid Perfectionism	.42**
Perseveration	.17**
Intimacy Avoidance	.48**
Restricted Affectivity	.42**
Anxiousness	.33**
Hostility	.38**
Submissiveness	.27**
Suspiciousness	.25**
Impulsivity	.37**
OCPD-IS	.42**
General Impairment	.33**

Note. SCID-II-PQ = Structured Clinical Interview for the DSM-IV Axis II Disorders – Personality Questionnaire; OCPD-IS = Obsessive-Compulsive Personality Disorder Impairment Scale Total Score; General Impairment = Aggregate score of the Level of Personality Functioning Scale, the Social Functioning Questionnaire and the Measure of Disordered Personality Functioning.

** $p < 0.01$

Second, we evaluated whether the four trait facets in the AMPD could predict traditional OCPD. We examined this relationship in two ways: (1) within the self-report data and (2) within the informant data. Preliminary tests confirmed that there was no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity for correlation and multiple regression analyses. Rigid perfectionism was significantly correlated with traditional OCPD in both scenarios, and evinced the strongest association with traditional OCPD of the four traits. The pattern of results for the other three traits was less clear (see Tables 5.1 to 5.3). More specifically, within the self-report data, restricted affectivity was the only trait not to evince a meaningful

association with traditional OCPD. Traditional OCPD was predicted strongly by rigid perfectionism, and weakly by perseveration and intimacy avoidance. Within informant data, only rigid perfectionism predicted traditional OCPD.

For our third research question, we examined the extent to which the additional traits of anxiousness, hostility, submissiveness, suspiciousness, impulsivity and workaholism augmented the prediction of traditional OCPD. First, in terms of bivariate associations, anxiousness, suspiciousness and hostility were significantly correlated with traditional OCPD in both scenarios. Submissiveness was significantly correlated with traditional OCPD in the first scenario only (all self-report measures). High levels of impulsivity were significantly correlated with traditional OCPD in the second scenario (all informant measures), although only weakly. Workaholism was strongly associated with OCPD in the self-report scenario.

Hierarchical regression analyses were used to assess the unique contribution of the five additional traits to the prediction of OCPD. The four standard traits were entered into step 1, and the additional traits were included in step 2. This model resulted in $\Delta R^2 = .11$ ($p < .001$) for the second step in the first scenario (all self-report). The second scenario using all informant responses resulted in $\Delta R^2 = .05$ ($p < .05$) for the second step. In the self-report scenario, only workaholism added incrementally to the prediction of traditional OCPD, and in the informant scenario, only hostility added incrementally (see Table 5.4 for further details).

Table 5.2

Inter-Correlations Among Self-Report Measures (First Scenario)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. OCPD-Sec II	(.77/.17)	.58**	.36**	.19**	.04	.45**	.28**	.28**	.33**	.11	.54**	.57**	.42**
2. Rigid perfectionism		(.82/.53)	.34**	.07	.02	.50**	.27**	.26**	.29**	-.01	.52**	.49**	.36**
3. Perseveration			(.79/.49)	.18**	.09	.49**	.35**	.43**	.43**	.30**	.04	.26**	.46**
4. Intimacy avoidance				(.85/.35)	.30**	.17*	.15*	.00	.25**	.11	.09	.39**	.34**
5. Restricted affectivity					(.77/.45)	.00	.05	-.02	.24**	.11	.07	.28**	.18**
6. Anxiousness						(.85/.59)	.34**	.40**	.41**	.03	.25**	.32**	.44**
7. Hostility							(.80/.48)	.15*	.36**	.29**	.08	.20**	.42**
8. Submissiveness								(.83/.54)	.28**	.05	.13	.14*	.23**
9. Suspiciousness									(.70/.38)	.23**	.19**	.33**	.45**
10. Impulsivity										(.88/.65)	-.04	.06	.30**
11. CAT-PD-SF Workaholism											(.91/.62)	.54**	.19**
12. OCPD-IS												(.68/.24)	.49**
13. General impairment													(.90/.19)

Note. Internal consistency reliabilities (coefficient alpha/inter-item correlations) are in parentheses.

OCPD-Sec II = Aggregate score of the Personality Diagnostic Questionnaire, 4th ed. and the Structured Clinical Interview for the DSM-IV Axis II Disorders – Personality Questionnaire; CAT-PD-SF = Computerized Adaptive Test of Personality Disorder-Static Form; OCPD-IS = Obsessive-Compulsive Personality Disorder Impairment Scale Total Score; General Impairment = Aggregate score of the Level of Personality Functioning Scale, the Social Functioning Questionnaire and the Measure of Disordered Personality Functioning.

* $p < 0.05$, ** $p < 0.01$

Table 5.3

Inter-Correlations Among Informant Measures (Second Scenario)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. SCID-II-PQ	(.70/.19)	.59**	.35**	.21**	.16*	.37**	.43**	.05	.34**	.17**	.61**	.31**
2. Rigid perfectionism		(.83/.54)	.45**	.14*	.05	.50**	.34**	.19**	.39**	.10	.48**	.26**
3. Perseveration			(.82/.54)	.32**	.12	.60**	.47**	.30**	.56**	.37**	.36**	.60**
4. Intimacy avoidance				(.80/.51)	.45**	.24**	.25**	.06	.25**	.25**	.26**	.39**
5. Restricted affectivity					(.79/.48)	.02	.15*	-.01	.10	.21**	.31**	.29**
6. Anxiousness						(.86/.60)	.35**	.41**	.53**	.13	.35**	.50**
7. Hostility							(.80/.50)	.09	.49**	.33**	.37**	.49**
8. Submissiveness								(.82/.54)	.20**	.03	.11	.27**
9. Suspiciousness									(.75/.43)	.24**	.36**	.57**
10. Impulsivity										(.85/.59)	.17*	.32**
11. OCPD-IS											(.69/.25)	.50**
12. General impairment												(.92/.25)

Note. Internal consistency reliabilities (coefficient alpha/inter-item correlations) are in parentheses.

SCID-II-PQ = Structured Clinical Interview for the DSM-IV Axis II Disorders–Personality Questionnaire; OCPD-IS = Obsessive–Compulsive Personality Disorder Impairment Scale; General Impairment = Aggregate score of the Level of Personality Functioning Scale, the Social Functioning Questionnaire and the Measure of Disordered Personality Functioning.

* $p < 0.05$, ** $p < 0.01$

Table 5.4

Multiple Regression Analyses for Traits Predicting Traditional OCPD

Variable	Scenario 1 (All SR)			Scenario 2 (All INF)		
	B	SE B	β	B	SE B	β
Step 1						
Rigid perfectionism	.14	.02	.51**	.16	.02	.55**
Perseveration	.06	.02	.19**	.02	.02	.07
Intimacy avoidance	.03	.02	.12*	.02	.02	.06
Restricted affectivity	-.01	.02	-.03	.03	.02	.10
Step 2						
Rigid perfectionism	.07	.02	.26**	.15	.02	.49**
Perseveration	.05	.02	.16*			
Intimacy avoidance						
Restricted affectivity						
Anxiousness						
Hostility				.08	.02	.23**
Submissiveness						
Suspiciousness						
Impulsivity						
CAT-PD-SF	.07	.01	.36**			
Workaholism						

Note. OCPD = Obsessive-Compulsive Personality Disorder; SR = Self-report; INF = Informant report; CAT-PD-SF = Computerized Adaptive Test of Personality Disorder-Static Form.

* $p < 0.05$, ** $p < 0.01$

For our fourth research question, we examined whether a measure of OCPD-specific impairment (OCPD-IS) was better able to predict the traditional operationalisation of OCPD than were measures of general impairment in personality functioning. Correlation analyses revealed that in both scenarios, general impairment was moderately, and OCPD-specific impairment was strongly correlated with OCPD.

Finally, we conducted a series of hierarchical regression analyses, where general impairment was added in step 1, and OCPD-specific impairment was added in step 2. Within the self-report data, this resulted in $\Delta R^2 = .18$ ($p < .001$) for the second step. In the final model, OCPD-IS moderately ($\beta = .49, p < .001$) and general impairment weakly ($\beta = .16, p < .05$) predicted OCPD. Within informant data, this resulted in $\Delta R^2 = .27$ ($p < .001$), with only the OCPD-IS predicting OCPD ($\beta = .60, p < .001$) in the final model.

Discussion

This study examined the concordance between self and informant reports of personality traits, impairment and traditional OCPD; the optimal constellation of traits to operationalise OCPD and the utility of an OCPD-specific measure of impairment. The findings indicated that self-report data moderately corresponded with informant data. Rigid perfectionism, workaholism and, to a lesser degree, perseveration were found to be the most relevant traits to the OCPD construct, with no additional traits consistently augmenting the OCPD trait profile. Finally, our results indicated that a measure of OCPD-specific impairment outperformed general measures of impairment in predicting traditional OCPD.

Relationship Between Informant and Self-Report Measures of OCPD

Based on the existing literature (Klonsky et al., 2002; Modestin & Puhon, 2000; Oltmanns & Turkheimer, 2009), we hypothesised that all self reported measures would be weakly to moderately correlated with their informant measure counterparts. This hypothesis was confirmed across our results. All but three of the self-report measures were moderately correlated with their informant counterparts. The exceptions were the self-report measures of perseveration, submissiveness and suspiciousness, which were all weakly correlated with their informant counterparts. Of these three, perseveration had the weakest cross-method correlation. This result may be related to the

characteristics of perseveration; driven by an internal thought process, perseveration might be most apparent to the individual. Alternatively, the weak cross-method correlation may be related to a lack of insight on the part of perseverating individuals. A lack of insight is a part of the definition of the trait – i.e. “Persistence at tasks ... *long after the behavior has ceased to be functional or effective*; continuance of the same behavior *despite repeated failures*” (emphasis added) (APA, 2013, p. 768).

Accordingly, individuals who persevereate may have poor insight into their tendency to do so (or may not see it as a problem), and therefore be less likely to acknowledge what others see as their propensity to persevereate.

The analysis of the self-report data indicates that individuals tend to hold internally consistent views about themselves. Similarly, the analysis of the informant data indicates that informants tend to hold internally consistent views about others. The discrepancy between the two reports indicates that the perspectives of individuals and informants do not always align. This finding supports the existing literature, suggesting that informant reports do indeed provide information different to that provided by individuals reporting information about themselves (Klonsky et al., 2002; Oltmanns & Turkheimer, 2009). What the results cannot tell us is which perspective is more reliable, or whether the different perspective of informants is of clinical relevance. Expert clinical judgment is likely to be necessary to resolve such questions in individual cases.

AMPD Trait Profile for OCPD

For our second research question, we examined the relationship between traditional OCPD and the four traits used to define the alternative model of OCPD. As predicted, rigid perfectionism had the strongest association with OCPD in all analyses. These results are consistent with the literature (Anderson et al., 2014; Fossati et al., 2013; Hopwood et al., 2012; Liggett, Sellbom, et al., 2017; Yam & Simms, 2014), and

confirm that rigid perfectionism can be considered the fundamental trait underpinning OCPD.

The other three AMPD traits were not as strongly or consistently associated with traditional OCPD. Perseveration was moderately associated with traditional OCPD, but less strongly than rigid perfectionism. This finding is consistent with the balance of the literature, which broadly supports the inclusion of perseveration in the alternative model of OCPD (Anderson et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Liggett, Sellbom, et al., 2017; Morey et al., 2016). These studies have, however, all relied on a single method of data collection. The consistency of these findings, coupled with our own, suggest that perseveration is relevant to OCPD.

Intimacy avoidance was weakly associated with traditional OCPD in both scenarios. In a regression model, it only weakly predicted traditional OCPD, and then only in the self-report scenario. Restricted affectivity had the weakest association with traditional OCPD. It was weakly correlated with traditional OCPD in the informant scenario. These findings are also consistent with previous research (Bastiaens et al., 2016; Hopwood et al., 2012; Liggett, Sellbom, et al., 2017; Yam & Simms, 2014) indicating that intimacy avoidance and restricted affectivity can be considered as peripheral to the OCPD construct. These results are unsurprising to the extent that the traditional model of OCPD does not include direct behavioural analogues of either trait. Nor do related behaviours feature prominently in the history of the disorder. As such, the removal of these traits from the OCPD AMPD trait profile should be considered.

Workaholism was strongly correlated with traditional OCPD, and accounted for more variance in traditional OCPD than did the four traits. This result too was unsurprising, given the trait's historical association with the OCPD construct (APA, 1952). Interestingly, the PID-5 does not include a scale for this trait. The original proposal for the AMPD included 6 domains and 37 traits. The compulsivity domain,

which included traits relevant to OCPD such as orderliness, was eventually removed on the basis of factor analysis, despite its relevance to the conceptualisation of OCPD (Crego et al., 2015). Some traits conceptually relevant to OCPD were combined (e.g. rigidity and perfectionism), while others were removed altogether (e.g. orderliness). These omissions appear to have negatively affected the AMPD trait model's (as operationalised by the PID-5) capacity to capture the OCPD construct. To fully understand and conceptualise OCPD, it may be necessary to expand the AMPD (and PID-5) to include trait analogues of the behaviours historically associated with OCPD, such as workaholism, indexed in the CAT-PD (Simms et al., 2011) and the FFOCI (Samuel, Riddell, Lynam, Miller, & Widiger, 2012).

The AMPD traits of anxiousness, hostility and suspiciousness, and the workaholism trait were the only additional traits to evince consistent association with traditional OCPD. The association of OCPD with anxiousness may be linked to the maintenance of unrealistically high standards (i.e. rigid perfectionism) (Kyrios, Nedeljkovic, Moulding, & Doron, 2007). Similarly, the association with hostility could be related to becoming irritated, frustrated, and showing anger towards others who are unable to meet these standards (Greve & Adams, 2002). The association of suspiciousness with OCPD may be related to interpersonal mistrust from a concern that others do not understand or share the individual's high standards, and cannot be trusted to complete delegated tasks to a satisfactory standard (Greve & Adams, 2002; Kyrios et al., 2007). The association of workaholism (of a similar strength to rigid perfectionism) is unsurprising, given its historical centrality to the OCPD construct.

When the additional traits were entered into the model, however, rigid perfectionism was the only trait to predict OCPD across both scenarios. The failure of anxiousness, hostility and submissiveness to consistently augment rigid perfectionism in the prediction of OCPD suggests that they may be peripheral to the disorder at best.

Hostility augmented the profile of traditional OCPD, but only weakly in the informant scenario. These results suggest hostility might have some greater significance than other potential traits, but more research is required to resolve this question. Workaholism, which was only included in the self-report scenario, strongly predicted OCPD, suggesting that it is likely a core component of the OCPD construct, making its omission within the AMPD trait model especially significant.

The reduction of traits in the PID-5 from 37 to 25, which influenced the final version of the AMPD trait model, appears to have impacted the coverage of OCPD in particular, with one study reporting that clinicians found the original trait list for OCPD to adequately cover the disorder, but that the reduced list did not (Crego, Sleep, & Widiger, 2016). The reduced capacity for the 25 traits to adequately capture the OCPD construct was confirmed by Rojas and Widiger (2017), who reported weak convergence for the traits of intimacy avoidance and restricted affectivity. Similarly, a study of OCPD experts found that only the traits of perfectionism and perseverance were rated as being extremely or moderately descriptive of OCPD (Samuel, Lynam, Widiger, & Ball, 2012). Restricted affectivity achieved a low rating, and intimacy avoidance was not yet included as a trait potentially relevant to OCPD (Samuel, Lynam, et al., 2012).

General and Disorder-Specific Impairment

Our final hypothesis, that a measure of disorder-specific impairment would be more strongly correlated with, and better predict, traditional OCPD than a measure of general impairment was borne out. While both the OCPD-IS and measures of general impairment evinced bivariate associations with traditional OCPD across both scenarios, the strength of the OCPD-IS correlation was consistently greater. The OCPD-IS predicted traditional OCPD in both scenarios (moderately to strongly), whereas the measures of general impairment only weakly predicted traditional OCPD in the self-report scenario. These findings are consistent with previous research into the alternative

model of OCPD (Liggett, Sellbom, et al., 2017) and antisocial PD (Wygant et al., 2016), where measures of disorder-specific impairment were able to contribute uniquely to the prediction of PDs. Other studies, however, have concluded that disorder-specific impairment may not be preferable to general measures of personality impairment (Anderson & Sellbom, 2016; Sellbom et al., 2017). These inconsistencies in the literature deserve further attention. At present, however, two of three studies using the OCPD-IS (in non-clinical and mental health samples) have supported the utility of the disorder-specific measure. While additional research is still needed, the OCPD-IS shows early promise in its ability to index Criterion A of the alternative model of OCPD.

General Implications

The study's findings only partially supported the way in which OCPD is currently conceptualised in the AMPD. The alternative model's reliance on disorder-specific impairment was strongly supported by the study's results. The trait profile utilised in the alternative model may, however, need to be revised. The results suggest strongly that rigid perfectionism is highly relevant to OCPD. This trait was strongly correlated with the disorder, and consistently augmented the prediction of traditional OCPD. Workaholism was also strongly correlated with OCPD, and augmented the prediction of the disorder in the self-report scenario (the only scenario in which it was measured). Serious consideration should be given to including workaholism in the DSM-5 AMPD. Of the other traits measured, several were correlated with traditional OCPD, but only hostility predicted OCPD and then only weakly and only in the informant scenario. This pattern of results suggests that these additional traits are, at best, peripherally relevant. It might be that OCPD, from a trait perspective, is synonymous with the specific trait domain of anankastia in the proposed ICD-11 PD model and not much else is needed to operationalise this disorder. Indeed, recent

research has indicated that rigid perfectionism (and to a lesser degree perseveration) compose anankastia from the DSM-5 AMPD model (Bach, Sellbom, Kongerslev, et al., 2017), and anankastia is the only domain of predictive relevance to traditional OCPD from this perspective (Bach, Sellbom, Skjernov, & Simonsen, 2017).

Limitations and Future Directions

The study's findings must be considered in the context of its limitations. First, while the self-report data was collected under the supervision of the primary researcher, the informant data was collected online, without supervision, introducing risk of lower quality data. However, validity measures were used to screen out inconsistent or careless responding, and only a small percentage were removed from the data as a result, indicating that most informants seemed to have completed the survey in a valid manner, despite being unsupervised. Second, while participants self-reported that they had engaged in mental health treatment in the 12 months preceding the survey, the study did not include a mechanism to verify these claims. Their responses to follow-up questions regarding their mental health history were examined individually and no one was excluded for evidencing a non-credible response pattern. Would-be participants who indicated that they had not had any mental health treatment in the past 12 months were disqualified from participating. However, other participants may not have been completely honest in their responses. While the current study is unique in its use of a mental health sample, the current findings should be replicated using a clinical sample in which the fact of mental health treatment can be verified. Finally, the study was limited to the use of the PID-5 and one scale from the CAT-PD-SF. Future studies could utilise scales with a wider range of traits, such as the FFOCI and full range of CAT-PD traits.

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Appendices

Appendix A

Ethics Approval

31 March 2016

Dear Ms Jacqueline Liggett,

Protocol: 2015/796

Conceptualisation of Obsessive-Compulsive Personality Disorder

I am pleased to advise you that your Human Ethics application received approval by the Chair of the Science and Medical DERC 24 February 2016 on 31/03/2016.

For your information:

1. Under the NHMRC/AVCC National Statement on Ethical Conduct in Human Research we are required to follow up research that we have approved. Once a year (or sooner for short projects) we shall request a brief report on any ethical issues which may have arisen during your research or whether it proceeded according to the plan outlined in the above protocol.
2. Please notify the committee of any changes to your protocol in the course of your research, and when you complete or cease working on the project.
3. Please notify the Committee immediately if any unforeseen events occur that might affect continued ethical acceptability of the research work.
4. Please advise the HREC if you receive any complaints about the research work.
5. The validity of the current approval is five years' maximum from the date shown approved. For longer projects you are required to seek renewed approval from the Committee.

All the best with your research,

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Appendix B

Participant Information Sheet – Target Version.



Participant Information Sheet

Researchers:

The current study is being undertaken by Jacqueline Liggett (PhD candidate) and Associate Professor Martin Sellbom (Visiting Fellow) from the Research School of Psychology at the Australian National University (ANU) College of Medicine, Biology & Environment.

Project Title: An examination of personality styles.

General Outline of the Project:

- This study involves two questionnaires about personality styles. The first questionnaire, which you are invited to complete, will be completed by approximately 200 individuals who have received mental health care treatment in the past 12 months. Once you have completed this questionnaire, you will be asked to nominate two individuals who know you well. One of these people will be asked to complete a second short (10 minute) questionnaire about you. (If this person does not wish to participate, the second person you nominated will be contacted.)
- The confidentiality of responses to both questionnaires will be protected, and no identifying information will be published.
- The de-identified results of this study may be disseminated through academic journal publication. A de-identified summary of the study findings will be made available on the primary investigator's ANU profile page at the conclusion of the study.

Participant Involvement:

This survey will take between 30 to 45 minutes to complete, and will be completed at the Research School of Psychology at the ANU. It consists of validated measures of personality style, personal and interpersonal functioning, and clinical questionnaires. At the conclusion of the survey, you will be asked to provide the name and email contact of two people that know you well. One of these people will be contacted by the researcher, and asked to complete a short (10 minute) survey about you. The nature of the questions will be similar to those asked of you during the survey, and will be of a personal nature. If this person does not wish to participate, the second person nominated by you will be contacted and asked to complete the short, 10 minute questionnaire.

You will be offered 60 minutes of course credit or \$20 cash for your participation. If the person nominated by you completes the second questionnaire, they will go into a draw to win a \$100 Coles-Myer voucher.

Completion of the survey is voluntary, and it is possible to withdraw without penalty at any stage. No explanation for withdrawal is required. If you choose to withdraw from the study, your data will be deleted, and will not be included in the research. Data is re-identifiable by the researcher only.

While it is not expected, some survey questions may lead to discomfort or distress. If you experience discomfort or distress as a result of completing the survey, please inform the primary investigator immediately. If additional support is required after you have completed the survey, you are encouraged to contact the primary investigator, psychologist Jacqueline Liggett, (contact details below), or Lifeline on 13 11 14.

Exclusion criteria:

You must be over 18 years of age, and have engaged in mental health care treatment in the past 12 months to participate in this study.

Confidentiality:

The confidentiality of all participants will be upheld to the full extent of the law. No identifying information will be used in any publications or dissemination of this research.

Privacy Notice:

The ANU Privacy Policy can be found at https://policies.anu.edu.au/ppl/document/ANUP_010007 and contains information about how you can:

- o Have access or seek correction to your personal information, and
- o Complain about a breach of an Australian Privacy Principle (APP) by ANU and how ANU will handle the complaint.

Data Storage:

Data management procedures will be in compliance with the Privacy Act 1988 (*Cth*) and the ANU policy for the Responsible Practice of Research. Data will be stored on a password-protected computer, locked in secure premises, and be kept for a minimum of 5 years after it has been used for theses or publication. Only the nominated researchers listed above will have access to the survey data.

Queries and Concerns:

Please contact Jacqueline Liggett (ph: 6125 5902, e: jacqueline.liggett@anu.edu.au) or Dr Martin Sellbom (msellbom@psy.otago.ac.nz) should you have any concerns regarding the study.

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee.

Appendix C

Participant Information Sheet – Informant Version.



Participant Information Sheet

Researchers:

The current study is being undertaken by Jacqueline Liggett (PhD candidate) and Associate Professor Martin Sellbom (Visiting Fellow) from the Research School of Psychology (RSP) at the Australian National University (ANU) College of Medicine, Biology & Environment.

- This study involves two questionnaires about personality styles. One questionnaire will be completed by 200 participants (the “primary participants”). That survey relates to the primary participants’ personality styles. Each primary participant will then nominate a person who knows them well, to complete a second questionnaire about the primary participant. You have been nominated by a primary participant in this study.
- The confidentiality of responses to both questionnaires will be protected, and no identifying information will be published.
- The de-identified results of this study may be disseminated through academic journal publication. A de-identified summary of the study findings will be made available on the primary investigator’s ANU profile page at the conclusion of the study.

Participant Involvement:

This survey will take approximately 10 minutes to complete. It consists of validated measures of personality style, personal and interpersonal functioning, and clinical questionnaires.

Completion of the survey is voluntary, and it is possible to withdraw without penalty at any stage. No explanation for withdrawal is required. If you choose to withdraw from the study, your data will be deleted, and will not be included in the research. Data is re-identifiable by the researcher only.

Your responses remain confidential, and will not be released to the person about whom you are responding.

You will go into the draw to win a \$100 Coles-Myer gift voucher for your participation. The lottery will be drawn before the end of 2017, and the winner will be notified by email. The winner will be decided by an online random number generator, and the process of generating the winner will be witnessed by an RSP administration employee, to ensure the lottery’s transparency and integrity. Participant confidentiality will be upheld, with only the winning participant being contacted.

While it is not expected, some survey questions may lead to discomfort or distress. If you experience discomfort or distress as a result of completing the survey, you are encouraged to contact Lifeline on 13 11 14.

Exclusion criteria:

You must be over 18 years of age to participate in this study.

Confidentiality:

The confidentiality of all participants will be upheld to the full extent of the law. No identifying information will be used in any publications or dissemination of this research.

Data Storage:

Data management procedures will be in compliance with the Privacy Act 1988 (*Cth*) and the ANU policy for the Responsible Practice of Research. Data will be stored on a password-protected computer, locked in secure premises, and be kept for a minimum of 5 years after it has been used for theses or publication. Only the nominated researchers listed above will have access to the survey data.

Queries and Concerns:

Please contact Jacqueline Liggett (ph: 6125 5902, e: jacqueline.liggett@anu.edu.au) or Dr Martin Sellbom (msellbom@psy.otago.ac.nz) should you have any concerns regarding the study.

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee.

Appendix D

Email Requesting Informant Participation.

Subject line: ANU Personality Style Survey

Dear XX,

XX recently completed an online survey being conducted in the Research School of Psychology at the Australian National University. XX nominated you as a person who knows them well, who may be willing to complete a short 10 minute online survey about their personality. Should you wish to participate, your responses will remain confidential, and your responses will not be made known to the individual who nominated you to participate.

To begin, please click here, or copy and paste the following link into your browser.

https://anupsych.col.qualtrics.com/SE/?SID=SV_0GGTyxasmQyXQX

When asked in the survey, please quote the following unique identification code: XX

By completing the survey, you will go into the draw to win a \$100 Myer gift voucher.

Kind regards

Jacqueline Liggett

Psychologist / Clinical Psychology PhD Candidate

Building 39, Room 224

Research School of Psychology

College of Medicine, Biology and Environment

The Australian National University

Canberra ACT 0200

Appendix E

Demographics Questionnaire – Target Version.

1. How old are you?
2. Please indicate your gender.
Female
Male
Other
3. Please indicate your country of origin.
Australia
China
United States of America
Other English-speaking country
Other non-English speaking country
4. Do you identify as Aboriginal or Torres Strait Islander?
Yes, Aboriginal
Yes, Torres Strait Islander
Yes, both Aboriginal and Torres Strait Islander
No
5. Is English your native language?
Yes
No
6. How proficient do you consider your English language skills compared to your English speaking peers?

(Likert scale ranging from 1 [*Not proficient*] to 7 [*Fluent*])
7. What is your current relationship status?
Single
De-facto
Married
Separated
Divorced
Widowed
8. Are you employed?
Yes, full time (more than 30 hours per week)
Yes, part time (less than 30 hours per week)
No

9. What is the highest level of education you have completed?
- Less than year 12 or equivalent
 - Year 12 or equivalent
 - Diploma
 - Bachelor's degree (including honours)
 - Master's degree
 - Doctorate or PhD
10. Are you currently a student?
- Yes, full time
 - Yes, part time
 - No
11. What is your annual personal income before tax?
- Less than \$10,000
 - \$10,000 to \$29,999
 - \$30,000 to \$49,999
 - \$50,000 to \$69,999
 - \$70,000 to \$89,999
 - \$90,000 to \$99,999
 - \$100,000 to \$149,999
 - \$150,000 or more

Appendix F

Demographics Questionnaire – Informant Version.

1. Please enter the unique code provided to you, to link your responses to those of the person you are responding about:
For example, a complete code could look like: AG070619911

2. What is your relationship to the person you are completing this questionnaire about?

Parent
Child
Sibling
Partner
Friend
Other

3. How long have you known the person who you are completing the questionnaire about?

Less than 1 year
1 to 2 years
2 to 5 years
5+ years

Appendix G

Personality Inventory for the DSM-5 (PID-5) – 100 Item Version.

Personality Inventory for the DSM-5 Informant Report Form – 100 Item Version.

(The Personality Inventory for the DSM-5 Informant Report Form is a 221-item questionnaire based on the PID-5, where all self-report items were replaced from first to third person [e.g. “I” replaced with “he/him” or “she/her”]. Items retained the same 4-point response format as the self-report form. Only the 100 items from the PID-5 100 item version were used in this study.)

This is a list of things different people might say about themselves. We are interested in how you would describe yourself. There are no right or wrong answers. So you can describe yourself as honestly as possible, we will keep your responses confidential. We'd like you to take your time and read each statement carefully, selecting the response that best describes you.

Item	Very False or Often False	Some- times or Some- what False	Some- times or Some what True	Very True or Often True
1	0	1	2	3
2	0	1	2	3
3	0	1	2	3
4	0	1	2	3
5	0	1	2	3
6	0	1	2	3
7	0	1	2	3
8	0	1	2	3
9	0	1	2	3
10	0	1	2	3
11	0	1	2	3
12	0	1	2	3
13	0	1	2	3
14	0	1	2	3
15	0	1	2	3
16	0	1	2	3
17	0	1	2	3
18	0	1	2	3
19	0	1	2	3
20	0	1	2	3

21	I like to take risks.	0	1	2	3
22	Others seem to think I'm quite odd or unusual.	0	1	2	3
23	I love getting the attention of other people.	0	1	2	3
24	I worry a lot about terrible things that might happen.	0	1	2	3
25	I have trouble changing how I'm doing something even if what I'm doing isn't going well.	0	1	2	3
26	The world would be better off if I were dead.	0	1	2	3
27	I keep my distance from people.	0	1	2	3
28	I don't get emotional.	0	1	2	3
29	I prefer to keep romance out of my life.	0	1	2	3
30	I don't show emotions strongly.	0	1	2	3
31	I have a very short temper.	0	1	2	3
32	I get fixated on certain things and can't stop.	0	1	2	3
33	If something I do isn't absolutely perfect, it's simply not acceptable.	0	1	2	3
34	I often have unusual experiences, such as sensing the presence of someone who isn't actually there.	0	1	2	3
35	I'm good at making people do what I want them to do.	0	1	2	3
36	I'm always worrying about something.	0	1	2	3
37	I'm better than almost everyone else.	0	1	2	3
38	I'm always on my guard for someone trying to trick or harm me.	0	1	2	3
39	I have trouble keeping my mind focused on what needs to be done.	0	1	2	3
40	I'm just not very interested in having sexual relationships.	0	1	2	3
41	I get emotional easily, often for very little reason.	0	1	2	3
42	Even though it drives other people crazy, I insist on absolute perfection in everything I do.	0	1	2	3
43	I almost never feel happy about my day-to-day activities.	0	1	2	3
44	Sweet-talking others helps me get what I want.	0	1	2	3
45	I fear being alone in life more than anything else.	0	1	2	3

46	I get stuck on one way of doing things, even when it's clear it won't work.	0	1	2	3
47	I'm often pretty careless with my own and others' things.	0	1	2	3
48	I am a very anxious person.	0	1	2	3
49	I am easily distracted.	0	1	2	3
50	It seems like I'm always getting a "raw deal" from others.	0	1	2	3
51	I don't hesitate to cheat if it gets me ahead.	0	1	2	3
52	I don't like spending time with others.	0	1	2	3
53	I never know where my emotions will go from moment to moment.	0	1	2	3
54	I have seen things that weren't really there.	0	1	2	3
55	I can't focus on things for very long.	0	1	2	3
56	I steer clear of romantic relationships.	0	1	2	3
57	I'm not interested in making friends.	0	1	2	3
58	I'll do just about anything to keep someone from abandoning me.	0	1	2	3
59	Sometimes I can influence other people just by sending my thoughts to them.	0	1	2	3
60	Life looks pretty bleak to me.	0	1	2	3
61	I think about things in odd ways that don't make sense to most people.	0	1	2	3
62	I don't care if my actions hurt others.	0	1	2	3
63	Sometimes I feel "controlled" by thoughts that belong to someone else.	0	1	2	3
64	I make promises that I don't really intend to keep.	0	1	2	3
65	Nothing seems to make me feel good.	0	1	2	3
66	I get irritated easily by all sorts of things.	0	1	2	3
67	I do what I want regardless of how unsafe it might be.	0	1	2	3
68	I often forget to pay my bills.	0	1	2	3
69	I'm good at conning people.	0	1	2	3
70	Everything seems pointless to me.	0	1	2	3
71	I get emotional over every little thing.	0	1	2	3
72	It's no big deal if I hurt other peoples' feelings.	0	1	2	3
73	I never show emotions to others.	0	1	2	3

74	I have no worth as a person.	0	1	2	3
75	I am usually pretty hostile.	0	1	2	3
76	I've skipped town to avoid responsibilities.	0	1	2	3
77	I like being a person who gets noticed.	0	1	2	3
78	I'm always fearful or on edge about bad things that might happen.	0	1	2	3
79	I never want to be alone.	0	1	2	3
80	I keep trying to make things perfect, even when I've gotten them as good as they're likely to get.	0	1	2	3
81	My emotions are unpredictable.	0	1	2	3
82	I don't care about other peoples' problems.	0	1	2	3
83	I don't react much to things that seem to make others emotional.	0	1	2	3
84	I avoid social events.	0	1	2	3
85	I deserve special treatment.	0	1	2	3
86	I suspect that even my so-called "friends" betray me a lot.	0	1	2	3
87	I crave attention.	0	1	2	3
88	Sometimes I think someone else is removing thoughts from my head.	0	1	2	3
89	I simply won't put up with things being out of their proper places.	0	1	2	3
90	I often have to deal with people who are less important than me.	0	1	2	3
91	I get pulled off-task by even minor distractions.	0	1	2	3
92	I try to do what others want me to do.	0	1	2	3
93	I prefer being alone to having a close romantic partner.	0	1	2	3
94	I often have thoughts that make sense to me but that other people say are strange.	0	1	2	3
95	I use people to get what I want.	0	1	2	3
96	I've had some really weird experiences that are very difficult to explain.	0	1	2	3
97	I like to draw attention to myself.	0	1	2	3
98	Things around me often feel unreal, or more real than usual.	0	1	2	3
99	I'll stretch the truth if it's to my advantage.	0	1	2	3
100	It is easy for me to take advantage of others.	0	1	2	3

Appendix H

Computerized Adaptive Test of Personality Disorder-Static Form.

Workaholism items only.

For the following questions, please describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know who are the same sex and roughly the same age as you.

Responses are made on a 5-point Likert scale from 1 (*Very Untrue of Me*) to 5 (*Very True of Me*).

-
1. I work too much.
 2. I am a workaholic, with little time for fun or pleasure.
 3. I have noticed that I put my work ahead of too many other things.
 4. I work longer hours than most people.
 5. I work so hard that my relationships have suffered.
 6. I push myself very hard to succeed.
-

Appendix I

Level of Personality Functioning Scale.

Level of Personality Functioning Scale – Informant Version.

(For the informant version, “I” was replaced with “he/him” or “she/her” in all questions).

Report which of the following statements applies to you. Only select “yes” if this has been the case for at least a year.

1	I often do not know who I really am.	Yes	No
2	I often think very negatively about myself.	Yes	No
3	My emotions change without me having a grip on them.	Yes	No
4	I have no sense of where I want to go in my life.	Yes	No
5	I often do not understand my own thoughts and feelings.	Yes	No
6	I often make unrealistic demands on myself.	Yes	No
7	I often have difficulty understanding the thoughts and feelings of others.	Yes	No
8	I often find it hard to stand it when others have a different opinion.	Yes	No
9	I often do not fully understand why my behavior has a certain effect on others.	Yes	No
10	My relationships and friendships never last long.	Yes	No
11	I often feel very vulnerable when relations become more personal.	Yes	No
12	I often do not succeed in cooperating with others in a mutually satisfactory way.	Yes	No

Appendix J

Collection of Informant Details.

At the beginning of this survey, you were asked to think about two people who know you well, who may be willing to respond to a 10 minute questionnaire about you.

Person 1: Please enter their name.

What is their relationship to you?

What is their email address?

Person 2: Please enter their name.

What is their relationship to you?

What is their email address?

By checking the box below, you consent to the researcher using your responses for research purposes, and contacting the people you have nominated by email to complete a short questionnaire. (The second person you nominate will only be contacted if the first person declines to participate, or does not respond).

Yes, I consent.

No, I do not consent.

Appendix K

Informant Prize Draw Entry.

Thank you for completing the questionnaire.

To enter the prize draw, please provide your details below. This information is in no way attached to your survey responses.

Name

Email address

The prize winner will be notified by email after all responses have been collected. The gift voucher will be sent to the mailing address provided via email.

Appendix L

Participant Debrief Statement.

Investigating Personality Styles

Thank you for your participation in this study. The purpose of this debriefing document is to provide you with more information about the study and to provide you with information about who to contact if you have any questions or concerns related to the study.

Your responses to the study will remain confidential, and no identifying information about you will be published. All data sheets will have numeric identifiers in place of names to ensure your privacy is protected.

The main purpose of the study is to investigate the types of functional impairment related to personality traits associated with obsessive-compulsive personality disorder. This information will contribute to a growing body of literature aimed at enhancing treatment interventions for people who experience problems associated with obsessive-compulsive personality.

If you have any further questions or concerns about this research, or have experienced any distress as a result of this research, please contact the primary investigator, Jacqueline Liggett at jacqueline.liggett@anu.edu.au or research supervisor Dr Martin Sellbom at msellbom@psy.otago.ac.nz. Alternatively, you can contact the ANU counselling centre (6125 2442) or Lifeline (131114) if you require any support for issues that arise as a result of participation in the study.

Thank you once again for your time and effort in participating in this study. We are very grateful to you for your contribution to this important research.

Chapter Six - General Discussion

Personality psychopathology is known to influence a range of important behavioural and mental health outcomes (Costa & McCrae, 1980; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007), including but not limited to workplace difficulties, (Judge, Martocchio, & Thoresen, 1997) relationship dysfunction (Caughlin, Huston, & Houts, 2000), suicidality (Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994), criminality (Miller & Lynam, 2001) and mortality (Roberts et al., 2007). Personality disordered individuals are more likely to demonstrate lower levels of social functioning (Grant et al., 2004) and to cause distress among family, friends and colleagues (Miller, Campbell, & Pilkonis, 2007). Personality dysfunction is also common, with approximately 15% of American adults estimated to have at least one personality disorder (PD) (APA, 2013). Because personality dysfunction affects so many people, and has the potential to affect so many areas of functioning, the conceptualisation, assessment and diagnosis of PDs is therefore an important domain of study in the field in clinical psychology, with implications for society at large.

The way in which PDs should be conceptualised and diagnosed has been the subject of significant debate (Clark, 2007; Skodol, 2012; Widiger & Mullins-Sweatt, 2010). Traditionally, PDs have been defined by the presence or absence of a given set of behavioural criteria. In the past decade, there have been an increasing number of calls to reconceptualise PDs using an alternative model of personality disorders (AMPD) that, instead of relying on behavioural criteria, defines PDs by reference to disorder-specific combinations of personality traits and impairment types. In this alternative model, both traits and impairment are conceptualised as dimensional, rather than as binary categories. Others have called for the removal of categorical labels altogether, advocating instead for a wholly dimensional model in which the entirety of a person's trait profile is considered. Both the traditional and the alternative models have

supporters and detractors. The DSM-5 gives the traditional model primacy in Section II (Diagnostic Criteria and Codes), with the alternative model relegated to Section III (Emerging Models and Measures). The alternative model is regarded as requiring further development if it is to be implemented in clinical practice.

Brief Review of Research Studies

The four studies in this research project were directed at evaluating different aspects of the alternative model and its operationalisation of Obsessive-Compulsive PD (OCPD). More specifically, the studies assessed the personality trait (Criterion B) and impairment (Criterion A) components of the alternative model, as well as the relationship between informant and self-report measures of OCPD.

To date, most research into the alternative model has focussed on Criterion B (traits), with limited attention paid to the evaluation of Criterion A (impairment). Prior to this research project, there was no measure for indexing the disorder-specific types of impairment described in Criterion A. Study One contributed to filling this gap by developing disorder specific impairment scales for OCPD and Avoidant PD (AvPD), modelled on the Level of Personality Functioning Scale (LPFS). Results showed that both measures of impairment (but particularly the AvPD measure) showed initial promise in their ability to measure disorder-specific impairment.

The research on the alternative model is more fully developed for some PDs than it is for others. For well-researched disorders, such as borderline and antisocial PDs, the relationship between the traditional and alternative models is relatively well understood (Anderson, Sellbom, Wygant, Salekin, & Krueger, 2014; Miller, Morse, Nolf, Stepp, & Pilkonis, 2012; Sellbom, Sansone, Songer, & Anderson, 2014; Wygant et al., 2016). For OCPD, one of the under-studied PDs, this relationship is poorly understood. Responding to this knowledge gap, Study Two investigated the extent to which the alternative model of OCPD, and its component parts (traits and impairment),

corresponded with traditional OCPD. Using the OCPD Impairment Scale (OCPD-IS) developed in Study One, the findings revealed that OCPD specific measures of self- and interpersonal impairment augmented traits in accounting for variance in traditional OCPD scores. Additionally, traditional and alternative models of OCPD were found to overlap substantially. Three of the four traits used to define OCPD in the AMPD were uniquely associated with traditional OCPD. The traits of anxiousness and (low) impulsivity also had unique associations.

The literature on the extent to which the four trait facets specified in the AMPD are conceptually related to traditional OCPD is inconsistent. Study Three built upon Study Two by using a clinical sample to investigate the continuity between the traditional and alternative operationalisations of OCPD. This study also researched the extent to which the AMPD personality traits corresponded with the individual behavioural criteria for traditional OCPD, as well as whether additional traits could be incorporated to the alternative model of OCPD to improve its conceptualisation of the disorder. The results of this study revealed that the trait facets proposed for OCPD in the AMPD are only partially aligned with traditional OCPD. Additional traits not currently included in the alternative model of OCPD were also found to be associated with individual traditional OCPD criteria.

Finally, Study Four examined the relevance of measurement method to the conceptualisation of OCPD. The majority of OCPD research to date has relied solely on self report data, which has the potential to distort results. The way in which individuals perceive themselves, and the way in which others perceive them, can differ drastically. Informant reports therefore have the potential to provide new insights, and change the way PDs are assessed (Clark, 2007; Widiger & Samuel, 2005). Study Four assessed the significance of different measurement modalities by considering the relationship between self- and informant reports of the traditional and alternative models of OCPD

in a mental health sample. This study evaluated whether self-report and informant measures of the alternative model of OCPD (i.e. measures of traits and impairment) were able to account for variance in traditional OCPD, as well as the extent to which self report and informant data correspond. Study Four also examined whether a measure of OCPD-specific impairment was better than general measures of impairment of personality functioning at accounting for variance in traditional OCPD. We found that the alternative model's reliance on disorder-specific impairment was strongly supported by the study's results, but that the trait profile may need to be revised. The results confirm that rigid perfectionism is centrally relevant to OCPD. The inclusion of perseveration and workaholism in the AMPD trait profile of OCPD was also supported. Self report data only moderately corresponded with informant data, suggesting that different measurement methods provide different information.

Implications for Theory and Practice

Continuity Between the Traditional and Alternative Models of PDs. In developing the alternative model, the Personality and Personality Disorder (P&PD) Work Group sought to strike a balance between the imperatives of reform and continuity. The well-documented problems with the traditional model necessitated significant reform, but too radical a change would deprive future researchers and clinicians of the benefit of the extant literature. The Work Group therefore attempted to pursue its reform objectives in a manner that achieved a degree of continuity between the two models, so that research on and treatments developed for OCPD (and other PDs) would remain generally applicable, minimising the potential disruption for researchers and clinicians. Studies Two, Three and Four evaluated the degree of continuity between the traditional and alternative models of OCPD – i.e. the extent to which the alternative model of OCPD describes the same condition as that described in the traditional model of OCPD.

The studies found a relatively high degree of continuity. In general, there was a clear relationship between the traditional and alternative models of OCPD. For example, Study Two found that the four traits used in the AMPD to operationalise OCPD were strongly correlated ($r = .753, p < .001$) with a latent construct of traditional OCPD. Further, a measure of OCPD specific impairment accounted for significant variance in traditional OCPD. Study Three found that three of the four traits used in the alternative model were substantially associated with six of the eight categorical behavioural criteria of traditional OCPD. In Study Four, three of the four proposed traits were significantly associated with traditional OCPD when self-report data was used. However, of these, rigid perfectionism was the only trait to consistently account for variance in traditional OCPD scores among both self and informant reports.

While more research on this question is clearly required, these studies provide initial support for the proposition that the alternative model of OCPD operationalises the same construct as that which is assessed via traditional OCPD criteria, though the trait profile used to describe OCPD in the alternative model could be improved (see the discussion below). For the reasons already given it will, in the short to medium term, be important to understand the degree of continuity between the new and old models. Longer term, however, research priorities may shift to determining the feasibility of more radical reform involving the embrace of a wholly dimensional model (i.e. one which does not continue to use categorical labels).

Criterion A – Impairment. In the traditional model, all PD diagnoses require the presence of “clinically significant” impairment. The AMPD extends this criterion further by differentiating between degrees of impairment (a PD diagnosis requires “moderate impairment”, the median of a 5-point impairment scale), and by specifying different types of impairment for different PDs. The potential benefits of this innovation are threefold. First, the quantification of impairment on a 5-point scale may lead to

greater standardisation of clinician assessments (by avoiding the subjectivity of “clinically significant”). Second, the use of a 5-point scale facilitates a more granular assessment of impairment than does the binary of the presence or absence of clinically significant impairment. Third, the articulation of disorder-specific forms of impairment may enable better differentiation between PDs (noting that the traditional model has been criticised for the high degree of consanguinity amongst its 10 PDs).

For these benefits to be realised, practitioners need to have the capacity to accurately measure impairment. However, at the time the Work Group proposed the impairment criteria, comparatively limited research on the measurement of disorder-specific impairment had been conducted. While the DSM-5 P&PD Work Group developed a general measure of personality functioning (the LPFS), they did not develop any instruments to measure disorder-specific impairment. The studies in this research project developed a measure of OCPD-specific impairment and investigated its utility in the measurement of the alternative model of OCPD.

Study One involved the development and evaluation of a measure of disorder-specific impairment for OCPD and AvPD. The results of this study provided initial support for the use of the disorder-specific impairment measures. Both impairment scales showed promise in their ability to measure disorder-specific impairment, demonstrating convergent validity with their respective traditional PDs, and discriminant validity with their non-corresponding traditional disorder and with each other. The scales were not, however, able to differentiate impairment by domain or by facet. This pattern of results suggests that it may be more useful to measure disorder-specific impairment as a total score, rather than seeking to parse personality impairment into domains and facets in the manner of the AMPD.

The discriminant validity of the AvPD and OCPD impairment scales supports the findings of Skodol et al. (2002), strengthening the case that different PDs are indeed

associated with different types of impairment. This is important as the measurement of disorder-specific impairment has the potential to enable better differentiation of PDs. This potential is only relevant, however, if impairment can account for variance not accounted for by traits. Some researchers have questioned the utility of measuring disorder-specific impairment, emphasising the overlap between impairment (Criterion A) and traits (Criterion B) (e.g. Few et al., 2013; Zimmermann et al., 2015). Others, however, suggest that impairment criteria can augment personality traits (Bastiaansen, De Fruyt, Rossi, Schotte, & Hofmans, 2013; Calabrese & Simms, 2014). Relatively few studies have investigated the extent to which disorder specific impairment is associated with particular PDs, and the findings of those studies that have are mixed (Anderson & Sellbom, 2016; Liggett, Sellbom, & Carmichael, 2017; Sellbom, Carmichael, & Liggett, 2017; Wygant et al., 2016).

Studies Two and Four aimed to address this ambiguity in the literature with regards to OCPD. Using the OCPD-IS developed in Study One, Study Two examined whether the OCPD-specific impairment criteria augmented the trait facets specified for the disorder in accounting for variance in traditional OCPD. Consistent with previous research (Bastiaansen et al., 2013; Calabrese & Simms, 2014; Wygant et al., 2016), Study Two supported the alternative structure for the diagnosis of OCPD, with results indicating that disorder-specific impairment for OCPD contributed above and beyond the contribution made by personality traits. Study Four had similar results. OCPD specific impairment made a unique contribution, additional to that made by the four proposed trait facets, in accounting for variance in traditional OCPD, and performed better in this regard than measures of general personality impairment.

Taken together, these studies show that the OCPD impairment scale can measure OCPD-specific impairment, and that OCPD-specific impairment augments traits in accounting for variance in measures of traditional OCPD. Given the potential

benefits of measuring disorder specific impairment, these findings bolster the argument that the alternative model should replace the traditional model.

Criterion B - Optimal Trait Profile for OCPD. The alternative model defines OCPD by reference to four trait facets: rigid perfectionism, perseveration, intimacy avoidance and restricted affectivity. The use of traits, rather than behaviours, is not the only innovation; the contours of the disorder have also been redrawn. While some behaviours from the traditional model have corresponding traits in the alternative model (e.g. showing perfectionism that interferes with task completion and rigid perfectionism) others do not (e.g. the inability to discard worthless objects). There are also traits in the alternative model with no behavioural analogue in the traditional model (e.g. restricted affectivity).

The question of whether the four traits included in the alternative model are the most appropriate trait facets by which OCPD should be defined is contested. Results across studies remain mixed as to exactly which trait facets are relevant to the disorder (Anderson, Snider, Sellbom, Krueger, & Hopwood, 2014; Bastiaens, Smits, De Hert, Vanwalleghem, & Claes, 2016; Fossati, Krueger, Markon, Borroni, & Maffei, 2013; Hopwood, Thomas, Markon, Wright, & Krueger, 2012; Morey & Benson, 2016; Yam & Simms, 2014). There is strong evidence in the literature that rigid perfectionism and, to a lesser extent perseveration, characterise the disorder. The evidence for the inclusion of intimacy avoidance and restricted affectivity is more equivocal, and there is some evidence that other trait facets could be included.

Studies Two, Three and Four all included investigation of the optimal trait profile for OCPD. These studies found that, in a regression model, rigid perfectionism was strongly associated with traditional OCPD in community, university and mental health samples. This finding is consistent with the broader literature, in which rigid perfectionism has consistently been found to be associated with OCPD, often with the

strongest association of any trait (Anderson, Snider, et al., 2014; Fossati et al., 2013; Hopwood et al., 2012; Yam & Simms, 2014). The finding is unsurprising, not only because of the recorded association in the literature, but because rigid perfectionism is so closely related to the behaviours that have long been used to describe OCPD. For example, there are obvious resonances between rigid perfectionism and two of the three behaviours making up Freud's (1908) "anal triad" – obstinacy and orderliness. It is also closely related to perfectionistic behaviours used to describe OCPD in every iteration of the DSM since 1980. This history, the literature and our results all support the specification in the alternative model that elevated levels of rigid perfectionism are required for a diagnosis of OCPD.

Studies Two to Four also supported the inclusion of perseveration, which accounted for a substantial amount of variance in traditional OCPD, though not to the same degree as rigid perfectionism. Again, these findings are consistent with the existing literature (Anderson, Snider, et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Morey & Benson, 2016), and with the manner in which OCPD has been conceptualised in the past century. Strong adherence to a particular way of doing things is closely related to a number of behaviours historically associated with the disorder: obstinacy, orderliness, perfectionism and moral rigidity. Against this background, our results support the inclusion of perseveration in the alternative model of OCPD.

Consistent with the literature (Bastiaens et al., 2016; Hopwood et al., 2012; Yam & Simms, 2014), there was no clear pattern in our results suggesting that intimacy avoidance or restricted affectivity are essential components of the disorder. Study Two found that, in a regression model, restricted affectivity, but not intimacy avoidance, was associated with traditional OCPD. Study Three did not support the inclusion of intimacy avoidance or restricted affectivity in the alternative model of OCPD. Similarly, in Study

Four, neither restricted affectivity nor intimacy avoidance was found to account for variance in traditional OCPD. This finding was consistent across both self report and informant measures of those traits. In conjunction with the literature base, our findings suggest that intimacy avoidance and restricted affectivity are peripheral to the OCPD construct. Furthermore, historically, behaviours associated with these two traits have not featured prominently in operationalisations of the disorder. The DSM-III (APA, 1980) did refer to the restricted expression of emotions, but this was abandoned in the DSM-IV (APA, 1994). Behaviours of intimacy avoidance have never been included. At different times the DSM has referenced the impact that excessive devotion to work can have on relationships (APA, 1952, 1980, 1987, 1994, 2000, 2013), but an impaired ability to form close relationships is qualitatively different from being uninterested in forming them (i.e. avoiding intimacy). To the extent that OCPD is associated with impaired relationships, it may be more appropriate to capture this in the OCPD-specific impairment criteria, rather than in the trait profile. Absent strong evidence for their inclusion, intimacy avoidance and restricted affectivity should be considered for removal from the alternative model's OCPD trait profile.

Gaps in the Alternative Model Trait Profile of OCPD. As noted above, the trait profile adopted by the Work Group did not include trait analogues for every behavioural criterion in the traditional model. Moral rigidity, workaholism, miserliness, a reluctance to delegate and hoarding behaviours all feature in the traditional model, but have no corresponding trait in the alternative model. While still maintaining a degree of continuity between the traditional and alternative models, this trimming of the scope of the disorder may help to address the problems of heterogeneity associated with the traditional model. Further, the omission of certain behaviours in the traditional model appears to be conceptually justified. Miserliness, hoarding and a reluctance to delegate are perhaps overly specific, and the latter two do not have a long history in the OCPD

literature. Miserliness, which does have some history in the literature, was originally more closely linked with the concept of emotional, rather than material, stinginess (DSM-III; APA, 1980) – a concept which is now appropriately covered by restricted affectivity. On this basis the omission of miserliness also appears justified. The omission of moral rigidity and workaholism may be more difficult to justify. Possible trait analogues of these behaviours are discussed further below.

Since the publication of the earliest studies into the relevant trait facets for OCPD (Anderson, Snider, et al., 2014; Hopwood et al., 2012), additional traits not included in the alternative model of OCPD have been found to be associated with the disorder. However, such findings have not been consistent. Studies Two, Three and Four investigated the optimal trait profile for OCPD, including whether additional traits should be included. Study Two found that the traits of anxiousness and (low) impulsivity accounted for variance in latent OCPD scores. Study Three found that submissiveness, suspiciousness and impulsivity uniquely predicted individual traditional OCPD criteria in a regression model. However, both elevated and diminished levels of these trait facets were associated with different traditional OCPD criteria. In Study Four, anxiousness, hostility and suspiciousness were the only additional traits to be consistently associated with OCPD.

This pattern of results makes intuitive sense when the structure of the traditional operationalisation of OCPD is considered. That model, which requires that four of eight polythetic behavioural criteria are met, captures a very heterogeneous group. This heterogeneity makes it difficult to describe this group by reference to a set of four trait facets. Rigid perfectionism and perseverance have a clear conceptual relationship with most of the behavioural criteria in the traditional model of OCPD, a result which is reflected in our findings. Other trait facets, however, are related to only some of the behavioural criteria. Others still may be related in contrary ways – for example, elevated

levels of submissiveness are conceptually related to the behavioural criteria of over-conscientiousness, while diminished levels of submissiveness are conceptually related to the criteria of rigidity and stubbornness. These too, are reflected in our findings, with Study Three finding that some traits were associated with OCPD at both elevated and diminished levels.

The association between OCPD and anxiousness (observed in Studies Two and Four) may be related to the maintenance of unrealistically high standards (i.e. rigid perfectionism) (Kyrios, Nedeljkovic, Moulding, & Doron, 2007), and the relationship with hostility (observed in Study Four) may be attributable to the tendency to become frustrated, irritated or angry with individuals who are unable to meet these standards (Greve & Adams, 2002). Suspiciousness (found to be associated with OCPD in Studies Three and Four) could represent the mistrust associated with a concern that others are unable to be trusted to complete tasks to the same high standard as that of the individual (Greve & Adams, 2002; Kyrios et al., 2007; Millon, 1996). While it is possible to articulate conceptual links between these traits and traditional OCPD, they were not consistently associated with OCPD in our findings. For example, in Study Four, when entered into the regression model, no traits were able to consistently augment rigid perfectionism in the prediction of OCPD.

It may be that additional personality traits, not indexed by the PID-5, are relevant to OCPD. The PID-5 originally included a more expansive list of six domains and 37 personality traits. The “compulsivity” domain was not included in the final version of the measure, with its traits either merged (e.g. rigidity and perfectionism) or left out entirely (e.g. orderliness). Crego, Sleep, and Widiger (2016) found that this change negatively affected the PID-5’s ability to index OCPD. Other measures of personality include traits conceptually relevant to OCPD. For example, the behaviours of over-conscientiousness and an excessive devotion to work have a long history in the

OCPD literature. While the PID-5 lacks directly analogous personality traits for these behaviours, other measures of personality include corresponding traits.

Overconscientiousness (defined in the traditional model of PDs to include an inflexible approach to matters of morality) is analogous to the Five-Factor Model Rating Form (FFM-RF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006) trait of low openness to values (described as dogmatism). Excessive devotion to work could be indexed by the FFM-RF trait of achievement (high levels of which are described as workaholism) and the Computerized Adaptive Test of Personality Disorder scale (CAT-PD; Simms et al., 2011) of workaholism. Given the historical significance of their corresponding behaviours to the disorder, the capacity of these traits to contribute to a trait-based conceptualisation of OCPD deserves further investigation. As demonstrated in Study Four, this capacity is potentially significant. In that study, scores on the workaholism scale of the CAT-PD-SF accounted for more variance in traditional OCPD scores than rigid perfectionism.

When combined with the existing literature, our results suggest that OCPD may be best conceptualised as a disorder characterised by rigid perfectionism and, to a lesser extent, perseveration. Studies Two, Three and Four suggest that other trait facets such as anxiousness, hostility, submissiveness, suspiciousness and (low) impulsivity might have some greater significance to OCPD than other traits in how the disorder manifests in individual cases, but ought not be considered constitutive trait facets of the disorder. It may, therefore, be appropriate to amend the AMPD diagnostic criteria for OCPD so that Criterion B requires elevated levels of rigid perfectionism and perseveration, and at least one of several second-order trait facets. If replicated, our results suggest that the group of second-order trait facets should include anxiousness, hostility, submissiveness, suspiciousness and (low) impulsivity. Workaholism and/or dogmatism could also be included, should future research confirm that these traits are associated with OCPD (as

is suggested by the history of the disorder and, in the case of workaholism, Study Four). Whether Criterion B should require the presence of more than one second-order trait facet would need to be determined by further research into the degree of continuity between the traditional model and the model just proposed.

The Relevance of the Measurement Method. Most research into PDs relies solely on self-report measures (such as questionnaires and diagnostic interviews with the target individuals) (Clark, 2007). This mono-method bias has the potential to create particular problems in the area of personality research (Clark, 2007; Widiger & Samuel, 2005). Many personality disordered individuals experience interpersonal difficulties, which can result in frequent conflict with others. These problems can be exacerbated when a lack of insight leads the individual to attribute responsibility for such difficulties to others, as opposed to themselves. This lack of awareness can lead to personality disordered individuals being unreliable historians of their experiences, which likely influences the weak to moderate correlation between how individuals see themselves and how others see the individual (Biesanz, West, & Millevoi, 2007; Klonsky, Oltmanns, & Turkheimer, 2002; Watson, Hubbard, & Wiese, 2000). Over-reliance on self-report data in personality research is likely, therefore, to result in biased and distorted information. Study Four aimed to assess the significance of this problem by using self-report and informant data on OCPD related measures to examine the concordance between the two sources. In line with the existing literature (Klonsky et al., 2002; Modestin & Puhan, 2000; Oltmanns & Turkheimer, 2009), all self report measures were found to be weakly to moderately correlated with their informant counterparts.

These results confirm that informant reports do provide information that is different to that provided by individuals reporting information about themselves. Given this finding, clinicians may wish to collect collateral information more often when

assessing personality. The need to collect collateral information may depend upon the personality traits that are in issue – the degree of agreement between self and informant reports was different for different traits. Our study merely highlighted areas in which differences between informant and self-reports exist – it did not investigate which perspective is more accurate or reliable. Expert clinical judgement is likely to be necessary to resolve this question in individual cases.

Suspiciousness, submissiveness and perseveration had the weakest associations. These results have implications for clinical practice insofar as they confirm that informant reports of personality provide information different to that provided by individuals about themselves. More specifically, our results suggest that clinicians should be particularly aware of the possibility that self-reported levels of suspiciousness, submissiveness and perseveration may not accord with the perceptions of others. The Johari window (Luft & Ingham, 1955) may be a useful framework within which to consider this absence of self-informant agreement for personality traits (Yalch & Hopwood, 2016). In this model, personality traits may be observed by just the individual (hidden area), by just the informant (blind area), by both the individual and informant (open area), or by neither the individual or the informant (unknown area) (Luft & Ingham, 1955). Suspiciousness is likely to be located in the “hidden” area, resulting in low levels of self-informant agreement – i.e. individuals with high levels of mistrust are likely to seek to hide this fact from others (whom they do not trust) (Yalch & Hopwood, 2016). Submissiveness and perseveration are more likely to be in the “blind” quadrant of the Johari window. Leising, Rehbein, and Sporberg (2006) have found that submissiveness is often underreported by individuals, but noticeable to others. As discussed above, a lack of insight is a component part of perseveration. Clinicians may benefit from bearing these properties in mind when considering what weight to place on reports from individuals or informants about these traits.

Areas for Future Research

Our research confirms the findings of other studies that the AMPD operationalisation of OCPD shows initial promise in improving the conceptualisation of the disorder (Anderson, Snider, et al., 2014; Hopwood et al., 2012). Further research in several areas is, however, required to refine and fully operationalise the model.

Given the inconsistencies in both the trait and impairment literature, additional research into each of these areas is clearly needed. There is a growing body of research, including our studies, suggesting that rigid perfectionism and perseveration are the core traits underpinning OCPD (Anderson, Snider, et al., 2014; Bastiaens et al., 2016; Fossati et al., 2013; Hopwood et al., 2012; Yam & Simms, 2014). Further replication of these results, and investigation of the utility of other traits (including traits not included in the PID-5), is needed before the trait profile in the alternative model of OCPD can be revised. Investigation of the optimal trait profile for OCPD using a wider array of OCPD measures would also be valuable. Regarding impairment, our results suggest that there is utility in defining OCPD in part by reference to disorder-specific impairment and that the OCPD-IS is a useful tool to index such impairment. Again, these findings need to be replicated. Additional research is also required to confirm whether disorder-specific impairment is equally useful in defining PDs other than OCPD. There is some preliminary evidence that it may not be (Anderson & Sellbom, 2016; Sellbom et al., 2017).

Further research into the performance of the alternative model among clinical populations is also needed. At present, much of the literature relies on community and university samples, with only a handful of studies using clinical or treatment samples. Although the present research project, in addition to other studies (Morey, Bender, & Skodol, 2013; Morey & Benson, 2016; Yam & Simms, 2014), suggests that the findings

of studies using non-clinical populations can be generalised to clinical populations, additional research is warranted.

Research using community populations can help to set standardised norms, but research using clinical populations is needed to establish clinical cut-offs delineating normative-personality from psychopathology. At present, only limited research has examined the point at which personality traits transition from normal to maladaptive. The DSM-5 currently provides descriptions of the 25 maladaptive traits (and the PID-5 enables ratings on a 4-point Likert scale) but does not provide normal baselines or cut-offs. Absent this information, the ideal of a dimensional approach to personality remains unrealised. Researchers and clinicians are unable to identify the point at which a trait becomes elevated to the extent that it is considered pathological. Therefore, before the alternative model can be readily employed in clinical practice, research must be undertaken to establish appropriate cut-off points for personality psychopathology. This problem is also apparent for the measurement of impairment – no clinical cut-offs or normative data have been researched to provide clinicians with baselines upon which to base assessments of levels of impairment in personality functioning. Clinical guidelines must therefore be developed to aid clinicians in their decision making and formulation processes.

The implications of the alternative model of OCPD for treatment also deserve further attention. Under the traditional model, treatment options for OCPD remain limited (Diedrich & Voderholzer, 2015). It may be that the reconceptualisation of OCPD in the AMPD will create new ways of thinking about the treatment of the disorder. Research is needed to examine the degree to which the dimensional traits and personality impairment can assist in the development of appropriate treatment recommendations for those living with OCPD.

Finally, additional research must focus on the value of informant reports in the alternative model for both OCPD, and PDs more generally. It is clear that personality disordered individuals are not always reliable narrators. Informant reports have the potential to contribute to a clearer picture of the target individual's personality functioning. Additional research, however, is required to provide information on the particular areas in which informant reports are likely to be most useful. The level of agreement between self and informant reports of personality is not uniform across different traits and impairment types. If the patterns in this variation were better understood, clinicians would be better able to assess the weight to be given to self-reports and when it would be beneficial to obtain collateral information. Study Four of this research project is the only study to date having addressed this question for OCPD; as such, more research is needed.

The deficiencies of the traditional model of personality disorders are widely known, and the alternative model includes several improvements. Before the alternative model can be fully implemented, however, additional research is clearly required. The studies comprising this thesis have contributed to the knowledge base needed to further refine and operationalise the alternative model of OCPD by critically evaluating the constellation of traits relevant to OCPD, the value of disorder-specific impairment, and the utility of informant reports of personality.

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