

# **PERSONALITY DISORDERS**

## **AND THE FIVE-FACTOR MODEL OF PERSONALITY**



III

# PERSONALITY DISORDERS AND THE FIVE-FACTOR MODEL OF PERSONALITY

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EDITED BY THOMAS A. WIDIGER AND PAUL T. COSTA JR.

*Third Edition*

*f a c t o r*

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This book is dedicated to the memory of Cindy Sanderson, a very dedicated, skilled, and talented dialectical behavior clinician, and much more importantly, a very dear, loving, and sorely missed close friend.



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# **PERSONALITY DISORDERS**

## **AND THE FIVE-FACTOR MODEL OF PERSONALITY**



# PERSONALITY DISORDERS AND THE FIVE-FACTOR MODEL OF PERSONALITY: RATIONALE FOR THE THIRD EDITION

*Thomas A. Widiger and Paul T. Costa Jr.*

This is a difficult yet also exciting time for the diagnosis and classification of personality disorders. The American Psychiatric Association is in the process of constructing the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). In a survey of members of the International Society for the Study of Personality Disorders and the Association for Research on Personality Disorders, 80% of respondents indicated that they felt that “personality disorders are better understood as variants of normal personality than as categorical disease entities” (Bernstein, Iscan, Maser, & the Boards of Directors of the Association for Research in Personality Disorders and the International Society for the Study of Personality Disorders, 2007, p. 542). The DSM-5 Personality and Personality Disorders Work Group appears to be taking a number of steps to embrace this conceptual position, shifting toward a five-factor model (FFM) conceptualization of personality disorder.

It is not entirely clear what will happen to the personality disorders section in DSM-5. The original proposals of the DSM-5 Personality and Personality Disorders Work Group were in some regards quite radical, and they have since undergone significant revision. They could very well shift once again. However, in the current version of the proposal, DSM-5 would include a five-factor dimensional trait model that is closely aligned with the FFM, and the diagnostic criterion sets for the categorical diagnoses

would be heavily informed by FFM personality traits (American Psychiatric Association, 2011; Clark & Krueger, 2011).

It is also likely that many of the diagnostic categories of the fourth edition of the DSM (DSM-IV; American Psychiatric Association, 1994) diagnostic categories will be deleted (e.g., perhaps schizoid, paranoid, dependent, and histrionic), and others might be shifted out of the personality disorders section (e.g., perhaps schizotypal and antisocial). The deletion of the diagnoses is not meant to imply that their respective personality traits were not considered to be real or significant but only that the diagnostic co-occurrence inherent to the categorical model of classification had become too cumbersome and problematic (Skodol, 2010). The traits for the personality disorders being deleted are to be recovered within the dimensional trait model.

The substantial shift of DSM-5 toward the FFM has been the result of a considerable amount of research that occurred prior to the first and second editions of the current text (Costa & Widiger, 1994, 2002) as well as even more research that has occurred since the publication of those editions. Persons familiar with these two prior editions will notice that many new chapters have been included in this latest edition, reflecting the substantial amount of empirical and clinical work that has occurred since the 2002 edition. We attempt to provide in this third edition a reasonably comprehensive

summary and representation of this empirical and clinical literature.

We begin this chapter, as we did in the prior editions, with a brief overview of the five domains of the FFM. We then provide a summary of each of the chapters.

## DESCRIPTION OF FACTORS

In this section, we briefly describe the domains or higher order dimensions of the FFM. These broad dimensions include many more specific traits. One such specification of the lower order structure is provided by the facet scales of the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992), an instrument designed to measure the FFM. Details on these facets are provided in Appendix A.

### Neuroticism (N)

N refers to the chronic level of emotional adjustment and instability. High N identifies individuals who are prone to psychological distress. High N includes negative affectivity, such as angry hostility, depressiveness, anxiousness, and volatility, but N also more generally includes vulnerability to stress, self-consciousness, and excessive craving, urges, and difficulty in tolerating the frustration caused by not acting on one's urges. As shown in Appendix A, N as assessed by the NEO PI-R includes facet scales for anxiety, angry hostility, depression, self-consciousness, impulsivity, and vulnerability.

### Extraversion (E)

E refers to the quantity and intensity of preferred interactions, activity level, need for stimulation, and capacity for joy. People who are high in E tend to be sociable, active, talkative, person-oriented, optimistic, fun loving, and affectionate, whereas people who are low in E tend to be reserved (but not necessarily unfriendly), sober, aloof, independent, and quiet. Introverts are not unhappy or pessimistic people, but they do not experience the exuberant high spirits that characterize extraverts.

### Openness to Experience (O)

O is less well studied than either N or E and, in fact, is often construed differently, as the alternative label

of *intellect* suggests. However, O differs from ability and intelligence and involves the active seeking and appreciation of experiences for their own sake. Open individuals are curious, imaginative, and willing to entertain unconventional ideas and values; they experience the whole gamut of emotions more vividly than do closed individuals. By contrast, closed individuals (those who are low in O) tend to be conventional in their beliefs and attitudes, conservative in their tastes, and dogmatic and rigid in their beliefs; they are behaviorally set in their ways and emotionally unresponsive.

### Agreeableness (A)

A, like E, is an interpersonal dimension and refers to the kinds of interactions a person prefers along a continuum from compassion to antagonism. People who are high in A tend to be softhearted, good-natured, trusting, helpful, forgiving, and altruistic. Eager to help others, they tend to be responsive and empathic and believe that most others want to and will behave in the same manner. Those who are low in A (called *antagonistic*) tend to be cynical, rude or even abrasive, suspicious, uncooperative, and irritable and can be manipulative, vengeful, and ruthless.

### Conscientiousness (C)

C assesses the degree of organization, persistence, control, and motivation in goal-directed behavior. People who are high in C tend to be organized, reliable, hardworking, self-directed, scrupulous, ambitious, and persevering, whereas those who are low in C tend to be aimless, unreliable, lazy, careless, lax, negligent, and hedonistic.

## GOALS AND ORGANIZATION OF THE THIRD EDITION

The goals of this edition are essentially the same as those of the first edition: (a) to examine how personality disorders represent maladaptive variants of the personality traits that are present in all individuals to varying degrees, (b) to empirically demonstrate the application and utility of the FFM to personality disorders, (c) to illustrate the power of the FFM to capture the essence of major features of personality disorders through clinical case stud-

ies, and (d) to provide possible reconceptualizations of personality disorders.

Although its goals are essentially the same, the current edition explores the topics in greater depth and is supported by considerably more empirical research. We no longer just describe personality disorders in terms of the FFM; we can now provide the empirical support for these descriptions. We no longer just indicate how the FFM may have more clinical utility for treatment planning; we can provide the empirical findings to support this belief. However, we do continue to present clinical case studies because they provide nicely vivid illustrations of the clinical application of the FFM.

The book is again divided into four primary sections: (a) Conceptual and Empirical Background, (b) Patient Populations, (c) Assessment, and (d) Clinical Application. We do, however, include a fifth section, which is our closing chapter. We describe each of these sections in turn.

### **Conceptual and Empirical Background**

This section provides the conceptual and empirical background of the FFM. McCrae and Costa (Chapter 2) appropriately begin this section with a broad overview of the FFM. They provide its history and discuss its extensive empirical validation as the predominant dimensional model of general personality structure. They discuss, in particular, its universality, temporal stability, and ability to predict a wide variety of important life outcomes. They discuss the higher and lower order structure of the FFM, considering whether there are factors above the Big Five and the optimal set of facets within each of the five domains. They also articulate their five-factor theory (McCrae & Costa, 2003) for the origins of these fundamental domains of personality structure.

Zapolski, Guller, and Smith (Chapter 3) provide a sophisticated and informative overview of construct validation and, in particular, apply these principles to the conceptualization and classification of personality disorder. Building on their prior work on the construct validation within psychopathology research (e.g., Smith & Zapolski, 2009; Strauss & Smith, 2009), they critique the preference within the existing psychiatric literature for syndromal diagno-

sis and argue instead for the importance, value, and utility of identifying homogeneous constructs that will lead to more specific findings with regard to etiology, pathology, and treatment. They articulate in a compelling fashion that describing individuals along fundamental dimensions of personality functioning, making use of well-validated constructs from the personality literature, will provide both a parsimonious and comprehensive description and will lead directly to treatment planning.

A long-standing limitation of the existing personality disorder nomenclature has been an inadequate understanding of childhood antecedents (De Clercq & De Fruyt, 2007). This is frankly remarkable given how long the existing diagnoses have been available for research and stands in stark contrast to an understanding of the childhood antecedents of adult personality. De Fruyt and De Clercq (Chapter 4) overview what is known about the childhood antecedents of personality disorder and provide a compelling integration of this literature with a conceptualization of childhood personality disorder from the perspective of the FFM. They indicate how the field of child and adolescent personality can bring valuable knowledge to an understanding of adult personality pathology and indicate how future conceptualizations of personality pathology can and should be integrated with this developmental perspective. Most important, they summarize their own work in developing a classification and assessment of childhood maladaptive personality traits from the perspective of the FFM (e.g., De Clercq, De Fruyt, Van Leeuwen, & Mervielde, 2006).

Allik, Realo, and McCrae (Chapter 5) provide an in-depth discussion of the empirical support for the universality of the FFM. As they indicate, if mental disorders are comparable with physical disorders (as implied by their inclusion in the *International Classification of Diseases*; World Health Organization, 2010), then their psychological substrates must likewise be universal. Personality traits provide the substrate of personality disorders, and so the question of their cross-cultural invariance is crucially important (Allik, 2005). Allik and colleagues indicate how the FFM not only obtains strong empirical support as a universal, cross-cultural dimensional model of general personality

structure, but also can help researchers to articulate and understand differences between cultures.

Widiger, Costa, Gore, and Crego (Chapter 6) end this section with an overview of the existing FFM personality disorder research. Widiger and Costa (2002, Chapter 5) provided a comparable chapter in the previous edition of this text, which identified 56 personality disorders studies that were concerned specifically with the FFM. At the time of that review, this was a large number, relative to the studies of other, alternative dimensional models of personality disorder. The number of individual FFM personality disorder studies has since ballooned to a number that is no longer easily quantified. The new chapter in the current edition highlights studies concerning the FFM coverage of alternative trait models; the FFM descriptions of the personality disorders of the fourth edition, text revision version of the DSM (*DSM-IV-TR*; American Psychiatric Association, 2000); empirical support for these FFM descriptions; empirical support for understanding the *DSM-5* dimensional trait model from the perspective of the FFM; maladaptive variants of the FFM; comparisons of alternative measures of *DSM-IV-TR* personality disorders from the perspective of the FFM; and the construct validity of the *DSM-IV-TR* personality disorders in terms of the FFM. As Widiger and colleagues indicate, even this list of topics barely scratches the surface of FFM personality disorder research, much of which is, however, covered in subsequent chapters.

## Patient Populations

The previous edition of this book (Costa & Widiger, 2002) included a section on patient populations and clinical cases, with chapters concerning opioid abusers, sex offenders, borderline personality disorder, narcissism, and psychopathy. Some of these chapters were primarily case studies, their purpose being to vividly illustrate how clinical populations can be well understood from the perspective of the FFM. This literature has grown substantially since the prior edition of this book, and these chapters now have a much stronger empirical foundation.

The Patient Populations section begins with an overview by Dereckno and Lynam (Chapter 7) on how psychopathy can be understood from the per-

spective of the FFM. This discussion in the prior edition (Costa & Widiger, 2002, Chapter 20) was largely speculative or at least based on just one or two studies. Dereckno and Lynam review what has now become a considerable body of research on psychopathy from the perspective of the FFM (Lynam & Widiger, 2007), and they articulate well how many issues that bedevil an understanding of psychopathy (e.g., its optimal structure, assessment, etiology, and pathology) can now be well-addressed from the FFM perspective.

Trull and Brown (Chapter 8) provide a comparable summary of the research literature concerning the understanding of borderline personality disorder (Trull, Stepp, & Durrett, 2003) from the perspective of the FFM. This chapter in the prior edition of this book (Costa & Widiger, 2002, Chapter 17) was confined largely to case studies. However, there have now been a good number of empirical studies concerned directly with the validity and the advantages of conceptualizing borderline personality disorder from the perspective of the FFM. Trull and Brown summarize this body of literature and indicate, for instance, how psychiatrists, social workers, and other mental health clinicians can use the FFM to diagnose this personality disorder and to understand its correlates, temporal stability, and etiology.

Campbell and Miller (Chapter 9) provide a summary of the research literature concerning the understanding of narcissism and narcissistic personality disorder from the perspective of the FFM. This chapter in the prior edition (Costa & Widiger, 2002, Chapter 18) was again confined largely to case studies. As indicated by Campbell and Miller, there is now a substantial body of FFM narcissism research. One of the strengths of the FFM is its robust comprehensiveness, and this is put to good advantage in the conceptualization and study of narcissism. For example, a central, ongoing issue in the diagnosis and assessment of narcissism is the distinction between grandiose and vulnerable variants of narcissism (Campbell & Miller, 2011). Campbell and Miller indicate how both perspectives are well accommodated if one conceptualizes narcissistic personality disorder as a maladaptive variant of the FFM of general personality structure.

Edmundson and Kwapil (Chapter 10) provide a comparable overview of an understanding of

schizotypal personality disorder from the perspective of the FFM. Schizotypal is a personality disorder that might be reclassified in *DSM-5* as a variant of schizophrenia rather than as a personality disorder, despite the considerable body of literature that has long recognized the existence of schizotypal personality traits (Kwapil & Barrantes-Vida, *in press*). This reformulation of a personality disorder as a variant of an Axis I mental disorder would represent a fundamental shift within the *DSM* classification (Skodol, *in press*). The FFM is relatively more stable and consistent in its conceptualization of personality and, as indicated by Edmundson and Kwapil, accommodates well this personality disorder that has been the focus of a considerable body of personality trait research. As indicated by Edmundson and Kwapil, schizotypal is one of the few personality disorders for which FFM openness is particularly central to its understanding.

Dependent personality disorder is likely to be deleted in *DSM-5* (American Psychiatric Association, 2011; Skodol, 2010). In their chapter, Gore and Pincus (Chapter 11) suggest that this will be a regrettable decision as there has, in fact, been a considerable body of research indicating the clinical importance of dependent personality traits. The diagnosis is being deleted not because it is believed that there is no such thing as dependent personality traits. On the contrary, these traits will still be assessed within the *DSM-5* dimensional model, making the dimensional trait model all the more important for research and clinical use. The diagnosis is being deleted largely as an effort to decrease the diagnostic co-occurrence that has been so problematic for the categorical model of classification (Skodol, 2010). In any case, Gore and Pincus indicate how the traits of dependent personality disorder are indeed well captured by the FFM, the particular importance of maladaptive agreeableness in the conceptualization of dependency, and the empirical support for this conceptualization.

As noted earlier, one of the strengths of the FFM is that it provides a reasonably comprehensive coverage of general personality structure. As such, it can recognize forms of maladaptive personality functioning not currently recognized within *DSM-IV-TR* (American Psychiatric Association,

2000). This is demonstrated well in the chapter by Bagby, Watson, and Ryder (Chapter 12) on depressive personality disorder from the perspective of the FFM. Depressive personality disorder was considered for inclusion within the third edition of the *DSM* (American Psychiatric Association, 1980) and was formally proposed for *DSM-IV* (American Psychiatric Association, 1994) but did not receive official recognition (Bagby, Ryder, & Schuller, 2003). It is currently included within an appendix to *DSM-IV-TR* (American Psychiatric Association, 2000). Bagby and colleagues document well how depressive personality disorder is accommodated comfortably within the FFM and indicate the empirical support for this conceptualization.

In addition to demonstrating how each *DSM-IV-TR* (American Psychiatric Association, 2000) personality disorder can be understood in terms of the FFM, one can also demonstrate how *DSM-IV-TR* lacks adequate coverage of maladaptive personality functioning by failing to recognize maladaptive variants of the FFM (Piedmont, Sherman, Sherman, Dy-Liacco, & Williams, 2009). This is demonstrated well in the chapter by Taylor and Bagby (Chapter 13) in which they discuss alexithymia from the perspective of the FFM. As these authors indicate, alexithymia is a clinical construct that has been recognized and studied for a substantial period of time and yet has never been recognized within the American Psychiatric Association diagnostic nomenclature (Taylor, 2004). Taylor and Bagby document its clinical importance, its rich empirical foundation, and how it can be well accommodated within the FFM.

This section concludes with a chapter by Boyd (Chapter 14) on the application of the FFM to an understanding of individual differences in FFM personality for persons with an intellectual disability (ID). There can be a tendency to minimize the importance of individual differences in persons with an ID, as if the ID explains everything about that person. As indicated by Boyd, there has been limited but very encouraging research on the study of personality and personality disorder within this population. An advantage of a truly integrative model of normal and abnormal personality is its ability to identify both the strengths and deficits of persons

within the same common and unified nomenclature (Widiger & Trull, 2007). This is particularly advantageous for person-centered planning, a widely utilized approach for identifying interventions and supports for persons with ID. Boyd even provides initial validity data on the application of the FFM within this population.

## Assessment

The prior edition of this text did not include a section devoted to assessment. However, assessment is clearly a fundamental concern in the diagnosis and study of personality disorders as well as, of course, personality (Widiger & Samuel, 2005). In addition, quite a bit of new and innovative work on assessment has been developing in the study of personality disorders from the perspective of the FFM.

Samuel, in the first chapter of this section (Chapter 15), provides an overview of the assessment of the FFM. One of the advantages of the FFM is that there are so many alternative measures, which is itself a testament to the substantial interest in and research concerning the FFM. De Raad and Perugini (2002), in fact, devoted an entire text to a number of different options, and that text could well be updated because quite a few more have since been developed. Samuel focuses his chapter in particular on the ability of existing instruments to provide coverage of the maladaptive range of FFM personality structure.

In the development of the FFM, considerable emphasis was placed on the collection and analysis of information from peers and other informants (see Chapter 2, this volume). A common finding in *DSM-IV-TR* personality disorder research is a relatively weak convergence of self and informant (peer) assessment (Oltmanns & Turkheimer, 2009). Oltmanns and Carlson (Chapter 16) discuss the importance of obtaining and considering information on maladaptive personality functioning from peers, spouses, and/or other informants. Personality disorders are characterized in part by distortions in self-image, both positive and negative, and it is then curious that so much research has relied so heavily on self-report. Observer versions of FFM instruments have long been available and recommended.

Step 4 of the four-step procedure for the diagnosis of a personality disorder from the perspective of the FFM (see Chapter 19, this volume, for a description and discussion of the four steps) is matching the FFM profile of the respective individual with the FFM profile of a prototypic case. This technique was first tested empirically by Miller, Lynam, Widiger, and Leukefeld (2001) and has since proven to be a highly useful and valid means of assessing personality disorder constructs. As expressed in Chapter 19 in this volume, this step of FFM personality disorder diagnosis is optional in part because the most accurate and precise description will be in terms of the domains and facets of the FFM, not the extent to which the person matches a particular prototypic case (see also Chapter 3 by Zapolski, Guller, & Smith). Nevertheless, prototype matching does serve as a useful bridge between the FFM and the *DSM-IV-TR*, providing a method with which persons can translate their more familiar diagnostic constructs into the FFM. Miller (Chapter 17) discusses the rationale and provides extensive empirical support for this method as well as compares and contrasts it with other methods of prototype matching. As indicated by Miller, the diagnosis of *DSM-5* personality disorder types will likely parallel closely the simplified version of FFM prototype matching (Miller, Bagby, Pilkonis, Reynolds, & Lynam, 2005).

The final chapter of this section (Chapter 18) concerns the development of new self-report measures for the assessment of maladaptive variants of the FFM. Step 2 of the four step procedure for the diagnosis of a personality disorder (see Chapter 19) is the assessment of maladaptive variants of FFM domains and/or facets. This step is being facilitated by the development of scales for these maladaptive variants. The first such set of scales was developed by Lynam et al. (2011) for the assessment of the maladaptive variants of the FFM that are considered to be important and useful for the construct of psychopathy. This effort was followed by the development of comparable FFM scales for schizotypal personality traits (Edmundson, Lynam, Miller, Gore, & Widiger, 2011) and FFM scales for histrionic personality traits (Tomiatti, Gore, Lynam, Miller, & Widiger, 2012). By the time this book is published, it is expected that there will be FFM scales for all of

the traits for all of the *DSM-IV-TR* personality disorders. In his chapter, Lynam provides the rationale and process for the development of these scales, along with particular details with respect to the construction and validation of the FFM psychopathy scales.

### Clinical Application

The penultimate section describes how the FFM would be applied clinically to render a personality disorder diagnosis, presents clinical illustrations of these applications, summarizes the research on the clinical utility of the FFM, and discusses FFM treatment recommendations. In the prior edition of this book, Widiger, Costa, and McCrae (2002, Chapter 25) provided a four-step procedure for obtaining a personality disorder diagnosis with the FFM. The four steps are the obtainment of an FFM profile; the identification of the problems, impairments, and/or maladaptive traits that are variants of the FFM trait elevations; determination of whether the collection of these traits constitutes a clinically significant level of impairment; and, if desired, prototype matching. Quite a bit of further work and development has occurred with respect to one or more of these four steps. As Widiger et al. indicate in their updated version of this chapter for this edition (Chapter 19), the procedure being recommended for the diagnosis of personality disorders in *DSM-5* (American Psychiatric Association, 2011) now closely parallels this FFM approach.

One of the repeated concerns raised with respect to any dimensional model of personality disorder, including the FFM, is whether clinicians will consider it to have adequate clinical utility, relative to the existing nomenclature. Mullins-Sweatt (Chapter 20) begins her chapter with a sophisticated and informative discussion of the construct of clinical utility, its importance, and its fundamental components (Mullins-Sweatt & Widiger, 2009). As she indicates in her chapter, quite a few empirical studies have now been conducted that have compared directly the clinical utility of the FFM and the *DSM-IV-TR* nomenclature for the diagnosis and treatment of personality disorders.

The chapter by Sanderson and Clarkin (Chapter 21) has been carried over from the prior edition

of the book (Costa & Widiger, 2002, Chapter 21). With their rich clinical experience, they provide a clinically astute examination of how the five personality dimensions of the FFM affect therapy focus, alliance, and outcome. They illustrate with clinical vignettes how FFM dimensions are related to planning and applying psychological interventions. They also present an FFM profile for female patients with borderline personality disorder based on 64 carefully diagnosed patients, as well as a specific 26-year-old female patient, indicating how the profile can help in treatment planning.

The chapter by Stone (Chapter 22) is also carried over from the prior edition (Costa & Widiger, 2002, Chapter 24). Stone, a well-regarded psycho-dynamic psychiatrist, indicates how the FFM is readily and meaningfully applied to his patients with borderline personality disorder. His wonderful book *Abnormalities of Personality: Within and Beyond the Realm of Treatment* (Stone, 1993) was the first illustration by someone outside of traditional FFM research of how the model can provide a vivid and useful representation of the essence of patients with a personality disorder.

Piedmont has written an outstanding text on the clinical application of the FFM (Piedmont, 1998). Piedmont and Rodgerson, in their chapter for this text (Chapter 23), focus in particular on the application of the FFM to marital and family counseling. One of the many intriguing aspects of their work is the consideration of the extent and nature of couples' agreement in their FFM descriptions of one another. They indicate how the FFM assessment not only informs treatment planning but can also become an integral part of the marital therapy.

In their chapter, Stepp, Whalen, and Smith (Chapter 24) focus on the application of the FFM for dialectical behavior therapy, one of the better known and more empirically validated methods of personality disorder treatment, for persons diagnosed with borderline personality disorder. They first provide a brief overview of dialectical behavior therapy and its main tenets (Stepp, Epler, Jahng, & Trull, 2008). Each of these components is then conceptualized from an FFM perspective. They conclude with how the FFM might be used in dialectical behavior therapy practice and

provide an illustrative case study that is based on treatment conducted by Stepp at a forensic inpatient hospital.

Presnall, in the final chapter of this section (Chapter 25), discusses how all 10 poles of all five domains of the FFM have at least some implications for maladaptive personality functioning and goes even further to offer tentative treatment recommendations for each pole of each domain. This intriguing and creative review draws heavily from the existing literature on empirically validated treatments as well as from the rich clinical literature on the treatment of respective *DSM-IV-TR* personality disorders. This chapter provides the first step toward an eventual development of a treatment manual for the FFM of personality disorder.

## Conclusions and Future Research

The final section of the text provides our brief final overview and suggestions for future work and research. As we indicate in this final chapter (Chapter 26), we feel that all of the chapters in this book will be useful in stimulating further clinical and research work on the development of the FFM of personality disorder. With the clear shift of the *DSM* toward the FFM conceptualization and diagnosis of personality disorder, there is no doubt that this attention and focus on the FFM will increase even further. We hope you enjoy this text!

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PART I

CONCEPTUAL AND  
EMPIRICAL BACKGROUND



# INTRODUCTION TO THE EMPIRICAL AND THEORETICAL STATUS OF THE FIVE-FACTOR MODEL OF PERSONALITY TRAITS

*Robert R. McCrae and Paul T. Costa Jr.*

Progress sometimes seems elusive in psychology, where old methods often endure despite decades of criticism and new research is often based on passing fads rather than cumulative findings. It is remarkable, therefore, when clear progress is made, and there are few more dramatic examples than the rise to dominance of the five-factor model (FFM) of personality traits in the past quarter century. Before that time, trait psychology had endured a Thirty Years' War of competing trait models, with Guilford, Cattell, and Eysenck only the most illustrious of the combatants. The discovery of the FFM by Tupes and Christal (1961/1992) in the midst of that war was largely ignored, but its rediscovery 20 years later quickly led to a growing acceptance. Today it is the default model of personality structure, guiding not only personality psychologists, but also, increasingly, developmentalists (Kohnstamm, Halverson, Mervielde, & Havill, 1998); cross-cultural psychologists (McCrae & Allik, 2002); industrial/organizational (I/O) psychologists (Judge, Higgins, Thoresen, & Barrick, 1999); clinicians (J. A. Singer, 2005); and, more particularly, researchers and clinicians interested in personality disorders (Ball, 2001; Clark, 2007; Widiger & Trull, 2007).

## ORIGINS AND ACCOMPLISHMENTS OF THE FFM

The FFM is the most widely accepted solution to the problem of describing trait structure—that is, finding a simple and effective way to understand relations between traits. Trait adjectives (such as *nervous*, *energetic*, *original*, *accommodating*, and *careful*) describe individual differences that usually show a bell-shaped distribution—for example, a few people are very energetic, most people are somewhat energetic, and a few are lethargic. There are thousands of such terms in the English language, and many other traits have been identified by psychologists (such as ego strength, tolerance of ambiguity, and need for achievement). It was recognized long ago that these traits overlap: Someone who is described as *nervous* is also likely to be described as *worried*, *jittery*, *anxious*, *apprehensive*, and *fearful*. Beyond semantic similarity, psychologists realized that some classes of traits were closely related. For example, there is a clear difference between being sad and being scared, but people who are frequently sad are also frequently scared.

To summarize trait information in a manageable number of constructs, psychologists used factor analysis, a statistical technique that in effect sorts variables into groups of related traits that are more or

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*Personality Disorders and the Five-Factor Model of Personality, Third Edition*, T. A. Widiger and P. T. Costa Jr. (Editors)  
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less independent of the other groups. For example, *sad* and *scared* would define the high pole of a factor (or dimension) called Neuroticism (N) because it was first observed in psychiatric patients diagnosed with a neurosis. The opposite pole of the same dimension would be defined by traits such as *calm* and *stable*. A completely different factor, Extraversion (E), contrasts *warm*, *outgoing*, and *cheerful* with *reserved*, *solitary*, and *somber*. Just as any place on Earth can be specified by the three dimensions of latitude, longitude, and elevation, so anyone's personality can be characterized in terms of the five dimensions of the FFM.

N and E factors have been familiar to psychologists since the mid-20th century. The former is central to many forms of mental disorder, and thus well known to clinical psychologists and psychiatrists. The latter is the most easily observed factor, and *extravert* has long been part of popular speech. The remaining factors are Openness to Experience (O; also called Intellect, or Openness vs. Closedness), which describes imaginative, curious, and exploratory tendencies as opposed to rigid, practical, and traditional tendencies; Agreeableness (A), which contrasts generosity, honesty, and modesty with selfishness, aggression, and arrogance; and Conscientiousness (C; or Dependability, Constraint, or Will to Achieve), which characterizes people who are hardworking, purposeful, and disciplined rather than laid back, unambitious, and weak willed.

Psychologists took several decades to identify the FFM, chiefly because they differed in their ideas of what variables should be included in their factor analyses. Many approaches were offered, but the breakthrough came from lexical researchers, who argued that traits are so important in daily life that people will have invented names for all the important ones. A search of an unabridged dictionary should yield an exhaustive list of traits, and it was in analyses of such trait descriptors that the FFM was discovered. Although there had been previous indications that five factors were necessary and sufficient, the case was clearly made for the first time by two Air Force psychologists, Ernest Tupes and Ray Christal, who published a technical report in 1961. It was known to a few personality psychologists but had little influence until researchers returned to the lexical approach around 1980, again searching the

dictionary and again finding five factors (Goldberg, 1983). Researchers who work in the lexical tradition, focusing on lay trait vocabularies in different languages, generally call the five factors the Big Five and distinguish them from the dimensions of the FFM, which are not based on lay terminology. These labels, however, are used interchangeably by many psychologists.

Lexical researchers initially had a limited impact on the field as a whole because most psychologists relied on questionnaires that measured traits (and related concepts, like preferences and needs). Most of these questionnaires had been developed to operationalize particular theories of personality and were thought to be more scientific than lay terms. For example, C. G. Jung's (1923/1971) theory of psychological types was the basis of the Myers-Briggs Type Indicator (MBTI; Myers & McCaulley, 1985), a widely used measure of four dimensions, from which Introvert versus Extravert, Sensing versus Intuiting, Thinking versus Feeling, and Perceiving versus Judging preferences were scored.

The dominance of the FFM came as a result of empirical studies showing that the traits assessed by psychological questionnaires were closely related to the lexical Big Five factors (McCrae, 1989). It is not surprising that the Introvert versus Extravert dimension of the MBTI corresponded to the lexical Extraversion factor, but it was very revealing that Sensing versus Intuiting was in fact Openness, Thinking versus Feeling was Agreeableness, and Perceiving versus Judging was Conscientiousness (McCrae & Costa, 1989a). Scales from many other questionnaires were also found to match up with lexical factors, and it became clear that in creating their scientific questionnaires, personality psychologists had rediscovered and formalized what had long been implicit in lay conceptions of personality.

## Research Accomplishments

The widespread acceptance of the FFM in the 1990s led to systematic research on a variety of topics, allowing important advances in our understanding of personality trait psychology. One of the first issues resolved by research on the FFM concerned consensual validation. As a result of influential critiques (e.g., Mischel, 1968), it was widely believed

in the 1970s that personality traits were cognitive fictions—beliefs people held about themselves and others around them that had no basis in fact. Because traits assessed by personality tests were relatively poor predictors of specific behaviors in laboratory tests, some researchers concluded that all trait attributions were illusory. However, single behaviors in the artificial setting of a psychological laboratory are not very meaningful criteria for judging the reality of traits. Much more important criteria are provided by the views of significant others in one's life. If there is substantial agreement across different raters, and if raters agree with self-reports, it is likely that the agreement is based on the common perception of real psychological characteristics in the target.

This was a crucial issue in the early 1980s, especially because two of the five factors, A and C, were highly evaluative. It was easy to argue that rating someone as being high on these factors merely meant that one liked them; rating oneself as high on A and C could be nothing more than socially desirable responding. However, studies in which self-reports were compared with peer and spouse ratings showed moderately high agreement on all five factors (Funder, Kolar, & Blackman, 1995; McCrae & Costa, 1987), suggesting that all reflected real characteristics of the individual.

The reality of traits was also demonstrated by studies of their heritability (Bouchard & Loehlin, 2001). Identical twins, who share all their genes, resemble each other much more than fraternal twins do, whether or not they were raised in the same family. About half the observed variation in trait scores appears to be genetically based, and this is true for all five factors (Jang, Livesley, & Vernon, 1996). Recent work has shown that the five-factor structure itself is genetically based, presumably meaning that traits like orderliness and deliberation go together because they are both influenced in part by the same genes (Yamagata et al., 2006). So far the actual genes involved have not been identified, probably because a large number of genes affect each trait, so the effect of any single gene is very small and correspondingly hard to detect (McCrae, Scally, Terracciano, Abecasis, & Costa, 2010).

Longitudinal studies, in which personality is assessed twice many years apart, show that

individual differences are very stable (Roberts & DelVecchio, 2000). A person who is artistically sensitive, intellectually curious, and politically liberal at age 30 is likely to be artistically sensitive, intellectually curious, and politically liberal—relative to his or her age peers—at age 80. There is strong evidence for stability over periods as long as 40 years; all five factors are about equally stable; and both self-reports and observer ratings show stability (Costa & McCrae, 1992b; Terracciano, Costa, & McCrae, 2006). Although rank order is stable, there are gradual changes in the mean level of traits from adolescence to old age. People in general decrease in N, E, and O, and increase in A and C as they age (Terracciano, McCrae, Brant, & Costa, 2005). Thus, older men and women tend to be less active and adventurous than their grandchildren but more emotionally stable and mature.

Cross-cultural studies once required researchers to travel to foreign lands and master new languages in order to gather personality data, and consequently they were rare. Today, almost every nation in the world has psychologists who speak English and are trained in modern methods of psychological research, and the Internet makes it possible to collaborate from the convenience of one's own office. As a result, there has been a surge of cross-cultural research on personality (Schmitt et al., 2007). A questionnaire designed to operationalize the FFM, the Revised NEO Personality Inventory (NEO PI-R; McCrae & Costa, 2010), has been translated into more than 40 languages and used to assess personality in countries around the world, from the Congo to Iceland to Iran. This research was based on the assumption that the traits assessed by the NEO PI-R would be found everywhere, and that assumption has been supported by dozens of studies. In country after country, factor analysis of the NEO PI-R has yielded the five factors familiar to American psychologists (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). The FFM appears to be a universal aspect of human nature, probably because it is genetically based, and all human beings share the same human genome.

Many other properties of traits have also been shown to be universal. Some psychologists have argued that traits are less important than

relationships in collectivistic countries such as Japan, and consequently trait ratings would be less reliable and valid. But studies of cross-observer agreement in collectivistic cultures show correlations as high as those in the United States (McCrae et al., 2004). So far, there are no longitudinal studies of personality in non-Western nations, so we cannot determine whether traits are equally stable around the world. However, cross-sectional studies of age differences show the same trends everywhere: N, E, and O decline, and A and C increase as people age (McCrae et al., 1999). In the United States, women score a bit higher than men on measures of N and A; the same is true of women in Malaysia, Peru, and Burkina Faso (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005).

Long before the FFM was formulated, psychologists studied personality traits because they were useful in predicting important outcomes (Ozer & Benet-Martínez, 2006). It is true that traits are usually quite modest predictors of specific behaviors, because behavior is affected by the demands of the situation as well as by short-term moods and states. But situations, states, and symptoms come and go, whereas traits endure over long periods of time, and the small influences they exert on single behaviors are compounded across a lifetime. Traits are good predictors of patterns of behavior (McCrae & Costa, 2003).

The most important outcomes of N are those related to well-being and mental health (Lahey, 2009). Individuals high in N tend to be unhappy, regardless of their life situation, and they are more susceptible than others to psychiatric disorders such as depression (Bagby et al., 1997) and many of the personality disorders (Trull & McCrae, 2002). E is associated with popularity and social success, with enterprising self-promotion, and, ultimately, with higher lifetime income (Soldz & Vaillant, 1999). Extraverts are also likely to be happier than introverts. O is a predictor of creative achievement, whereas closedness predicts political conservatism and religious fundamentalism (McCrae, 1996). Agreeable people are more likely to be desired as mates (Buss & Barnes, 1986) and have better marital relations (Donnellan, Conger, & Bryant, 2004), whereas antagonistic men and women are more

likely to commit crimes and abuse drugs (Brooner, Schmidt, & Herbst, 2002). C is the most consistent predictor of job performance (Barrick & Mount, 1991); it is not surprising that employees who are punctual, hard-working, and systematic are usually more productive. C is also associated with a number of positive health habits, like safe driving, exercise, and a sensible diet; in consequence, conscientious people are more likely to be healthy and live longer (Weiss & Costa, 2005).

## Theoretical Context

The FFM is a model of the structure of traits, and thus a basis for organizing research findings. But it is not a theory of personality; it does not explain how traits function in daily life, or how individuals understand themselves, or how people adapt to the cultures in which they find themselves. The wealth of new findings about traits has inspired a number of personality psychologists to formulate new theories of personality. In 1996, Jerry Wiggins edited a book in which he invited prominent FFM researchers to put their findings in theoretical contexts, from evolutionary to socio-analytic (Wiggins, 1996). Other views have since been offered as part of a new generation of personality theories (Cervone, 2004; Mayer, 2005; McAdams & Pals, 2006; Sheldon, 2004).

Five-factor theory (FFT; McCrae & Costa, 1996, 2003, 2008b) shares features with many of these models and has proven particularly useful in understanding the functioning of traits across cultures. The major components in the theory are represented schematically in Figure 2.1. The central elements, in rectangles, are Basic Tendencies and Characteristic Adaptations (of which the Self-Concept is a part). The distinction between these two is central to the theory; it holds that personality traits (as well as other characteristics such as intelligence and musical ability) are biologically based properties of the individual that affect the rest of the personality system but are not themselves affected by it. Personality traits are thus conceptualized in the tradition of temperaments (McCrae et al., 2000).

In contrast, Characteristic Adaptations are acquired from the interaction of the individual's

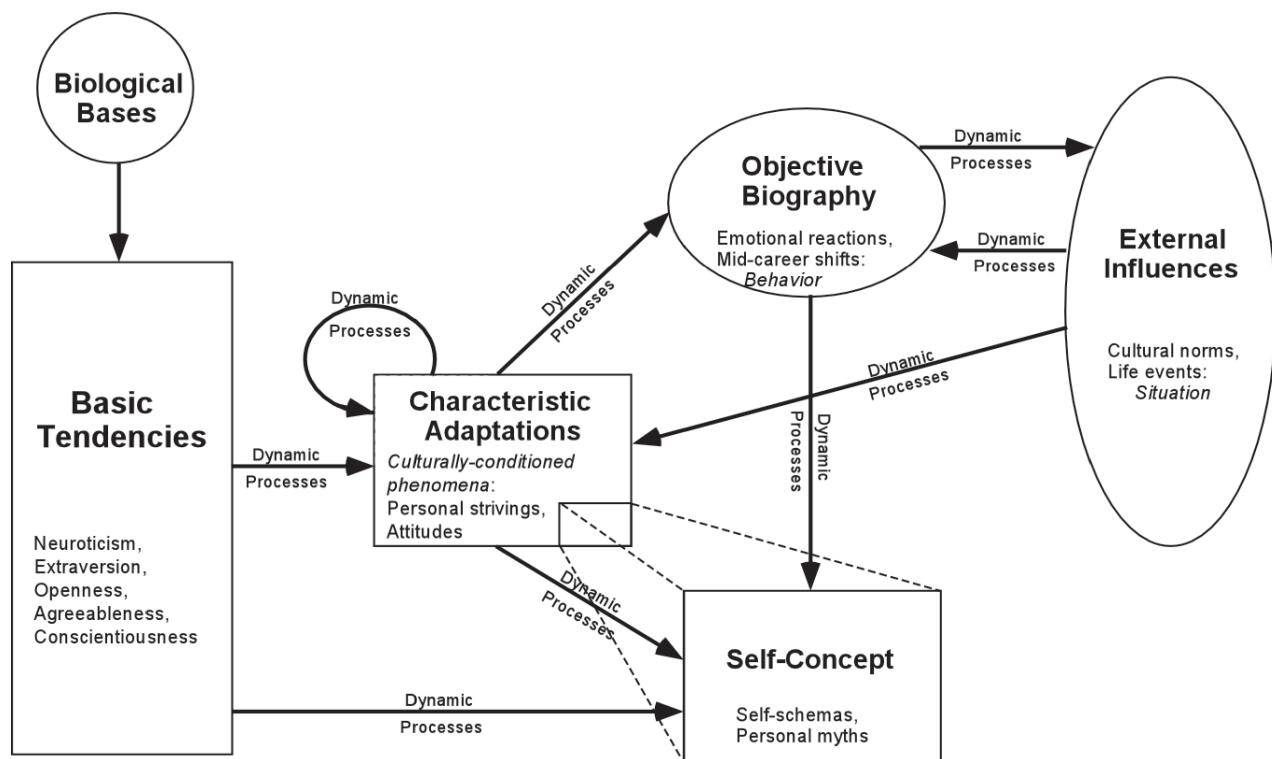


FIGURE 2.1. A schematic representation of the personality system. Adapted from *Can Personality Change?* (p. 22), by T. Heatherton and J. Weinberger (Eds.), 1994, Washington, DC: American Psychological Association. Copyright 1994 by the American Psychological Association.

Basic Tendencies and a range of External Influences. A man may speak Hindi because he was born with the capacity for human speech and grew up in India; in the same way, a woman may smile at strangers because she was born agreeable and raised in America, where smiling at strangers is appropriate behavior. Characteristic Adaptations include a vast range of psychological mechanisms: habits, interests, values, skills, knowledge, beliefs, attitudes, and the internalized aspect of roles and relationships. All of these are thought to be shaped to some extent by basic personality traits, and it is because of this pervasive influence that traits are correlates of so many psychological characteristics. At the same time, all these features depend on learning and experience in particular social and cultural environments, so the specific ways in which traits are expressed is likely to vary across cultures. In Saudi Arabia, women do not speak to men who are not close relations (Cole, 2001), so Saudi women who are extraverted are likely to be especially talkative among their female friends.

Although in principle it might seem that cultures could dictate any sort of behavior as the appropriate way to express traits, in fact the range of variation is fairly circumscribed: Antagonistic behavior, for example, is recognizable anywhere. As a result, fairly direct translations of personality questionnaires yield serviceable measures that retain most of the psychometric properties of the original (Schmitt et al., 2007). One fortunate consequence of this fact is that it makes possible an important test of FFT. According to FFT, personality traits reflect only biological bases; because all humans share the same genome, FFT predicts that the structure of personality should be the same everywhere. That prediction, which would have evoked profound skepticism from a generation of personality-and-culture researchers (M. Singer, 1961), has now been strongly supported at both the phenotypic (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005) and genotypic (Yamagata et al., 2006) levels. This is powerful evidence in favor of FFT.

The most controversial aspects of FFT concern two postulates about the origin and development of traits. As the arrows in Figure 2.1 suggest, FFT asserts that traits are influenced only by biology (which includes genetics, but also physical disease, malnutrition, intrauterine hormonal environment, etc.). Neither life experiences nor culture are supposed to affect traits, a radical position that is supported mostly by a conspicuous lack of compelling evidence for environmental effects (McCrae & Costa, 2008b). For example, Roberts, Nelson, and Kohnen (2002) reported that divorce led to decreases in dominance in women, whereas Costa, Herbst, McCrae, and Siegler (2000) found that among women divorce led to *increases* in E, which includes dominance. Without replication is it difficult to trust either of these findings.

FFT acknowledges that trait levels change over the life span but attributes the change to intrinsic maturation rather than life experience. If that account is correct, then the same pattern of personality change should be seen in different cultures, and the same pattern of age differences should be seen in nations with very different recent histories. In one study we compared Chinese, many of whom had lived through the Cultural Revolution and other social upheavals, with Americans of the same birth cohorts. Despite the profound differences in life history of these two groups, the pattern of age differences was remarkably similar (Yang, McCrae, & Costa, 1998).

Although this finding is consistent with FFT, it is susceptible to alternative explanations. Roberts, Wood, and Smith (2005) have proposed social investment theory as a way to account for similar patterns of personality development. Higher levels of A and C are useful attributes for responsible adults to have, whereas E and O are not as important after the individual has found his or her way into the adult world. Consequently, they argued, societies everywhere encourage high A and C and discourage high E and O in adults. Members of each culture invest in this social vision and change their traits accordingly. That is certainly a possibility; what are needed are designs that would allow researchers to compare conflicting predictions from these two theories to see which better accounts for the facts.

## CHALLENGES TO THE FFM

The success of the FFM as a description of personality trait structure does not mean that it has gone unchallenged. In fact, its prominence has made it the target of numerous critiques, some from those who advocate alternative structures (Ashton et al., 2004; De Raad & Peabody, 2005), some from those who see limitations in any factor model (Block, 2001; Cervone, 2004). We have addressed the issue of alternative structures elsewhere (McCrae & Costa, 2008b); briefly, we argued that six-factor models added nothing that could not be subsumed by the FFM. In the remainder of this chapter, we consider two other current controversies about the FFM: the nature of higher order factors, and the specification of facets.

### Higher Order Factors

The structure postulate of FFT states that personality trait structure is hierarchical, and that the five factors “constitute the highest level of the hierarchy” (McCrae & Costa, 2003, p. 190). Yet in 1997, Digman showed that in many global measures of the FFM, the five factors were not independent but covaried to define two very broad factors, which he called  $\alpha$  (or Socialization) and  $\beta$  (or Personal Growth).  $\alpha$  contrasted N with A and C, whereas  $\beta$  combined E and O. Such factors can be found in the NEO PI-R if domain scores are factored, and they also appear in larger samples of personality instruments (Markon, Krueger, & Watson, 2005). These factors have attracted sporadic interest in the past decade. DeYoung, Peterson, and Higgins (2002) proposed a neurobiological model for  $\beta$ , which they called *plasticity*, and Jang et al. (2006) presented evidence that  $\alpha$  and  $\beta$  are heritable.

There are two substantive explanations for associations among the five factors. One is that there are shared causal structures that influence both factors. For example, a set of genes or a neurological structure might have effects on both E- and O-related traits in general. This interpretation is the basis of the work of DeYoung et al. (2002) and Jang et al. (2006). It is also possible that the associations reflect the particular choice of facets to define each factor (Ashton, Lee, Goldberg, & de Vries, 2009). For example, the NEO

PI-R N domain includes N5: Impulsiveness, which reflects inability to control impulses, and which is, not surprisingly, also related to low C. The NEO PI-R does not have a Perfectionism scale, but such a scale would probably be related to N and high C (cf. Hill, McIntire, & Bacharach, 1997). The negative correlation between NEO PI-R N and C would be decreased, perhaps substantially, by substituting a Perfectionism facet for the Impulsiveness facet. Although the selection of facets surely is one influence on the correlation among domain scales, the fact that different instruments, with different item and subscale compositions, often yield factor higher order factors akin to  $\alpha$  and  $\beta$  (Digman, 1997; Markon et al., 2005) suggests the need for a deeper explanation.

That explanation, however, need not be substantive. McCrae and Costa (2008b) have argued that  $\alpha$  and  $\beta$  may be evaluative biases, akin to the (low) Negative Valence and Positive Valence factors identified by Tellegen and Waller (2008). People who are prone to describe themselves (or others) in highly positive terms such as *remarkable*, *flawless*, and *outstanding* are also more likely to describe themselves (or others) as higher in E and in O. Thus,  $\beta$  might result from a Positive Valence bias. Such a bias would probably not be shared by others, so multimethod assessments would yield uncorrelated E and O factors. This is precisely what Biesanz and West (2004) found in a study of self-reports and peer and parent ratings. They concluded that “observed correlations among Big Five traits are the product of informant-specific effects” (p. 870) and that “theoretical frameworks that integrate these traits as facets of a broader construct may need to be reexamined” (p. 871).

Yet some studies do show significant cross-observer correlations among domains. For example, McCrae and Costa (1987) reported a correlation ( $r$ ) of .25,  $p < .001$ , between self-reported O and peer rated E. One way to integrate this small body of literature is by assuming that there are both substantive and artifactual explanations for the intercorrelations among domains, substance predominating in some studies and instruments, artifact in others.

This argument assumes that agreement across observers is necessary and sufficient to infer substantive causes. That is a very attractive argument, the basis of claims that personality traits show consen-

sual validation (Woodruffe, 1985). But alternative interpretations are possible. Two raters may agree about a target because both subscribe to the same unfounded stereotype; indeed, researchers in social perception often distinguish between mere consensus and true accuracy (Funder & West, 1993). One stereotype that observers may share is that extraverts are open to experience. Then raters who correctly perceived a target to be high in E might inflate their estimates of O; across raters, this would generate a positive correlation between these two factors that might be mistaken for consensual validation.

Multimethod assessments are thus not foolproof as ways of separating substance from artifact, but they are far more informative than monomethod assessment. One way to analyze cross-observer data is by examining the joint factor structure (cf. McCrae & Costa, 1983), and McCrae and Costa (2008a) conducted joint factor analyses that compared factor structures for substantive and artifactual models of  $\alpha$  and  $\beta$ . We used data from 532 adults for whom both self-reports and observer ratings were available on the NEO PI-3 (McCrae & Costa, 2010), a slightly simplified version of the NEO PI-R. These analyses suggested that it is primarily within-method artifact that contributes to the emergence of higher order  $\alpha$  and  $\beta$  factors (cf. Biesanz & West, 2004). The FFT Structure postulate withstood this test.

Subsequently McCrae et al. (2008) conducted structural equation modeling analyses of self-report and observer rating data on dizygotic and monozygotic twins. Models that treated  $\alpha$  and  $\beta$  as within-method artifacts consistently outperformed models that treated them as substantive personality traits—although models that included both substance and artifact were slightly better than either alone. These analyses strongly suggest that  $\alpha$  and  $\beta$  are chiefly, if not entirely, method artifacts. For practical purposes, the five FFM factors are the highest level of personality structure.

## A System of Facets

As Digman and Inouye (1986) noted, “If a large number of rating scales is used and if the scope of the scales is very broad, the domain of personality descriptors is almost completely accounted for by

five robust factors" (p. 116). At one level, this is good news, because it means that the FFM is robust and does not depend on the particular selection of traits one uses to assess it. At another level this is bad news, because it means the FFM offers little guidance about which facets should be included in a comprehensive assessment of personality. There is growing evidence that facet scales offer incremental validity over the five factors in predicting a variety of criteria (Paunonen & Ashton, 2001; Reynolds & Clark, 2001) and that facets within a domain may show different developmental trajectories (Terracciano et al., 2005). Thus, a full understanding of personality traits requires a system in which the most important facet-level traits are assessed. As yet, however, there is no consensus on which specific traits should be included in this system, or even how we should go about identifying them.

Facets for the NEO PI-R were selected on the basis of reviews of the literature and on a series of item analyses (Costa & McCrae, 1995). Our goal was to include traits that reflected the variables that psychologists have considered important in describing people and predicting behavior, and that were minimally redundant. A rather similar rational approach was taken by Watson and Clark (1997) for the E domain. They also identified six facets on the basis of a review of existing personality inventories. Four of these corresponded to four NEO PI-R E facets: Ascendance to E3: Assertiveness; Energy to E4: Activity; Venturesomeness to E5: Excitement Seeking; and Positive Affectivity to E6: Positive Emotions. Their Affiliation facet combined E1: Warmth and E2: Gregariousness. To this set they added Ambition, which "plays an important role in Tellegen's and Hogan's models, [but] is omitted from all of the others" (p. 775). In the NEO PI-R, the construct of ambition is included as C4: Achievement Striving, a definer of C with a small (.23) secondary loading on E (Costa & McCrae, 1992a).

More recently, Roberts and colleagues made systematic empirical attempts to map the facets of C. In a study of trait-descriptive adjectives, they began with a list of adjectives that were related either solely or primarily to the lexical C factor but which might also have secondary loadings on other factors (Roberts, Bogg, Walton, Chernyshenko, & Stark, 2004). This broad selection strategy

led to the identification of eight factors, five of which correspond conceptually to NEO PI-R C facets: Reliability ( $\approx$  NEO PI-R C3: Dutifulness); Orderliness (C2: Order); Impulse Control (C6: Deliberation); Decisiveness (C1: Competence); and Industriousness (C4: Achievement Striving). Their remaining factors were Punctuality, Formalness, and Conventionality; these had the lowest correlation with the overall lexical C factor ( $r_s = .34$  to .39), and, as the authors noted, Formalness and Conventionality "may be more strongly related to . . . openness to experience" (p. 175), with Formalness a form of high O and conventionality a form of low Openness to Values.

In a subsequent study Roberts and colleagues factored scales from seven personality inventories, including the NEO PI-R (Roberts, Chernyshenko, Stark, & Goldberg, 2005). They identified 36 scales conceptually related to C and interpreted six factors. Here the correspondence with the NEO PI-R system was less clear. Their Order factor was defined by C2: Order, and their Self-Control factor was defined by C6: Deliberation, but their Industriousness factor had loadings on all four remaining NEO PI-R C facets, and their Responsibility, Traditionalism, and Virtue scales were not defined by any NEO PI-R variables. They interpreted this to mean that the NEO PI-R definition of C (like those of other inventories) was too narrow.

That study, however, had limitations. The personality instruments were administered on different occasions over a period of years, so correlations within instrument may have been inflated relative to correlations across instruments by time-of-measurement effects. That might account for the clumping of NEO PI-R scales on the Industriousness factor. Some scales were taken from the California Psychological Inventory (CPI; Gough, 1987), where item overlap between scales makes factor analysis inappropriate. The Responsibility and Virtue factors were defined chiefly by CPI scales and may represent little more than item overlap. Finally, this study illustrates the dangers of attempting to define the facets of any single domain in isolation, because the resulting factors had serious problems of discriminant validity. Traditionalism had almost as strong a relation to O ( $r = -.42$ ) as to C ( $r = .44$ ), and Virtue

was more strongly related to both A ( $r = .54$ ) and N ( $r = -.59$ ) than to C ( $r = .51$ ). It is hard to justify its designation as a facet of C.

We are not aware of attempts by other investigators to define facets for O or A, but Endler, Rutherford, and Denisoff (1997) reported item factor analyses of NEO PI-R N items suggesting that a different set of facets might better be scored from this item pool. They found factors corresponding to N1: Anxiety, N2: Angry Hostility, and N5: Impulsiveness, but the remaining three factors distributed items from the other facets into new combinations. McCrae, Herbst, and Costa (2001) attempted to replicate Endler et al.'s findings and to determine whether they were attributable to acquiescence, which tends to create factors with items keyed in one direction. After controlling for acquiescence, McCrae and colleagues found that varimax-rotated item factors showed a one-to-one correspondence with the *a priori* scales, with correlations ranging from .68 to .92. It thus appeared that the division of NEO PI-R N items into the established facets was justified.

The issue that Endler et al. (1997) raised warrants more attention that it has so far been given. McCrae et al. (2001) also examined the factor structure of A items, and Costa and McCrae (1998) factored C items, but there have been no recent item analyses of E and O. To address these issues, we conducted new analyses on three data sets (McCrae & Costa, 2008a). The first two ( $N = 1,135$ ) were self-reports and observer ratings from a study of adolescents aged 14 to 20 and adults aged 21 to 90 who completed the NEO PI-3. The third ( $N = 12,156$ ) was from a study of observer ratings of personality conducted in 51 cultures (McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005) using translations of the NEO PI-R into more than 20 languages.

In all three samples, we factored the 48 items from each of the five domains, extracting six factors. We first examined familiar varimax rotations, although these analyses did nothing to control for the effects of acquiescence. With a few exceptions, the observed factors could be clearly matched to the *a priori* facet scales. We then conducted targeted rotations intended to maximize convergent and dis-

crimant validity with the facet scales (McCrae & Costa, 1989b) and thus to control for acquiescence. In these analyses, every item factor corresponded to its intended facet scale; the median convergent correlation was .84. It is clear that, across factors, samples, methods of measurement, and languages of administration, the conceptual distinctions drawn among the NEO facets are reflected in the empirical structure of the items.

This small literature on studies that have attempted to articulate facets for FFM domains suggests to us that the system used in the NEO Inventories is reasonable, with similar facets identified in rational analyses by other investigators and in empirical studies of adjectives and (to a lesser extent) of questionnaire scales. It is clearly not the case that these 30 scales exhaust the full range of traits related to each of the factors; punctuality is a good example of a marker of C that is not included. But an analysis of personality that incorporates NEO facets and their combinations can lead to detailed information that goes far beyond the five factors.

One major contribution of the FFM is that it has become a common framework for research by psychologists from many fields, with the result that information can be readily shared and cumulative progress can be made: The developmentalist interested in impulse control can learn from the I/O psychologist studying job performance because both understand the connection of their constructs to C. The advantages of a common framework would of course apply also to studies conducted at the facet level, so in an ideal world, all psychologists and psychiatrists would utilize the same set of facet constructs. The NEO Inventories facet system provides one such set, and there are as yet no real alternatives that cover the full FFM. We already know a great deal about these facets: their discriminant validity (McCrae & Costa, 1992), heritability (Jang, McCrae, Angleitner, Riemann, & Livesley, 1998), longitudinal stability and developmental course (Terracciano et al., 2005, 2006), consensual validity (McCrae et al., 2004), universality (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005), and utility in understanding Axis I (Malouff, Thorsteinsson, & Schutte, 2005; Quirk, Christiansen,

Wagner, & McNulty, 2003) and Axis II (Widiger & Trull, 2007) mental disorders. Personality research must move beyond the broad factors of the FFM, and the facets of the NEO inventories provide a proven system for doing so (Costa & McCrae, 2008).

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# ON THE VALID DESCRIPTION OF PERSONALITY DYSFUNCTION

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In this chapter, we demonstrate the following: The application of psychological theory validation and construct validation principles to the existing knowledge base on personality dysfunction leads to the conclusion that any form of diagnosis or description that uses a syndromal approach necessarily results in diagnoses of unclear meaning and constrained validity. In contrast, description of personality dysfunction in terms of homogeneous dimensions of functioning avoids the problems of the syndromal approach and provides more valid description and diagnosis. In addition, description based on homogeneous dimensions of personality function–dysfunction is more useful, because it provides direct connections to validated treatments.

To provide this demonstration, we first review the relevant principles of theory and construct validation. We then consider personality disorder research with those principles in mind (Zapolski, Guller, & Smith, *in press*). In doing so, we highlight the inherent limitations of syndromal approaches, including diagnosis by symptom count of heterogeneous symptoms and prototypal matching approaches, and we contrast that problematic approach with homogeneous dimensional description. Next, we show how dimensional description facilitates treatment planning. We conclude by addressing the issue of diagnosing the presence or absence of dysfunction: We suggest that diagnoses should be made based on demonstrated impairment

in social, emotional, and/or occupational functioning, not based on symptom counts or personality dimension scores.

## THEORY VALIDATION AND CONSTRUCT VALIDATION

The development of descriptions of psychopathology, and hence systems for diagnosing its presence, is based first of all on theory: One proposes that a certain form of dysfunction exists, that is has certain characteristics, and that it is associated with certain negative life outcomes. One relies on empirical research conducted both prior to and following one's proposal to determine its validity. One might examine the frequency of the occurrence of the dysfunction, whether it does lead to the hypothesized negative life outcomes, whether the identified characteristics of the dysfunction do in fact co-occur, and whether clinicians can assess the dysfunction reliably. To test any of these hypotheses, one needs measures of (a) the proposed dysfunction, which involves measurement of each of its characteristics, and (b) the negative life outcomes of interest. Our focus in this chapter is on (a). It is of course the case that the validity of the conclusions one draws from one's research depends on the validity of the measures that were used.

One cannot presume that any measure one develops represents the intended target construct validly; the history of psychological assessment testifies to

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that reality (Smith & Zapolski, 2009; Strauss & Smith, 2009). How, then, does one develop evidence that a measure of a psychological construct is valid? A crucial challenge one faces is that most constructs in the domain of personality dysfunction are not directly observable. Concepts such as "identity disturbance," "impulsivity," "lack of empathy," and "perfectionism" do not have tangible, concrete embodiments that are isomorphic to their intended meaning.

Accordingly, to provide evidence that a measure of such a construct is valid, one must demonstrate that the measure relates to measures of other constructs as predicted by theory (Cronbach & Meehl, 1955). For an unobservable, and hence hypothetical, construct, there is no way to determine whether a measure reflects the construct validly, except to test whether scores on the measure conform to a theory, of which the target construct is a part (Cronbach & Meehl, 1955; Smith, 2005).

Suppose, for example, one were to investigate the validity of a measure of perfectionism. One would need evidence of this kind: (a) independent expert agreement that the content of the measure conforms to one's definition of perfectionism, (b) scores on the measure covary positively with scores on measures of other constructs that theory suggests relate to perfectionism (perhaps measures of high personal standards, high achievement, and motivation), and (c) scores on the measure do not covary with scores on measures of constructs thought to be unrelated to perfectionism (one might demonstrate that one's measure of perfectionism is unrelated to measures of interpersonal inhibition, anger, and affective instability). If the results of studies testing these hypotheses conform to one's theory, one becomes more confident that one's measure validly reflects perfectionism. Of course, validation evidence of this kind is far from determinative; there may well be other constructs that have positive relationships with personal standards, achievement, and motivation but not with inhibition, anger, and affective instability. For that reason, researchers do everything they can to increase one's confidence that one's measure validly reflects the intended construct.

One crucial first step to increase one's confidence in the validity of one's construct measure is to define the target construct in precise terms. The

content domain that is included in a measure must represent all aspects of the construct represented in its definition and must exclude all content not represented in its definition. A problem that has surfaced repeatedly in psychological assessment is the inadvertent inclusion of content not prototypical of the target construct in measures, with the result that a single scale includes items representing more than one construct. For example, the Novelty Seeking scale of the Temperament and Character Inventory (Cloninger, Przybeck, & Svrakic, 1991) includes Item a, "I often try new things just for fun or thrills, even if most people think it is a waste of time," and also Item b, "I am usually able to get other people to believe me, even when I know that what I am saying is exaggerated or untrue." As noted by Smith, Fischer, and Fister (2003), these two items appear to reflect different constructs: Item a may be prototypic of novelty seeking, but surely Item b is not. In fact, Item b may represent content in a domain relevant to antisociality.

This problem is very important for the construct and theory validation process. Imagine a scale in which half the items were parallel to Item a and half were parallel to Item b. Correlations between such a scale and risky behaviors would probably be lower than they would have been if all the scale's items were parallel to Item a. In addition, such a scale might well result in higher correlations with measures of antisociality than would have otherwise occurred. The result might be to underestimate the role of novelty seeking in risky behavior involvement and overestimate the contribution of novelty seeking to antisociality. In the end, researchers' basic understanding of these forms of psychopathology could be distorted due to the inclusion of items representing two different constructs on a single scale.

For many years, this problem plagued research in the domain of impulsivity. Seminal work by Whiteside and Lynam (2001) indicated that many measures of impulsivity actually included items representing multiple different constructs, including a failure to plan, a failure to persevere on tasks, sensation seeking, and emotion-driven impulsivity. These constructs are only modestly related to each other, and they are not alternative representations of a

common impulsivity construct (Smith et al., 2007). Thus, single scores on a measure of "impulsivity" actually reflected variation in two, three, or even four different constructs. Among the many problems that resulted from this lack of clarity in the meaning of impulsivity measures was this: For many years, impulsivity was thought to have a very weak relationship to bulimia nervosa (Stice, 2002); however, meta-analysis based on distinctions among the different impulsivity-related constructs indicated that emotion-driven impulsivity correlates with bulimia nervosa symptoms quite substantially ( $r = .40$ ), and the other traits had trivially small correlations with that disorder (Fischer, Smith, & Cyders, 2008). This clarified finding has informed new theories of risk for bulimia nervosa (Combs & Smith, 2009; Fischer, Smith, & Cyders, 2006).

The inaccurate findings that can result from using a single score to represent multiple constructs, or multiple dimensions of a phenomenon, can be attributed to two sources of uncertainty in such measurement. First, with a single score, one cannot know whether different dimensions play different roles in relation to external behaviors. For example, one dimension may be highly correlated with the criterion, and other dimensions may not be correlated with it at all: A single score representing all those dimensions essentially averages the positive effect of the first dimension with the noneffects of the other dimensions, such that the overall score underrepresents the role of the first dimension and overrepresents the roles of the other dimensions. This process is what appears to have occurred in studies relating "impulsivity" to bulimia nervosa (Fischer et al., 2008). In any given case, one would not know the relative contributions of the different constructs to the effect that was observed.

The second source of uncertainty is perhaps even more troublesome; it lies in the fact that different profiles of scores on the constructs within the single measure can produce the same overall score. Consider that the correlation between emotion-driven impulsivity (called *negative urgency*) and sensation seeking has been found to be  $r = .12$  (Cyders & Smith, 2007). The two constructs share very little variance, but if they

are combined into a single score, a person high in negative urgency and low in sensation seeking could earn exactly the same score as a person with the opposite pattern of being low in negative urgency and high in sensation seeking. The same score could reflect two very different psychological experiences. That reality would not be apparent to researchers, and there would not be a clear way to interpret correlations between this measure and measures of other constructs or measures of psychopathology (Smith, McCarthy, & Zapolski, 2009; Strauss & Smith, 2009).

For these and other reasons, validation theorists have come to conclude that single scores on measures should represent single, homogeneous constructs (Edwards, 2001; Hough & Schneider, 1995; McGrath, 2005; Paunonen, 1998; Paunonen & Ashton, 2001; Schneider, Hough, & Dunnette, 1996; Smith et al., 2003, 2009; Smith & McCarthy, 1995; Strauss & Smith, 2009). Only when single scores represent single constructs is it possible to conduct fully accurate validation and theory tests, because only then can one develop confidence in the meaning of variation on a test score.

## ISSUES CONCERNING THE VALIDATION OF DESCRIPTIONS OF PERSONALITY DYSFUNCTION

Any approach to description and diagnosis represents a theoretical position concerning the nature of dysfunction to be described. A diagnostic system that involves specification of discrete psychological disorders involves the theoretical espousal of (a) the existence of certain separate disorders (or at least the utility of describing dysfunction in terms of those disorders), (b) a domain of functioning to be included in each disorder, and (c) the role of the disorders with respect to adaptive functioning. To validate both the underlying theory and the measurement of any personality disorder (PD), one would need to show that the presence versus absence of the PD, or variation in levels of the PD, is associated with other psychological constructs, behaviors, and distress as predicted by the theory underlying the PD.

The classic approach to personality dysfunction diagnosis and description has been to make

use of the syndrome perspective to identify a set of separate PDs (Millon et al., 1996). The syndrome perspective involves the identification of a constellation of symptoms that are thought to stem from a common cause or to indicate a disease or abnormal condition (Kraepelin, 1883/1981). Syndromal disorders can, and often do, include heterogeneous symptoms, as long as the various symptoms reflect a common cause. Individuals with the same disorder may not have the same set of symptoms; not all symptoms are thought to necessarily ensue when the disease cause is present. Similarly, the symptoms within a syndrome may not correlate perfectly, because some symptoms may be caused sometimes by one disorder and other times by a different disorder. To use an example from medicine, the experiences of headaches, muscle aches, sore throats, and fatigue do not covary perfectly because, although all of them may be symptoms of the flu, there are other disorders that lead to headaches but not sore throats, or fatigue but not headaches, and so on. The identification of separate, syndromal PDs is an expression of the theoretical position that personality dysfunction is best understood as sets of syndromes. There is a cause for each syndrome, and the different syndromes may have some symptoms in common.

In light of the foregoing discussion of theory validation and construct validation, how might one validate the syndromal theory of PD? If a given syndrome does exist and stems from a common cause, then presumably one could develop a test that gives a single score concerning the presence or absence of the syndrome (and one could then show that variation on the test covaries with variation in the predicted symptom expression). An analogue in medicine would be a lab test to determine the presence or absence of a bacterial infection, and the presence of the infection explains the observed symptoms of fever, muscle aches, and fatigue. To date, however, this has not occurred for a single PD. Kupfer, First, and Regier (2002; Kupfer is chair and Regier vice chair of the American Psychiatric Association's fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* [DSM-5] task force) noted that

the goal of validating these syndromes and discovering common etiologies has remained elusive. Despite many proposed candidates, not one laboratory marker has been found to be specific in identifying any of the DSM-defined syndromes. Epidemiologic and clinical studies have shown extremely high rates of comorbidities among the disorders, undermining the hypothesis that the syndromes represent distinct etiologies. (p. xviii)

In short, despite many decades of research, the most straightforward method of validating the theory that the different PDs represent different syndromes of dysfunction has produced no evidence supporting the syndromal model. That reality has led to a serious, if not fully recognized, problem in assessing PDs. In the absence of "syndrome tests," researchers have instead used overall symptom counts to measure the putative syndromes, whether reflecting the presence or absence of a disorder or its magnitude along a continuum.

In light of the foregoing discussion of test validation and construct validation procedures, using an overall score is most appropriate when the score refers to a location along a single, homogeneous dimension. But certainly, from the perspective of syndromal theory of personality dysfunction, PD diagnoses are understood to include heterogeneous symptoms (Trull & Durrett, 2005). If the symptoms that contribute to a given PD diagnosis do reflect different dimensions of psychological functioning, then summing them to produce a single score or single diagnosis is to produce scores or diagnoses of unclear meaning: Different individuals can receive the same diagnosis despite having important differences in their personality structures and in their psychological experiences. Considering just the PD diagnostic criterion sets, two different people can share the schizoid, schizotypal, antisocial, borderline, narcissistic, or avoidant PD and in each case have only one diagnostic criterion in common. From the standpoint of syndromal theory, this reality is fine, as long as one can identify the specific syndrome accurately. But there is not a single PD for which that is the case.

In the absence of evidence that current PD descriptions represent true syndromes, the validity of the strategy of combining heterogeneous symptom counts to produce a single diagnosis or single score can only rest on the premise that, in fact, the heterogeneity of the symptoms is more apparent than real; that is, that the symptoms within a given putative disorder correlate highly with each other, so that each is an alternate expression of the same psychological experience. Livesley (1998) made a similar point, by referring to the internal validity of diagnoses as defined by the extent to which diagnostic criteria form homogeneous clusters.

### Heterogeneous, Modestly Correlated Symptoms Within Putative Disorders

The evidence suggests quite the opposite (Zapolski, Guller, & Smith, *in press*). There appears to be limited internal validity or limited homogeneity for DSM-based PDs; in fact, some diagnostic criteria correlate more highly with diagnoses other than the ones to which they contribute (Morey, 1988a, 1988b). For borderline personality disorder (BPD), the intercorrelations among the nine symptoms have been found to range from -.30 to .30 within a non-clinical sample and from .29 to .51 in a clinical sample (Sanislow et al., 2002; Taylor & Reeves, 2007). Similar findings for other PDs have been reported. Indeed, median within-diagnosis intercorrelations for each of the 11 PDs found in the *DSM-III-R* (Morey, 1988a) ranged from 0.10 (obsessive-compulsive personality disorder) to 0.29 (paranoid personality disorder). The heterogeneity of symptoms within disorders has not changed with the *DSM-IV-TR* (American Psychiatric Association, 2000). In short, the criteria within PD disorders are only very modestly related to each other. It is thus the case that (a) there are no identified syndromes, or syndrome tests, for any of the PDs and (b) symptoms within a PD are not highly correlated with each other (*i.e.*, they are not alternate expressions of the same psychological experience). To combine such modestly correlated symptoms into a single score is to create scores with unclear meaning: Two individuals can have the same score yet have very different symptom pictures.

It may not just be that there is an absence of evidence that the symptoms within a disorder have a

common cause; it may be more accurate to say that symptoms within disorders have different causes from each other. Expert consensus on the personality dimensions underlying paranoid personality disorder (PPD) suggest that this PD is characterized by, among other things, high levels of angry hostility, low levels of warmth, low levels of openness to actions, low trust, and low compliance (Lynam & Widiger, 2001). Research on the heritability of these five-factor model personality traits has indicated that their specific variance (*i.e.*, that trait variance not shared with other traits) is substantially heritable (Jang, McCrae, Angleitner, Riemann, & Livesley, 1998). That is, there appear to be genetic causes of variance on each trait that do not cause variance on other traits. This analysis applies to the personality contributors to each PD. If trait contributors to PDs have, in part, different sources of heritability from each other, then they have at least partly different causes. Thus, a given PD comprises symptoms that vary in the psychological experiences to which they refer, that correlate with each other very modestly, and that have, at least in part, different causes.

It is important to appreciate the clinical reality of this heterogeneity: The problem with this approach to describing personality dysfunction is not a mere measurement fine point. Consider the two following brief case descriptions.

A. Sandra is a 35-year-old woman, currently divorced. She got married during her last year of college and lived for 5 years as a stay-at-home housewife. As time went on, she concluded that her husband was not the ideal man she thought he was; she felt that he was not attentive enough to her needs. She left him and pursued what had been her dormant career goal: She applied to law school and was accepted to a school in the Southeast. She visited the school, signed a lease on an apartment there, and prepared to move. In August, before the start of classes in September, she realized she did not want a law career, withdrew, and forfeited the deposit on her apartment. She came to understand that she was better suited to a career in English literature, so she spent the fall applying to doctoral programs. She got into one, and then after a year of study decided it was not for her. She recognized that she has more of a need to provide nurturance

to others, and she has just begun massage therapy school, which she now believes is a better fit to her personality. She has found, though, that the coursework emphasis on physiology turns her off. She has recently ended a turbulent relationship with a man named Joe. She describes Joe as initially so attentive and supportive that she was sure she had identified her true, ideal, soul mate. But after a few weeks, Joe had to cancel a date, according to him due to work obligations. She was crushed and felt like he had abandoned her, right when she needed him to talk through her uncertainty about massage therapy school. She was very angry with him; she felt like he was turning out to be just like the last two guys she had dated, both of whom she sometimes adored and sometimes hated. She ended up going to a bar, drinking an excessive amount of alcohol, and having sex with a stranger. She was worried about having done so, because she engaged in no protection during the act. She reported that she has done this in the past and she always feels bad afterward. She then realized that Joe really was her soul mate and that she had overreacted. She felt so bad that she cut her arm with a razor blade repeatedly; she has done so often in the past and finds the pain comforting and reassuring. She then went to Joe's house late at night, hoping to reestablish the relationship. Joe was not interested, and she was heartbroken and attempted suicide, which is what prompted her to seek therapy.

B. Linda is a 37-year-old woman who has been married for 15 years. She has two daughters, ages 13 and 11, and she is heavily involved in their activities: She takes one to soccer practice and the other to dance school, and she has served as a volunteer for fund-raising for the soccer league. She has been faithful to her husband and devoted to her children. She does, however, find that her emotional state fluctuates dramatically. At times, she is very happy, even delighted with her life; at other times, she feels sad, discouraged, overwhelmed, and depressed. Often, she describes herself as just empty inside; she says that she feels no anchor for who she is, other than her need to care for her children. Sometimes, particularly when she is really stressed or tired and she feels the responsibilities mount up, she starts to feel that people are almost

ganging up to work against her. For example, when her kids don't do the basic things they need to do to get ready for their activities on a Saturday, and her husband chooses to play golf with friends rather than help out, and the dance class carpool falls through at the last minute, she feels like everyone is actually conspiring to drive her crazy. She finds that she can get extremely angry at such times and say hurtful things to her husband and children that she later regrets. In order to manage her stress, Linda often goes to the mall or shops on the home-shopping network while her children are at school; she does so several times per week. She has currently accumulated over \$25,000 in debt due to her excessive shopping. Her husband has asked her to cut back on her shopping, but she is having difficulty doing so. Linda also has trouble controlling eating-related impulses: Once or twice a week, she feels a complete loss of control and eats a truly unusually large amount of food in a relatively brief period of time. She decided to enter therapy, in order to address her problems with shopping, eating, and difficulty controlling her anger.

Despite the numerous differences in the symptom pictures of these two women, they both meet the diagnostic criteria for BPD. They have one BPD symptom in common, impulsivity in two areas that are potentially self-damaging, and the nature of their impulsivity is quite different. Sandra has unstable relationships, lacks a clear sense of identity, and has attempted suicide; Linda has none of those symptoms. Linda has a stable, faithful marriage; Sandra does not. Linda develops paranoid feelings; Sandra does not. These two women are quite different from each other, and they are having very different psychological and social experiences. To give them the same diagnosis, in the absence of evidence of a common, underlying disease process, is to use diagnosis for something other than describing their dysfunction clearly and accurately. The use of the same diagnostic label for the two women highlights the limited validity of this approach to diagnosis.

It is worth noting that the same problem exists in the use of Axis I disorders. One person could have the symptoms of depressed mood, significant weight loss, insomnia, feelings of worthlessness, and diminished ability to think or concentrate. Another

person could have no depressed mood but have the symptoms of a loss of interest in or pleasure in most activities, significant weight gain, psychomotor retardation, fatigue/energy loss, and recurrent thoughts of death. These two individuals have virtually no symptoms in common, yet both meet the criteria for a major depressive episode. The use of the syndrome perspective and the problems resulting from it plague the *DSM* as a whole. Use of this system to describe personality dysfunction leads to unclear, inaccurate description and diagnosis.

### The Same Symptoms Across Multiple Putative Disorders

It is a well-known characteristic of the *DSM-IV-TR* system that similar criteria are used as indicators for many disorders, including both Axis I and Axis II disorders. As noted by Widiger and Samuel (2005), there is a great deal of common, shared pathology across disorders. Perhaps the most frequently shared pathology is negative affectivity or subjective distress. Indeed, Lynam and Widiger (2001) found that experts identified some form of negative affectivity to be present in nine of 10 PDs (all but schizoid, which was identified as low on positive emotions). Lynam and Widiger also found that experts identified (a) expressions of abnormally low Extraversion in seven of 10 PDs and abnormally high Extraversion in two of 10 PDs, (b) abnormally low Openness to Experience in five of 10 PDs and abnormally high Openness to Experience in four of 10 PDs, (c) abnormally low Agreeableness in three of 10 PDs and abnormally high Agreeableness in three of 10 PDs, and (d) abnormally low Conscientiousness in four of 10 PDs. Similarly, Shedler and Westen (2004) examined the diagnostic criteria of *DSM-IV-TR* PDs and found substantial overlap in the clinical descriptions and features of the diagnostic categories for avoidant and dependent personality disorder, borderline and histrionic personality disorder, and schizoid and schizotypal personality disorder. It is also the case that many symptoms of PDs are also identified as symptoms of Axis I disorders (e.g., negative affectivity/subjective distress and the mood disorders).

The use of the same or similar symptoms as criteria for more than one PD leads to a finding of high comorbidity among PDs, just as the use of the

same symptoms for both Axis I and Axis II disorders results in a finding of high comorbidity across the axes. Numerous studies have documented high comorbidity of these kinds. Grilo, Sanislow, and McGlashan (2002) and Watson and Sinha (1998) both reported high comorbidity within PDs. Individuals diagnosed with BPD have also been found to be more likely to receive a current diagnosis of major depressive disorder (MDD), bipolar I and II disorder, panic disorder with agoraphobia, social and specific phobia, posttraumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), eating disorder not otherwise specified (NOS), and any somatoform disorder (Zimmerman & Mattia, 1999). The American Psychiatric Association (2000) reported that among clinical populations with personality disorder, thirty to sixty percent of individuals among this population are also diagnosed with BPD. Of Axis II disorders, avoidant, dependent, and paranoid personality disorders have been identified as the most frequently diagnosed comorbid conditions (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). Widiger et al. (1991) also noted that individuals diagnosed with PPD are almost always diagnosed with a secondary co-occurring diagnosis. Even obsessive-compulsive personality disorder has been reported to have a comorbidity rate of approximately 70% (Livesley, 1998).

If the syndromal model had proved valid, then these findings of high comorbidity would perhaps be viewed as interesting, important substantive findings concerning the co-occurrence of many forms of mental dysfunction. But to the degree that the apparent comorbidity is really a function of the same form of dysfunction being counted multiple times (e.g., negative affectivity contributing to diagnoses of BPD, PPD, and narcissistic PD), it is necessary to rethink the idea of comorbidity. In the absence of evidence for the validity of the syndromal model, this appearance of comorbidity may be a simple function of having the same psychological dysfunction contribute to multiple different diagnostic labels.

### Prototypal Matching Preserves the Problems With Syndromes

One of the original proposals for the *DSM-5* description of personality dysfunction involved moving from

symptom counts to a prototypal matching model (Skodol et al., 2011). In this model, clinicians rate how closely a patient's personality matches a profile identified as the prototype for a given PD. One is asked to read a description of, for example, the prototypical BPD patient and then rate whether one's patient's personality is a very good match, a good match, a moderate match, a slight match, or no match with that prototype. Part of the rationale for using prototype matching is to reduce the high rate of comorbidity found using the *DSM-IV-TR* PD diagnostic system. In this system, clinicians would not be counting symptoms to meet a diagnostic threshold; in the absence of symptom counting, there will presumably be less assignment of multiple PD diagnoses. Instead, clinicians would perhaps be more likely to identify a single PD that their client most embodies. Although this approach could reduce the appearance of comorbidity, Westen, Shedler, and Bradley (2006) found that when clinicians are also asked to assess specific features of the PDs, the co-occurrence reappears. Thus, diagnostic co-occurrence appears more to be hidden than removed by the prototypal matching approach.

The prototypal matching approach begins with the assumption that the PDs are valid descriptions of personality dysfunction (at least the five PDs originally proposed to be maintained in *DSM-5*). In the absence of evidence that the PDs represent identifiable syndromes, and in the presence of evidence that symptoms within a given PD correlate with each other very modestly, and in the presence of evidence that symptoms within a PD may stem from different causes, it does not seem advisable to begin with this assumption. To use prototypes is to reify diagnoses that involve combinations of multiple, different psychological processes with no identified common cause. We argue that when the history of PD research is viewed from the standpoint of basic principles of theory and measure validation, there is not a sufficient basis for constructing a diagnostic system organized around discrete PDs.

The *DSM-5* prototype matching proposal might be replaced by diagnostic criterion sets that combine information concerning level of self and interpersonal dysfunction along with a list of maladaptive personality traits (Siever, 2011). Of course, the continued use of criterion sets preserves the problem of

the syndromal approach without realizing the true benefits of the dimensional trait model.

### Description of Personality Dysfunction in Terms of Dimensions of Personality Functioning

Fortunately, there is an alternative approach to describing personality dysfunction that is quite consistent with basic principles of theory validation and has proven useful to clinicians: It is the topic of this book. When personality dysfunction is described in terms of basic personality traits, the problems with the current system largely disappear. A number of researchers have developed systems to describe personality dysfunction based on homogeneous dimensions of personality. The Dimensional Assessment of Personality Pathology—Basic Questionnaire (DAPP-BQ; Livesley & Jackson, in press) and the Schedule for Nonadaptive and Adaptive Personality (SNAP-2; Clark, Simms, Wu, & Casillas, in press) were both constructed to derive conceptually cohesive, homogeneous trait constructs that underlie the symptoms identified as relevant to personality dysfunction through the *DSM* system. Not surprisingly, the two systems overlap heavily (Clark, Livesley, Schroeder, & Irish, 1996). A number of other models have been developed in similar ways.

The NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1995) representation of the five-factor model of personality comes at the problem from a slightly different direction: The NEO-PI-R has 30 traits that represent variation in normal personality functioning, and extensive research has supported the view that personality dysfunction represents extreme and/or maladaptive variants of normal functioning and so can be understood in terms of the five-factor model (Widiger & Trull, 2007). Strikingly, researchers who developed homogeneous trait measures of maladaptive functioning and those who developed homogeneous measures of adaptive functioning have reached a consensus on how to describe personality dysfunction (Widiger, Livesley, & Clark, 2009). There is an impressive convergence of evidence speaking to the validity of this approach (Widiger et al., 2009).

This new approach represents a fundamental departure from the idea of using discrete syndromes

for diagnosis. Instead, one assesses all individuals on a basic set of personality dimensions, so each patient can be described in terms of all aspects of personality relevant to his or her dysfunction. To the degree that the personality dimension measures do reflect homogeneous dimensions (i.e., meaningful, coherent psychological processes), scores on dimension measures can have clear meaning. Accordingly, the validation process becomes feasible: Researchers can study each individual dimension, with a clear sense of what psychological experience is thought to be represented by elevations on the dimension, and test hypotheses concerning the relationship between a given dimension and various indicators of life dysfunction. Similarly, descriptions of patients become clearer. One need not use the same label for two women as different as Sandra and Linda (see the case studies earlier in this chapter); one can describe each woman in terms of the personality traits most relevant to her experiences and dysfunction. Obviously, the problem of comorbidity goes away when using such a system. In the absence of discrete diagnostic categories, there is no comorbidity problem.

### THE UTILITY OF DIMENSIONAL DESCRIPTION

One important question concerning description in terms of multiple personality traits is whether such descriptions are useful for clinicians. Certainly it is true that shifting to dimensional description would require retraining, cause administrative problems, complicate record keeping, change the focus of some research, and disrupt the ability to apply past research to current clinical care (First, 2005). Of course, as First (2005) noted, if even this disruptive a change provided improved validity and applicability, it might well be worthwhile. The argument of this chapter is that the improvement in validity is likely to be quite large; indeed, in order to describe dysfunction in coherent, meaningful terms, the move to dimensional description is necessary. In this section of the chapter, we do not provide arguments for the utility of dimensional models in detail; others have done so in compelling ways (Mullins-Sweatt & Widiger, 2009). However, we do briefly note the value of improved validity for parsimony,

comprehensiveness, and diagnostic utility; we then consider the utility of a dimensional system for treatment planning.

To make the transition to a dimensional model less disruptive, it might prove useful to rely on the work of Miller (Chapter 17, this volume) and Miller et al. (2010). Using a prototype approach, this work provides evidence that one can translate dimensional description of personality dysfunction back to DSM-IV PD constructs. This important work helps clinicians familiar with traditional PD constructs make the transition to the dimensional approach, helps clarify the relevance of past research to current dimensional description, and incorporates explicitly the underlying traits into the descriptive process. However, we believe that over time, as researchers and clinicians become familiar with the dimensional approach, the syndromal and prototypal matching approaches will become obsolete and professionals will prefer more precise description at the trait level. Next, we briefly note the value of improved validity for parsimony and comprehensiveness and then consider the utility of a dimensional system for treatment planning.

### Parsimonious Description of Dysfunction

Rather than use numerous different *DSM-IV-TR* (or *DSM-5*) disorders to reflect all aspects of a patient's symptom picture, researchers and clinicians can describe dysfunction in terms of four or five basic personality dimensions and their facets (Widiger et al., 2009; Widiger & Simonsen, 2005). Patterns of deviation across well-validated personality traits can be used to describe the full range of dysfunction for which one currently needs multiple, separate PD categories. We believe there is an advance in parsimony from identifying basic dimensions of personality dysfunction rather than by delineating the presence or absence of multiple different syndromes.

### Comprehensive Coverage of Personality Dysfunction

At the same time that dimensional description provides parsimony, it also provides comprehensive descriptive capacity. Samuel and Widiger (2006) had clinicians evaluate classic clinical cases, including that of Ted Bundy (who was not identified to the

clinicians), using both *DSM-IV-TR* criteria and the 30 traits of the NEO PI-R representation of the five-factor model of personality. Not surprisingly, 96% of clinicians diagnosed Bundy with antisocial personality disorder, and 80% considered his case prototypical of that disorder. Dimensional diagnosis, using the NEO PI-R, appears to have produced a more comprehensive description of his personality: He was described as lacking normal anxiety, self-consciousness, vulnerability, and warmth; as being nontrustworthy, not straightforward, not altruistic, not compliant, and not modest; and as being unusually low in tender-mindedness. He was rated as unusually high in angry hostility, assertiveness, activity level, excitement seeking, competence, order, and achievement striving. This finding is not surprising: When clinicians are not constrained by the need to place individuals into discrete categories, they are free to describe patients across more dimensions and hence in more depth.

### **Diagnostic Utility**

Samuel and Widiger (2006) also asked the 245 clinicians to rate both *DSM-IV-TR* diagnosis and five-factor model description on several dimensions of utility for the three classic clinical cases. For all three, clinicians found the dimensional descriptions more useful with respect to global personality description, client communication, comprehensive description of difficulties, and treatment planning. For one case, dimensional description was also rated more useful for professional communication. For no dimension of clinical utility was *DSM-IV-TR* diagnosis judged more useful (including ease of application). These findings occurred despite clinicians' much greater prior familiarity with *DSM-IV-TR* diagnosis. It appears that clinicians will find this more valid approach to be more useful as well.

It is also the case that dimensional personality description avoids the use of the "wastebasket" category of *not otherwise specified* (NOS). NOS is generally used to classify individuals for whom a clinician has determined that a mental disorder is present, when the individuals do not have the specified number of criteria for an existing diagnosis (American Psychiatric Association, 2000). For PDs, personality disorder NOS is one of the most frequently used Axis II diagnoses (Verheul & Widiger,

2004). The diagnostic label of "personality disorder NOS" does not provide a description of the nature of a client's dysfunction. A substantial number of individuals seek treatment for conditions that fail to meet existing diagnostic criteria (NOS conditions). The inability of the categorical diagnostic system to provide an informative description of pathology, and hence a treatment plan, can be detrimental. However, if the dimensional model proposed is employed, the issues related to the NOS diagnosis would largely disappear.

### **Dimensional Description: Utility for Treatment Planning**

One central function of any diagnostic system is to guide clinicians in choosing appropriate, effective treatments. Recent decades have seen the development of numerous empirically supported treatments for many forms of psychological dysfunction (Chambless & Ollendick, 2001). Many well-validated treatment protocols share components with each other (Combs, Spillane, & Smith, 2011). For example, many interventions involve cognitive restructuring, relaxation training, emotion regulation skill development, distress tolerance, behavior activation, interpersonal effectiveness, and so on (Combs et al., 2011). It is of course the case that treatment protocols are validated with respect to their usefulness in treating patients, based on patients' *DSM-IV-TR* diagnoses. Because so many diagnoses share symptoms, it is not surprising that treatments validated for different disorders have very similar components.

Clinicians treat patients based on the symptoms they exhibit, not based on the disorder with which they have been diagnosed (Livesley, 1998). For example, one patient diagnosed with depression who is experiencing anhedonia is likely to benefit from behavior activation therapy (Dimidjian et al., 2006). Another patient who is also diagnosed with depression but is not anhedonic and is instead experiencing a great deal of sadness might well benefit from cognitive behavior therapy (DeRubeis et al., 2005). This reality speaks directly to the value of describing patient dysfunction in terms of homogeneous dimensions of functioning, because doing so leads directly to treatment choice.

Combs et al. (2011) conducted a review of all symptoms represented across the disorders in *DSM-IV-TR* and a parallel review of all components of empirically validated psychological treatments for *DSM*-based disorders. They found a striking convergence between the two: They identified 22 basic dimensions of dysfunction across the full *DSM-IV-TR* and a set of 10 categories of treatment components within all empirically validated treatments; each of the 10 treatment components could be mapped onto dimensions of dysfunction. The simplicity and usefulness of their system are apparent: For any given type of dysfunction, one can identify treatments that have proven effective with that dysfunction. Dimensional description of psychopathology and personality pathology is more useful than the syndromal approach because it more effectively guides treatment planning.

### **DETERMINING WHETHER CLINICAL DYSFUNCTION EXISTS**

One concern with the possible use of a model that describes individuals along multiple dimensions of functioning is that there are still dichotomous decisions that must be made; for example, some individuals will be determined to merit insurance reimbursement for their treatment and others will not. We argue that the determination of whether a clinical disorder is present involves the determination of whether an individual is experiencing significant impairment in his or her social, emotional, and occupational functioning. Determination of a disorder should not be based on symptom counts because it is the end product of symptoms, impairment in life functioning, that truly matters. Ro and Clark (2009) proposed that clinicians measure impairments in functioning with as little confound from the measurement of psychopathology as possible, in order to keep separate assessment of the presence of clinical impairment and evaluation of psychological functioning. As they noted, only by measuring the two domains separately can one inquire into the ways in which impaired life functioning relates to dimensions of psychological functioning. Life impairment can be, in part, a product of psychological factors, and it is that product—disrupted ability

to manage necessary life functions—that determines whether a clinical disorder is present. We agree with Ro and Clark's call for advances in assessing psycho-social impairment. Mullins-Sweatt and Widiger (2010) provided an illustration of this approach from the perspective of the five-factor model.

It is certainly the case that the assessment of impairment has been an ongoing concern in diagnostic systems, so examples of how to do so already exist. As Widiger and Trull (2007) noted, the Global Assessment of Functioning (GAF) scale provided on Axis V of the *DSM-IV-TR* (American Psychiatric Association, 2000) can be used to determine if a significant level of impairment is being experienced by an individual. The GAF is based on social, emotional, or occupational impairment. For example, a score of 71 or above indicates a normal range of functioning: absent or minimal symptoms (e.g., difficulty concentrating after family argument) and no more than slight impairment in social, occupational, or school functioning (e.g., temporarily falling behind in schoolwork). A score of 60 or below represents a clinically significant level of impairment (moderate symptoms or difficulty in social, occupational, or school functioning; e.g., few friends, conflicts with peers, flat affect, circumstantial speech) to severe impairment (e.g., danger to self or others, suicidal ideation, violent behavior, hallucinations, delusions; American Psychiatric Association, 2000). Ro and Clark (2009) noted that the World Health Organization's (WHO) International Classification of Functioning, Disability, and Health (WHO, 2001) was also developed to assess impairment of functioning, and they noted that it is less confounded with psychopathology than is the GAF. Advances in assessing impaired functioning are well under way (Mullins-Sweatt & Widiger, 2010; Ro & Clark, 2009) and are likely to facilitate determination of clinical status in increasingly valid ways.

### **CONCLUSION**

Classic, syndrome-based diagnosis of PDs has not met standards for valid description of personality dysfunction (Zapolski, Guller, & Smith, in press). To date, there is no evidence for an underlying cause for any of the putative syndromes, and symptoms

within the syndromes covary modestly and often do not have the same cause. Continued endorsement of a syndrome approach, whether through symptom counts, prototypes, or even the sum of traits, is unlikely to bear the fruit of improved accuracy and utility of diagnosis. In contrast, description using homogeneous dimensions of functioning has clear potential for more valid assessment; indeed, it is already working quite well in the field of personality dysfunction (Widiger et al., 2009; Widiger & Trull, 2007). Describing individuals along basic dimensions of personality functioning makes use of well-validated constructs from the personality literature. It makes concerns about comorbidity obsolete, provides both parsimonious and comprehensive description, and leads directly to treatment planning. Dimensional description should guide future research and clinical activity.

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# CHILDHOOD ANTECEDENTS OF PERSONALITY DISORDER: A FIVE-FACTOR MODEL PERSPECTIVE

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The two previous editions of this edited volume (Costa & Widiger, 1994, 2002) provided scholarly chapters identifying and discussing problems in the description and classification of personality disorders as exemplified in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994). Costa and Widiger (1994, 2002) compiled evidence for dimensional approaches to the description of personality pathology, which centered on the five-factor model (FFM), among alternatives. The books were very influential in stimulating the DSM-IV Axis II debate and encouraged conceptual thinking about personality, personality pathology, and the relations with Axis I pathology. Although the previous editions included numerous chapters considering personality disorders from various angles, none specifically discussed their precipitants. In the current chapter, we fill this gap by providing an overview of available evidence and different approaches to the conceptualization and description of personality and personality pathology in childhood and adolescence. Evidence for a developmental perspective on personality pathology is reviewed, together with studies on the structure and description of general and maladaptive traits in childhood and adolescence. We argue that the field of child and adolescent personality can bring valuable knowledge to the domain of personality pathology, and future conceptualizations and taxonomies of personality pathology should

integrate such a developmental perspective. The chapter closes with a discussion of the implications of these findings for the assessment and conceptualization of personality pathology.

## CHILDHOOD ANTECEDENTS AND THE DSM

A growing body of research acknowledges the relevance of childhood precipitants of personality disorders (Cicchetti & Crick, 2009a), advancing the understanding and conceptualization of personality pathology across the life span (Tackett, Balsis, Oltmanns, & Krueger, 2009). Authors of a number of recent articles have pleaded to incorporate a developmental perspective on the study and conceptualization of personality disorders and personality pathology in general (De Clercq & De Fruyt, 2007, in press; De Clercq, De Fruyt, & Widiger, 2009; Tackett et al., 2009; Widiger, De Clercq, & De Fruyt, 2009). Together, they rely on a broad, although scattered, literature demonstrating that personality disorders noticeable in adulthood may have early origins or show continuity with latent dispositions already present in childhood. These studies make clear that both temperament or personality traits as well as environmental factors contribute to adult personality pathology and that the interplay between nature–nurture risk factors and clinical outcomes across development are complex to assess, study,

and theoretically summarize (De Clercq & De Fruyt, 2007). Very different principles are involved in the development of psychopathology, and researchers conducting longitudinal studies will have to assess at multiple times a broad spectrum of personality traits and environmental influences to track the developmental course of pathology. The same disorder may be present across developmental stages, although its expression may be substantially different. Moreover, it will be necessary to distinguish personality symptoms from normal trait variation that can be observed and expected across development. Finally, different personality disorder risk factors in childhood may lead to various disorders or even an absence of pathology (multifinality), or similar personality disorders may result from different risk factors (equifinality; De Clercq & De Fruyt, 2007; Tackett et al., 2009). Research on developmental antecedents of personality pathology will have to be evaluated against this complex background.

A developmental perspective on personality pathology was discarded in the last edition of the DSM (i.e., the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000), where it is explicitly stated that personality disorders can be diagnosed only after the age of 18 years. It is acknowledged, however, that children or adolescents may show some personality disorder features, although they may not have developed a personality disorder yet (American Psychiatric Association, 2000). It is further stated that if symptoms are already present in childhood, they "will often not persist unchanged into adult life" (American Psychiatric Association, 2000, p. 687), and a diagnosis is then considered allowable only in "relatively unusual instances" (American Psychiatric Association, 2000, p. 687). An exception is made, however, for the antisocial personality disorder for which an antecedent condition of conduct disorder is required. In *DSM-IV-TR* is the statement that there should be "evidence of conduct disorder . . . with onset before age 15 years" (American Psychiatric Association, 2000, p. 706) before a diagnosis of antisocial personality disorder can be made. Personality pathology precipitants were not further considered in *DSM-IV-TR*.

Widiger, De Clercq, and De Fruyt (2009) provided a historical overview showing that the third edition of DSM (*DSM-III*; American Psychiatric Association, 1980) did include consideration of possible antecedent conditions. Four different childhood disorders were distinguished in *DSM-III*—an avoidant, a schizoid, an identity, and an oppositional disorder—that were considered to show continuity or to be early manifestations of the avoidant, schizoid, borderline, and passive-aggressive personality disorders, respectively (De Clercq, De Fruyt, & Widiger, 2009). The first three childhood disorders either disappeared or were subsumed by another disorder in subsequent editions of the DSM, whereas the passive-aggressive personality disorder was deleted from Axis II in *DSM-IV* (American Psychiatric Association, 1994).

Various considerations probably influenced this neglect of developmental precursors of personality disorders, among them a reluctance to use for children and adolescents diagnostic labels that have a relatively stable nature and are associated with severe impairment and an unfavorable prognosis. Indeed, childhood and adolescence are considered by psychologists to be important developmental stages during which malleability and change in the individual are assumed on the way to maturity and identity formation. Additionally, there was no agreed-upon taxonomy of child and adolescent personality differences that could be considered precursors of personality disorders in adulthood. Finally, the knowledge base on normal personality trait development in childhood and adolescence was limited (De Fruyt et al., 2006), making it difficult to distinguish between normative and maladaptive personality changes. As a result, there has been little to no systematic research on the childhood antecedents of the *DSM-IV-TR* personality disorders (De Clercq, De Fruyt, & Widiger, 2009). Notwithstanding this neglect in the *DSM*, a large number of studies do consider personality disorders and personality pathology in preadulthood.

## PERSONALITY DISORDER PRECIPITANTS

Longitudinal studies including multiple assessment points are the design par excellence to learn about developmental antecedents of personality pathol-

ogy. The Children in the Community (CIC) study (Cohen & Cohen, 1996) is the only longitudinal study currently available that assesses a broad series of personality symptoms across multiple points in time starting from early adolescence. The CIC study started as a follow-up in 1983 of another project surveying the needs for social services for young families (Kogan, Smith, & Jenkins, 1977). Adolescents were, on average, 14 years old at first follow-up; participants have been followed into adulthood, with additional assessment points when they were, on average, 16, 22, and 33 years of age. Personality pathology symptoms were assessed from the second follow-up onward, using an item set compiled from various sources:

Items were drawn from the following sources: 44 items from the National Institute of Mental Health Diagnostic Interview Schedule for Children (Costello, Edelbrock, Duncan, Kalas, & Klaric, 1984) . . . 26 items from the Disorganizing Poverty Interview (Kogan et al., 1977) . . . 10 items from the Quality of Life Interview (Cohen, 1986) . . . and 97 items from two personality disorder inventories that were adapted by us for adolescent respondents. (Bernstein et al., 1993, p. 1238)

The achievements of the CIC study are numerous and have been recently summarized by Cohen, Crawford, Johnson, and Kasen (2005). Although the CIC item set is not an exact representation of Axis II personality disorder symptoms (Widiger, De Clercq, & De Fruyt, 2009), the results show that overall mean personality disorder symptom counts as well as mean symptom counts marking specific personality disorders are highest in early adolescence and show in general linear declines from ages 9 to 27 years (Johnson et al., 2000). The declines stabilize for most personality disorders thereafter, except for further declines in histrionic and narcissistic symptom counts. In addition to these mean-level changes, there is strong evidence for rank-order stability across personality disorder symptom configurations and across developmental stages (Johnson et al., 2000), in line with rank-order

stabilities observed for general personality traits (Roberts & DelVecchio, 2000). The CIC study was also highly informative on different general risk factors for the development of personality disorder symptoms, such as physical and sexual abuse (Cohen, Brown, & Smailes, 2001; Cohen et al., 2005; Johnson et al., 1999), socioeconomic factors (Cohen, 2008; Cohen et al., 2008), attachment and parenting (Johnson, Cohen, Chen, Kasen, & Brook, 2006), and co-occurring Axis I psychopathology (Cohen et al., 2005; Crawford et al., 2006). Crawford et al. (2008) reported that about half of the early adolescents with a disorder on one axis also had a disorder on the other axis. Both Axis I, including mood, anxiety, disruptive behavior, and substance abuse disorders, and Axis II disorders observed in adolescence showed risks for psychopathology and psychosocial impairment 20 years later, although participants with co-occurring disorders across *DSM* axes turned out to show the highest risk. The CIC study has significantly contributed to psychologists' understanding that personality pathology symptoms are clearly manifested in preadulthood and have important prognostic value for later developing psychopathology.

In an attempt to go beyond the *DSM* Axis II descriptions, Shedler and Westen developed the Shedler-Westen Assessment Procedure (Westen & Muderrisoglu, 2003; Westen & Shedler, 1999a, 1999b) for adults. This item set was adapted for the description of adolescent personality pathology and relies on a wide range of criteria to judge the suitability of items and to ensure broad coverage of personality disturbances manifested in adolescence. The 200-item Shedler-Westen Assessment Procedure for Adolescents (SWAP-200-A) item set (Westen, Dutra, & Shedler, 2005) is intended to be rated by clinicians reviewing adolescents' developmental trajectory, behavior, and interactions during assessment and treatment. Items have to be sorted according to an a priori defined distribution from *irrelevant or not descriptive* to *highly descriptive*. The item set allows the computation of *DSM-IV* Axis II diagnoses in adolescence by comparing individuals' scores with diagnostic personality disorder prototypes. The SWAP-200-A item set has been used in both a variable-centered analysis examining

its structure (Westen et al., 2005) and a person-centered analysis focusing on co-occurring trait positions in individuals (Westen, Shedler, Durrett, Glass, & Martens, 2003). The variable-centered analysis identified 11 factors explaining 52% of the variance (Westen et al., 2005): Psychopathy/Malignant Narcissism, Dysphoria/Inhibition, Psychological Health, Histrionic Sexualization, Schizotypy, Emotional Dysregulation, Anxious Obsessionality, Delinquent Behavior, Sexual Conflict, Attentional Dysregulation, and Peer Rejection. The person-centered analysis produced six personality prototypes, including a resilient-healthy prototype and prototypes that were labeled *antisocial-psychopathic, emotionally dysregulated, avoidant-constricted, narcissistic, and histrionic* (Westen et al., 2003). Two prototypes showed clear resemblances to Axis II constructs, that is, the antisocial and the narcissistic personality disorders, whereas the remaining prototypes partly corresponded with the borderline (emotionally dysregulated), avoidant, and histrionic personality disorders. The number and nature of factors and prototypes that were identified in adolescence with the SWAP-200-A should be compared with alternative empirically constructed taxonomies of childhood and adolescent personality pathology.

Besides the CIC and SWAP-200-A research lines, an extensive database of research on Axis II personality disorder criteria in childhood and adolescence became available in the past decade (for a review, see De Clercq & De Fruyt, 2007; De Clercq, De Fruyt, & Widiger, 2009). Two psychopathology journals, *Development and Psychopathology* (Cicchetti & Crick, 2009b) and the *Journal of Psychopathology and Behavioral Assessment* (Tackett, 2010), recently published excellent special issues on developmental issues and manifestations of personality pathology during preadulthood, with some articles providing a comprehensive overview across personality disorders (Cicchetti & Crick, 2009a; Kobak, Zajac, & Smith, 2009; Shiner, 2009; Tackett et al., 2009; Widiger, De Clercq, & De Fruyt, 2009), whereas others concentrated on specific disorders, including Cluster A disorders (Esterberg, Goulding, & Walker, 2010), as well as borderline (Beauchaine, Klein, Crowell, Derbridge,

& Gatzke-Kopp, 2009; Bornovalova, Hicks, Iacono, & McGue, 2009; Cole, Llera, & Pemberton, 2009; Crawford, Cohen, Chen, Anglin, & Ehrensaft, 2009; Fonagy & Luyten, 2009; Gratz et al., 2009), narcissistic (Barry & Wallace, 2010; Bukowski, Schwartzman, Santo, Bagwell, & Adams, 2009; Thomaes, Bushman, De Castro, & Stegge, 2009), antisocial (Beauchaine et al., 2009), avoidant (Eggum et al., 2009), and obsessive-compulsive (Aelterman, Decuyper, & De Fruyt, 2010) personality disorders. Most studies have in common that they, in one way or another, start from the notion that personality pathology symptoms as defined in the DSM for adults are transferable eventually, after slight modifications, to children and adolescents. This assumption should be evaluated against approaches describing personality symptoms along personality pathology taxonomies specifically constructed for children and adolescents that are not primarily DSM based.

## TEMPERAMENT AND PERSONALITY TRAITS

### Temperament Versus Personality?

It has been argued by many (e.g., Shiner, 2009; Tackett et al., 2009) that the personality pathology area should also benefit from incorporating knowledge from the temperament literature and normative personality development. This recommendation is certainly valid for childhood and adolescence given the recent evidence on specific normative developmental patterns for this stage (McCrae et al., 2002; Roberts & DelVecchio, 2000; Soto, John, Gosling, & Potter, 2011). Differences in traitlike characteristics in infancy and childhood have been traditionally studied by temperament researchers, whereas dispositional differences occurring thereafter have been described by personality researchers (Mervielde & Asendorpf, 2000). For Rothbart and Bates (1998), temperamental individual differences in childhood refer to differences in the affective, activational, and attentional core of personality. Mervielde and Asendorpf (2000) reviewed differences and similarities among the major temperament theories, and Caspi, Roberts, and Shiner (2005) conceptually classified temperament factors under the umbrella of the FFM. On reviewing this literature and the item

content of temperament and personality inventories in particular, it seems to be difficult at an operational level to distinguish between items assessing personality versus temperament constructs. Caspi et al. (2005) therefore concluded that temperament and personality constructs are probably more alike than different.

### **Five-Factor Model**

Trait psychologists have achieved a relative consensus over the past years that personality differences notable in adults can be described along the dimensions of the FFM (or Big Five), including Neuroticism (or Emotional Instability), Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Its most well-known operationalization, the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992), further distinguishes six lower order facets under each basic dimension. A considerable body of research with the NEO PI-R has supported the applicability of the FFM across cultures (McCrae & Terracciano, 2005); informants (McCrae et al., 2004); referred and nonreferred populations; and, most recently, adolescence (De Fruyt, De Bolle, McCrae, Terracciano, & Costa, 2009).

There is further strong support for the validity of the Big Five dimensions to describe personality differences in children and adolescents. Digman (1963) was among the first retrieving the Big Five from teacher ratings of schoolchildren on a set of trait adjectives selected from research with adults, supplemented with short behavioral descriptions indicative of behavior in the classroom. In hindsight, Digman's contribution was unique and important, because he selected his scales long before the Big Five became a prominent model of personality description. From 1959 to 1967, he collected six data sets, including teacher ratings of more than 2,500 pupils who were between 7 and 13 years old. Later, Goldberg (2001) reanalyzed Digman's data and confirmed that the Big Five were replicable and that no replicable factors beyond the Big Five showed up across the six data sets. John, Caspi, Robins, Moffitt, and Stouthamer-Loeber (1994) found evidence for what they called the "little five" personality factors plus two additional factors in maternal ratings on the California Child Q-sort (Block & Block, 1980). These little five

showed clear resemblance to the Big Five, although it was unclear whether the two additional factors of Irritability and Positive Activity were dimensions specific to the California Child Q-sort or whether they represented major dimensions of personality that were unique for adolescence and merged with, respectively, Neuroticism and Extraversion in adulthood. John et al. (1994) further demonstrated that the little five were associated with internalizing and externalizing pathology as described with the Child Behavior Checklist (Achenbach, 1991), providing the first evidence that the FFM dimensions were related to broad overarching dimensions of psychopathology in youth. Externalizing problems were negatively associated with Agreeableness and Conscientiousness and positively with Extraversion, whereas internalizing problems were related positively to Neuroticism and negatively to Conscientiousness.

These initial findings have been supplemented and replicated (Mervielde, Buyst, & De Fruyt, 1995), although personality ratings were still provided by adults with children as target individuals, so the observed structure could still be in the eye of the beholder. Most studies done so far further assessed personality in children or adolescents using adjective lists or inventories developed for adults, prestructuring the resulting factor solution. Finally, these item sets did not reflect age-specific behavior, preventing the emergence of childhood-specific personality dimensions or facets. Although the California Child Q-sort item set used by John et al. (1994) was developed for studies with youths, there were no guarantees that the items comprehensively covered all personality differences that knowledgeable informants can reliably observe among children.

### **Hierarchical Personality Inventory for Children**

The lexical approach to personality description (De Raad, 2000) provided a convincing rationale for the development of a comprehensive child and adolescent personality taxonomy. Mervielde and De Fruyt (1999, 2002) adopted this approach to construct such a taxonomy. They started by assembling a large pool of parental personality descriptions of Flemish children between 6 and 13 years of age and asking

parents to describe what they found characteristic of their child without giving any specific prompts (Kohnstamm, Halverson, Mervielde, & Havill, 1998). Almost 10,000 of these descriptors were sorted in a personality-descriptive lexicon comprising 14 major categories, including the Big Five supplemented with specific temperament categories and further split into approximately 100 categories that were homogenous with respect to personality-descriptive content. For each of these categories, two to three personality items were written, and this item set was administered to large samples of parents and teachers, who provided ratings of 6- to 12-year-old children.

An analysis of the factor structure clearly pointed toward five factors that could be labeled *Extraversion, Benevolence, Conscientiousness, Emotional Instability* or *Neuroticism*, and *Imagination*. Mervielde and De Fruyt (1999, 2002) additionally examined the lower level structure and identified 18 traits that were unequally distributed across the main factors. They subsequently constructed the Hierarchical Personality Inventory for Children (HiPIC; Mervielde & De Fruyt, 1999; Mervielde, De Fruyt, & De Clercq, 2009), with five domain factors and 18 facets, each assessed with eight items. An overview of the HiPIC domain and facet structure with sample items is given in Table 4.1. Some of the HiPIC domain labels differ somewhat from the lexical adult Big Five (Goldberg, 1993). The HiPIC dimensions Extraversion, Conscientiousness, and Emotional Instability refer to content similar to their adult Big Five counterparts and hence received the same label. The HiPIC Benevolence factor, however, refers to a broader set of traits than does the adult Agreeableness factor, because it includes traits linked to the "easy–difficult" child concept described in the temperament literature (Thomas, Chess, Birch, Herzig, & Korn, 1963). The Benevolence factor refers to differences in the manageability of the child from the perspective of the parent informant. The HiPIC Imagination domain comprises both intellect and Openness to Experience items, blending the two alternative labels for the fifth factor emerging from adult adjective-based lexical studies (Goldberg, 1993) and the questionnaire-oriented FFM approach (Costa & McCrae, 1992). Given its construction

background, comprehensiveness, and empirical justification for its facet structure, the HiPIC can be considered a sensitive measure to assess personality and normative personality development at a young age (De Clercq, De Fruyt, & Van Leeuwen, 2004).

## GENERAL TRAITS AND PERSONALITY DISORDERS

The second edition of this handbook (Costa & Widiger, 2002) has substantially contributed to the notion that general and maladaptive personality traits in adulthood substantially overlap and that personality disorders can be described to some extent along the FFM dimensions, suggesting that differences between normality and abnormality are quantitative rather than qualitative (Widiger & Trull, 2007). De Clercq and De Fruyt (2003) were among the first to extend this perspective to adolescence, examining in a group of nonreferred adolescents ( $N = 419$ ) whether FFM dimensions were similarly related to personality disorders as they are in adulthood (Widiger, Trull, Clarkin, Sanderson, & Costa, 2002). They built on evidence that the NEO PI-R could be reliably administered to adolescents (De Fruyt, Mervielde, Hoekstra, & Rolland, 2000), whereas the Assessment of DSM-IV Personality Disorders (ADP-IV; Schotte et al., 2004) was used to evaluate personality disorders. ADP-IV scale scores of seven disorders were associated with Neuroticism, except for schizoid, antisocial, and narcissistic disorders, and all but avoidant, dependent, and obsessive-compulsive disorders correlated negatively with Agreeableness. Six disorders, except schizoid, narcissistic, avoidant, and obsessive-compulsive disorders, related negatively to Conscientiousness, and six, except antisocial, borderline, histrionic, and narcissistic disorders, were negatively related to Extraversion. Only three personality disorder scales showed moderately negative relations with Openness to Experience, that is, schizoid, avoidant, and dependent. The results at the FFM domain level largely replicated the meta-analytic findings reported for adults by Saulsman and Page (2004). There was further substantial support for the predictions by Widiger et al. (2002) at the FFM facet level, with 49 out of 74 (66%) predictions confirmed in adoles-

**TABLE 4.1****Hierarchical Personality Inventory for Children Domains, Facets, and Sample Items**

<b>Domain and facet</b>	<b>Paraphrased sample items</b>
Emotional Stability S1: Anxiety (RKF) S2: Self-confidence	Worries about things Easily makes decisions
Extraversion E1: Energy E2: Expressiveness E3: Optimism E4: Shyness (RKF)	Excessive energy Feelings and thoughts are kept to themselves (RKI) Sees the bright side of things Makes an effort to relate to new classmates (RKI)
Imagination I1: Creativity I2: Intellect I3: Curiosity	Enjoys creating things Understands the meaning of things quickly Enjoys learning new things
Benevolence B1: Altruism B2: Dominance (RKF) B3: Egocentrism (RKF) B4: Compliance B5: Irritability (RKF)	Defends persons who are weaker Bosses persons Has difficulty sharing with others Obedient without complaining Is easily offended
Conscientiousness C1: Concentration C2: Perseverance C3: Orderliness C4: Achievement striving	Demonstrates sustained attention while working Perseveres until tasks are completed Leaves things in a mess (RKI) Wants to excel at everything

Note. RKF = reverse-keyed facet; RKI = reverse-keyed item. Items are not reproduced verbatim but rather are paraphrased from Mervielde et al. (2009).

cence and some discrepancies reported for histrionic, dependent, and obsessive-compulsive disorders. No significant association was found between histrionic personality and Extraversion, dependent disorder was not correlated with Agreeableness, and obsessive-compulsive disorder was not positively related to the Conscientiousness domain or any of its facets (De Clercq & De Fruyt, 2003). In addition, a high number of nonpredicted associations between facets and personality disorder scales were observed for 105 out of 226 nonhypothesized associations.

De Clercq, De Fruyt, and Van Leeuwen (2004), on analyzing a different adolescent sample ( $N = 454$ ), further confirmed the parallel associations between general personality traits and personality disorder constructs across adolescence and adulthood using the HiPIC, a lexically based and age-specific personality inventory. This sample could be considered comparable in terms of personality

pathology to their previous sample (De Clercq & De Fruyt, 2003) that completed the NEO PI-R. A comparison of the explained personality pathology variances by the NEO PI-R versus the HiPIC factors showed that the adjusted multiple correlation squared for the NEO domains ranged from .14 (obsessive-compulsive) to .41 (borderline) with a median value of .29, whereas the values for the HiPIC domains ranged from .15 (schizoid) to .48 (avoidant) with a median value of .33. These findings underscore that general trait models show large variability in terms of their overlap with specific personality pathology constructs, although a large proportion of the variance remains unexplained. More recent work has further underscored the associations between FFM traits and personality pathology in adolescence. Decuyper, De Clercq, De Bolle, and De Fruyt (2009) examined the validity of FFM personality disorder counts to identify Axis II personality disorders,

including psychopathy, whereas Salekin, Debus, and Barker (2010) described relations between adolescent psychopathy assessed with the Youth Psychopathic Traits Inventory (Andershed, Kerr, Stattin, & Levander, 2002) and the Interpersonal Adjective Scale Revised–Big 5 (Trapnell & Wiggins, 1990).

Axis II personality disorders have been shown to co-occur frequently in adulthood (Widiger & Clark, 2000). To control for comorbid personality pathology in adolescence, De Clercq et al. (2004) computed a general personality pathology factor for their two samples that represented shared variance among personality disorders. The multiple correlation squared adjusted for their second sample ranged from .21 (schizoid) to .58 (borderline and paranoid disorders) with a median value of .46, paralleling findings of De Clercq and De Fruyt (2003). The explained variances in both studies turned out to be substantially higher than those observed by Trull, Widiger, and Burr (2001) in adulthood where coefficients ranged between .07 and .47 with a median of .31. Besides citing method effects to explain this discrepancy, De Clercq, De Fruyt, and Van Leeuwen (2004) argued that

increased overlap among personality symptomatology during adolescence, at least when operationalized along criteria developed for adults, may suggest a developmental trend and point out that personality pathology is less crystallized at younger ages. On the other hand, it may also reflect that the symptoms described for adults (included in Axis II) are not appropriate expressions of personality symptomatology for adolescence (Westen et al., 2003). The implication of this interpretation would be that we should assess personality pathology in adolescence in a different way. (p. 496)

## MALADAPTIVE TRAIT MODELS

The study of maladaptive traits in childhood and adolescence evolved very similarly to the study of general personality, initially importing Axis II-based

personality pathology assessment tools constructed for adults into adolescence. Shiner (2007) and De Fruyt and De Clercq (in press) provided comprehensive reviews of the assessment methods used in research and for clinical purposes in preadulthood. Likewise, the SWAP–200–A (Westen et al., 2005) is an adaptation of its parent inventory designed for adults, and the item set used in the CIC study has been modeled after Axis II symptoms defined for adults. Also, dimensional models designed to describe personality pathology in adulthood, which have been proposed as alternatives for categorical Axis II disorders, were used unadapted or with minor language modifications with adolescents. For example, the Dimensional Assessment of Personality Pathology—Basic Questionnaire (DAPP–BQ; Livesley, 1990; Livesley, Schroeder, & Jackson, 1992), assessing emotional dysregulation, dissocial behavior, inhibition, and compulsivity, together with 18 more specific maladaptive traits, has been recently used without modifications in community and referred groups of adolescents (Aelterman et al., 2010; Du et al., 2006; Krischer, Sevecke, Lehmkuhl, & Pukrop, 2007). Tromp and Koot (2008) enhanced readability of the DAPP–BQ items for adolescents, replacing difficult or uncommon words with synonyms from a children's dictionary. Also, the instructions were slightly modified, and 105 items (36%) were finally adapted. The factor structure in a combined sample of referred ( $N = 170$ ) and nonreferred ( $N = 1,628$ ) adolescents was highly similar to the one obtained in adults, with clearly identifiable Emotional Dysregulation, Dissocial Behavior, Inhibitedness, and Compulsivity factors, whereas internal consistency coefficients for the 18 lower order traits ranged from .67 to .97 in the referred sample and from .73 to .92 in the non-referred sample.

Similar disadvantages of top-down research such as that for general personality assessment apply to maladaptive trait measures used in adolescence or childhood. First, the use of measures designed for adulthood precludes the emergence of deviating or new major trait factors or facets that may be valid for adolescence. Second and most important, all item content describing personality pathology at younger ages is explicitly tied to the Axis II

symptoms found in the *DSM-IV* (De Clercq, De Fruyt, & Widiger, 2009; Shiner, 2007; Widiger, De Clercq, & De Fruyt, 2009). Given the numerous problems associated with the conceptualization of the *DSM-IV* personality disorders, it is recommended to look for alternative ways to define the range of indicators of personality dysfunction in childhood and adolescence.

In contrast to the previous top-down strategy in which personality pathology inventories developed for adults were used in a straight or slightly adapted format to assess children and adolescents, De Clercq, De Fruyt, Van Leeuwen, and Mervielde (2006) started bottom up with the compilation of a comprehensive set of maladaptive trait items applicable to denote disturbances in personality functioning in childhood. The observation in adulthood that extreme positions on general traits are indicative of personality dysfunction and the notion that the broad range of personality disorder symptoms is not entirely covered by general trait measures (Clark, 2007) formed two guiding principles for item writing and compilation. Applying the first principle, De Clercq et al. wrote a set of complementary items that represented the more extreme and/or maladaptive content for four dimensions of the HiPIC (Mervielde & De Fruyt, 1999; Mervielde et al., 2009), except for the Imagination domain. It turned out to be difficult to write maladaptive variants for the Imagination facets and items and especially to distinguish such content from normative changes happening in childhood and adolescence.<sup>1</sup> In line with the second principle, the item set was further compiled with items from Axis II personality disorder inventories, including the ADP-IV and the Structured Clinical Interview for *DSM-IV* Axis II (First, Gibbon, Spitzer, Williams, & Benjamin, 1997), although applicable for children. The resulting item set, referred to as the Dimensional Personality Symptom Item Pool (DIPSI; De Clercq et al., 2003), included 172 items and was subsequently presented to large groups of parents of nonreferred and referred children. The higher order structure was formed by four major dimensions and further unfolded in 27 reliable and homo-

geneous lower level traits. The higher order dimensions—Disagreeableness, Emotional Instability, Introversion, and Compulsivity—show consistent conceptual and structural similarities with the personality pathology dimensions that have been described for adults (O'Connor, 2005; Saulsman & Page, 2004; Widiger & Simonsen, 2005). The lower order facets are to be interpreted as maladaptive extremes of general lower order traits (Widiger, De Clercq, & De Fruyt, 2009) but also provide an additional and more differentiated description of pathological features not fully accounted for by general trait or temperament models (De Clercq, De Fruyt, & Widiger, 2009).

Since its inception, the DIPSI has been used in several studies underscoring its construct and discriminant validity to describe psychopathology in childhood and adolescence. De Clercq, Van Leeuwen, Van den Noortgate, De Bolle, and De Fruyt (2009) examined the stability of maternal ratings on the DIPSI dimensions across a 2-year interval in a community sample of 477 children (mean age 128.0 months,  $SD = 13.02$  months). The Introversion domain showed stability over time, whereas the other DIPSI dimensions showed small but significant declines, with smaller declines for high-scoring (as compared with low-scoring) individuals. These findings are largely in line with other studies on personality trait continuity in children (De Fruyt et al., 2006) and suggest that clinical interventions should take into account these differences in natural plasticity of personality dimensions.

The association between the DIPSI dimensions and internalizing and externalizing psychopathology was examined in a mixed sample ( $N = 862$ ) of referred and nonreferred children and adolescents, with parenting (rated by parents and, for a subsample, also by children) as a moderator of this relation (De Clercq, Van Leeuwen, De Fruyt, Van Hiel, & Mervielde, 2008). The results indicated positive main effects of maladaptive traits on externalizing and internalizing problems and of parental negative control on externalizing problems. De Clercq et al. (2008) demonstrated that the DIPSI dimensions

<sup>1</sup>More recently, De Clercq wrote a set of items that can be conceptualized within extreme and/or maladaptive imagination (De Clercq, De Fruyt, & Mervielde, 2003).

and the Child Behavior Checklist Internalizing and Externalizing scales referred to distinct constructs, so their associations could not be explained in terms of item overlap. Significant aggravating interactions were found for Disagreeableness and Emotional Instability with parental negative control, whereas protective interactions were found for Disagreeableness  $\times$  Positive Parenting for explaining externalizing problems. Although the main effects for the maladaptive trait dimensions explain larger proportions of variance in internalizing and externalizing problems, the interactions between child personality and parenting variables demonstrated that parents may have impact with their parenting behavior on psychopathology outcomes. This study has shown that relatively stable dispositions—also in childhood and adolescence—do not imply immobility but leave room for psychoeducation of parents and clinical intervention.

De Clercq et al. (2010) further examined whether maternal ratings on DIPSI dimensions and facets were helpful in differentiating among 164 children (mean age = 10.11 years, range: 5.56–14.38 years) who received diagnoses of autism spectrum disorders on the basis of DSM-IV-TR criteria. The DIPSI domains and facets were shown to be distinctly related to the dimensions Communication Deficits and Repetitive Behaviors, derived from an item-level principal axis factoring followed by oblimin rotation of the items enclosed in the Social Communication Questionnaire (Rutter, Bailey, & Pickles, 2003). The DIPSI facets of lack of empathy and withdrawn traits explained 22% of the Communication Deficits dimension, whereas risk behavior and inflexibility explained 39% of the Repetitive Behaviors factor. The results suggest that a substantial number of the symptoms marking the autism spectrum are trait related.

Finally, Aelterman et al. (2010) examined the associations between general and maladaptive personality traits and obsessive-compulsive personality disorder symptoms, prior to and after controlling for co-occurring personality disorder variance, in a general population sample of 274 Flemish adolescents. They further explored the incremental validity of the DIPSI and the DAPP-BQ beyond the NEO PI-R. The results demonstrated that the

number of (general and maladaptive) personality and obsessive-compulsive personality disorder associations decreased after controlling for a general personality pathology factor, with the FFM factor Conscientiousness and its maladaptive counterpart Compulsivity as the remaining correlates. Maternal-rated NEO PI-R descriptions explained 22% and 15% of the full and the residual obsessive-compulsive personality disorder variance, respectively. The maternal DIPSI ratings substantially added to the prediction, explaining 25% and 14%, respectively; the DAPP-BQ also added slightly to the prediction. The explanatory power of the DIPSI versus the DAPP-BQ cannot be compared directly, because the DIPSI ratings were provided by mothers, inducing shared method variance with the obsessive-compulsive personality disorder ratings, whereas the DAPP-BQ ratings were given by adolescents themselves. The findings further suggest that the general NEO PI-R (Costa & McCrae, 1992) scales should be complemented with more maladaptive items to enable a more comprehensive description of personality pathology variance.

## ASSESSMENT PROCESS

Authors anticipating *DSM-5* developments have recently proposed a dimensional model for the assessment of personality pathology in adulthood that integrates general and maladaptive trait measures (Widiger, Livesley, & Clark, 2009). The first step of this integrative hierarchical model involves an assessment of the extent to which an individual's general personality profile shows meaningful deviations (either high or low) in each of the main personality domains. This first assessment has to identify individuals with extreme scores on general traits who have to be evaluated in the second step using measures containing more maladaptive personality-descriptive content such as the DAPP-BQ or the Schedule for Nonadaptive and Adaptive Personality.

A comparable two-step assessment procedure can be applied in childhood and adolescence. Given the validity of the NEO PI-R and NEO Personality Inventory—3 (McCrae, Costa, & Martin, 2005) as general trait measures in adolescence (De Fruyt

et al., 2009), these inventories can be used in the first step, whereas a maladaptive trait measure such as the DAPP–BQ–A (Tromp & Koot, 2008) can be used for additional evaluation. Alternatively, this two-step process may be implemented in a more age-specific manner, relying on general and maladaptive trait measures that are specifically designed for youths. Such an age-specific assessment would involve a facet-level assessment of general traits, covered by the HiPIC (Mervielde et al., 2009) in the first step, and complemented by an assessment of maladaptive traits using the DIPSI (De Clercq et al., 2006). Administering the DIPSI to a child or adolescent scoring outside the average range of normal trait variation may offer an age-specific description of patterns of personality symptoms along the broader dimensions of Disagreeableness, Emotional Instability, Introversion, and Compulsivity that represent the extremes of four of the five general trait dimensions evaluated in Step 1.

## CONCEPTUAL CHALLENGES

The preliminary proposal for *DSM–5* (<http://www.dsm5.org>) entirely neglected a developmental perspective on personality pathology. We, in contrast, consider this perspective to be essential, given the empirical evidence on personality continuity from childhood onward and the attention for general personality traits in addition to personality disorder subtypes in the *DSM–5* preview description. Costa and McCrae (2010) even argued for a more prominent position of general traits and considered a description of the individual on the FFM traits to be a necessary first step irrespective of the presence of personality symptoms. If we agree that general trait assessment should be on the front line of the assessment process, then *DSM–5* should also include consideration of the manifestation of these traits and personality symptoms in childhood and adolescence. The field of developmental antecedents of personality pathology faces a number of important challenges.

### Normative Development

According to Tackett et al. (2009), a major challenge for a unifying perspective on personality pathol-

ogy across the life span is to distinguish personality symptoms from normative changes across development. Childhood and adolescence are well-known developmental stages in which individuals are subject to a host of stressors and undergo many biological and psychological changes (Arnett, 2001; Kins & Beyers, 2010). It will hence be necessary to distinguish between personality symptoms indicative of personality pathology and temporary behaviors, cognitions, and emotions accompanying normative development. For example, the proposed definition of a personality disorder in *DSM–5* stated that “personality disorders represent the failure to develop a sense of self-identity and the capacity for interpersonal functioning that are adaptive in the context of the individual’s cultural norms and expectations” (retrieved October 10, 2010, from <http://www.dsm5.org>). The development of identity, friendships, and interpersonal relationships are important life tasks to be accomplished during adolescence, so it is important to distinguish among normal experimentation and acute personality symptoms indicative of personality vulnerabilities.

### Associations With Axis I

Krueger, Markon, Patrick, and Iacono (2005) have argued that the switch toward a dimensional representation of personality pathology opens possibilities to understanding associations with Axis I disorders. This perspective can be extended toward childhood and adolescence (Mervielde, De Clercq, De Fruyt, & Van Leeuwen, 2005) and is consistent with a proposal to incorporate general personality assessment in the evaluation of psychopathology in childhood and adolescence. The primary focus on the description of the general traits of a patient (adult, adolescent, or child) opens perspectives to link personality to symptoms and problems that are currently described on both Axis I and Axis II. Such potential cannot be achieved when the assessment focus would be solely on a measure exclusively tapping pathological personality variance.

The HiPIC dimensions have been shown to relate to both the internalizing and the externalizing dimensions of the Child Behavior Checklist (Achenbach, 1991). Internalizing turned out to be correlated positively with Neuroticism (.52) and

negatively with Extraversion (-.30), Imagination (-.19), Benevolence (-.26), and Conscientiousness (-.24), whereas the externalizing dimension was negatively associated with Benevolence (-.62) and Conscientiousness (-.40; De Fruyt, Mervielde, & Van Leeuwen, 2002). Besides associations with general and broad measures of psychopathology, HiPIC domains and facets have also been associated with specific disorders from the internalizing spectrum such as anxiety disorders and depression in childhood and adolescence (De Bolle, De Fruyt, & Decuyper, 2010) and the externalizing spectrum such as psychopathy (Decuyper et al., 2009).

The ultimate challenge will be to propose a fully integrated model of psychopathology in childhood and adolescence, integrating general traits and Axis I and II constructs. The present chapter on developmental antecedents of personality pathology is not meant to import the currently debated categorical personality disorder constructs from Axis II into adolescence or childhood. Instead, we have argued for a description of general and maladaptive traits along dimensional models of personality. A description of general personality traits in childhood and adolescence along the dimensions and facets of the FFM should help to identify strengths and vulnerabilities in the personality of the child, facilitating the interpretation of different Axis I and Axis II symptoms and advancing the selection of therapeutic interventions and targets. If warranted, a more detailed description on the DIPSI dimensions and traits can be recommended. To achieve these purposes, the DIPSI will have to provide additional guarantees that it comprehensively describes personality disturbances observable in preadulthood.

### Person-Centered Approaches

The variable-centered approach has been the major paradigm in personality and personality pathology research in the past years, examining the structure of associations among traits and personality symptoms across individuals. Clinical practice, however, is, by definition, person centered, and assessors and therapists have to take into account the interplay of different traits within single individuals. The

person-centered perspective has been frequently applied in the study of childhood and adolescent personality (Mervielde & Asendorpf, 2000), and this rich knowledge base can be easily transferred to the study of personality pathology. Person-centered approaches have the potential to identify clusters of individuals with co-occurring traits and/or personality symptoms and are hence helpful to empirically construct taxonomies of pathology and personality pathology in particular. In this respect, Eaton, Krueger, South, Simms, and Clark (2011) argued that prototypes have the potential to bridge dimensional and categorical descriptions of personality pathology using the same set of dimensions. One could argue that *DSM-IV* (American Psychiatric Association, 1994) has been constructed starting from pathology features manifested in individual patients, without giving primary attention to the underlying structure of symptoms across persons. More recent dimensional representations of personality pathology have been developed across individuals and need to be complemented with research on prototypes to make this paradigm shift appealing and useful for practitioners. The basic question then becomes how to identify frequently occurring prototypes. Eaton et al. (2011) recently examined the nature and number of prototypes that could be identified in a large ( $N = 8,690$ ) heterogeneous sample of adults that were administered the Schedule for Nonadaptive and Adaptive Personality (Clark, 1993) using finite mixture modeling. An elegant feature of this technique is that it provides a formal fit index (Bayesian information criterion) to determine the number of clusters to retain, an advantage over previously used methods of analyses, such as  $k$ -means cluster analysis, that have no clear guidelines to judge on the optimal number of clusters except replicability across different studies. The Bayesian information criterion suggested retaining seven clusters that were not replicable across different subsamples, although the prototypes showed meaningful relations and external validity with the FFM and Minnesota Multiphasic Personality Inventory clinical scales. Further, they were not interpretable in terms of the current *DSM-IV*/Axis II nomenclature. Eaton and colleagues concluded that

personality-descriptive dimensions, but not prototypes, were robust.

There is a relative consensus (Asendorpf & van Aken, 1999; Caspi, 1998) among developmental and personality psychologists about the emergence of three personality prototypes when cluster analyzing personality-descriptive data of children and adolescents: (a) a resilient prototype for whom the average trait profile is characterized by a socially desirable position on the FFM, (b) an undercontrolled prototype who has lower means on Agreeableness and Conscientiousness, and (c) an overcontrolled prototype with high Neuroticism and low Extraversion scores. De Fruyt et al. (2002) replicated these prototypes by clustering HiPIC raw scores but not NEO PI-R domain scores. Although cluster analysis of NEO PI-R domain scores produced a resilient cluster, the two remaining clusters blended overcontrolled and undercontrolled characteristics, suggesting a potential fourth prototype. De Fruyt et al. (2002) concluded that "rather than assuming that the prototypes—and only these three—are universal and should be present in all samples, it might be more reasonable and beneficial to conceive them as configurations of traits typical for a significant proportion of individuals in a given sample" (p. S69). The nature of these three to four prototypes derived from general personality measures should be compared with results from alternative person-centered analyses starting from a different item set, such as the SWAP-200-A (Westen et al., 2003). Westen et al. (2003) also described a resilient-healthy prototype, in addition to antisocial-psychopathic, emotionally dysregulated, avoidant-constricted, narcissistic, and histrionic prototypes. The undercontrolled cluster conceptually matches with Westen et al.'s antisocial-psychopathic prototype, whereas the overcontrolled type shows some similarities with the avoidant-constricted prototype (Westen et al., 2003).

Future researchers will have to examine whether these specific clusters, derived from general trait measures, yield a specific risk for developing concurrent or later personality pathology. For example, the overcontrolled prototype characterized by increased Neuroticism and decreased Extraversion scores may include a heightened risk to manifest or

develop personality pathology in general, because many Axis II personality disorders have these general traits at their core (Saulsman & Page, 2004); likewise, the undercontrolled personality cluster may yield a higher risk for antisocial personality pathology, whereas the resilient cluster may have no or only a moderate risk. Although it is premature to suggest such associations in the absence of empirical studies, such broad personality clusters may be useful configurations for specific follow-up, adopting, for example, the two-step assessment approach that was described earlier in this chapter.

### Multiple Informants

Finally, the field of child and adolescent psychopathology has a well-established tradition of relying on multiple-informant perspectives to describe symptoms and traits. A similar multi-informant perspective on personality pathology (Shiner, 2007) should accompany the paradigm shift from a categorical to a dimensional description of personality pathology. Parents and teachers, as knowledgeable informants, may provide useful information on strengths as well as difficulties beyond self-descriptions because they experience children and adolescents in different contexts. Additional informants can not only assist with the description of the adaptive and maladaptive traits but also evaluate potential impairment that is associated with these descriptions. Such additional information opens new perspectives for clinical intervention and therapy.

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# UNIVERSALITY OF THE FIVE-FACTOR MODEL OF PERSONALITY

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Measles, diabetes, and Alzheimer's disease are essentially the same disorders everywhere in the world, because the human immune, endocrine, and nervous systems are specieswide. If mental disorders are comparable to physical disorders (as their inclusion in the International Classification of Diseases implies), then their psychological substrates must likewise be universal. Personality traits provide the substrate of personality disorders (PDs), so the question of their pan-cultural invariance is crucial. This chapter reviews data suggesting that in many respects personality traits are indeed universal.

## PSYCHOSOCIAL UNIVERSALS

When people describe their own personalities or those of people they know well, many of the descriptors typically go hand in hand. For example, individuals who are described by themselves or by their close acquaintances as talkative are also believed to experience positive emotions frequently, and those who are reported to be modest often describe themselves as willing to assist others in need of help. These covariations tend to group around the same five basic themes (Goldberg, 1993; Thurstone, 1934), which seem to transcend languages and cultures, giving a good reason to suggest that this structure of covariation may be a human universal (McCrae & Costa, 1997).

Strictly speaking, *universal* means that something is characteristic of all members of a class, without limit or exception. Very little in nature meets this absolute criterion, but many characteristics appear to be relatively invariant. Psychologists are interested in universals at the level of both the individual (all people are mortal) and the group, but these levels must be distinguished. The claim that gender differences in personality are universal does not mean that every woman scores higher than every man on a trait; it means that in all groups of people, the same degree or direction of gender-related trait differences is found on average. Most of the properties of traits discussed in this chapter are (potentially) universal at the group level.

Linguists were probably among the first who faced the problem of universality. Currently, the list of world's languages, called *Ethnologue* (Lewis, 2009), contains 6,909 living languages. Most of these languages are distinctive so that without proper learning they are incomprehensible to speakers of other languages, sometimes living only a few miles away. In spite of this enormous variety, languages have features that occur systematically across all of them. For example, if a language is spoken, it has consonants and vowels. Even further, all known languages seem to have minimally three vowels including /i/, /a/, and /u/, and most languages, not all, contain nasals (Burquest & Payne, 1993). Thus,

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beside absolute universals—true for all languages, living or extinct—there are general tendencies that hold for most languages. Noam Chomsky (1965) has famously argued that there is a universal grammar—general generative and combinatorial mechanisms that have an innate biological basis—used by all spoken languages.

In response to a dominant paradigm of the social sciences—cultural relativism—Donald Brown, a professor of anthropology at the University of California, started to compose a list of human universals (Brown, 1991). As it turned out, ethnographers have noticed many features common to all known human societies studied so far. For example, everywhere people live they have baby talk, jokes, magic, and a preference for sweet tastes, to say nothing, of course, about language. In the long list of universals or near-universals, many are associated with what we can call personality dispositions. For example, according to this list, in all human societies people have childhood fears, classification of behavioral propensities and inner states, and facial expression of anger; and in all known human populations males are more aggressive than females. Steven Pinker (2002) extended this list by adding, among other features, fear of death, tickling, and a desire to have a positive self-image.

The status of many of these and other putative human universals is still uncertain. For example, anger—mentioned in the above list of universals—is one of the fundamental human emotions that has emerged consistently across time and culture (Chon, 2002), and there are equivalents for the word *anger* in all major languages of the world (Mesquita, Frijda, & Scherer, 1997). Yet, there is one society—the Utkuhikhalingmiut (“Utku”) Eskimos—that does not have a special word for anger. More than 30 years ago, anthropologist Jean Briggs described the Utku society (which at the time of her research consisted of 35 individuals—the only inhabitants in an arctic area of more than 35,000 square miles) in her book expressively titled *Never in Anger* (Briggs, 1970). If these ethnographical observations are valid, the experience and expression of anger may be disqualified from the rank of the absolute universals and degraded to the rank of the near-universals. Similar fates, however, could happen to even more

fundamental constituents of the human society: Contrary to what Claude Lévi-Strauss (1949/1969) has claimed, there is at least one society where there is no concept for fathers or husbands (Hua, 2001).

## A UNIVERSAL STRUCTURE OF PERSONALITY

When it comes to personality dispositions, it is not a trivial task to determine the rank of their universality. Even linguists acknowledge that there are still a large number of unidentified languages, and among the known 6,909 languages, only a minority is thoroughly described. Psychological research rooted in Western culture—sometime called *Western academic scientific psychology* (WASP)—is believed by some scholars to be of little relevance to the majority of the world (Berry, Poortinga, Segall, & Dasen, 2002), reflecting only a small minority of Western, educated, industrialized, rich, and democratic (WEIRD) people (Henrich, Heine, & Norenzayan, 2010a, 2010b; D. Jones, 2010). A recent survey of the top psychological journals found that 96% of all research participants were from Western industrialized countries (Henrich et al., 2010b). However, unlike many fields in psychology, personality research has been a truly international enterprise for a number of years. Even if questionnaires were mainly devised by WASP or WEIRD researchers, they were soon translated into many different languages. For example, Indian researchers translated the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992), developed in Baltimore, Maryland, into Telugu and Marathi (cf. Lodhi, Deo, & Belhekar, 2002; McCrae, 2002). This is a major advance, because there are 74 and 90 million Telugu and Marathi speakers, respectively, occupying the 16th and 15th positions in the list of the most spoken languages (Lewis, 2009).

Strictly speaking, it is unrealistic to expect to demonstrate absolute universality of any aspect of personality dispositions. When McCrae and Costa (1997) proposed the bold hypothesis that the pattern of covariation among personality traits is a human universal, they were able to rely on only six translations of the NEO PI-R into the German, Portuguese, Hebrew, Chinese, Korean, and Japanese languages.

Nevertheless, data from these highly diverse cultures with languages from five distinct language families were persuasive enough to suggest that the observed regularity in the pattern of covariation among personality traits will be not violated when more and more new cultures and languages are subjected to a critical examination.

### **Large-Scale, Cross-Cultural Studies**

Although it is not entirely clear how exactly to establish universality, it is inevitable that large-scale, cross-cultural studies are necessary to provide evidence that something is indeed characteristic of all human beings. However, collection of personality data from many cultures is even more expensive than gathering data about all spoken languages. There are only a few ways to collect personality data from a sufficient number of countries. The first is to develop a popular inventory that will be translated into a large number of languages by enthusiastic colleagues. The Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) and the NEO PI-R are the good examples of this relatively slow and complicated method of collecting data (Lynn & Martin, 1995; McCrae, 2002; van Hemert, van de Vijver, Poortinga, & Georgas, 2002). Another way is to form an international research syndicate that is held together by the promise that the first two or three articles are coauthored by all those who participate in collecting data. For instance, David Schmitt, one of the most successful elaborators of this research mechanism, was able to obtain personality data from 56 countries or territories using the Big Five Inventory (Schmitt, Allik, McCrae, & Benet-Martínez, 2007). Exploiting the same principle, McCrae and Terracciano gathered observer-reported personality data and national character ratings from 50 cultures (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005).

Another important development in the research technology is, of course, the widespread use of the Internet, which allows the collection of huge samples during a relatively short period of time. Perhaps one of the best examples is the British Broadcasting Corporation's Internet study, which examined sex

differences on three personality traits—extraversion, agreeableness, and neuroticism—for more than 200,000 participants from 53 nations (Lippa, 2010). Although it has been argued that Internet findings are consistent with results from traditional methods (Gosling, Vazire, Srivastava, & John, 2004), there is indisputable evidence that self-recruited Internet data may sometimes be biased compared with random sampling (Pullmann, Allik, & Realo, 2009), which may constrain their potential value.

Perhaps the most important lesson from all these large-scale comparative studies is the ease with which personality instruments can transcend language and culture barriers. The same basic pattern of covariations—the five-factor model (FFM)—has been replicated, more or less accurately, in every language and culture studied so far (Kallasmaa, Allik, Realo, & McCrae, 2000; Rolland, 2002; Schmitt et al., 2007). Essentially the same factor structure was recovered from self-ratings (McCrae, 2002) and from observer ratings (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). Thus, the FFM appears to be invariant across methods of measurement. It is also important to notice that the structure is found not only in convenience but also in clinical samples (Terracciano & McCrae, 2006; Yang et al., 1999), which is essential if the FFM is to be used to describe PDs (Widiger, Livesley, & Clark, 2009; Widiger & Mullins-Sweatt, 2009).

There are only a few studies of personality in which geographical representativeness inside one country was achieved. Perhaps it is not so urgent to achieve a sufficient geographical coverage for a small country like Estonia (Allik, Laidra, Realo, & Pullmann, 2004), but it is desirable, if not imperative, for large countries like the United States and Russia. Recently, 7,065 participants from 39 samples in 33 administrative areas of the Russian Federation identified an ethnically Russian adult or college-age man or woman whom they knew well and rated the target using the Russian observer rating paper-and-pencil version of the NEO PI-R (Allik et al., 2009). The expected FFM structure was clearly replicated in the full sample, with factor congruence coefficients of .95 to .96 for all five factors. When these analyses were repeated within the 39 samples,

all showed reasonable to good replications of the FFM, with average factor congruence coefficients ranging from .90 to .98.

Although the five-factor structure is clearly recognizable in every language into which the NEO PI-R or Big Five Inventory has been translated, in less developed countries the data seem to fit the FFM less perfectly than in industrialized, less agrarian countries (Piedmont, Bain, McCrae, & Costa, 2002). Research suggests that the degree of fit to the FFM depends primarily on the quality of the data (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). For example, one indicator of data quality is negative item bias (Schmitt & Allik, 2005). In less developed countries where people live in economic need and access to education is limited, respondents are inclined to answer negatively worded items slightly differently than they answer directly formulated statements. The fit of the FFM may also depend on the cultural relevance of specific items. In several cultures, the Openness factor has proved to be the weakest, especially in African countries (Piedmont et al., 2002). It seems that NEO PI-R items such as "Poetry has little or no effect on me" or "I often try new and foreign foods" may represent the openness concept less clearly in Burkina Faso and Zimbabwe than they do in Western countries (Rossier, Dahourou, & McCrae, 2005). This implies that a more appropriate selection of items is needed to optimize the translation of the FFM into more exotic cultures.

### Alternatives to the FFM

However, the universality of the FFM does not rule out the possibility that some other covariance patterns, with smaller or larger numbers of factors, may also be replicable across many languages and cultures. For example, Eysenck's three-factor (van Hemert et al., 2002) and psycholexical six-factor (Lee & Ashton, 2008) structures have also been replicated in many cultures. The compatibility of structures with different numbers of factors becomes understandable within a structural framework based on a hierarchy of personality traits (Markon, Krueger, & Watson, 2005). The hierarchy of traits can be cut on a different level of generaliza-

tion and can have as a result three, five, or six relatively stable factors.

It has been argued that imposing a factor structure derived from Western samples on non-Western cultures may leave unnoticed unique personality factors specific to these cultures alone, called *emic* dimensions of personality. For example, it was claimed that the FFM ignores an Interpersonal Relatedness factor that is unique to Chinese (or more generally Asian) personality (Cheung, Cheung, Wada, & Zhang, 2003; Cheung et al., 2001). It was soon discovered, however, that this supposedly specific Chinese or Asian factor could be reproduced fairly well in a European-American sample, indicating that the Interpersonal Relatedness factor is not unique to Asian populations (Lin & Church, 2004).

In a similar vein, many domestic and foreign observers have claimed that Russians have a unique constellation of personality traits that mirrors their distinctive historical and cultural experience. In contrasting themselves with the industrialized and materialistic cultures of the West, Russians in the 19th century began to define themselves in terms of their spiritual qualities, their distinctive "Russian soul" (Allik et al., 2011). To capture distinctive, *emic* aspects of Russian personality beyond the familiar Big Five dimensions, a set of *emic* personality items was developed. For instance, the widely perceived inclination of Russians toward fatalism was measured by items such as "Believes that he/she cannot escape his/her fate" and "Believes that he/she is an architect of one's own fortunes" (reversed). As it turned out, most of the variance in the *emic* items could be explained by the known Big Five factors (Allik et al., 2011). These results suggest that it is wise to be skeptical of the claim that there are personality traits specific to one culture alone.

### THE FFM STRUCTURE AT DIFFERENT LEVELS OF ANALYSIS

The pattern of covariation in the FFM was established by means of factor analyses based on interindividual differences. From that level, it is possible to move either higher to the level of cultures or lower to the level of single individuals.

## Culture-Level Analysis

Collecting NEO PI-R self-report data from 36 cultures or territories was difficult (McCrae, 2002). However, it was still too small a data set to subject the mean, culture-level values on 30 facet scales to a factor analysis. A solution was to split each culture into four subgroups according to sex and age (female participants vs. male participants; college-age people vs. adults), increasing subsamples to 114. With minor variations, the culture-level analysis of the means of these 114 samples replicated the five-factor, individual-level factor structure (see McCrae, 2002, Table 2). These findings were subsequently replicated in culture-level analyses of observer ratings of college-age and adult targets from 51 cultures (McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005) and of adolescents from 24 cultures (McCrae et al., 2010).

Initially, this replication of the FFM structure was interpreted as an empirical finding about the structure of personality on the culture level, but it soon became clear that it is a statistical necessity. Assigning individuals randomly to an arbitrary 114 subsamples would have resulted in an even better replication of the individual-level factor structure (cf. McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). Thus, only deviations, not resemblance, between individual- and group-level factor structures are indicative about the possible involvement of culture. When culture-level factor structure replicates the individual-level structure, it means that the influence of culture on personality traits (and their assessment) is negligible. Existing data show that culture contributes consistently but rather modestly to the pattern of covariances (McCrae & Terracciano, 2008).

## Intraindividual Level of Analysis

Another direction of generalizability is to move from the level of the group to that of the individual. According to some researchers, personality trait covariation models such as the FFM provide information that holds true at the level of groups or populations but may not apply to the level of the individual (Borsboom, 2005). For example, it was demonstrated that if a latent factor model fits

a given population, this does not guarantee the fit of the same model for each or even any individual participants from that group, assuming that intraindividual variation is measured by repeated administration of the same instrument (Borsboom, Mellenbergh, & van Heerden, 2003; Molenaar & Campbell, 2009): The structure of traits across individuals is not necessarily the same as the structure of states within the individual. Borsboom et al. (2003) concluded from this that models derived from between-subjects variation cannot provide causal explanations for the behavior of an individual—a conclusion that has been challenged by others (McCrae & Costa, 2008). However, this work raises the question of whether, and in what sense, the FFM can be said to characterize individuals.

Allik et al. (2012) argued that the FFM characterizes an individual if scores on each of the indicators of a factor (e.g., the six facets that define each factor in the NEO PI-R) are at similar levels (especially in contrast to variation in levels of facets across different factors). A person who is high on Anxiety and Angry Hostility and Depression and Self-Consciousness and Impulsiveness and Vulnerability can meaningfully be said to be characterized by the Neuroticism factor, whereas an individual who is high on the first three facets and low on the last three does not show a coherent Neuroticism factor. Allik et al. operationalized this concept using the intraclass correlation and concluded that most individuals are reasonably well characterized by the FFM structure.

## OTHER TRAIT UNIVERSALS

The most straightforward explanation for the universality of the FFM is that traits are based in common human biology. This hypothesis is supported by studies of the genetic covariance of NEO PI-R facets (Yamagata et al., 2006). If personality traits are characteristic of the human species, then other properties besides factor structure should be universal, and this is in fact the case.

## Sex Differences

Lynn and Martin (1995) were among the first who reported a systematic pattern of gender differences:

Women obtained higher mean scores than men on Neuroticism scales in all 37 nations where the results of the Eysenck Personality Questionnaire were available; men scored higher than women on Extraversion in 30 countries and on Psychoticism in 34 countries. Subsequent studies that used measures of the FFM have shown that women in most countries are higher in several traits related to neuroticism, agreeableness, warmth, and openness to feelings, whereas men score higher on scales measuring assertiveness and openness to ideas (Costa, Terracciano, & McCrae, 2001; Lippa, 2010; Schmitt, Realo, Voracek, & Allik, 2008). These differences are consistent with universal gender stereotypes (Williams & Best, 1982), but the measured differences are generally rather small.

Although the direction of gender differences is near universal, the magnitude shows systematic variation: These differences systematically increase with level of development—including long and healthy life, equal access to knowledge and education, and economic wealth (Costa et al., 2001; Lippa, 2010; Schmitt et al., 2008). This finding was counter-intuitive, because most people assumed that gender equality would lead to diminished sex differences in personality. Several explanations have been offered to explain this puzzling finding. Costa et al. (2001) speculated that it reflected different processes of attribution in traditional and modern cultures. Schmitt et al. (2008) proposed that heightened levels of sexual dimorphism result from personality traits of men and women being less constrained and more able to naturally diverge in developed nations. In less fortunate social and economic conditions, innate personality differences between men and women may be attenuated.

Certain forms of personality pathology are gender related—for example, men tend to be much more likely to be diagnosed with antisocial PD. This is likely due to their lower levels of Agreeableness; because gender difference is universal, it is likely that antisocial behavior will be more common in men around the world.

## Age Differences

There also seem to be pervasive differences in personality traits of younger and older individu-

als: Younger people are considerably more extraverted and open than older people, whereas older people are perceived to be more agreeable and conscientious than younger people (Allik et al., 2009; McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005).

Existing data seem to favor an explanation according to which personality development through the lifespan follows a universal pattern that is largely independent of the economic and political environments (Costa, McCrae, et al., 2000). Consider a cross-sectional study of the observer-rated personality traits of 7,065 Russians. Most adult targets were born before the first satellite Sputnik was launched in 1957, and approximately 10% were born before Stalin's purges in 1937; there were even five targets born before the Bolshevik revolution lead by Vladimir Lenin in 1917 (Allik et al., 2009). In contrast, the college-age targets had lived most of their lives in the post-Soviet era. These major historical events, very different from those experienced elsewhere in the world, might have left their imprints on the personality of targets, and uniquely Russian cohort effects might have created a distinctive pattern of Russian age differences. Instead, age differences in general showed the same pattern seen elsewhere: The difference profile between younger and older Russians across the 30 NEO PI-R facet scales has almost exactly the same shape as it has in the United States, Portugal, or Korea. These findings seem to support the hypothesis that intrinsic maturational changes in the mean level of personality traits are most likely genetically determined and relatively immune to social and historical influences (Allik et al., 2009).

As many researchers have noted (e.g., Donnellan, Conger, & Burzette, 2007), most personality changes are in the direction of increased maturity. As a result, personality pathology tends to decline with age, notably in the case of borderline PD. Such age changes in the prevalence of PDs ought to be similar around the world.

## Differences in Perspective

Social psychologists have conducted a considerable number of laboratory experiments to explore the idea that there is a fundamental disparity between

the way people perceive themselves and the way they are perceived by others (E. E. Jones & Nisbett, 1971; Nisbett, Caputo, Legant, & Marecek, 1973; Watson, 1982). This disparity is believed to originate from an inevitable asymmetry between internal and external viewpoints: People are immersed in their own sensations, emotions, and cognitions at the same time that their experience of others is dominated by what can be observed externally (Pronin, 2008).

However, all these arguments about systematic differences between how people see others' and their own personality traits are suspicious in view of the fact that normative self-rated personality mean scores converge almost perfectly with normative observer-rated mean scores on personality questionnaires (Allik et al., 2010). There are truly miniature differences between self- and observer-rated mean raw scores, amounting to less than one-quarter standard deviation for most traits.

Nevertheless, the small differences that are seen demonstrate a cross-culturally replicable pattern of difference between internal and external perspectives for Big Five personality traits. People everywhere see themselves (on average) as more neurotic and open to experience than they are seen by other people. External observers generally hold a higher opinion of an individual's Conscientiousness than he or she does about him- or herself. As a rule, people think that they have more positive emotions and excitement seeking but have less assertiveness than it seems from the vantage point of an external observer. This cross-culturally replicable disparity between internal and external perspectives is not consistent with predictions based on the actor–observer hypothesis, because the size of the disparity was unrelated to the visibility of personality traits. Surprisingly, a relatively strong negative correlation ( $r = -.53$ ) between the average self-minus-observer profile and social desirability ratings suggests that people in most cultures studied view themselves less favorably than they are perceived by others (Allik et al., 2010). It is clear that our current theories cannot explain the direction of the small differences in personality trait perception, but once again personality processes have shown themselves to be universal.

## Reliability and Validity

McCrae, Kurtz, Yamagata, and Terracciano (2011) reviewed data on the differential reliability and validity of the 30 NEO PI-R facets. For example, they calculated the internal consistency of each of the 30 facets in each of 51 cultures, and they concluded that across all cultures, some scales (e.g., Conscientiousness 5: Self-Discipline; Openness 5: Ideas) had consistently higher coefficient alphas than did others (e.g., Openness 4: Actions; Agreeableness 6: Tender-Mindedness). Despite the fact that the NEO PI-R had been administered in 28 different languages, internal consistency of the scales appeared to be universal. Although based on fewer samples, the same appeared to be true for estimates of retest reliability. Data from samples in Germany, Italy, Canada, and Japan showed that some facets were consistently more heritable than others, even after controlling for reliability. There was also evidence of cross-cultural agreement on which facets showed the highest levels of cross-observer agreement. Data on long-term personality stability were available only from American and German samples, but these showed similar patterns. All these findings suggest that psychometric properties of personality scales are universal—further evidence that traits function the same way around the world.

Many studies of the validity of personality scales as predictors of life outcomes and other correlates have been replicated in different cultural contexts (e.g., Salgado, 1997). Of particular interest are studies that relate personality traits to measures of PDs. Yang et al. (2002) replicated American findings in a large sample of Chinese psychiatric patients. For example, borderline PD, as assessed by both self-report and psychiatrist ratings, was related to all six NEO PI-R Neuroticism facets; paranoid PD was negatively related to Agreeableness 1: Trust. In a remarkable study, Rossier, Rigozzi, and the Personality Across Culture Research Group (2008) assessed personality and PDs in sub-Saharan and Arabic African cultures and found that the pattern of correlations between personality traits and PDs paralleled that found in Switzerland. The associations of personality traits with personality pathologies appear to be universal.

## ARE MEAN LEVELS UNIVERSAL?

Because so many properties of traits are constant across cultures, it might be reasonable to suppose that means and standard deviations are also invariant (cf. Poortinga, Van de Vijver, & Van Hemert, 2002). On their face, the data do not support this conjecture: Measured means vary from culture to culture (otherwise there could be no FFM at the culture level), and measured standard deviations are consistently higher in Western than in non-Western nations. However, it is not clear how these data should be interpreted. Are the differences real, or are they artifacts of translation, cultural differences in frames-of-reference, or other biases? This question is important for understanding the epidemiology of mental health (Terracciano & McCrae, 2006). If some cultures are truly higher in Neuroticism than others, they should show higher prevalence of borderline, avoidant, and schizotypal PDs; if the differences are artifacts, no differences in true prevalence should be seen.

There are several lines of evidence that suggest that the observed differences in trait levels across cultures are real. As noted above, the FFM can be replicated in culture-level analyses, because cultures that score higher on some definers of a factor usually score higher on others: Variations in trait levels are thus not due merely to random fluctuations introduced by translation. Culture-level means show construct validity in a number of ways, including correlations of means based on self-reports versus observer ratings (McCrae et al., 2010; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005) and correlations with other culture-level variables, such as individualism-collectivism (Hofstede & McCrae, 2004).

Perhaps one of the most intriguing observations is that the geographic distribution of mean scores of personality traits has a systematic pattern for both self and observer ratings (Allik & McCrae, 2004; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005; Rentfrow, 2010; Rentfrow & Gosling, 2006; Schmitt et al., 2007) across the world and with countries (Allik et al., 2009; Rentfrow, Gosling, & Potter, 2008). For example, it seems to be a general rule that

extraverted and open-minded people live predominantly in economically prosperous, democratic, and individualistic countries (Allik & McCrae, 2004).

However, the ranking of cultures on some personality traits may seem counterintuitive. Indeed, it is not highly expected that the most conscientious—determined, strong-willed, organized, dutiful, and deliberate—people live in Burkina Faso and Congo, whereas the least conscientious, according to the self-reports at least, live in Japan and Korea (Möttus, Allik, & Realo, 2010). These informal observations can be supported by more rigorous analyses. For instance, Heine, Buchtel, and Norenzayan (2008) reanalyzed published data and showed that aggregate national scores of self-reported Conscientiousness were, contrary to the authors' expectations, negatively correlated with various country-level behavioral and demographic indicators of Conscientiousness, such as postal workers' speed, accuracy of clocks in public banks, accumulated economic wealth, and life expectancy at birth. Oishi and Roth (2009) extended the list of paradoxical findings by showing that nations with high self-reported Conscientiousness were not less but were more corrupt.

Skepticism concerning the validity of the country mean scores was also stimulated by the publication of surprising findings that national character ratings did not converge with assessed personality traits (McCrae, Terracciano, Realo, & Allik, 2007; Terracciano et al., 2005). The lack of correspondence between national stereotypes and assessed personality traits elicited a vigorous debate (Ashton, 2007; Krueger & Wright, 2006; McGrath & Goldberg, 2006; Perugini & Richetin, 2007; Robins, 2005). Among critical comments, Leon Festinger's (1954) social comparison processes—the idea that people estimate their attitudes or dispositions relative to social standards—were repeatedly mentioned. These frame-of-reference explanations are very seductive in their simplicity, but they are certainly much easier to propose than prove. For example, Heine et al. (2008) proposed that people are likely bring to mind a standard that lies outside their own culture, for example, a perceived international norm, in making their own ratings. Yet, how could laypersons have such an extraordinary ability to obtain accurate

information about the mean levels of personality traits across many countries when psychologists find it so difficult?

Other fields also facing the reference-level problem have learned to cope with it. Health studies, for example, are familiar with a paradox that in those countries and regions where people complain more about serious health problems, people are in fact healthier and live longer (Sen, 2002). A Harvard political scientist, Gary King, proposed to use anchoring vignettes—brief descriptions of hypothetical persons—along with self-reports (King, Murray, Salomon, & Tandon, 2003; King & Wand, 2007). Provided that the anchoring vignettes display various levels of the same characteristic that is being measured by self-reports, it is possible to determine relative position of self-ratings among the hypothetical persons depicted in the vignettes. In a recent study, anchoring vignettes were used for testing whether people from 21 countries (Australia, Benin, Burkina Faso, People's Republic of China, Estonia, Germany, Hong Kong, Japan, Lithuania, Malaysia, Mali, Mauritius, Philippines, Poland, Russia, Senegal, South Africa, South Korea, Sweden, Switzerland, and United States) have different standards for Conscientiousness (Möttus et al., 2011). All participants rated their own Conscientiousness and that of the 30 hypothetical persons portrayed in short vignettes, the latter ratings expected to reveal individual differences in standards of Conscientiousness. Contrary to expectations of the reference-level theorists, the vignettes were rated relatively similarly in all cultures, suggesting no substantial culture-related differences in standards for Conscientiousness. Controlling for the small differences in these standards did not substantially change the rankings of countries on mean self-ratings and the predictive validities of these rankings for objective criteria. These findings lend little support to the hypothesis that mean self-rated Conscientiousness scores are influenced by culture-specific standards, considerably restricting the range of potential explanations for the puzzling country rankings in Conscientiousness (Möttus et al., 2011). Although it is premature to draw any firm conclusions, it may be that personality traits are estimated in absolute rather than in relative terms. It is possible, for example, that

people have developed a more robust and unconditional way for judging their basic tendencies to feel, think, and behave than for judging the level of political freedom in their society or their work satisfaction (King et al., 2003; Kristensen & Johansson, 2008).

## WHAT IS BEHIND PERSONALITY UNIVERSALS?

Searching for personality universals cannot be a goal in itself; they need to be explained, because they may reveal the most fundamental properties of human personality. The observation of universal properties has already stimulated some theoretical explanations. Five-factor theory (FFT) emerged as a response to challenges posed by these recently discovered universalities (McCrae & Costa, 1996, 1999). In contrast to the FFM, which is an empirical summary about the covariation of personality traits, FFT is an attempt to explain universal or near-universal properties of human personality. How can we understand the extraordinary stability of personality traits across human life span (McCrae & Costa, 2003)? Why does the same pattern of covariation among personality traits emerge in countries with completely different economic prosperity, historical experience, and cultural traditions (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005)? Why are the effects of heritability overwhelming compared with the vanishingly small effects of the shared environment (Riemann, Angleitner, & Strelau, 1997)? Or why do life events show very little influence on the levels of personality traits (Costa, Herbst, McCrae, & Siegler, 2000)? The FFT was a response to these challenges and provides an explanation for most of these personality universals established during the last few decades. According to the FFT, personality traits are basic tendencies, deeply rooted in the organism, that are relatively immune to influences from the environment (McCrae & Costa, 1996, 1999).

The main purpose of that central "dogma"—in the sense that Francis Crick (1990) used that word—of FFT was to provide a clear basis for formulating testable hypothesis (Allik & McCrae, 2002). Postulating a general heuristic principle that there is no "transfer" from culture and life experience

to basic personality traits obviously stimulates the search for conditions—certainly not very frequent ones—where this general postulate is violated (Allik & McCrae, 2002). However, finding these violations may be more difficult than is claimed by critics of FFT. Typically those who oppose the central dogma concentrate on one particular detail, forgetting about the whole picture. For example, normative changes in the mean levels of Neuroticism, Agreeableness, and Conscientiousness can perhaps be explained alternatively by the social investments that individuals make in work, family, and community during different life periods (Roberts, Wood, & Smith, 2005). However, there is as yet no convincing evidence that universal social tasks are in fact behind normative changes, and the intrinsic maturation hypothesis of FFT is more consistent with other findings on minimal environmental influences.

Almost 10 years ago, Allik and McCrae (2002) reviewed evidence that could challenge the central dogma of the FFT in the context of cross-cultural research. There are two groups of findings that appear inconsistent with the basic hypothesis about the immunity of personality traits to cultural influences. The first is the consistent finding that the FFM structure is slightly different on the culture level than on the individual level (McCrae et al., 2010). The second involves personality differences associated with acculturation. McCrae, Yik, Trapnell, Bond, and Paulhus (1998) examined Chinese undergraduates living in Hong Kong and Vancouver. Canadian-born Chinese shared many features of the Hong Kong personality profile, but they also demonstrated significant acculturation effects: Their profiles were more similar to European Canadians than were personality profiles of recent emigrants from Hong Kong. It is quite appalling that this has remained almost the only study designed to examine how acculturation shapes personality traits.

Nobody seems to question that it is an essential function of science to seek for universals. When Galileo dropped objects of different materials and weight from the Tower of Pisa he looked for a property that is common to all matter. In the same way, personality psychologists are deeply interested in what is common to personality descriptions in

all cultures. Only these universal features could provide a satisfying answer to the question of why some people are happy and others feel miserable; why some are gregarious and others seek solitude; or why some unfortunate individuals develop the maladaptive thoughts, feelings, and behaviors that characterize the PDs.

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# FIVE-FACTOR MODEL PERSONALITY DISORDER RESEARCH

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The question of whether personality disorders are discrete clinical conditions or arbitrary distinctions along dimensions of general personality functioning has been a longstanding issue (Widiger & Simonsen, 2005b). The third edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric Association, 1980) was quite innovative in many respects, but it continued to diagnose personality disorders categorically despite the improvements in validity and clinical utility that would be obtained through a dimensional model of classification (Cloninger, 1987; Frances, 1982; Livesley, 1985; Widiger & Frances, 1985). The authors of the revised third edition of the American Psychiatric Association diagnostic manual attempted to address some of the problems inherent in the categorical model by using polythetic criterion sets in which multiple diagnostic criteria are provided, only a subset of which would be necessary for the diagnosis (Widiger, Frances, Spitzer, & Williams, 1988). Compelling proposals for a more fundamental shift in how personality disorders are classified and diagnosed, however, continued to be made (Clark, 1992; Cloninger, Svrakic, & Przybeck, 1993; Widiger, 1993).

The first research planning conference for the forthcoming DSM-5 (Kupfer, First, & Regier, 2002) included a work group whose task was to lay the conceptual groundwork for the eventual development of a dimensional model of personality dis-

order (First et al., 2002). The members of this work group focused in particular on the four-dimensional model of the Dimensional Assessment of Personality Psychopathology—Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2009), the three-dimensional model of the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993), the seven-dimensional model of the Temperament and Character Inventory (TCI; Cloninger, 2006), and the five-factor model (FFM; McCrae & Costa, 2003). In a subsequent DSM-5 research planning conference devoted to shifting the personality toward a dimensional classification, Widiger and Simonsen (2005a) identified 18 alternative ways in which the personality disorders in the fourth edition text revision of the DSM (DSM-IV-TR; American Psychiatric Association, 2000) could be conceptualized dimensionally. They proposed a four-dimensional model in an effort to find a common ground among the major alternatives. This model consisted of emotional dysregulation versus emotional stability, extraversion versus introversion, antagonism versus compliance, and constraint versus impulsivity. Included within each domain were the normal and abnormal trait scales from existing alternative models.

Widiger and Simonsen (2005a) suggested, though, that a fifth broad domain, unconventionality versus closed to experience, would also be necessary to fully account for all of the maladaptive trait scales included within the alternative dimensional

models. This fifth domain was not included within their common model because it was missing from the predominant alternatives, more specifically, the four-factor model of Livesley (2007) and the three-factor model of Clark (1993; Clark & Watson, 2008). A domain of unconventionality versus closedness to experience though was included within the FFM as a maladaptive variant of openness versus closedness to experience (Widiger, Costa, & McCrae, 2002; Widiger & Mullins-Sweatt, 2009). The latest version of the proposed dimensional model of personality disorder for *DSM-5* now includes this fifth domain (Krueger et al., 2011), although it is quite possible that the final version will not be commensurate with the current version.

In her authoritative *Annual Review of Clinical Psychology* article devoted to the assessment and classification of personality disorder, Clark (2007) suggested that there were three primary choices: the FFM (Widiger & Trull, 2007), the TCI (Cloninger, 2006), and the factor structure derived from the Shedler-Westen Assessment Procedure-200 (SWAP-200; Shedler & Westen, 2004). She concluded that the FFM had the strongest conceptual and empirical support. As she indicated, "The five-factor model of personality is widely accepted as representing the higher-order structure of both normal and abnormal personality traits" (Clark, 2007, p. 246).

The purpose of this chapter is to provide a summary of the FFM of personality disorder research. Widiger and Costa (2002) provided a summary of this research in the prior edition of this text (Chapter 6 of the second edition). They listed and summarized 56 studies concerned specifically with the relationship of the FFM to personality disorder symptomatology. At the time, 56 was a substantial number, at least in comparison with the research concerning the alternative dimensional models. For the current chapter, we attempted to again compile a comprehensive list of all FFM personality disorder studies but gave up after a few months, as it became apparent that the reference list alone would be longer than the space limitations of this chapter. We quit after identifying well over 200 studies.

We instead cover within this chapter studies concerned with some of the central topics or issues

concerning the FFM of personality disorder, as well as emphasizing studies that have been published since the prior review (Widiger & Costa, 2002). We also attempt to avoid overlap with other chapters within this text. So, for example, covered elsewhere within this book is the extensive FFM research concerning psychopathy (see Chapter 7 by Dereckno & Lynam), borderline (see Chapter 8 by Trull & Brown), schizotypy (see Chapter 10 by Edmundson & Kwapis), dependency (see Chapter 11 by Gore & Pincus), and narcissism (see Chapter 9 by Campbell & Miller). Also covered elsewhere is the considerable body of research concerning the clinical utility of the FFM (see Chapter 20 by Mullins-Sweatt), FFM prototype matching (see Chapter 17 by Miller), informant assessments (see Chapter 16 by Oltmanns & Carlson), and childhood antecedents (see Chapter 4 by De Fruyt & De Clercq).

## FFM COVERAGE OF ALTERNATIVE TRAIT MODELS

One of the strengths of the FFM is its robustness (Widiger & Costa, in press). "Personality psychology has been long beset by a chaotic plethora of personality constructs that sometimes differ in label while measuring nearly the same thing, and sometimes have the same label while measuring very different things" (Funder, 2001, p. 200). "One of the great strengths of the Big Five taxonomy is that it can capture, at a broad level of abstraction, the commonalities among most of the existing systems of personality traits, thus providing an integrative descriptive model" (John, Naumann, & Soto, 2008, p. 139). Literature reviews of vast sets of personality trait research are often organized with respect to the FFM, reflecting its coherence and comprehensiveness. Examples include the trait literature concerning temperament (Shiner & Caspi, 2003), temporal stability (Roberts & DelVecchio, 2000), gender (Feingold, 1994), health psychology (Segerstrom, 2000), positive and negative life outcomes (Ozer & Benet-Martinez, 2006), and even animal species behavior (Weinstein, Capitanio, & Gosling, 2008).

The first wave of FFM personality disorder research (Widiger & Costa, 2002) was devoted largely to demonstrating empirically this robustness.

Costa, McCrae, and their colleagues conducted a substantial number of studies indicating how the FFM can account for constructs contained within alternative models of personality, including (but not limited to) the constructs of the interpersonal circumplex (McCrae & Costa, 1989b), Henry Murray's 20 need dispositions (Costa & McCrae, 1988), the California Psychological Inventory (McCrae, Costa, & Piedmont, 1993), the Myers-Briggs Type Indicator (McCrae & Costa, 1989a), the Minnesota Multiphasic Personality Inventory (MMPI; Costa, Zonderman, McCrae, & Williams, 1985), and many others. Resistance to the FFM was perhaps futile, as all major instruments were eventually assimilated.

This initial research is traditionally classified as studies of normal personality. However, the results of much of this research are quite relevant to the question of the extent to which the FFM accounts for personality disorder symptomatology, as most of the instruments and scales investigated have been and continue to be used within clinical populations to assess maladaptive personality traits. For example, McCrae, Costa, and Busch (1986) demonstrated how the 100 items within the California Q-Set (CQS; Block, 2008) could be readily understood from the perspective of the FFM. The CQS items were developed by successive panels of psychodynamically oriented clinical psychologists seeking a common language. A factor analysis of the complete set of items yielded five factors that corresponded closely to the FFM. For example, the neuroticism factor contrasted such CQS items as "thin-skinned," "extrapunitive," and "brittle ego defenses" with "socially poised" and "calm, relaxed"; extraversion contrasted such items as "talkative," "behaves assertively," and "self-dramatizing" with "avoids close relationships" and "emotionally bland"; openness contrasted "values intellectual matters," "rebellious nonconforming," "unusual thought processes," and "engages in fantasy, daydreams" with "moralistic," "uncomfortable with complexities," and "favors conservative values"; agreeableness contrasted "behaves in giving way" and "warm, compassionate" with "basically distrustful," "expresses hostility directly," and "critical, skeptical"; and conscientiousness contrasted "dependable, responsible" and "has high aspiration level" with "self-indulgent"

and "unable to delay gratification." Support for their interpretation of these factors was obtained from convergent and discriminant correlations with self and peer NEO Personality Inventory—Revised (NEO PI-R) scales (Costa & McCrae, 1992). The results of their study demonstrated well a close correspondence of a sophisticated psychodynamic nomenclature with the FFM. The CQS "represents a distillation of clinical insights, and the fact that very similar factors can be found in it provides striking support for the five-factor model" (McCrae et al., 1986, p. 442).

Mullins-Sweatt and Widiger (2007b) reported similar results for the SWAP-200, a psychodynamically oriented clinician Q-Set rating form comparable to the CQS (Shedler & Westen, 2004). They had persons with significant personality problems described in terms of the SWAP-200 and the FFM. They reported close convergence of the FFM and SWAP-200 descriptions, both with respect to personality disorder scales (e.g., SWAP-200 and FFM borderline personality scales) and trait scales (e.g., SWAP-200 Dysphoria and NEO PI-R Neuroticism). There were a few SWAP-200 trait scales that were unrelated to the FFM, such as Oedipal Conflict (e.g., sexual involvement with persons significantly different in age) and Sexual Conflict (e.g., premature ejaculation or inhibited orgasm). These negative results might have reflected inadequate range within their sample and/or the possibility that these particular SWAP-200 scales are assessing constructs that do indeed lie outside of general personality structure. On the basis of their research, Mullins-Sweatt and Widiger (2008) subsequently reported how SWAP-200 items can be used to assess the FFM.

O'Connor (2002) conducted integrative factor analyses with previously published findings in approximately 75 studies involving FFM variables and the scales of 28 popular and commonly used personality inventories. He concluded that "the factor structures that exist in the scales of many popular inventories can be closely replicated using data derived solely from the scale associations with the FFM" (O'Connor, 2002, p. 198). O'Connor further suggested that "the basic dimensions that exist in other personality inventories can thus be considered 'well captured' by the FFM" (O'Connor, 2002, p. 198).

## FFM DESCRIPTIONS OF PERSONALITY DISORDERS

Widiger, Trull, Clarkin, Sanderson, and Costa (2002) provided a hypothetical translation of the 10 *DSM-IV-TR* personality disorders into the language of the FFM by coding each of the diagnostic criteria and *DSM-IV-TR* text descriptions of each respective personality disorder in terms of the 60 poles of the 30 facets of the FFM. Lynam and Widiger (2001) surveyed personality disorder researchers, asking them to describe a prototypic case of each of the 10 *DSM-IV-TR* personality disorders in terms of the FFM, using a one-page rating form that eventually became the Five-Factor Model Rating Form (FFMRF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006). Samuel and Widiger (2004) surveyed practicing clinicians and similarly asked them to describe a prototypic case of each of the 10 *DSM-IV-TR* personality disorders, again using the FFMRF.

The agreement between the researchers' and clinicians' FFM descriptions was considerable, ranging from .90 (dependent) to .97 (antisocial). The agreement of the researchers' and clinicians' FFM descriptions with those of Widiger, Trull, et al. (2002) was in all cases significant but not as strong as the agreement between the researchers' and clinicians' descriptions. For example, the agreement between the descriptions by the researchers with Widiger, Trull, et al. ranged from .77 (antisocial) to .83 (avoidant) for six of the personality disorders and from .54 (narcissistic) to .58 (obsessive-compulsive) for the remaining four.

Table 6.1 provides an integrative summary of these FFM descriptions. It is apparent from Table 6.1 that each of the *DSM-IV-TR* (American Psychiatric Association, 2000) personality disorders is well described in terms of the FFM. The FFM has the withdrawal evident in both the avoidant and schizoid personality disorders (see facets of introversion) but also the anxiousness and self-consciousness that distinguishes the avoidant from the schizoid (see facets of neuroticism), as well as the anhedonia (low positive emotions) that distinguishes the schizoid from the avoidant (Widiger, 2001). The FFM has the intense attachment needs

(high warmth of extraversion), the deference, gullibility, selfless self-sacrifice, and meekness (facets of agreeableness), and the self-conscious anxiousness of the dependent personality disorder (Lowe, Edmundson, & Widiger, 2009); the perfectionism and workaholism of the obsessive-compulsive (high conscientiousness; Samuel & Widiger, 2011); and the fragile vulnerability and emotional dysregulation of the borderline (Widiger, 2005).

The deviation of the descriptions by Widiger, Trull, et al. (2002) from the researchers' and clinicians' descriptions is due largely to the fact that the former were confined to a coding of the *DSM-IV-TR* diagnostic criterion sets and text descriptions. It is evident that researchers and clinicians will not always be in agreement with the American Psychiatric Association diagnostic manual with respect to how a personality disorder should be described. For example, the greatest degree of disagreement occurred between the researchers' and the *DSM-IV-TR* description of narcissistic personality disorder (NPD). Widiger, Trull, et al. described the prototypic case of NPD as involving high levels of self-consciousness and vulnerability (reflecting the references in the text of *DSM-IV-TR* to extreme sensitivity to criticism, rebuke, or failure), whereas the researchers described the prototypic case as being low in self-consciousness and vulnerability (reflecting perhaps their emphasis on grandiose rather than vulnerable narcissism; Miller, Widiger, & Campbell, 2010).

The descriptions by the researchers and the clinicians were generally broader, not being limited by the *DSM-IV-TR* criterion sets and text. Their FFM descriptions included what is contained in the *DSM-IV-TR* but went further to provide fuller, more comprehensive descriptions (Widiger & Mullins-Sweatt, 2009). For example, the researchers' descriptions of a prototypic case of obsessive-compulsive personality disorder (OCPD) went beyond the *DSM-IV-TR* criterion set to include traits that describe an excessive inhibition (e.g., extremely low on excitement-seeking) and a narrow closed-mindedness (low scores on openness to values). Both FFM profiles described the paranoid person as being very high in mistrust, as well as deceptive, oppositional, and hostile, but the clinicians' FFM description went beyond the

TABLE 6.1

## DSM-IV Personality Disorders From the Perspective of the Five-Factor Model of General Personality Structure

Five-factor model domain and facet	PRN	SZD	SZT	ATS	BDL	HST	NCS	AVD	DPD	OCP
Neuroticism (vs. emotional stability)										
Anxiousness			H	L	H			H	H	H
Angry hostility	H			H	H		H			
Depressiveness					H			H	H	
Self-consciousness		H		L	H		L/H	H	H	
Impulsivity				H	H			L		
Vulnerability				L	H	H	H	H	H	
Extraversion (vs. introversion)										
Warmth (vs. coldness)	L	L	L			H			H	L
Gregariousness (vs. withdrawal)	L	L	L			H	H	L		
Assertiveness (vs. unassertiveness)	L			H			H	L	L	
Activity (vs. passivity)	L			H				L		
Excitement-seeking			L		H		H	L		L
Positive emotionality (vs. anhedonia)	L	L	L							
Openness (vs. closedness)										
Fantasy				H		H	H	H		
Aesthetics										
Feelings (vs. alexithymia)		L					H			L
Actions	L	L	H	H				L		L
Ideas			H							
Values	L									L
Agreeableness (vs. antagonism)										
Trust (vs. mistrust)	L		L	L	L	H	L		H	
Straightforwardness (vs. deception)	L			L	L	L	L			
Altruism (vs. exploitation)				L			L		H	
Compliance (vs. aggression)	L		L	L					H	
Modesty (vs. arrogance)				L		L	L	H	H	
Tender-mindedness (vs. tough-minded)	L			L			L			
Conscientiousness (vs. disinhibition)									L	H
Competence (vs. laxness)										H
Order (vs. disordered)							L			H
Dutifulness (vs. irresponsibility)					L					H
Achievement-striving							H			H
Self-discipline (vs. negligence)		L						L		H
Deliberation (vs. rashness)	L	L	L							H

Note. Based on data from Lynam and Widiger (2001); Samuel and Widiger (2004); and Widiger, Trull, Clarkin, Sanderson, and Costa (2002). DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 2000); PRN = paranoid; SZD = schizoid; SZT = schizotypal; ATS = antisocial; BDL = borderline; HST = histrionic; NCS = narcissistic; AVD = avoidant; DPD = dependent; OCP = obsessive-compulsive; H = high; L = low. Reprinted from "Integrating Normal and Abnormal Personality Structure: The Five Factor Model," by T. A. Widiger & P. T. Costa Jr., *Journal of Personality*, in press. Copyright 2012 by Wiley-Blackwell. Reprinted with permission.

*DSM-IV-TR* to include low positive emotionality, low openness to values, high anxiousness, low warmth, low gregariousness, low altruism, and low tender-mindedness.

The FFM includes the traits of *DSM-IV-TR* anti-social personality disorder (deception, exploitation, aggression, irresponsibility, negligence, rashness, angry hostility, impulsivity, excitement-seeking, and assertiveness; see Table 6.1), and goes beyond *DSM-IV-TR* to include traits that are unique to the widely popular Psychopathy Checklist-Revised (PCL-R; Hare & Neumann, 2008), such as glib charm (low self-consciousness), arrogance (low modesty), and lack of empathy (tough-minded callousness), and goes even further to include traits of psychopathy emphasized originally by Cleckley (1941) but not included in either the *DSM-IV-TR* or the PCL-R, such as low vulnerability (fearlessness) and low anxiousness (Hare & Neumann, 2008; Hicklin & Widiger, 2005; Lynam & Widiger, 2007a).

The FFM descriptions of each respective personality disorder also go well beyond the trait descriptions that may be provided for *DSM-5* (American Psychiatric Association, 2011). For example, the proposed criterion set for *DSM-5* OCPD is confined simply to the traits of rigid perfectionism and perseveration; narcissistic is confined to grandiosity and attention-seeking; dependent to just submissiveness, anxiousness, and separation insecurity; and avoidant to just anxiousness, intimacy avoidance, withdrawal, and anhedonia (American Psychiatric Association, 2011). This is due in large part to the list being confined to an arbitrary maximum of just 25 total traits. There are clearly substantially more maladaptive personality traits beyond the 25 proposed for *DSM-5* (albeit that list may indeed expand prior to the final decision). Further discussion of the FFM descriptions of the borderline, antisocial (psychopathic), narcissistic, dependent, and schizotypal personality disorders are provided (respectively) in the chapters in this volume by Trull and Brown (Chapter 8), Dereinko and Lynam (Chapter 7), Campbell and Miller (Chapter 9), Gore and Pincus (Chapter 11), and Edmundson and Kwapis (Chapter 10).

An advantage of the FFM of personality disorder relative to the *DSM-IV-TR* is its ability to provide a means of describing personality disorder con-

structs not recognized within the official American Psychiatric Association nomenclature (Piedmont, Sherman, Sherman, Dy-Liacco, & Williams, 2009). There were proposals for *DSM-IV* to include such constructs as depressive personality disorder and alexithymia. However, any increase in coverage would exacerbate diagnostic co-occurrence and make an already highly problematic differential diagnosis even worse. Therefore, there was little enthusiasm for including any new diagnoses (H. A. Pincus, Frances, Davis, First, & Widiger, 1992). Nevertheless, a complementary limitation of the *DSM-IV-TR* has been its lack of coverage (Westen & Arkowitz-Westen, 1998). The diagnosis of personality disorder not otherwise specified (PDNOS) is provided when a clinician concludes that a personality disorder is indeed present but is not well described by one of the existing categories. The fact that PDNOS is among the most frequent diagnoses in clinical practice is a testament to a failure of the diagnostic manual to provide adequate coverage (Verheul & Widiger, 2004).

This failing will be much worse in *DSM-5*. It is not clear what personality disorder diagnoses will in fact survive (see Chapter 19, this volume, by Widiger, Costa, & McCrae). The FFM is considerably more stable, as well as more comprehensive in its coverage. For example, Luminet, Bagby, Wagner, Taylor, and Parker (1999) and Zimmermann, Rossier, de Stadelhofen, and Gaillard (2005) indicated how alexithymia can be understood from the perspective of the FFM. Flynn (2005) described how close-minded prejudice and racism can be understood from the perspective of the FFM. Taylor and Bagby (Chapter 13, this volume) provide a thorough review of the research on the FFM conceptualization of alexithymia.

Vachon, Sellbom, Ryder, Miller, and Bagby (2009), following the methodology of Lynam and Widiger (2001), asked personality disorder experts to describe a prototypic case of depressive personality disorder in terms of the 30 facets of the FFM using the FFMRF (Mullins-Sweatt et al., 2006). Their description converged onto an FFM profile consisting of high depressiveness, anxiousness, vulnerability, and modesty, along with low activity, excitement-seeking, and positive emotions. Vachon

et al. indicated how this profile can be used to identify persons within clinical practice that match the profile and how the profile can itself be used to conduct research on the hypothesized syndrome of depressive personality disorder. See the chapter in this volume by Bagby, Watson, and Ryder (Chapter 12) for a further discussion of and research concerning depressive personality disorder from the perspective of the FFM.

Mullins-Sweatt, Glover, Derefinko, Miller, and Widiger (2010) obtained a consensus description of a prototypic successful psychopath. Successful psychopaths are, in theory, individuals who are psychopathic, having certain fundamental traits (e.g., callousness, exploitativeness, glib charm, deceptive manipulation), but largely succeed in their exploitation. Psychopathy theorists have long made anecdotal references to psychopathic lawyers, professors, businessmen, and politicians who have not committed crimes that warranted arrest or have successfully avoided investigation. However, obtaining any useful sample of successful psychopaths has eluded investigators (Hall & Benning, 2006). Mullins-Sweatt et al. surveyed criminal lawyers, forensic psychologists, and clinical psychology professors, asking them if they had ever known someone personally that they would describe as a psychopath whom they also felt had been successful in his or her psychopathic endeavors. Their descriptions were highly convergent with each other, but a notable difference between the description of the successful psychopath and the prototypic psychopath was that the former was characterized by high levels of conscientiousness, whereas the latter was characterized by low levels. This finding is consistent with an earlier description of the serial murderer Ted Bundy, who is often described as being psychopathic. His FFM profile is also characterized by high rather than low conscientiousness (Samuel & Widiger, 2006), perhaps contributing to his many years of successfully avoiding capture and incarceration. These findings are also commensurate with a considerable body of literature that documents the importance of conscientiousness to a variety of positive life outcomes and low conscientiousness to negative life outcomes, such as arrest record (e.g., Ozer & Benet-Martinez, 2006). Mullins-Sweatt et al. demonstrated

the value of a descriptive model that includes adaptive, as well as maladaptive, traits, thereby providing the means of describing both the successful and the unsuccessful psychopath within the same descriptive system.

## EMPIRICAL SUPPORT FOR FFM DESCRIPTIONS

Quite a bit of the FFM personality disorder research has been concerned with the extent to which personality disorder symptomatology can be understood as maladaptive and/or extreme variants of the FFM (e.g., Madsen, Parsons, & Grubin, 2006; Nestadt et al., 2008; Rolland & De Fruyt, 2003), often relative to an alternative dimensional model (e.g., Gaughan, Miller, Pryor, & Lynam, 2009; Mullins-Sweatt & Widiger, 2007a; Quirk, Christiansen, Wagner, & McNulty, 2003; Ramanaiah, Rielage, & Cheng, 2002; Reynolds & Clark, 2001; Stepp, Trull, Burr, Wolfenstein, & Vieth, 2005). Many of these studies have tested in particular the validity of the specific FFM descriptions that have been proposed for each personality disorder (e.g., Aluja, Cuevas, Garcia, & Garcia, 2007; Bagby, Costa, Widiger, Ryder, & Marshall, 2005; Bagby, Sellbom, Costa, & Widiger, 2008; De Fruyt, De Clercq, van de Wiele, & Van Heeringen, 2006; Few et al., 2010; Furnham & Crump, 2005; Huprich, 2003; Rossier & Rigozzi, 2008; Trull, Widiger, & Burr, 2001).

Wiggins and Pincus (1989) provided the first published study concerned explicitly with the empirical relationship of the FFM to personality disorder symptomatology, conducting joint factor analyses of measures of the FFM, the interpersonal circumplex, and DSM personality disorders (DSM refers to the diagnostic manual, in general, unless a given edition is specified). They concluded that “conceptions of personality disorders were strongly and clearly related to dimensions of normal personality traits” (Wiggins & Pincus, 1989, p. 305), including (but not limited to) a close relationship of schizotypal symptomatology with openness; dependent with agreeableness; antisocial, paranoid, and narcissistic with antagonism; borderline with neuroticism; histrionic and narcissistic with extraversion; schizoid with introversion; and compulsive

with conscientiousness. Although the interpersonal circumplex was able to provide a meaningful and informative understanding of a subset of the personality disorders, Wiggins and Pincus reached the conclusion that “the full 5-factor model was required to capture and clarify the entire range of personality disorders” (Wiggins & Pincus, 1989, p. 305).

Trull (1992) provided the first study to include the administration of measures of the FFM and personality disorder symptomatology within a clinical sample. He administered the NEO PI-R (Costa & McCrae, 1992) and three independent measures of the *DSM* revised third edition (*DSM-III-R*; American Psychiatric Association, 1987) personality disorders. He concluded, “the FFM appears to be useful in conceptualizing and differentiating among the *DSM-III-R* personality disorders” (Trull, 1992, p. 557), with some findings replicating “across all three personality disorder assessment instruments” (Trull, 1992, p. 557).

Saulsman and Page (2004) conducted a meta-analysis of 12 studies containing a total of 15 independent samples that related a measure of the five FFM domains to the 10 *DSM* personality disorders. They concluded that the “results of this meta-analysis are consistent with the view that personality disorders can be conceptualized using the five-factor model of normal personality” (p. 1075). Saulsman and Page considered the specific descriptions of each personality disorder in terms of the FFM and reached the conclusion that “the five-factor model is related to each individual personality disorder category in meaningful and predictable ways” (p. 1081).

O’Connor (2005) conducted a similar investigation into the combined structure of the FFM and the *DSM* personality disorders using interbattery factor analysis. Interbattery factor analysis is useful because

it permits factor analyses to be conducted on the associations between two sets of variables (such as the FFM and the personality disorders), while excluding the covariation that is contained in the within-set data (such as the intercorrelation between personality disorders). (O’Connor, 2005, p. 326)

O’Connor first calculated the consensus factor structure of the *DSM* personality disorders based on 33 studies that had reported their  $10 \times 10$  correlation matrix. He then calculated the consensus factor structure using 20 matrices that reported correlations between the *DSM* personality disorders and the five domains of the FFM. The results of these procedures indicated that a four-factor structure (the domain of openness did not appear to be well represented) provided the best fit for both analyses. O’Connor concluded that “the dimensions that underlie personality disorders can be understood by reference to dimensions that have emerged from research on normal personality” (p. 340).

Bastiaansen, Rossi, Schotte, and De Fruyt (2011) tested alternative structures of the *DSM-IV-TR* personality disorders suggested by the three-cluster arrangement within the diagnostic manual (American Psychiatric Association, 2000) versus a structure suggested by the FFM, using structural equation modeling in a sample of 1,688 participants (1,029 of whom were clinical participants). There was substantially better support for the FFM structure, including conscientiousness defined by OCPD and extraversion by the histrionic personality disorder (HPD).

A potential limitation of the meta-analyses of O’Connor (2005) and Saulsman and Page (2004) was that they were confined to analyses at the broad domain level. Some personality disorders are hypothesized to be associated with the same domain (e.g., schizotypal and avoidant with low extraversion) but for largely different reasons (schizotypal and avoidant sharing the facet of low gregariousness, but schizotypal being associated with low warmth and low positive emotions and avoidant being associated with low assertiveness and low excitement seeking; see Table 6.1). In addition, some personality disorders are predicted to be associated with only one or two facets of a particular domain (e.g., schizotypal with the facet of low trust from agreeableness and narcissism with high achievement striving from conscientiousness; see Table 6.1). These more-specific aspects of a respective personality disorder would be missed by an analysis confined to the domains of the FFM, yet they can be quite important and fundamental to the

description or understanding of a respective personality disorder.

Samuel and Widiger (2008b) replicated and extended the meta-analysis of Saulsman and Page (2004) with studies that administered a measure of the FFM that included facet scale analyses; more specifically, the NEO PI-R (Costa & McCrae, 1992), the Structured Interview for the Five-Factor Model (Trull et al., 2001), or the FFMRF (Mullins-Sweatt et al., 2006). They obtained FFM facet correlations with the 10 *DSM-IV-TR* personality disorders from 16 studies that contained a total of 18 independent samples with a combined 3,207 participants (only one study was previously reported in Saulsman & Page, 2004). Some studies reported results for more than one measure, yielding thereby a total of 38 correlation matrices. The results of this meta-analysis provided strong support for the ability of the FFM to account for the *DSM-IV-TR* personality disorders. With respect to the specific FFM profiles obtained from researchers and clinicians, the empirical results correlated with these profiles from a low of .60 for the dependent personality disorder with that of Lynam and Widiger (2001) to a high of .92 for the obsessive-compulsive prototype with that of Samuel and Widiger (2004). One of the more important results from their meta-analysis though was strong instrument effects, particularly for the relationship of conscientiousness to OCPD, openness to schizotypal personality disorder, and extraversion to HPD. The implication of these findings is discussed further below.

Markon, Krueger, and Watson (2005) conducted meta-analytic as well as exploratory hierarchical factor analyses at the facet level of numerous measures of normal and abnormal personality functioning, including (for instance) the DAPP-BQ (Livesley & Jackson, 2009), the SNAP (Clark, 1993), and the NEO PI-R (Costa & McCrae, 1992). Their results consistently yielded a five-factor solution that they indicated "strongly resembles the Big Five factor structure commonly described in the literature, including Neuroticism, Agreeableness, Extraversion, Conscientiousness, and Openness factors" (Markon et al., 2005, p. 144). They considered this five-factor solution to be preferable to all other factor solutions and concluded that their "results indicate that the

Big Five traits occupy an important, unique position in the hierarchy, in that the other Big Trait models can be derived from the Big Five in some way" (Markon et al., 2005, p. 154).

Samuel, Simms, Clark, Livesley, and Widiger (2010) demonstrated empirically through item response theory (IRT) analysis that the maladaptive personality trait scales of the DAPP-BQ (Livesley & Jackson, 2009) and the SNAP (Clark, 1993) lie along the same latent traits as those assessed by the NEO PI-R (Costa & McCrae, 1992), the primary distinction being that the DAPP-BQ and SNAP scales have relatively greater fidelity for the assessment of the (maladaptively) extreme variants of FFM traits, whereas the NEO PI-R has relatively greater fidelity for the more normal variants. However, it was also evident from this study that there is considerably more overlap among the scales than differences, due in part to the fact that the NEO PI-R does assess a considerable amount of maladaptivity with respect to high neuroticism, introversion, low openness, antagonism, and low conscientiousness. Stepp et al. (2011) replicated and extended these findings using the NEO PI-R, the SNAP (Clark, 1993), and the TCI (Cloninger, 2006) in a confirmatory factor analysis and IRT integration of the items from these scales into a common five-factor model. Samuel, Carroll, Rounsville, and Ball (in press) focused specifically on the *DSM-IV-TR* borderline personality disorder symptomatology. Using IRT, they indicated that the borderline symptoms (e.g., recurrent suicidality) lie along the same latent trait as FFM neuroticism and have relatively greater fidelity for the assessment of the (maladaptively) extreme variants of neuroticism, whereas the NEO PI-R has relatively greater fidelity for the more normal variants.

## FFM AND DSM-5 DIMENSIONAL TRAIT MODEL

It is not really clear what the personality disorders section of *DSM-5* will contain or even if there will in fact be a section for personality disorders (Siever, 2011). Nevertheless, it is evident that if *DSM-5* does still include personality disorders, there will be a significant shift toward a dimensional classification and the FFM in particular. This would be evident

through the inclusion of a five-dimensional model of maladaptive traits (Krueger et al., 2011) closely aligned with the FFM (Widiger, 2011a; see Chapter 19, this volume, by Widiger, Costa, & McCrae) and perhaps even the use of these traits as a major component of the diagnostic criteria for the personality disorder types in a manner that closely parallels FFM prototype matching (Miller, Bagby, Pilkonis, Reynolds, & Lynam, 2005; see Chapter 17, this volume, by Miller).

The original proposal for the dimensional model consisted of six unipolar domains (i.e., negative emotionality, introversion, antagonism, disinhibition, compulsivity, and schizotypy) with 37 underlying traits. This proposal was subsequently modified by shifting compulsivity to be opposite to disinhibition (i.e., albeit compulsivity represented by just one trait, keyed negatively) and by deleting 12 of the lower order traits to yield a five-domain model with 25 traits (Krueger et al., 2011). Figure 6.1 indicates how the 25 traits are aligned with the FFM. As noted in Chapter 19 in this volume, *DSM-5* negative affectivity (also called in *DSM-5* emotional dysregulation) aligns

with FFM neuroticism, detachment aligns with FFM introversion, peculiarity (also called *psychoticism*) aligns with FFM openness, antagonism aligns with FFM antagonism, and compulsivity aligns with high FFM conscientiousness and disinhibition with low FFM conscientiousness (Widiger, 2011a). A considerable amount of FFM research has been concerned with these alignments, some of which has been summarized earlier in this chapter. Of particular focus here are the alignments of compulsivity with conscientiousness and peculiarity with FFM openness.

### Compulsivity and Conscientiousness

The essential feature of OCPD is “a preoccupation with orderliness, perfectionism, and mental and interpersonal control” (American Psychiatric Association, 2000, p. 669), including within its diagnostic criteria such traits as perfectionism, preoccupation with order and organization, workaholism, and, quite explicitly, overconscientiousness. Similarly, FFM conscientiousness includes such facets as order, discipline, achievement-striving, and deliberation (Costa & McCrae, 1992). It is not

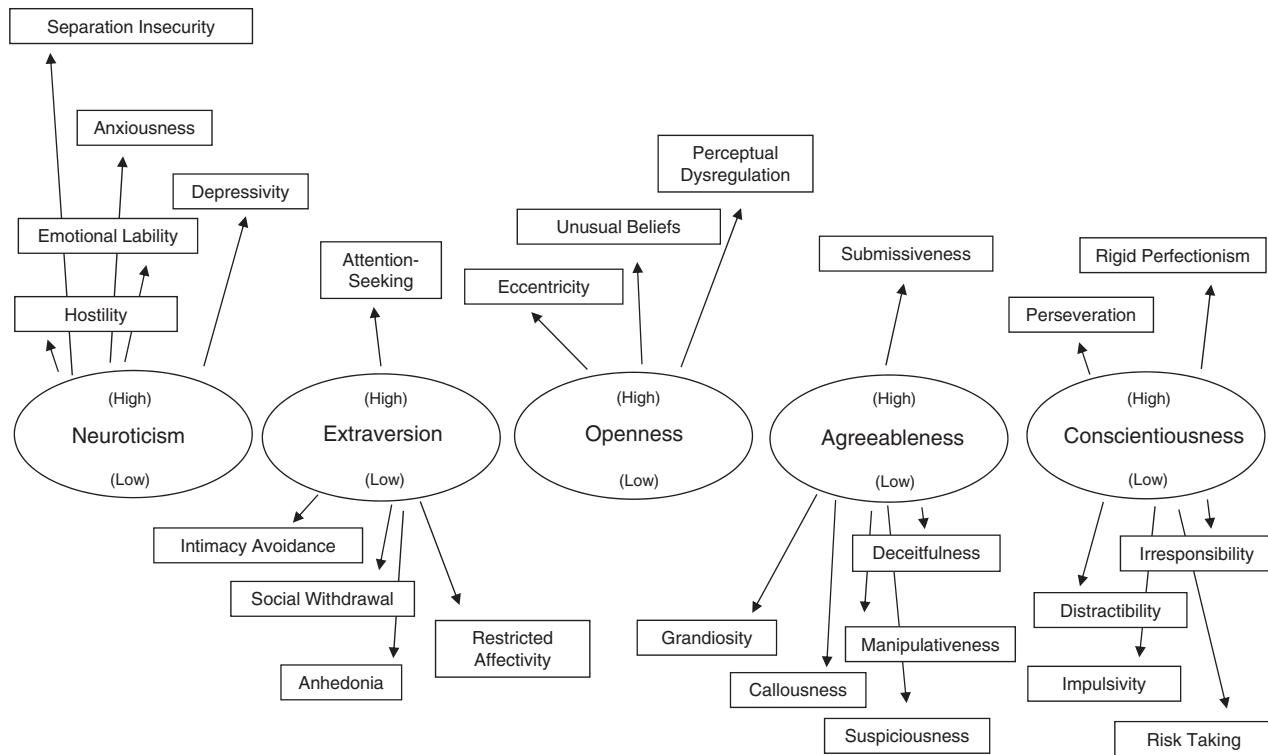


FIGURE 6.1. *DSM-5* dimensional model traits within the five-factor model. Based on data from Krueger et al. (2011).

difficult to infer that maladaptive and/or extreme variants of order, discipline, achievement-striving, and deliberation would be the OCPD traits of perfectionism, preoccupation with order and organization, workaholism, and overconscientiousness.

Saulsman and Page (2004) reported in their meta-analysis a relatively small but significant association of OCPD with FFM conscientiousness, concluding that “those [personality disorders] particularly characterized by orderliness show positive associations with Conscientiousness (e.g., Obsessive-Compulsive)” (p. 1075). O’Connor (2005) in his meta-analysis concluded that OCPD aligned well with conscientiousness (obtaining a loading of .72 on the respective factor), replicating two earlier meta-analytic studies by O’Connor and colleagues that also clearly aligned compulsivity with conscientiousness (i.e., O’Connor, 2002; O’Connor & Dyce, 1998). Samuel and Widiger (2008b) similarly concluded in their meta-analysis that “a predominant finding of the studies included within this meta-analysis was a positive correlation of FFM conscientiousness facets with OCPD” (p. 1337).

The relationship of OCPD with conscientiousness will not necessarily be strong in part because OCPD is a heterogeneous personality disorder that includes more than just facets of conscientiousness. Joint factor analyses of measures of the FFM with measures of the more specific OCPD components of compulsivity (assessed by the DAPP-BQ; Livesley & Jackson, 2009) and workaholism and propriety (assessed by the SNAP; Clark, 1993) have provided clear, consistent, and strong evidence for the association of these more specific components with conscientiousness (e.g., Clark, Livesley, Schroeder, & Irish, 1996; Clark, Vorhies, & McEwen, 2002; Markon et al., 2005; Schroeder, Wormworth, & Livesley, 1992). In reviewing their models together, Clark and Livesley (2002) concluded that “compulsivity (conventionality-rigidity) undoubtedly tapped conscientiousness” (p. 167). In an early draft of the dimensional trait model for *DSM-5*, Krueger, Skodol, Livesley, Shrout, and Huang (2008) included “orderliness” and “conscientiousness” as facet scales for the domain of compulsivity.

Samuel and Widiger (2011) explored the relationship of conscientiousness with compulsivity using six alternative measures of conscientiousness,

seven alternative measures of OCPD, and three scales assessing specific components of OCPD (i.e., compulsivity, workaholism, and propriety). They reported a consistent and strong relationship of compulsivity with all six measures of conscientiousness. Workaholism and propriety also related consistently and strongly with FFM conscientiousness, consistent with prior research that related measures of perfectionism with FFM conscientiousness (Stoeber, Otto, & Dalbert, 2009). The relationship weakened somewhat with measures of OCPD, which include as well some components of personality beyond conscientiousness, such as high neuroticism and low openness (Lynam & Widiger, 2001; Samuel & Widiger, 2008b, 2010b).

### Peculiarity With Openness

The FFM of personality disorder hypothesizes that the primary maladaptive variants of high openness currently included within the *DSM-IV-TR* nomenclature are the cognitive and perceptual aberrations of the schizotypal personality disorder (Widiger, Costa, & McCrae, 2002; see also Chapter 19, this volume). This hypothesis has received inconsistent empirical support (O’Connor, 2005; Saulsman & Page, 2004). For example, Watson, Clark, and Chmielewski (2008) reported a separation of adaptive openness from maladaptive peculiarity in their particular factor analysis, but it was through an analysis that heavily loaded these two constructs with so many scales that a factor analysis would be compelled to separate them. In other factor analytic studies by Camisa et al. (2005); Kwapisil, Barrantes-Vidal, and Silvia (2008); McCrae et al. (1986); and Wiggins and Pincus (1989), cognitive-perceptual aberrations and/or schizotypal symptoms clearly loaded on the FFM openness factor. As noted earlier, Stepp et al. (2011) integrated items from the NEO PI-R (Costa & McCrae, 1992), the TCI (Cloninger, 2006), and the SNAP (Clark, 1993) in a confirmatory factor analysis that documented the presence of a common five-factor model that was closely aligned with the FFM. Using IRT, they selected the optimal subset of items from each instrument. They reported that items from the NEO PI-R scales assessing openness to ideas, fantasy, and aesthetics defined the normal range of their unconventionality dimension,

whereas the SNAP scale assessing eccentric perceptions (along with TCI self-transcendence) defined the abnormal range.

It is also worth noting that studies have indicated that schizotypal symptomatology may have opposite relationships to different facets of openness. Kwapil et al. (2008) and Ross, Lutz, and Bailey (2002) reported that the positive symptoms of schizotypia (e.g., magical ideation and perceptual aberrations) correlate positively with FFM openness, whereas negative symptoms of schizotypia (e.g., physical anhedonia) correlate negatively. Asai, Sugimori, Bando, and Tanno (2011) replicated the relationship of positive symptoms to FFM openness. To the extent that an assessment of schizotypal personality disorder includes both components, a correlation with FFM openness might not appear as they may cancel each other out.

Samuel and Widiger (2008b) suggested in their meta-analysis that the relationship is inconsistently confirmed when the FFM is assessed with the NEO PI-R (Costa & McCrae, 1992), but is confirmed more consistently when using a semistructured interview to assess FFM openness. Haigler and Widiger (2001) also demonstrated empirically that when NEO PI-R openness items are revised to assess maladaptive variants of the same content, correlations with schizotypy emerge.

Piedmont et al. (2009) developed scales to assess maladaptive variants of both high and low FFM openness. Their “Odd and Eccentric” openness scale correlates strongly with schizotypal personality disorder and various aberrant perceptions and paranormal beliefs. Van Kampen (2009) included within his 5-Dimensional Personality Test an Absorption scale, which aligns explicitly with FFM openness and assesses dissociative absorption and positive symptoms of schizotypy. The HEXACO-Personality Inventory (HEXACO-PI; Lee & Ashton, 2004) includes an Openness to Experience scale that corresponds conceptually and empirically with FFM openness. This HEXACO-PI scale includes four facet scales, one of which is titled Unconventionality and assesses the disposition to be eccentric, weird, peculiar, odd, and strange. Tellegen similarly included an Unconventionality domain and scale aligned explicitly with FFM openness, containing items that assess

normal openness (e.g., curious, inquisitive, imaginative, and creative) as well as items that concern such attributes as having ideas or beliefs that have little basis within reality, dwelling upon fantasies, or often engaging in activities that are bizarre, deviant, or aberrant (Tellegen & Waller, 1987).

Grazioplene, Jung, and Chavez (2011) even developed and supported empirically a neurobiological model for the relationship of FFM openness to cognitive-perceptual aberrations. Advances in neuro-imaging allow for increasingly precise analysis of the neurobiology of personality traits (DeYoung et al., 2010). Diffusion tensor imaging (DTI) reveals the microstructural properties of white matter tracts in the brain; fractional anisotropy (FA) is a DTI index of white matter integrity and coherence. Grazioplene et al. correlated openness and divergent thinking scores with FA in 72 young adults, controlling for sex, age, and IQ. Openness was significantly inversely related to FA within the right anterior thalamic radiation (ATR), and divergent thinking performance was inversely related to FA bilaterally in the ATR. Perhaps most interesting, these regions of the ATR exhibit substantial overlap with frontothalamic white matter regions known to exhibit lower FA in schizotypal spectrum disorders. Grazioplene et al. suggested that

these results may indicate that although some aspects of Openness/Intellect are related to intelligence, other aspects appear to reflect a literal physical as well as cognitive diffusivity in frontal circuits related to working memory function, perhaps accounting for the “overinclusive” perceptual tendencies common to both Openness and schizotypy.  
(Grazioplene et al., 2011, abstract)

Further discussion of the relationship of schizotypy with the FFM and openness in particular is provided in Chapter 10 in this volume by Edmundson and Kwapil.

## MALADAPTIVE VARIANTS OF THE FFM

A proposal for *DSM-5* has been to separate the diagnosis of mental disorder from the assessment of impairment or disability. A special issue of *World*

*Psychiatry* was devoted to this proposal (Sartorius, 2009), and it also has received consideration within the field of personality disorder (Clark, 2007; Krueger et al., 2008; Parker et al., 2004; Ro & Clark, 2009). This separation would allow for the possibility that a disorder could exist independently of the presence of any particular impairment or dysfunction.

The separation of the assessment of traits and impairment is already consistent with the FFM procedure for the diagnosis of a personality disorder, which first assesses for the presence of personality traits and then secondly for impairments and/or maladaptive variants of these FFM traits (as indicated by Mullins-Sweatt & Widiger, 2010, it might not be possible to truly separate an assessment of a maladaptive trait from an assessment of impairment). For example, gullibility is hypothesized to be a potential problem associated with high levels of agreeableness, whereas fighting is hypothesized to be a potential problem with low levels of agreeableness. Widiger et al. (2002) listed typical impairments associated with each of the 60 poles of the 30 facets of the FFM. McCrae, Lockenhoff, and Costa (2005) provided a further extension of this list (see Chapter 19, this volume, for a more extensive discussion of the full four-step procedure).

Simms et al. (2011) are developing maladaptive personality trait scales for each domain of the FFM. As noted earlier, Widiger and Simonsen (2005a) proposed five fundamental domains of personality that integrated alternative dimensional models of normal and abnormal personality within one common hierarchical structure. These domains were emotional dysregulation, extroversion versus introversion, unconventionality versus closedness to experience, antagonism versus compliance, and constraint versus impulsivity, which parallel closely the five domains of the FFM. Working from this model, Simms et al. are in the process of identifying maladaptive variants of each of the five domains, eventually leading to scales developed through IRT analysis that would be able to cover the full range of normal and abnormal personality functioning within one common five-factor model. Their effort parallels closely the maladaptive trait scales being developed by Lynam, Gaughan, et al. (2011); Edmundson,

Lynam, Miller, Gore, and Widiger (2011); and Tomiatti, Gore, Lynam, Miller, and Widiger (2011), described in more detail in Chapter 18, this volume, by Lynam.

De Fruyt et al. (2009) demonstrated, using data from four different countries, the validity and usefulness of FFM personality disorder scores (assessed with the NEO PI-R) in predicting criteria of central importance to industrial, work, and organizational psychologists for selection and career development decisions. Skeem, Miller, Mulvey, Tiemann, and Monahan (2005) compared (favorably) the ability of FFM traits relative to psychopathy to postdict violent behavior.

The FFM might be especially advantageous in separating the assessment of personality from impairment and distress, as it could offer a meaningful and useful organization of assessment consistent with the typical definition of personality disorder. Presence of distress, social impairment, and/or occupational impairment are the three fundamental components of the American Psychiatric Association's (2000) definition of personality disorder (p. 689). Mullins-Sweatt and Widiger (2010) administered relatively comprehensive measures of distress and impairment (along with measures of the FFM) to persons who were currently or recently in psychological treatment for personality-related problems in living. They reported significant correlations of distress with neuroticism, social impairment with extraversion and agreeableness, and occupational impairment with conscientiousness, with each FFM domain obtaining incremental validity over the other domains that also obtained significant correlations (e.g., agreeableness had incremental validity over conscientiousness in accounting for measures of social impairment), whereas the reverse did not occur. The one exception to this specificity of the relationships of FFM domains to distress, social impairment, and occupational impairment was that neuroticism did continue to contribute to social impairment even when controlling for extraversion and agreeableness, a finding consistent with the broader literature indicating substantial contributions of neuroticism to a broad array of negative life outcomes (Lahey, 2009; Ozer & Benet-Martinez, 2006; Widiger, 2009).

The Collaborative Longitudinal Personality Disorders Study (CLPS) has also considered whether the *DSM-IV-TR* personality disorders relate to social functioning, occupational functioning, and leisure activities (e.g., Skodol et al., 2002). Unfortunately, there is no indication of any unique or specific relationships for a respective *DSM-IV-TR* personality disorder other than the global finding that OCPD is consistently related to less dysfunction across all three areas. Hopwood et al. (2009) reported, using CLPS data, that FFM conscientiousness was specifically associated with work dysfunction and that extraversion and agreeableness were associated with social dysfunction after accounting for *DSM-IV-TR* personality disorder symptoms.

The findings of Hopwood et al. (2009) and Mullins-Sweatt and Widiger (2010) are consistent with general personality research. Ozer and Benet-Martinez (2006) indicated in their extensive review that all five domains of the FFM are predictive of a wide variety of both successful and unsuccessful life outcomes and, most importantly, that these relationships are relatively specific for each domain. For example, subjective well-being was related most strongly to low neuroticism. High agreeableness and extraversion predicted social acceptance, and low agreeableness was the primary domain related to relationship dissatisfaction, conflict, and criminality. Job performance was most strongly related to conscientiousness. Openness to experience was the principal domain related to existential/paranormal beliefs, creativity, and educational level.

Boudreault and Ozer (2011) administered an extensive multicontext problems checklist to over 400 participants, along with a measure of the FFM. One of the more intriguing results of their study was indicating the presence of problems secondary to all but one of the 10 poles of the FFM. For example, high openness was associated with having an overactive imagination, being overly involved in work, and having too many career interests. Low openness was associated with being unable to think outside the box, being unaware of needs of partner, and being unable to work without clear rules and guidelines. Antagonism was associated with always needing to be right, not caring about many people, being too argumentative, feeling superior to other people, and

being too critical or judgmental, whereas agreeableness was associated with not being able to say no, not managing time effectively, and not being able to prioritize work tasks (the latter two difficulties perhaps reflecting an excessive agreeableness to take on any responsibility or request that is asked of one). The only pole of a domain of the FFM not associated with some type of problems was low neuroticism.

In sum, the findings of Hopwood et al. (2009), Boudreault and Ozer (2011), and Mullins-Sweatt and Widiger (2010) support not just simply the presence of impairments secondary to the domains of the FFM but as well the specificity of these impairments with respect to each respective FFM domain. This will facilitate the development of more specific treatment planning and implications for outcome than is currently possible with the *DSM-IV-TR* heterogeneous syndromes (Smith & Zapolski, 2009; see also Chapter 3, this volume, by Zapolski, Guller, & Smith).

## COMPARISON OF PERSONALITY DISORDER INSTRUMENTS

Ozer and Reise (1994) and Goldberg (1993) likened the domains of the FFM to the coordinates of latitude and longitude that cartographers use to map the world, suggesting that the FFM might be similarly useful in comparing and contrasting different personality measures with respect to their relative saturation of these fundamental personality traits. The FFM has indeed been shown to be useful in comparing and contrasting different conceptualizations and measures of personality disorder (e.g., Paulhus & Williams, 2002; Ruiz, Pincus, & Schinka, 2008; Trobst, Ayearst, & Salekin, 2004), including more specifically the antisocial (Costa & McCrae, 1990; Decuyper, De Pauw, De Fruyt, De Bolle, & De Clercq, 2009; Gudonis, Miller, Miller, & Lynam, 2008; Hicklin & Widiger, 2005; Seibert, Miller, Few, Zeichner, & Lynam, 2011), dependent (Lowe et al., 2009; McBride, Zuroff, Bagby, & Bacchichiochi, 2006; Mongrain, 1993; A. L. Pincus & Gurtman, 1995; Zuroff, 1994), narcissistic (Miller & Campbell, 2008; Samuel & Widiger, 2008a), histrionic (Gore, Tomiatti, & Widiger, 2011), and obsessive-compulsive (Samuel & Widiger, 2010b).

Costa and McCrae (1990) compared different editions of the Millon Clinical Multiaxial Inventory (MCMI-III; Millon, Millon, Davis, & Grossman, 2009) with respect to the FFM. They indicated, for example, how early versions of the antisocial personality disorder scale were saturated with high neuroticism that was removed from subsequent versions, which, in turn, increased a representation of low conscientiousness. Samuel and Widiger (2010b) compared eight different *DSM-IV-TR* OCPD measures from the perspective of the FFM. One notable finding was that the MMPI-2 (Somwaru & Ben-Porath, 1995) assessment of OCPD, in contrast to the others, was confined largely to neuroticism, with little to no representation of low conscientiousness, likely due to the fact that the MMPI-2 item pool in general lacks much representation of FFM conscientiousness (Trull, Useda, Costa, & McCrae, 1995). The SNAP (Clark, 1993) provided approximately equal weight to its coverage of neuroticism and conscientiousness, whereas the MCMI-III was largely saturated with items assessing conscientiousness. Even more striking for the MCMI-III was its negative correlation with neuroticism, whereas all other OCPD measures correlated positive with neuroticism. From this perspective, it is not surprising that the MCMI-III OCPD scale obtains weak convergent validity with other measures of OCPD (Widiger & Boyd, 2009).

Gore et al. (2011) indicated how different measures of histrionic personality traits can be understood from the perspective of the FFM. The MCMI-III and MMPI-2 assessments of HPD correlated negatively with neuroticism, whereas, in striking contrast, the Coolidge Axis II Inventory (CATI; Coolidge & Merwin, 1992), SNAP, OMNI Personality Inventory—IV (OMNI-IV; Loranger, 2001), Personality Diagnostic Questionnaire-4 (PDQ-4), and Wisconsin Personality Disorders Inventory (WISPI; Klein et al., 1993) HPD scales correlated positively. Further, the MCMI-III and MMPI-2 HPD scales correlated substantially with extraversion (above .70), whereas the PDQ-4, OMNI-IV, and WISPI were uncorrelated with extraversion (the SNAP and CATI obtained moderately high positive correlations). The PDQ-4, OMNI-IV, and WISPI HPD scales correlated negatively with

conscientiousness, whereas the MMPI-2 and MCMI-III were uncorrelated with conscientiousness.

Whiteside and Lynam (2001) compared and contrasted alternative measures of impulsivity from the perspective of the FFM, leading to the useful distinction of negative urgency (facet of neuroticism), lack of premeditation (low deliberation), lack of perseverance (low self-discipline), and sensation seeking (facet of extraversion). They demonstrated how existing measures of impulsivity vary considerably with respect to which variant is being assessed, as well as the social and clinical importance of the four different variants. A considerable amount of subsequent validation and extension of these FFM variants has since been published (e.g., Lynam, Miller, Miller, Bornovalova, & Lejuez, 2011; Ruiz et al., 2008; Whiteside, Lynam, Miller, & Reynolds, 2005). Bechara (2005) even placed these four traits into a larger neurocognitive framework.

Gunderson (2010) lamented how the prototype narratives originally proposed for *DSM-5* were potentially providing a fundamental shift in how borderline personality disorder was being conceptualized and diagnosed. Samuel et al. (2011) demonstrated this empirically, comparing the *DSM-IV-TR* (American Psychiatric Association, 2000) and *DSM-5* borderline narratives (Skodol, 2010) with respect to the FFM. They indicated that the *DSM-5* proposal would have increased a focus on interpersonal dependency (i.e., agreeableness) and deemphasized antagonism and disinhibition, which they suggested would have had important ramifications for conceptualizations and treatment (the narrative proposal has since been abandoned; American Psychiatric Association, 2011).

Samuel and Widiger (2008a) compared and contrasted five alternative measures of narcissism. Among their findings was that the SNAP (Clark, 1993) and PDQ-4 (Bagby & Farvolden, 2004) were confined largely to aspects of antagonism with no relationship with neuroticism or extraversion. In stark contrast, the MMPI-2 assessment of NPD was unrelated to antagonism and was evenly weighted in its coverage of neuroticism and extraversion. The MCMI-III fell in between, including a negative relationship with neuroticism and positive relationships with antagonism and extraversion. Similar findings

were reported by Miller and Campbell (2008). In sum, some studies have suggested that the FFM is unable to provide an adequate differentiation among the personality disorders (Morey, Gunderson, Quigley, & Lyons, 2000). However, in stark contrast to this conclusion, the FFM is in fact able to provide meaningful and clinically important differentiations among scales purportedly assessing the same personality disorder construct.

## PERSONALITY DISORDER CONSTRUCT VALIDITY

Some of the FFM personality disorder research has helped to understand findings, correlates, discrepancies, and even the etiology of *DSM-IV-TR* personality disorders (e.g., Ryder, Costa, & Bagby, 2007; Trobst et al., 2004). For example, Distel et al. (2009) examined the phenotypic and genetic association between borderline personality and FFM personality traits in 4,403 monozygotic twins, 4,425 dizygotic twins, and 1,661 siblings from 6,140 Dutch, Belgian, and Australian families. Multivariate genetic analyses indicated that the genetic factors that influenced individual differences in neuroticism, agreeableness, conscientiousness, and extraversion accounted for all of the genetic liability for borderline personality (albeit unique environmental effects were not completely shared with the FFM traits).

The widely published CLPS (Skodol et al., 2005) included assessments of FFM general personality structure and has yielded a number of interesting results. For example, one of the difficulties for the *DSM-IV-TR* personality disorders is a temporal stability that is less than one would have expected for a disorder of personality. Temporal stability “goes to the heart of how personality traits are conceptualized” (Roberts & DelVecchio, 2000, p. 3). Over 2-year (Warner et al., 2004) and 4-year (Morey et al., 2007) follow-up periods, the temporal stability of FFM traits has been substantially higher than obtained for the *DSM-IV-TR* constructs. This has also contributed to greater predictive validity over time for the FFM than for the *DSM-IV-TR* (Morey et al., 2007). As indicated by Warner et al. (2004), changes in FFM personality predicted changes in personality disorder but not vice versa. Warner et al.

concluded that this finding “supports the contention that personality disorders stem from particular constellations of personality traits” (Warner et al., 2004, pp. 222–223). Nestadt et al. (2010) suggested that the *DSM-IV-TR* diagnostic criteria are assessing FFM personality traits, but many of them at a lower level of behavioral specificity, leading perhaps then to less temporal stability.

As noted earlier, some studies have suggested that the FFM is unable to provide an adequate differentiation among the personality disorders (Morey et al., 2000). This criticism is somewhat ironic, given that a major failing of the *DSM-IV-TR* diagnostic categories is their problematic diagnostic co-occurrence and lack of adequate discriminant validity (Clark, 2007; Trull & Durrett, 2005; Widiger & Trull, 2007). The excessive diagnostic co-occurrence has been so problematic that it is touted as the primary reason for the deletion of four of the 10 diagnostic categories from *DSM-5* (Skodol, 2010). This might be a rather draconian solution to this problem (Widiger, 2011b), but it does reflect on the serious difficulty the categorical model has had with discriminant validity.

No instrument or model can adequately differentiate the *DSM-IV-TR* personality disorder constructs because they are inherently overlapping. Scales to assess them often contain common items precisely because they share many of the same traits (Widiger & Boyd, 2009). Lynam and Widiger (2001) and O’Connor (2005) in fact indicated how the FFM can explain the problematic diagnostic co-occurrence among the *DSM-IV-TR* personality disorders. Lynam and Widiger indicated empirically that the extent to which the personality disorders shared FFM traits explained much of the co-occurrence among the diagnostic categories. The “overlap among FFM profiles reproduced well the covariation obtained for the schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, and compulsive PDs aggregated across several sets of studies” (Lynam & Widiger, 2001, p. 410).

Poor results were obtained for only one personality disorder, dependent, precisely because its FFM description provided considerably more differentiation from other personality disorders than is in fact found using the *DSM-IV-TR* criterion sets.

Discriminant validity would clearly be better with the factor-analytically based FFM constructs relative to the explicitly overlapping constructs of the *DSM-IV-TR*. Samuel and Widiger (2010a) demonstrated this empirically in a direct comparison of the FFM and *DSM-IV-TR* models of classification across four methods of assessment: self-report, semistructured interview, peer report, and clinician rating.

As discussed by Oltmanns and Carlson (Chapter 16, this volume), cross-method (e.g., peer, interviewer, and self-report) assessments of personality disorders have generally not obtained adequate convergent or discriminant validity. Three studies have directly compared cross-method convergence and/or divergence of the FFM versus the *DSM* (i.e., Ball, Rounsville, Tennen, & Kranzler, 2001; Miller, Pilkonis, & Clifton, 2005; Samuel & Widiger, 2010a). In the most recent of these three studies, including therapist ratings, peer report, self-report, and semistructured interview assessments for both the *DSM-IV-TR* and the FFM, Samuel and Widiger (2010a) reported an appreciable advantage over the *DSM-IV-TR* in terms of convergent validity at the domain level (and, as noted earlier, discriminant validity at the domain and facet levels).

Gender bias within the personality disorder nomenclature has been a heated issue for quite some time (Morey, Alexander, & Boggs, 2005). The differential sex prevalence rates that have been reported were difficult to justify in the absence of any theoretical basis for knowing what differential sex prevalence should be obtained. In contrast, the FFM has proved useful in helping to explain and understand gender differences in personality (Costa, Terracciano, & McCrae, 2001; Feingold, 1994). Lynam and Widiger (2007b) demonstrated that the differential sex prevalence rates obtained for the *DSM-IV-TR* personality disorders are well explained if these disorders are understood as maladaptive variants of the domains and facets of the FFM. They reported that the differential sex prevalence rates obtained through a meta-analytic aggregation of prior studies were consistent with the sex differences that would be predicted if the personality disorders were understood to be maladaptive variants of the FFM. One exception was for HPD. The FFM conceptualization predicted no differential sex

prevalence rate, whereas this personality disorder is diagnosed much more frequently in women. This finding is consistent with the fact that HPD has been the most controversial diagnosis with respect to concerns of gender bias (Morey et al., 2005). In addition, the FFM profile for HPD is a mix of traits for which women generally obtain higher scores (e.g., the extraversion facets of gregariousness, activity, and positive emotions) as well as traits for which they usually obtain lower scores (e.g., the extraversion facet of excitement seeking and the neuroticism facet of low self-consciousness), making for a complex prediction of differential sex prevalence. The differential sex prevalence that is obtained for HPD will depend on which combination of traits predominates within any particular sample. Samuel and Widiger (2009) indicated empirically as well how a reformulation of the personality disorders in terms of the FFM could help to diminish gender assumptions and stereotypic expectations.

## CONCLUSION

Discussed in this chapter has been research concerning the coverage of alternative trait models, the *DSM-IV-TR* personality disorders, and the *DSM-5* dimensional trait model; maladaptive variants of the FFM; comparisons among alternative measures of *DSM-IV-TR* personality disorders; and construct validity of the *DSM-IV-TR* personality disorders. Covered elsewhere in this book is the considerable body of FFM personality disorder research concerning the clinical utility of the FFM (see Chapter 20 by Mullins-Sweatt), FFM prototype matching (see Chapter 17 by Miller), and childhood antecedents (see Chapter 4 by De Fruyt & De Clercq), as well as the research concerning individual personality disorders, such as psychopathy (see Chapter 7 by Dereckko & Lynam), borderline (see Chapter 8 by Trull & Brown), schizotypal (see Chapter 10 by Edmundson & Kwapis), and narcissistic (see Chapter 9 by Campbell & Miller). It is evident from the above review and these additional chapters that a substantial amount of published research on the relationship of the FFM to personality disorders has been published since the original review by Widiger and Costa (2002).

We anticipate that there will continue to be a considerable amount of research devoted to understanding personality disorders from the perspective of the FFM. The FFM has received the most attention with respect to the alternative dimensional models of personality disorder (Ball, 2001; Clark, 2007; Widiger & Costa, in press), and this is likely to escalate further with the shift of the *DSM-5* toward the FFM, with respect to both the dimensional trait model and the diagnostic criterion sets (see Chapter 19, this volume, by Widiger, Costa, & McCrae).

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PART II

## PATIENT POPULATIONS



# PSYCHOPATHY FROM THE PERSPECTIVE OF THE FIVE-FACTOR MODEL OF PERSONALITY

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In this chapter, we focus on the conceptualization of psychopathy through the lens of the five-factor model of personality (FFM; McCrae & Costa, 1990). Historically, most of the research aimed at understanding psychopathy has operated from the perspective that psychopathy is a relatively homogeneous condition that is qualitatively distinct from normal functioning. This perspective has led to a strong focus on assessment issues (see Lilienfeld, 1994, 1998) and substantial efforts to identify a unique pathology that is distinct to persons with psychopathy (Sutker, 1994). We offer a different perspective that views psychopathy as a collection of personality traits that exists on a continuum with normal personality functioning. More specifically, we believe that psychopathy can be understood using the FFM.

Although the origin of this conceptualization has been described elsewhere (see Lynam, 2002; Lynam & Widiger, 2007), in this chapter, we provide a review of FFM psychopathy through a variety of methodologies and provide emerging research that addresses the use of the FFM to describe psychopathy and the literature surrounding this disorder. At this time, it is clear that the FFM conceptualization of psychopathy is useful in replicating the nomological network that surrounds psychopathy, describing manifestations of the disorder across age groups, accounting for overlap among instruments and subfactors, dismantling psychopathic autonomic and behavioral deficits, and testing hypotheses regarding

subclinical forms of the disorder. It is proposed that the use of simple traits will be helpful in developing new theories of psychopathy through providing a link to the large research base in general personality.

## THE FIVE-FACTOR MODEL CONCEPTUALIZATION OF PSYCHOPATHY

As assessed through the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992), the FFM provides a lexicon of 30 facets with six facets underlying each of the five broad domains. At the domain level, the FFM includes Neuroticism (N), which assesses emotional adjustment and stability; Extraversion (E), which assesses an individual's proneness to positive emotions and sociability; Openness to Experience (O), which refers to an individual's interest in culture and to the preference for new activities and emotions; Agreeableness (A), which is concerned with an individual's interpersonal relationships and strategies; and Conscientiousness (C) which relates self-control, ability to plan, organization, and completion of behavioral tasks. In the pages that follow, we outline the FFM conceptualization of psychopathy and provide supporting evidence of this conceptualization.

## Translation of the Psychopathy Checklist—Revised

As an initial basis for conceptualizing psychopathy from the FFM, Widiger and Lynam (1998) translated

the Hare Psychopathy Checklist—Revised (PCL-R; Hare, 1991) description of psychopathy into the language of the FFM on an item-by-item basis. Widiger and Lynam (1998) argued that all of the core features of psychopathy operationalized in Hare's (1991) PCL-R have explicit representations within one or more facets of the FFM. As can be seen in Table 7.1, the psychopath appears to be very low in all facets of A except A1: trust and in 4 of 6 facets of C (C3: dutifulness, C4: achievement striving, C5: self-discipline, and C6: deliberation). Additionally, the psychopath is low in N4: self-consciousness, E1: warmth, and E6: positive emotions and high in N2: hostility, N5: impulsiveness, and E5: excitement seeking.

Importantly, although some PCL-R items are well represented by single facets (e.g., glibness, grandiosity, and lack of remorse) or multiple facets from the same domain (e.g., conning and irresponsibility), other PCL-R traits are represented by combinations of facets from different domains. The degree to which the PCL-R items map onto single FFM domains is a function of the degree to which the PCL-R item represents an explicit trait rather than a behavior. For example, at least five of the seven PCL-R items translated as combinations of facets from A and C reference antisocial behavior (i.e., promiscuous sexual behavior, early behavior problems, juvenile delinquency, revocation of conditional release, and criminal versatility). However, the blended translations offered for these items are quite consistent with what is known about the personality correlates of crime (Miller & Lynam, 2001). For the remaining PCL-R items, the necessity to blend FFM domains was due primarily to either poor operationalization of the PCL-R item itself (i.e., shallow affect) or to the placement of related facets, primarily those dealing with impulsivity (see Whiteside & Lynam, 2001), on different domains within the FFM itself.

### **Expert Consensus**

An alternative approach, not dependent on one or two raters or a specific conceptualization of psychopathy, is the expert consensus approach. Miller, Lynam, Widiger, and Leukefeld (2001) wrote to 23 nationally known psychopathy researchers and asked each to "rate the prototypical, classic Cleckley

psychopath" on each of 30 bipolar scales that corresponded to the 30 facets of the FFM. Aggregating these ratings yields a description that brings out aspects on which experts agree and blunts idiosyncratic elements of each description. Of those contacted, 16 experts returned the ratings. As detailed in Miller et al. (2001), there was remarkable agreement in the descriptions of the prototypic psychopath, validating the approach itself. What does the prototypic psychopath look like according to the experts? Taking any facet with a mean score lower than 2 (low) or higher than 4 (high) as characteristic, the profile is similar to the one provided by Widiger and Lynam (1998). The psychopath is low in all facets of A (A1: trust, A2: straightforwardness, A3: altruism, A4: compliance, A5: modesty, and A6: tender-mindedness), three facets of C (C3: dutifulness, C5: self-discipline, and C6: deliberation), N4: self-consciousness, and E1: warmth and high in N5: impulsiveness and E5: excitement seeking.

Additionally, the experts indicated that the prototypic psychopath is low in N1: anxiety, N3: depression, N6: vulnerability, A1: trust, and O3: openness to feelings but high on E3: assertiveness, O4: openness to actions, and C1: competence. The additional traits included by experts were likely due to the fact that the ratings were not constrained by a particular psychopathy measure. For instance, despite not being explicitly assessed by the PCL-R, low anxiety, a facet of N, is considered by some a cardinal characteristic of psychopathy (Lykken, 1995). Similarly, low trust (A) is the tendency to be cynical and to assume that others may be dishonest or dangerous (Costa & McCrae, 1992). The most difficult aspect of the experts' ratings to understand may be the characterization of the psychopath as high in competence. Given that this trait is, in part, a self-assessment of efficacy, it may be that psychopathic individuals see themselves as competent despite histories of criminal and violent behaviors.

### **Empirical Evidence**

An additional way of arriving at an FFM conceptualization of psychopathy is through empirical relations between measures of psychopathy and the FFM. To date, a number of studies have investigated these relations (e.g., Derefinko & Lynam, 2006;

**TABLE 7.1**

Item-by-Item Translation of the Psychopathy Checklist—Revised (PCL-R) Into the 30 Facets of the Five-Factor Model (FFM)

<b>PCL-R item</b>	<b>FFM facets</b>
<b>Factor 1 items</b>	
1. Glib and superficial charm	Low self-consciousness (N4r)
2. Grandiose sense of self-worth	Low modesty (A5r)
4. Pathological lying	Low straightforwardness (A2r)
5. Conning and Manipulative	Low straightforwardness (A2r), low altruism (A3r), low tender-mindedness (A6r)
6. Lack of remorse or guilt	Low tender-mindedness (A6r)
7. Shallow affect	Low warmth (E1r), low positive emotions (E6r), low altruism (A3r), low tender-mindedness (A6r)
8. Callousness/lack of empathy	Low modesty (A5r), low tender-mindedness (A6r)
16. Failure to accept responsibility for own actions	Low straightforwardness (A2r), low compliance (A4r), low tender-mindedness (A6r), low dutifulness (C3r)
<b>Factor 2 items</b>	
3. Need for stimulation/proneness to boredom	High excitement seeking (E5), low self-discipline (C5r)
9. Parasitic lifestyle	Low straightforwardness (A2r), low altruism (A3r), low compliance (A4r), low modesty (A5r), low modesty (A6r), low achievement striving (C4r), low self-discipline (C5r)
10. Poor behavioral controls	High angry hostility (N2), low compliance (A4r), low deliberation (C6r)
12. Early behavior problems	Low straightforwardness (A2r), low altruism (A3r), low compliance (A4r), low modesty (A5r), low modesty (A6r), low dutifulness (C3r), low self-discipline (C5r), low deliberation (C6r)
13. Lack of realistic long-term goals	Low achievement striving (C4r), low self-discipline (C5r), low deliberation (C6r)
14. Impulsivity	High impulsiveness (N5), low deliberation (C6r)
15. Irresponsibility	Low dutifulness (C3r)
18. Juvenile delinquency	Low straightforwardness (A2r), low altruism (A3r), low compliance (A4r), low modesty (A5r), low modesty (A6r), low dutifulness (C3r), low self-discipline (C5r), low deliberation (C6r)
19. Revocation of conditional release	Low straightforwardness (A2r), low altruism (A3r), low compliance (A4r), low modesty (A5r), low modesty (A6r), low dutifulness (C3r), low self-discipline (C5r), low deliberation (C6r)
<b>Items not on either factor</b>	
11. Promiscuous sexual behavior	Low straightforwardness (A2r), low altruism (A3r), low compliance (A4r), low modesty (A5r), low modesty (A6r), low dutifulness (C3r), low self-discipline (C5r), low deliberation (C6r)
17. Many short-term marital relationships	Low dutifulness (C3r)
20. Criminal versatility	Low straightforwardness (A2r), low altruism (A3r), low compliance (A4r), low modesty (A5r), low modesty (A6r), low dutifulness (C3r), low self-discipline (C5r), low deliberation (C6r)

Note. Compilation of data from Widiger and Lynam (1998).

Hicklin & Widiger, 2005; Patrick, Hicks, Nichol, & Krueger, 2007; Ross, Benning, Patrick, Thompson, & Thurston, 2009). Although individual findings differ somewhat according to the psychopathy measure used, remarkable consistencies have emerged (Lynam & Widiger, 2007). A recent meta-analytic summary by Decuyper, De Pauw, De Fruyt, De Bolle, and De Clercq (2009), provides substantial support for both the translation (Widiger & Lynam, 1998), and expert consensus (Lynam, 2002; Miller et al., 2001) approaches.

Ignoring very small effect sizes ( $r > |.10|$ ), Decuyper et al. (2009) found that psychopathy measures were negatively related to all facets of A (A1: trust, A2: straightforwardness, A3: altruism, A4: compliance, A5: modesty, and A6: tender-mindedness), and all facets of C (C1: competence, C2: order, C3: dutifulness, C4: achievement striving, C5: self-discipline, and C6: deliberation). Also, consistent with previous approaches, there was a blend of high and low traits from E and N. Specifically, the meta-analytic findings suggested that psychopathy was negatively related to N1: anxiety and E1: warmth and positively related to N2: hostility, N5: impulsiveness, E3: assertiveness, and E5: excitement seeking. Just below the criterion for a very small effect were negative relations with N4: self-consciousness, E6: positive emotions and O3: openness to feelings and a positive relation with O4: openness to actions.

In sum, whether one translates a psychopathy inventory into the language of the FFM, asks experts to describe the prototypical psychopath, or examines the empirical relations between the FFM and psychopathy, results are consistent. On the basis of agreement across methodologies (see Table 7.2), the psychopath is low in most facets of A; he or she is deceptive, exploitive, aggressive, arrogant, and tough-minded. The psychopath is also low in the dutifulness, self-discipline, and deliberation facets of C. The description of the psychopath in terms of N and E is more complex with low self-consciousness (N), high impulsiveness (N), low warmth (E), and high excitement seeking (E) characterizing psychopathy across all three approaches.

Not surprisingly, the previously mentioned FFM meta-profile is similar to the profile of

Antisocial/Psychopathic Type (301.7) originally proposed by the DSM-5 Personality and Personality Disorders Work Group (American Psychiatric Association, 2010). The Work Group described the Psychopathic Type in terms of universally low A (arrogant, grandiose, lacking empathy, self-serving, manipulative, deceptive, sadistic, exploitative, and problems with authority figures), low C3: dutifulness (disavow responsibility; irresponsible about work obligations or financial commitments), low C5: self-discipline, low C6: deliberation, high N5: impulsiveness (tend to act impulsively without fear or regard for consequences), high E2: gregariousness (superficial charm and ingratiation), high E3: assertiveness (dominating), high E4: excitement seeking (reckless sensation seeking), high N2: hostility (emotional expression is mostly limited to irritability, anger, and hostility), low N1: anxiety, low E1: warmth, and low E6: positive emotions (acknowledgement and articulation of other emotions, such as love or anxiety, are rare). Further, the DSM-5 Dimensional Trait Rating (Clark & Krueger, 2010) is described in terms of low A (callousness, aggression, manipulativeness, hostility, deceitfulness, narcissism), and low C (irresponsibility, recklessness, impulsivity). The original narrative proposal for the antisocial/psychopathy has since changed (i.e., antisocial/dissocial; American Psychiatric Association, 2011) but in a manner that makes it even closer to the FFM conceptualization by diagnosing the disorder primarily in terms of the trait model, that is, four traits (i.e., manipulativeness, deceitfulness, callousness, and hostility) from antagonism and three (irresponsibility, risk taking, and impulsivity) from disinhibition (i.e., low conscientiousness and high extraversion).

## APPLICATION AND EXTENSION OF THE FIVE-FACTOR MODEL PSYCHOPATHY CONCEPTUALIZATION

Not only is the psychopathic personality profile robustly recovered across methods but also the FFM profile seems capable of standing in for psychopathy. Several studies in adults have found that FFM-assessed psychopathy shows high con-

**TABLE 7.2**

The Five-Factor Model Conceptualization: Translation, Expert Consensus, and Empirical Evidence

<b>NEO PI-R facet</b>	<b>PCL-R translation<sup>a</sup></b>	<b>Expert-generated prototype<sup>b</sup></b>	<b>Meta-analysis<sup>c</sup></b>
Neuroticism			
Anxiety		Low	Low
Hostility	High		High
Depression		Low	
Self-consciousness	Low	Low	Low*
Impulsiveness	High	High	High
Vulnerability to stress		Low	
Extraversion			
Warmth	Low	Low	Low
Gregariousness			
Assertiveness		High	High
Activity			
Excitement seeking	High	High	High
Positive emotion	Low		Low*
Openness to Experience			
Fantasy			
Aesthetics			
Feelings		Low	Low*
Actions		High	High*
Ideas			
Values			
Agreeableness			
Trust		Low	Low
Straightforwardness	Low	Low	Low
Altruism	Low	Low	Low
Compliance	Low	Low	Low
Modesty	Low	Low	Low
Tender-mindedness	Low	Low	Low
Conscientiousness			
Competence		High	Low
Order			Low
Dutifulness	Low	Low	Low
Achievement striving	Low		Low
Self-discipline	Low	Low	Low
Deliberation	Low	Low	Low

Note. NEO PI-R = NEO Personality Inventory—Revised; PCL-R = Psychopathy Checklist—Revised.

<sup>a</sup>Compilation of data from Widiger and Lynam (1998). <sup>b</sup>Compilation of data from Miller et al. (2001).

<sup>c</sup>Compilation of data from Decuyper et al. (2009).

\* =  $r < |.10|$ .

vergence with explicit measures of psychopathy and expected relations with psychopathy-related criteria. First, FFM psychopathy demonstrates strong total score convergence with other self-reports of psychopathy, including the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews,

1996;  $r = .63$ ), and Hare's Self-Report Psychopathy Scale (SRP; Hare, Harpur, & Hemphill, 1989;  $r = .69$ ), suggesting that the traits assessed through the FFM psychopathy are similar to those included in self-reports that explicitly assess psychopathy (Derefinko & Lynam, 2006).

In studies of both undergraduates and drug-using samples, psychopathy assessed through the FFM shows predicted relations with psychopathy-related constructs, such as self-reported violent and non-violent antisocial behavior, arrest history, risky sexual behaviors, substance use and abuse, multiple forms of aggression (inside and outside of the laboratory), hostile social information processing, symptoms of antisocial personality disorder, low internalizing symptoms, and early age of onset for criminality and/or delinquency (Derefinko & Lynam, 2007; Miller & Lynam, 2003; Miller et al., 2001). Finally, FFM psychopathy has shown important divergences from other personality disorders in relation to important outcomes as well as incremental predictive utility over these disorders regarding antisocial behavior and substance use, suggesting that FFM psychopathy is assessing a construct distinct from generalized internalizing and externalizing pathology (Derefinko & Lynam, 2007).

Lynam (2002) provided information on the results of an expert rating project for child psychopathy similar to the one reported here for adults. Specifically, 14 psychopathy experts were asked to rate the prototypical fledgling psychopath as described by Cleckley (1941) using the 100 items of the Common Language Q-Sort (CLQ; Caspi et al., 1992). Because the CLQ items have been mapped to five-factor model space (John, Caspi, Robins, Moffitt, & Stouthamer-Loeber, 1994; Robins, John, & Caspi, 1994), it is possible to discuss the 21 most characteristic items in FFM terms. Of the 21 items, 10 were indicators of single domains: Five assessed low A; three assessed low C; and two assessed low N. The remaining 11 items were interstitial blends of two or more domains; fully 10 of these represented blends of low A and low C, and one represented a blend of low N and high E.

A handful of empirical studies report correlations between juvenile psychopathy assessments and the FFM among children and adolescents. Results from a meta-analysis conducted by Lynam (2010) were quite similar to those obtained among adults. Juvenile psychopathy is strongly negatively related to A and C. It is weakly negatively related to E and O and weakly positively related to N. In general, the personality profile of psychopathy appears similar

across developmental period; the personality of the psychopathic adult is the personality of the psychopathic youth. The stability of this profile is not surprising given what we know about the stability of personality across early to late adolescence (Roberts & DelVecchio, 2000) and from middle adolescence to young adulthood (Block, 1993).

## CLARIFICATIONS OF THE LITERATURE

Besides providing a potentially more accurate and specific picture of the psychopath than the traditional approach, the FFM perspective provides several clarifications of the findings in the field. Specifically, the FFM clarifies (a) the divergence among psychopathy assessment instruments, (b) the factor structure of psychopathy measures, (c) psychopathic deficits, and (d) the concept of successful psychopathy.

### Divergence Among Psychopathy Assessment Instruments

Although much of the psychopathy research base has relied heavily on the description of psychopathy from the PCL-R, other measures have emerged recently (Andershed, Kerr, Stattin, & Levander, 2002; Forth, Kosson, & Hare, 2003; Frick & Hare, 2001; Hare et al., 1989; Levenson, Kiehl, & Fitzpatrick, 1995; Lilienfeld & Andrews, 1996; Lynam, 1997). Although all are designed to assess the same construct, there are important divergences among the instruments. For example, although low anxiety does not appear explicitly in the PCL-R, more recently developed self-report measures of psychopathy like the PPI have included items explicitly assessing low anxiety. Although this divergence may appear modest in importance, differences in conceptualization, operationalization, and measurement of the construct of psychopathy with and without low anxiety translate to notable peculiarities among assessments that may ultimately blur understanding of the construct and its correlates.

Among other benefits, the FFM offers an elemental language that can be used to assay, compare, and contrast individual assessments. For instance, Derefinko and Lynam (2006) investigated relations

between the FFM and the PPI and found that aspects of this psychopathy measure include notably low N and high E content. In contrast, Miller, Gaughan, and Pryor (2008) investigated relations between the FFM and the Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995) and found it was related to facets of high N and low E.

Recent work has focused on the development of the Elemental Psychopathy Assessment (EPA; Lynam et al., 2011), designed to assess psychopathy using those basic trait elements from the FFM found to be most consistently and strongly related to the construct and to do so with items and scales explicitly written to assess the more maladaptive variants of these traits. Use of the maladaptive elemental traits enables researchers to capture the breadth of the psychopathy construct without sacrificing the link to general personality dimensions. Lynam et al. (2011) found that dimensions of the EPA provided further clarification of the divergence between three psychopathy self-report measures; although all measures similarly assessed elements of A, C, and E, there was notable divergence among measures in terms of N. Specifically, measures were differentially associated with EPA Unconcern (N1: anxiety), EPA self-contentment (N3: depression), EPA self-assurance (N4: self-consciousness), and EPA invulnerability (N6: vulnerability). Thus, from analyses using the NEO PI-R and the newly developed EPA, it is quite clear that there is considerable variation in assessment of the construct across contemporary measures.

### Factor Structure of Psychopathy

There has long been an interest in subtyping psychopaths or breaking psychopathy into its smaller elements (Cooke & Michie, 2001; Harpur, Hare, & Hakstian, 1989). Some attempts have been theoretical (Karpman, 1948; Lykken, 1995), whereas others have been empirical (Benning, Patrick, Hicks, Blonigen, & Kreuger, 2003; Cooke & Michie, 2001; Harpur, Hakstian, & Hare, 1988). Most empirical attempts involve factor analyses of psychopathy instruments, particularly the PCL-R. Originally researchers argued for a two-factor structure (Harpur, Hakstian, & Hare, 1988; Harpur, Hare, & Hakstian, 1989), whereas more recently Cooke

and Michie (2001) have suggested that a three-factor model is more parsimonious. The most recent version of the manual for the PCL-R (Hare, 2003) retained the original two-factor solution but offered an alternative four-factor conceptualization (Vitacco, Neumann, & Jackson, 2005). Because most previous research, including research on self-report instruments, has examined a two-factor solution, we examine how a structural personality model can be used to understand the nature of the factors.

The interpretation of the two factors up to this point has been unclear and confusing. One interpretation is that the first factor represents “a constellation of interpersonal and affective traits commonly considered to be fundamental to the construct of psychopathy,” whereas the second reflects a “chronically unstable, antisocial, and socially deviant lifestyle” (Hare, 1991, p. 38). This interpretation has several shortcomings. It raises and leaves unanswered the question of what is psychopathy. The personality–behavior dichotomy into which this interpretation frequently slips is simplistic and overlooks the fact that Factor 2 includes several personality dimensions such as impulsivity, irresponsibility, and sensation seeking (Rogers & Bagby, 1989).

We suggest that factor structure clarification is provided through the use of personality models. Table 7.1 represents the translation of the PCL-R provided by Widiger and Lynam (1998). The items on Factor 1 are almost all indicators of low A. Five of the eight items are mapped only onto low A, and two of the remaining three map onto low A and one other domain. Only the item assessing glibness fails to assess A. In contrast, Factor 2 items assess both low A and low C with minimal representations of high N and high E. This interpretation provides a substantive rather than methodological interpretation of the factors, acknowledges the presence of personality in both factors of the PCL-R, and does not suggest that one element is more central to psychopathy than another. Additionally, this interpretation accounts for the strong correlation between factors (Hare, 1991); the factors are correlated because both include low A.

Empirical evidence for the divergence between psychopathy factors in terms of the FFM supports this interpretation (Derefinko & Lynam, 2006;

Lynam & Derefinko, 2006), as does the overlap of psychopathy factors in terms of A and C (Lynam et al., 2005; Miller et al., 2008). As further support, in recent work, Lynam (2010) has used the FFM to explore relations between three-factor models of juvenile psychopathy with strikingly similar results; FFM A pervades all factors, and the three factors diverge as a result of relations with other dimensions. Thus, it is clear that the FFM provides a framework for understanding the factor structure of psychopathy and can be used to understand emerging factor solutions across instruments.

### Dismantling Psychopathic Deficits

Considerable research in psychopathy has been oriented toward identifying and characterizing the core problem or deficit underlying the disorder. Many deficits have been proposed and studied; unfortunately, these various deficits are not easily subsumed under a single construct. That is, there does not appear to be a singular etiological mechanism; rather, many deficits seem to contribute to the disorder. This state of affairs is exactly what is expected if psychopathy is a constellation of personality traits from a general model of personality. How could a single deficit or deviation underlie low A, low C, low and high N, and low and high E? Understood from a personality perspective, the variety of psychopathic deficits is due to the fact that different researchers are focused on different elements of the personality profile.

For example, several theories suggest that psychopathy is rooted in deficient fear conditioning (Dengerink & Bertilson, 1975; Hare, 1982; Lykken, 1957). Lykken (1957) wrote that for the psychopath, "the fear of punishment and the coercive voice of conscience both are, for some reason, weak or ineffectual" (p. 134). This deficit was first explored by Lykken (1957) through electrodermal responses during an aversive classical conditioning paradigm and more recently by Patrick, Bradley, and Lang (1993) through startle response tasks. Patrick (1994) has specifically related fear-potentiated startle response to the broad domain of negative affectivity (N): "The observed absence of startle potentiation in psychopaths (Patrick et al., 1993) may reflect a temperamental deficit in the capacity for negative affect" (Patrick, 1994, p. 325).

More evidence for the relation between hypoarousal and N is found outside the psychopathy literature. Electrodermal hyporeactivity has been associated with low scores on measures of anxiety (Schwerdtfeger, 2006; Smith, Bradley, & Lang, 2005). Other aspects of negative affect, such as anger or depression, have been shown to be related to startle potentiation, and measures of depression has been found to be better predictors of startle potentiation than measures of fear (Cook, Hawk, Davis, & Stevenson, 1991). This indicates that other emotions or perhaps even vulnerability to negative emotions may play a role in startle potentiation.

In contrast to deficient fear conditioning, the response modulation model of Newman (1998) has focused on a different area of functioning. Specifically, Newman has suggested that psychopaths are either unable to suspend a reward-based response set to assimilate feedback from the environment or may have a deficit in shifting attention from the organization and implementation of behavior to its evaluation. Although Lynam (2002) and Lynam and Widiger (2007) have previously argued that this deficit seems to place emphasis on low C as a result of hypothesized relations with impulse control, extant literature suggests that relations may not be so straightforward. Specifically, some studies have found no relation between behavioral tasks of response modulation and trait measures of self-control (Lane, Cherek, Rhodes, Pietras, & Techeremissine, 2003; White et al., 1994) or have found relations to other traits related but not specific to C, such as cognitive complexity and impulsive sensation seeking (Reynolds, Ortengren, Richards, & de Wit, 2006; Thornquist & Zuckerman, 1995).

Still others have focused on deficits in empathic responding as a core deficit of psychopathy. Blair (2001) has argued that psychopathic emotional processing deficits are best explained by the violence inhibition mechanism model. Specifically, the psychopath's abnormal affective processing is due to compromised functional integrity of an emotional system that responds to sad and fearful displays. The violence inhibition mechanism model has garnered support; psychopaths demonstrate autonomic hypoarousal to sad facial expressions (Blair,

1999; Blair, Jones, Clark, & Smith, 1997); impairment in the naming of sad, fearful, and disgusted facial expressions (Blair et al., 2004; Kosson, Suchy, Mayer, & Libby, 2002); and poor recognition of fearful vocal affect in both adults and children (Blair, Budhani, College, & Scott, 2005; Blair et al., 2002).

Although self-reported empathy appears quite clearly to address aspects of A (Graziano, Habashi, Sheese, & Tobin, 2007; Jolliffe & Farrington, 2006), there is no evidence to date that performance on emotion recognition tasks is associated specifically with this FFM dimension. For instance, Lawrence, Goerendt, and Brooks (2007) found that among individuals with Parkinson's disease and healthy comparison individuals, recognition of anger expression was positively related to the exploratory excitability subscale of novelty seeking from the Tridimensional Personality Questionnaire (Cloninger, 1987), whereas recognition of sadness was positively related to attachment and dependence, subscales of the Tridimensional Personality Questionnaire social reward dependence. It may be that emotion recognition tasks represent one specific aspect of empathy (e.g., cognitive empathy or affective empathy), or it may be the case that these tasks are simply a measure of processing speed and affect recognition with little emphasis on the trait of empathy itself. More research will be necessary to understand this possibility.

We can conclude from these findings that the relations to deficit areas can be quite straightforward for some areas and more elusive for others. It may be that just as there is no specific deficit that underlies psychopathy, there is no specific trait indicator that can fully subsume a series of complex thoughts and actions across settings. Although autonomic hypoarousal may be a more straightforward indicator of propensity for negative affect, tasks assessing response modulation and emotion recognition are down the chain of response; put simply, behavioral and emotional recognition tasks require a more complex series of processes than autonomic (innate) functioning. Thus, as is the case when attempting to translate behaviors from the PCL-R, complex behaviors that take place in the laboratory are difficult to subsume cleanly under one dimension of personality.

Despite complex relations, the use of a general model of personality such as the FFM can be quite useful in understanding the multitude of underlying deficits. Although some initial mappings have not been upheld empirically, it is important to remember that examinations of deficit models are only as good as their laboratory operationalizations. In contrast to the multitude of articles published supporting the psychometric properties of FFM and psychopathy measures, few articles have been published demonstrating the reliability and validity of most behavioral tasks. Additionally, whereas FFM and psychopathy measures assess patterns of thinking, feeling, and acting, most deficit measures represent single instances of behavior situated in a specific time and place.

### **Successful Psychopathy**

Lynam (2002) and Lynam and Widiger (2007) have argued that the FFM clarifies the variety of conceptions of "successful" psychopathy. Hare (1993) has written that "many psychopaths never go to prison or any other facility. They appear to function reasonably well—as lawyers, doctors, psychiatrists, academics, mercenaries, police officers, cult leaders, military personnel, business people, writers, artists, entertainers, and so forth" (p. 113). In fact, Hare indicated that if he could not study psychopathy in prisons, his next choice would "be a place like the Vancouver Stock Exchange" (p. 119). In contrast, Lykken's (1982) "successful" psychopath is the hero: "The hero and the psychopath are twigs from the same branch. Both are relatively fearless. . . . Had Chuck Yeager had slightly different parents (not necessarily bad parents, just more ordinary ones), he might have become a con man or a Gary Gilmore" (p. 22).

These are two very different conceptualizations of successful psychopathy. An understanding of psychopathy as a collection of traits from a general model of personality, however, suggests that all versions of the successful psychopath target only a subset of the traits in the psychopathic profile. The individuals Hare described are clearly deceptive, exploitative, arrogant, and callous (i.e., extremely low in A). However, they have frequently obtained advanced degrees and moved far in their fields; they seem to lack other important characteristics possessed

by the prototypic psychopath such as unreliability, aimlessness, and poor impulse control (i.e., low C). Similarly, Lykken's description focuses on only a subset of the traits involved in psychopathy, namely the traits associated with low N. Lykken neglects the fact that Yeager lacks the low A (i.e., deceptiveness, exploitativeness, aggressiveness, arrogance, and callousness) and low C (i.e., unreliability, aimlessness, negligence, and carelessness) that Gilmore possessed. In short, Yeager may share some characteristics with Gilmore (i.e., low fear, high excitement seeking, and high openness to actions), but there are more elements to prototypic psychopathy than these. Such an understanding of successful psychopathy is consistent with Cleckley's (1976) original descriptions of "incomplete manifestations or suggestions of the disorder" (p. 188).

Evidence for the FFM conceptualization of successful psychopathy has supported the idea that individuals considered psychopathic, but otherwise operating without significant impairment in society, have many but not all characteristics of the disorder. Mullins-Sweatt, Glover, Derefinko, Miller, and Widiger (2010) sampled psychologists with an interest in law, criminal attorneys, and clinical psychology professors to obtain descriptions of individuals they considered to be psychopaths on the basis of a description by Hare (2003) but who were also successful in their endeavors. Descriptions were consistent across professions and converged with descriptions of traditional psychopathy, suggesting that respondents were describing Hare's psychopath. However, as predicted, individuals who were successful in their pursuits were described by raters as being higher in C compared with traditional descriptions.

## **ADVANTAGES OF THE ELEMENTAL TRAITS OF PSYCHOPATHY**

Conceptualizing psychopathy as a constellation of the facets described throughout this chapter provides several advantages in assessment and theory building. In terms of assessment, the consensus elemental traits provide an index of the content that psychopathy scales should have and provide a common language for comparison across them.

These traits might also serve as the basis for new measurement development. There are several facet-level assessments available at the adult level, such as the NEO PI-R, the Five-Factor Model Rating Form (Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006), the Structured Interview for the Five-Factor Model (Trull & Widiger, 1997), and the International Personality Item Pool approximation to the FFM facet scales (Goldberg, 1999). Fewer are available at the adolescent level, although the NEO PI-R and the NEO PI-3 has been used successfully with children and adolescents (McCrae, Martin, & Costa, 2005), and the Five Factor Model Rating Form can likely be used among this population as well. Developing new scales, particularly ones that are designed for use by mothers, teachers, adolescents, and children would fill an important gap (e.g., De Clercq, De Fruyt, Van Leeuwen, & Mervielde, 2006). Doing so with the elemental facets as the basis would circumvent the issues faced by current explicit measures of psychopathy, namely, the problem of compound traits. If one conceptualizes psychopathy in terms of these elemental traits, some concerns about labeling children and adolescents as psychopathic may be ameliorated. Instead of talking about psychopathy per se, one can talk about a particular personality profile and describe the elemental traits that are involved.

Additionally, measures built from these traits, such as the EPA (Lynam et al., 2011), may solve an additional measurement problem with the PCL-R, namely, the presence of cooperative suppressor effects between the two factors and trait anxiety. Several studies have reported that PCL-R Factor 1 bears a negative relation to anxiety only after the variance shared with Factor 2 is removed (e.g., Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999; Verona, Joiner, & Patrick, 2001). It has been argued elsewhere that this is due to the fact that Factor 1 scores include both high and low neuroticism, whereas Factor 2 scores include only high neuroticism; thus, when Factor 2 is removed from Factor 1, the low neuroticism in Factor 1 is released (see Lynam, 2010; Lynam et al., 2005). Such suppressor effects should not appear with measures built from simple traits.

We believe that the basic components of psychopathy identified here can be used as bridges

between the psychopathy literature and the broad base of existing research in personality. By thinking at the elemental trait level, researchers and theorists can build psychopathy from the bottom up. One can examine which elements are most central, which are peripheral, and which are unnecessary to the construct of psychopathy. One can ask which elements are important for which particular outcomes (e.g., institutional aggression, recidivism, treatment resistance). One can also study the possibility of combinatorial effects; that is, one can search for synergistic effects in which specific combinations of elements give rise to emergent properties. One can more clearly describe developmental trends and courses and perhaps even use elements of personality to inform prevention and treatment programs.

For instance, researchers studying the basic processes underlying A have found that A serves as a moderator for aggressive cues and later aggression (Meier, Robinson, & Wilkowski, 2006). Further, researchers are examining the personality pathways to impulsive behavior (Whiteside & Lynam, 2001). Bechara (2005) has recently placed the four traits related to impulsive behavior, described as characteristic to the FFM psychopathic profile, into a larger neurocognitive framework rooted in neurology. Even more researchers are examining self-relevant negative affects (e.g., anxiety, depression, and shame or guilt) and how these emotions relate to behavior (e.g., Beer, Heerey, Keltner, Scabini, & Knight, 2003; Lonigan, Vasey, Phillips, & Hazen, 2004). The traits characteristic of psychopathy thus provide bridges that can bring basic research on personality and personality processes to the study of psychopathy.

## CONCLUSION

In this chapter, we have argued that psychopathy is a specific configuration of elemental personality traits drawn from the FFM of personality. In sum, we believe that psychopathy is best understood as a collection of personality traits that exists on a continuum with normal functioning. In terms of agreeableness and conscientiousness, psychopathy consists of extremely high antagonism and very low

conscientiousness (particularly the facets of dutifulness, self-discipline, and deliberation). In terms of neuroticism, psychopathy consists of low anxiety, low self-consciousness, and low vulnerability but high angry hostility and high impulsiveness. In terms of extraversion, psychopathy consists of low warmth and low positive emotions but high excitement seeking. The research in this area demonstrates that the FFM is able to define elemental traits, clarify the literature, and provide a groundwork from which new theories of psychopathy can be generated.

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# BORDERLINE PERSONALITY DISORDER: A FIVE-FACTOR MODEL PERSPECTIVE

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As this text attests, the five-factor model (FFM) has been used extensively to both characterize and understand the personality disorders included within the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000). The purpose of this chapter is to focus on and highlight the application of the FFM to *borderline personality disorder* (BPD). BPD is a severe mental disorder associated with extreme emotional, behavioral, and interpersonal dysfunction. Individuals with BPD have a maladaptive personality style that is present in a variety of contexts, emerges by early adulthood, and leads to distinct patterns of dysfunction in behavior and relationships (American Psychiatric Association, 2000). BPD affects 1% to 3% of the general population and is the most common personality disorder in clinical settings, representing 10% of the patients in outpatient settings, 15% to 20% of the patients in inpatients settings, and 30% to 60% of the patients diagnosed with personality disorders (Lenzenweger, Lane, Loranger, & Kessler, 2007; Trull, Jahng, Tomko, Wood, & Sher, 2010; Widiger & Trull, 1993; Widiger & Weissman, 1991). Finally, BPD is frequently comorbid with other personality disorders and with Axis I disorders, and this comorbidity is associated with poorer outcome (Skodol et al., 2002).

To receive a BPD diagnosis, at least five of the nine criteria must be present and the symptoms

must result in significant distress or impairment (American Psychiatric Association, 2000; see Exhibit 8.1 for a summary of the *DSM-IV-TR* BPD criteria). A calculation of unique combinations of five or more items from nine total items reveals that there are 256 possible ways to meet *DSM-IV-TR* criteria for BPD. In the case of BPD, this heterogeneity in membership has been recognized for some time and has proved challenging for both etiological and treatment research.

Several approaches to this heterogeneity problem have been adopted, including using the number of BPD symptoms present as an indicator of severity of the disorder, subtyping the disorder and classifying individuals on the basis of the most prominent symptoms manifested, and translating BPD into the language of personality and personality pathology to highlight the major traits or dispositions that underlie the BPD symptoms presented in the *DSM-IV-TR*. Each approach has its own merits and limitations (Trull & Durrett, 2005), but this latter approach is the focus of this chapter.

In this chapter, we review recent findings on the application of the FFM in BPD research (Widiger, 2005, also provided a discussion of BPD from the perspective of the FFM). We begin with a review of studies that explore the associations between BPD and FFM personality traits as well as alternative ways of indexing these associations. Then, we examine studies investigating both the validity and stability of a FFM conceptualization

**EXHIBIT 8.1****Summary of Diagnostic Criteria for Borderline Personality Disorder**

- 
- Frantic efforts to avoid real or imagined abandonment
  - Unstable and intense interpersonal relationships
  - Persistently unstable self-image
  - Impulsivity in at least two areas that are potentially self-damaging (e.g. sex and substance abuse)
  - Suicidal behavior, gestures, or threats; self-mutilating behavior
  - Affective instability due to a marked reactivity of mood
  - Feelings of emptiness
  - Inappropriate and intense anger
  - Stress-related dissociative symptoms
- 

*Note.* Data from American Psychiatric Association (2000).

of BPD as well as several special issues concerning the relations between BPD features and the FFM. Finally, we evaluate the current proposal for the fifth edition of the DSM (*DSM-5*) for diagnosing BPD, discuss how this proposal interfaces with a FFM perspective, and discuss the issue of clinical utility.

### **PERSONALITY CORRELATES OF BORDERLINE PERSONALITY DISORDER**

For several decades now, researchers have examined the correspondence between major personality traits and both symptoms and diagnoses of the DSM personality disorders (Trull & Widiger, 2008; Widiger & Trull, 2007). By far, the personality model that has received the most attention is the FFM (Costa & McCrae, 1992). The five broad FFM domains include Neuroticism (vs. emotional stability), Extraversion (or surgency), Agreeableness (vs. antagonism), Conscientiousness (or constraint), and Openness (or intellect, imagination, or unconventionalality). The most comprehensive measure of the FFM, the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992), also assesses 30 trait facets that make up the five major trait domains (six facets for each domain). Empirical support for the construct validity of the FFM as a dimensional model of personality structure is extensive (McCrae & Costa, 1999) with respect to the heritability of these traits, the universality across cultures, and the temporal stability across adulthood (Widiger & Trull, 2007).

### **Five-Factor Model Predictions**

A description of each of the 10 *DSM-IV-TR* personality disorders in terms of the 30 facets of the FFM was developed by Lynam and Widiger (2001) on the basis of a survey of personality disorder researchers; these descriptions were then replicated by Samuel and Widiger (2004) in a subsequent survey of clinicians (the FFM descriptions by the researchers and clinicians converged from .90 for dependent to .97 for antisocial). The FFM conceptualizations of the 10 *DSM-IV-TR* personality disorders include both all of the features within the diagnostic criterion sets as well as, in some cases, fuller descriptions of each personality disorder. As can be seen from Table 8.1, an FFM description of BPD (Lynam & Widiger, 2001) includes high levels of neuroticism (high anxiousness, angry hostility, depressiveness, impulsiveness, and vulnerability), high levels of openness (high openness to feelings and to actions), low levels of agreeableness (low compliance), and low levels of conscientiousness (low deliberation).

### **Empirical Support for Five-Factor Model Predictions**

Lynam and Widiger's (2001) FFM account of BPD has received empirical support both at the domain and facet level (Samuel & Widiger, 2008; Saulsman & Page, 2004). For example, a recent meta-analysis of 16 empirical articles (sampling over 3,000 participants) that examined the relations between FFM traits and BPD indicated a moderate positive correlation between neuroticism scores and BPD (.54)

**TABLE 8.1**  
Borderline Personality Disorder From a Five-Factor Model Perspective

Predictions <sup>a</sup>	Findings <sup>b</sup>
Neuroticism	Neuroticism
High: Anxiousness, angry hostility, depressiveness, impulsiveness, vulnerability	High: Anxiousness, angry hostility, depressiveness, self-consciousness, impulsiveness, vulnerability
Low: None	Low: None
Extraversion	Extraversion
High: None	High: None
Low: None	Low: Warmth, positive emotions
Openness to Experience	Openness to Experience
High: Feelings, actions	High: None
Low: None	Low: None
Agreeableness	Agreeableness
High: None	High: None
Low: Compliance	Low: Trust, straightforwardness, compliance
Conscientiousness	Conscientiousness
High: None	High: None
Low: Deliberation	Low: Competence, dutifulness, self-discipline, deliberation

<sup>a</sup>Data from Lynam and Widiger (2001). <sup>b</sup>Data from Samuel and Widiger (2008).

and negative correlations with agreeableness (−.24) and conscientious (−.29) scores (Samuel & Widiger, 2008). Furthermore, BPD was positively related to all neuroticism facets (i.e., anxiousness, angry hostility, depressiveness, self-consciousness, impulsiveness, and vulnerability) and negatively related to a range of extraversion, agreeableness, and conscientiousness facets (i.e., warmth, positive emotions, trust, straightforwardness, compliance, competence, dutifulness, self-discipline, and deliberation; see Table 8.1). In general, these findings corresponded highly with predictions based on BPD pathology and personality styles (e.g., Lynam & Widiger, 2001; Widiger, Trull, Clarkin, Sanderson, & Costa, 2002).

#### VALIDITY OF FIVE-FACTOR MODEL IN CHARACTERIZING BORDERLINE PERSONALITY DISORDER

Other more recent studies have also supported these FFM trait predictions for BPD diagnosis and features. In a sample of 187 psychiatric patients, Bagby, Sellbom, Costa, and Widiger (2008) assessed the relations between the five FFM domain scores (using the NEO PI-R; Costa & McCrae, 1992) and the total

number of BPD symptoms derived from an Axis II screening questionnaire. BPD symptoms were significantly positively related to scores on neuroticism ( $r = .59$ ), and significantly negatively related to scores on agreeableness ( $r = -.23$ ) and on conscientiousness ( $r = -.47$ ). In aggregate, FFM domain scores accounted for 43% of the variance in BPD symptom counts and showed incremental validity in accounting for BPD symptoms above and beyond scores from an alternative measure of personality pathology (i.e., the Personality Psychopathology Five; Harkness, McNulty, & Ben-Porath, 1995).

Davenport, Bore, and Campbell (2010) explored the relationship between FFM traits and BPD in a sample of seven BPD outpatient controls who were in a pretreatment phase of dialectical behavior therapy (Linehan, 1993), and a group of 10 BPD outpatients who had completed a 14-month dialectical behavior therapy treatment. The authors used items from Goldberg's (1999) International Personality Item Pool to measure the five major domains of the FFM. Results indicated that although pretreatment BPD patients scored significantly higher on neuroticism and lower on agreeableness and conscientiousness than normative populations, the pretreatment and

posttreatment groups only differed on conscientiousness and agreeableness scores (in both cases the posttreatment group scoring significantly higher). Because of the study design, however, it is impossible to attribute these latter differences to treatment effects.

Previously reported FFM–BPD relations have also been replicated in studies outside of the United States. Verardi, Nicastro, McQuillan, Keizer, and Rossier (2008) examined FFM personality trait profiles for those diagnosed with BPD. Fifty-two Swiss patients completed the International Personality Disorder Examination (Loranger et al., 1994) screening questionnaire to establish personality disorder diagnoses as well as the Big Five Questionnaire (Caprara, Barbaranelli, & Borgogni, 2001) to provide personality trait scores. All 52 participants met criteria for BPD. The Big Five Questionnaire average scores indicated that the BPD outpatients scored lower than nonclinical controls ( $n = 314$ ) on all five dimensions (emotional stability, energy, friendliness, conscientiousness, and openness) but especially on emotional stability (i.e., reverse-scored neuroticism).

Rossier and Rigozzi (2008) assessed the relations between scores on the NEO PI-R and BPD symptom counts derived from the International Personality Disorder Examination (Loranger et al., 1994) screening questionnaire in multiple French-speaking African countries ( $n = 2,014$ ) as well as from a sample of French-speaking Swiss ( $n = 697$ ). Correlations between BPD symptom counts and the five domains of the NEO PI-R were similar in all samples (positive correlations with neuroticism and negative correlations with agreeableness and conscientiousness). For Lynam and Widiger's (2001) predictions of FFM facets relations to BPD, over 85% of the predicted correlations were confirmed. These results provide some cross-cultural replication of the FFM in characterizing symptoms of BPD.

Distel et al. (2009) reported phenotypic correlations between FFM domain scores and the Personality Assessment Inventory—Borderline Features (PAI–BOR; Morey, 1991) measure of BPD. Data were available for 4,403 monozygotic twins, 4,425 dizygotic twins, and 1,661 siblings from 6,140 Dutch, Belgian, and Australian families.

Correlations between borderline personality and the FFM personality traits were .68 (neuroticism), -.31 (extraversion), .06 (openness), -.41 (agreeableness), and -.35 (conscientiousness). Results from multiple regression analyses indicated that a combination of high neuroticism and low agreeableness best predicted borderline personality.

Summarizing across these recent studies as well as previous meta-analyses, it seems safe to conclude that BPD diagnoses and features are most highly (and consistently) associated with the FFM domains of Neuroticism, Agreeableness, and Conscientiousness as well as select facets from each domain. In particular, most if not all facets of Neuroticism seem to characterize BPD.

### USING FIVE-FACTOR-MODEL-DERIVED BORDERLINE PERSONALITY DISORDER INDICES

Although assessing the relations between FFM traits and BPD diagnoses and features is instructive, some have sought to represent the strength of these relations in one quantitative index. Specifically, it is possible to assess the “match” between an individual's FFM trait profile and an FFM profile that is judged to be prototypic of the BPD diagnosis. As noted previously, Lynam and Widiger (2001) reported on a method to generate prototypic FFM profiles for each personality disorder (including BPD) by surveying experts in each diagnosis. The borderline experts rated each of the 30 facets of the FFM, as conceptualized by the NEO PI-R, on a scale of 1 to 5 (where 1 indicates that the prototypic [BPD] person would be extremely low on the trait; 2 indicates that the prototypic person would be low; 3 indicates that the person would be neither low nor high; 4 indicates that the prototypic person would be high on that trait; and 5 indicates that the prototypic person would be extremely high on that trait). In this way, Lynam and Widiger were able to identify the facet scores that were most likely to distinguish those with BPD from others (see Table 8.1).

This FFM borderline prototype can then be matched empirically against an individual's NEO PI-R (Costa & McCrae, 1992) profile to yield a similarity score. The more similar an individual is to this

BPD FFM prototype, the more he or she could be said to exhibit the FFM borderline personality profile. An intraclass  $Q$  correlation (ranging from  $-1.0$  [*not at all similar*] to  $+1.0$  [*perfectly similar*]) then can be used as an FFM measure of BPD and compared empirically with existing measures of BPD across a variety of samples and hypothesized correlates (see also Chapter 17, this volume).

The first example of the use of this FFM–BPD index was presented by Trull, Widiger, Lynam, and Costa (2003). Trull et al. (2003) reported on three studies that examined the relationship between this FFM–BPD index score (derived from the predictions of Lynam & Widiger, 2001; described previously) and a number of alternative BPD measures and external correlates. An FFM–BPD index score was calculated for each participant by correlating the individual's FFM scores with the Lynam and Widiger (2001) expert consensus profile of FFM BPD (using an intraclass  $Q$  correlation). Trull et al. (2003) found that this FFM–BPD index (a) was as highly correlated with direct measures of BPD symptoms as these measures were correlated with each other; (b) showed moderate discriminant validity in the prediction of BPD, antisocial, and avoidant symptoms; (c) was significantly related to measures of core BPD features; and (d) was significantly associated with measures of maladaptive functioning, childhood abuse, and parental psychopathology.

Following an earlier procedure developed by Miller, Bagby, Pilkonis, Reynolds, and Lynam (2005), Decuyper, DeClercq, De Bolle, and De Fruyt (2009) used an alternative scoring algorithm to create FFM–BPD scores. Instead of using an intraclass  $Q$  correlation to index the similarity between self-rated and expert consensus FFM–BPD scores, these authors used simple facet score counts to index the degree to which a person's FFM scores are similar to those expected from BPD patients. Specifically, facet scores that were rated as prototypically high in BPD were added together with facet scores rated as prototypically low in BPD (after these were reverse scored) to compute an overall FFM–BPD score. Using a  $T$ -score cutoff of 65 (1.5 standard deviations above the mean) derived from a normative Flemish adolescent sample, Decuyper et al. (2009) found that high scorers on the FFM–BPD scale endorsed

more BPD symptoms and showed elevations on measures of personality pathology traits relevant to BPD. Results suggest that the FFM personality disorder count technique can be used in both adolescent and adult samples.

Miller et al. (2010) evaluated whether clinician ratings of traits from the FFM could be used as proxies for *DSM–IV–TR* personality disorders. FFM BPD scores (sums of the FFM–BPD facet scores), *DSM–IV–TR* BPD symptom ratings, impairment scores, and scores on an alternative personality pathology questionnaire (the Schedule for Nonadaptive and Adaptive Personality; Clark, 1993) were available for all patients. Results indicated that the FFM–BPD scores were significantly correlated with *DSM–IV–TR* BPD symptom counts ( $r = .70$ ), showed good discriminant validity in reference to other *DSM–IV–TR* personality disorder symptom counts, were characterized by a similar Schedule for Nonadaptive and Adaptive Personality score profile as the *DSM–IV–TR* BPD symptom counts, and provided significant incremental prediction of impairment scores beyond that afforded by *DSM–IV–TR* BPD symptom counts. Therefore, this study provided yet another method of quantifying an index of an FFM conceptualization of BPD and demonstrated its validity and incremental utility over traditional measures of BPD features.

In summary, investigators have demonstrated the validity and utility of several FFM-based BPD indices. Interestingly, these FFM indices appear to perform as well as direct measures of BPD, whether the measures are questionnaire or structured interview based. These studies represent an important development in that they suggest that a single FFM-based index can be used in both clinical and research settings as a good screening method for BPD.

## STABILITY OF FIVE-FACTOR MODEL SCORES FOR BORDERLINE PERSONALITY DISORDER

In addition to establishing the validity of an FFM account of BPD, it is also important to evaluate the stability of relevant FFM scores over time. By definition, BPD and other personality disorders consist of chronic and relatively long-standing maladaptive

personality traits. Therefore, one would expect at least a moderate amount of stability over time in FFM traits that characterize BPD.

In a sample of 376 patients, Warner et al. (2004) assessed the stability of BPD–FFM profiles (derived from Lynam & Widiger, 2001) and of BPD features over a 2-year time period (3 waves). Results indicated that both the BPD–FFM profiles and BPD features were fairly stable over 2 years (all stability coefficients were .70–.77). Cross-lagged effects indicated that (a) baseline BPD features were significantly related to changes in the BPD–FFM traits from baseline to 1-year follow-up, and (b) FFM–BPD traits at 1-year follow-up were significantly related to changes in BPD features from 1-year follow-up to 2-year follow-up. Overall, the authors concluded that their results supported the predictions of Lynam and Widiger (2001) concerning the relationship of specific FFM traits to BPD and that there is some evidence that changes in personality traits may lead to changes in BPD features.

One might expect that personality traits characterizing BPD would show more instability than those for other personality disorders. The reason is that BPD is a disorder characterized by instability in affect, identity, and behavior. Using this logic, Hopwood et al. (2009) examined the FFM personality trait stability across four assessments over 6 years among 130 BPD patients and compared this with stability found for 302 patients with other personality disorders. Across a number of indices of stability and varying time frames, BPD patients tended to show less stability for the five FFM domain scores, but especially for Neuroticism and Conscientiousness. For example, over a 6-year follow-up period, the test–retest correlations for the BPD group were .41 (Neuroticism), .63 (Extraversion), .73 (Openness), .64 (Agreeableness), and .52 (Conscientiousness), whereas the corresponding coefficients for the other personality disorder group were .61, .68, .77, .74, and .69, respectively. One potential explanation for the relatively lower stabilities for Neuroticism and Conscientiousness scores among the BPD patients is that these traits map onto the core “unstable” features of BPD, which include affective instability and impulsivity.

Hopwood and Zanarini (2010b) sought to replicate these instability results in another independent patient sample. The authors collected FFM data (using the 60-item NEO Five-Factor Inventory; Costa & McCrae, 1992) from 290 BPD patients and 72 patients with other personality disorders over a 10-year time period. Although, overall, BPD patients tended to show less stability in FFM traits across 10 years, the only consistent finding across stability indices was for Conscientiousness (but not for Neuroticism) to be less stable among BPD patients. For example, the test–retest correlations over a 10-year period for the BPD group were .34 (Neuroticism), .52 (Extraversion), .64 (Openness), .58 (Agreeableness), and .49 (Conscientiousness), whereas the corresponding coefficients for the other personality disorder group were .28, .48, .73, .59, and .74, respectively.

In summary, FFM trait scores for BPD patients are not strongly stable over long periods of time. However, these results might be expected as a result of the length of time between assessments as well as the importance of instability in characterizing BPD features. Further, FFM scores for other personality disorders also evidence some instability over these time frames, as would be the case with patients with Axis I pathology as well. These results suggest that a trait account of BPD may complement symptom-based assessment of BPD using traditional BPD measures. Some of the major emotional and behavioral symptoms of BPD, which may wax and wane or respond to treatment, are related to two of the most unstable traits, Neuroticism and Conscientiousness (Trull, Tomko, Brown, & Scheiderer, 2010).

## FIVE-FACTOR MODEL AND BORDERLINE PERSONALITY DISORDER: SPECIAL ISSUES

We now turn to a discussion of several recent articles that focus on relations of the FFM to particular features of BPD (affective instability, nonsuicidal self-injury) and on the genetic overlap between BPD features and FFM traits.

### Affective Instability and Neuroticism

Miller and Pilkonis (2006) sought to determine whether a core feature of BPD, affective instability,

could be accounted for by the personality trait of neuroticism. The authors assessed 132 patients at baseline and then 91 of these at 12-month follow-up. The NEO PI-R (Costa & McCrae, 1992) was used as a measure of neuroticism, whereas four individual DSM criteria (from three different personality disorders) were used to assess affective instability. Consensus ratings on impairment, depression, anxiety, and overall level of functioning were available as were self-reported scores on interpersonal dysfunction. At baseline, neuroticism and affective instability scores were only modestly related ( $r = .27$ ,  $p < .01$ ), and both scores were significantly related to a diagnosis of BPD (without the affective instability items;  $r = .30$  and  $r = .36$ , respectively, both  $p < .01$ ). On the basis of these results and the findings that neuroticism and affective instability scores differentially predicted external correlates, the authors concluded that neuroticism and affective instability are overlapping but unique constructs that complement each other.

Kamen, Pryor, Gaughan, and Miller (2010) sought to further investigate the relationship between neuroticism and affective instability. In particular, Kamen et al. attempted to replicate previous findings by Miller and Pilkonis (2006). Kamen et al. administered a popular, independent measure of affective instability (the Affective Lability Scales; ALS; Harvey, Greenberg, & Serper, 1989) in addition to the NEO PI-R to 48 current outpatients. Once again, affective instability scores correlated modestly with neuroticism scores ( $r = .29$ ,  $p < .05$ ), and the correlations between neuroticism and affective instability, respectively, and BPD symptoms were not significantly different from each other. Kamen et al. also found that neuroticism scores were significantly related to some (anxiety-depression and anxiety) but not all forms of affective instability when controlling for the four other FFM domain scores. Finally, results from a series of regression analyses demonstrated that a substantial portion of the variance in ALS scores could be explained by FFM domains, and it was estimated that all 30 facets of the NEO PI-R accounted for about 50% of the variance in ALS scores.

Although interesting, these findings must be considered preliminary because they equate the

construct of neuroticism with only one measure of it (e.g., the NEO PI-R) as well as include only one measure of affective instability (e.g., the ALS). For the NEO PI-R, emotional dysregulation, or affective instability, is measured more directly in alternative measures of the FFM (Widiger, 2011b). The items of these alternative FFM instruments (e.g., Big Five Aspects Scale; DeYoung, Quilty, & Peterson, 2007; see also Chapter 15, this volume) ask about volatility and instability of mood, whereas the NEO instruments focus on consistent negative mood states. For the assessment of mood, the validity of the ALS as a measure of affective instability has been questioned. For example, ALS scores are not associated with instability and variability in negative affect as reported in the daily lives of those with BPD (Solhan et al., 2009). Future studies of the relation between neuroticism and affective instability should use multiple measures of these constructs to shed some light on whether the findings to date are primarily a function of instrument choice.

## The Five-Factor Model and Nonsuicidal Self-Injury

MacLaren and Best (2010) assessed the relations between nonsuicidal self-injury, a frequently occurring feature of BPD, and FFM scores in a sample of 151 undergraduates. Participants completed the Deliberate Self-Harm Inventory (Gratz, 2001) and the NEO PI-R (Costa & McCrae, 1992). Severe self-injurers (13%) who had self-injured 10 or more times or who had practiced three or more methods of nonsuicidal self-injury scored higher on Neuroticism (facets of depression, self-consciousness, vulnerability), lower on Openness (openness to feelings facet), lower on Agreeableness (facets of trust, straightforwardness, and altruism), and lower on Conscientiousness (facets of dutifulness, self-discipline, and deliberation). The finding of low openness to feelings may indicate some aversion to negative emotions, which may result in self-harm.

## Genetic Correlation Between Borderline Personality Disorder Features and Five-Factor Model Traits

As noted previously, the phenotypic association between BPD and normal personality traits has

extensively been studied, showing that borderline patients tend to score high on neuroticism and low on agreeableness and conscientiousness (Samuel & Widiger 2008; Saulsman & Page, 2004). To date, one study has investigated the genetic relationship between BPD and FFM traits. Using data from more than 10,000 twins and siblings, Distel et al. (2009) examined the association between BPD features and the FFM personality traits at the genetic level. BPD features were assessed with a dimensional measure of BPD, the PAI-BOR (Morey 1991). As noted previously, phenotypic correlations between the PAI-BOR and the FFM personality traits ranged from .06 for openness to experience to .68 for neuroticism. A combination of high neuroticism and low agreeableness predicted BPD features best. Consistent with the idea that pathological personality traits are the extreme forms of normal personality traits, Distel et al. found that 50% of the phenotypic association between borderline personality and the FFM traits could be explained by genetic effects. Interestingly, all genetic variation influencing BPD features was shared with FFM personality traits. The genetic correlation was highest between neuroticism and BPD features ( $r_{\text{additive genetic factors}} = .95$ ), but high genetic correlations of .81, .56, and .62 were also found between BPD features and agreeableness, conscientiousness and extraversion, respectively.

## DIAGNOSING BORDERLINE PERSONALITY DISORDER IN THE DSM-5

With the results of these studies documenting the validity and utility of the FFM in conceptualizing and measuring BPD features in mind, it is now time to turn to the new *DSM-5* proposal for BPD. The original *DSM-5* proposal presented a hybrid model of BPD—one that combined the notion of a borderline “type” with supplemental dimensional ratings of relevant personality traits (i.e., categorical and dimensional; Skodol et al., 2011).

This initial version proposed that a diagnosis of BPD proceed in three major steps. To qualify for a BPD diagnosis, the personality dysfunction presented must (a) be rated as a good or very good match to the BPD-type narrative (i.e., a score of 4 or 5) or be rated as extreme (i.e., score of 3) on one of

the six trait domains, (b) be associated with at least mild impairment in self-functioning and interpersonal functioning (i.e., a score of 1, 2, 3, or 4), (c) show relative stability across time and consistency across situations, (d) not be better understood as normative to the person’s dominant culture, and (e) not be due solely to the physiological effect of a substance or medical condition.

However, the most recent version of the *DSM-5* proposal for BPD (American Psychiatric Association, 2011) indicates that the Personality and Personality Disorders Work Group has deleted the borderline-type narrative from further consideration. Rather, the proposal currently requires (a) significant impairment in personality functioning (i.e., the domains of self-functioning and of interpersonal functioning); (b) elevated personality traits in negative affectivity, disinhibition, and antagonism; (c) stability and pervasiveness across situations; (d) these impairments and trait expressions not be normative or part of the person’s culture; and (e) these impairments and trait expressions not be due to the effects of substances or medications (this proposal may, of course, be revised prior to the final decisions for the *DSM-5*).

Here, we discuss each of these components of the *DSM-5* BPD diagnosis, with special emphasis on the trait ratings that are included in the *DSM-5* BPD conceptualization. The first step in assessing an individual for a *DSM-5* BPD diagnosis involves rating a patient’s *level of personality functioning*, specifically, the level of self-functioning and interpersonal functioning for each individual assessed. Self-functioning is defined in two areas (identity integration, self-directedness) as is interpersonal functioning (empathy and intimacy). The original *DSM-5* proposal indicated that a 5-point scale is used to rate overall level of personality functioning for this purpose (0 = no impairment; 1 = mild impairment; 2 = moderate impairment; 3 = serious impairment; and 4 = extreme impairment). Descriptions of each quantitative rating will likely be provided. The clinician is reminded that the ratings must reflect functioning that is of multiple years in duration; not due solely to another mental disorder, physical condition, or effect of a substance; and not a norm within a person’s cultural background.

The *DSM-5* BPD personality traits presented in the most recent proposal (American Psychiatric

Association, 2011; see <http://www.dsm5.org>) include those tapping *negative affectivity* (emotional lability, anxiousness, separation insecurity, and depressivity), *disinhibition* (impulsivity, risk taking), and *antagonism* (hostility). The original Personality and Personality Disorders Work Group proposal called on diagnosticians to provide a set of ratings for each of the seven traits, on a scale of 0 (*not at all descriptive*), 1 (*mildly descriptive*), 2 (*moderately descriptive*), or 3 (*extremely descriptive*) to describe the personality profile of the patient (Clark & Krueger, 2010).

### **EXAMINING THE DSM-5 BORDERLINE PERSONALITY DISORDER WORK GROUP PROPOSAL THROUGH A FIVE-FACTOR MODEL LENS**

For years, researchers have called for a switch to a dimensional model of personality disorders (Clark, 2007; Livesley, 2001; Widiger & Frances, 1985; Widiger & Trull, 2007), and BPD seemed especially well suited for such a change given the strong evidence that it is a dimensional construct (Trull, Distel, & Carpenter, 2011) and well characterized by major personality traits (Samuel & Widiger, 2008; Saulsman & Page, 2004). The inclusion of maladaptive personality traits within the diagnostic criterion set for BPD that are derived from the dimensional model parallels closely the FFM conceptualization and diagnosis of BPD (see Exhibit 8.2), representing a significant shift of the *DSM* toward the FFM (Trull & Widiger, *in press*). Unfortunately though, the *DSM-5* Personality and Personality Disorders Work Group's proposal for a trait-based personality disorder system, including the proposal for BPD, falls short for several reasons (Widiger, 2011a).

Table 8.2 provides an illustration of how the original 37 trait scales proposed by the *DSM-5* Personality and Personality Disorders Work Group would be classified within the FFM domains (Widiger, 2011a). The current seven *DSM-5* traits for BPD (American Psychiatric Association, 2011) appear in bold. This comparison highlights several problematic issues. First, although there is good evidence to suggest that certain personality traits are bipolar in nature,

the *DSM-5* Personality and Personality Disorders Work Group chose to include only unipolar traits. Unfortunately, the interpretation of a low score on a unipolar trait is ambiguous (Widiger, 2011a). In the case of BPD traits, for example, does a low score on emotional lability mean that one has a “normal” range level of emotionality or that one’s lack of emotionality is pathological (e.g., alexithymia; Taylor & Bagby, 2004)? This may be especially problematic in that neuroticism/negative emotionality, a trait domain considered to be highly relevant to BPD is not adequately sampled at the lower end of the trait. The same can be said about conscientiousness/disinhibition as well, a major trait that taps another core feature of BPD—impulsivity.

Further, at least one of the traits listed for the BPD type seems to be a behavioral indicator of a trait rather than a trait itself. Specifically, separation insecurity may be considered a questionable trait in this regard. The *DSM-5* website defines *separation insecurity* in this way: “fears of rejection by—and/or separation from—significant others, associated with fears of excessive dependency and complete loss of autonomy” (American Psychiatric Association, 2011, *Borderline Personality Disorder*, para. 3). Essentially, this is a description of the *DSM-IV-TR* criterion of fears of rejection or abandonment (including extreme attempts to avoid such). There is no argument that this is a feature of BPD, but this construct’s status as a primary trait seems questionable. Conceptually, it seems that separation anxiety is better suited as an indicator of primary traits (e.g., anxiousness, depressiveness, vulnerability from the FFM) rather than as a trait in and of itself.

### **THE UTILITY OF A FIVE-FACTOR MODEL APPROACH TO BORDERLINE PERSONALITY DISORDER**

One of the strongest arguments being raised against an FFM approach to characterizing BPD and other personality disorders is clinical utility (e.g., First, 2005). Interestingly, such an argument implies that the existing diagnostic system has superior clinical utility, whereas this is not the case (Kupfer, First, & Regier, 2002; Rounsville et al., 2002; Trull & Widiger, 2008; Westen & Arkowitz-Westen, 1998).

**EXHIBIT 8.2*****Diagnostic and Statistical Manual—5 (DSM–5) Borderline-Type Traits and Five-Factor Model (FFM) Borderline Personality Disorder (BPD) Traits<sup>a</sup>******DSM–5* borderline traits<sup>a</sup>**

- Negative emotionality: Emotional lability, separation insecurity, anxiousness, depressivity
- Antagonism: Hostility
- Disinhibition: Impulsivity, risk taking

**FFM BPD traits<sup>b</sup>**

- Neuroticism: Anxiousness, angry hostility, depressiveness, impulsiveness, vulnerability
- Agreeableness: Low compliance
- Conscientiousness: Low deliberation
- Openness: Feelings, actions

<sup>a</sup>Data from American Psychiatric Association (2011). <sup>b</sup>Data from Lynam and Widiger (2001).

A dimensional model of classification for BPD using the FFM has great potential to be clinically useful for several reasons. First, it is a model of personality traits that has the most empirical support regarding reliability, validity, and cross-cultural application. Second, because of its dimensional nature, it is possible to set different cutoff points along the respective dimensions that are optimal for different clinical decisions. As noted by Trull (in press), use of a FFM approach to diagnosing BPD would allow one to identify the level of emotional

instability, for example, that suggests the need for insurance coverage, pharmacotherapy, hospitalization, or disability. Third, the FFM model assesses traits that are core aspects of BPD, including emotional dysregulation/distress (e.g., neuroticism traits), social/interpersonal domains (e.g., extraversion and agreeableness traits), and impulsivity/disinhibition (e.g., conscientiousness traits; Trull, Tomko, et al., 2010). In addition, FFM traits may also have treatment implications and foreshadow within-treatment behavior. For example, in the case

**TABLE 8.2*****Placement of the 37 *Diagnostic and Statistical Manual—5 (DSM–5)* Dimensional Traits Within the Domains of the Five-Factor Model (FFM)***

<b>FFM domain</b>	<b><i>DSM–5</i> traits</b>
Neuroticism—high	<b>Emotional lability, separation insecurity</b> , pessimism, low self-esteem, <b>depressivity</b> , guilt/shame, <b>anxiousness</b> , self-harm
Neuroticism—low	None
Extraversion—high	Histrionism
Extraversion—low	Intimacy avoidance, social withdrawal, social detachment, restricted affectivity, anhedonia
Openness—high	Unusual perceptions, cognitive dysregulation, unusual beliefs, eccentricity, dissociation proneness
Openness—low	None
Agreeableness—high	Submissiveness
Agreeableness—low	Oppositionality, suspiciousness, <b>hostility</b> , aggression, narcissism, deceitfulness, manipulativeness, callousness
Conscientiousness—high	Rigidity, perseveration, perfectionism, risk aversion, orderliness
Conscientiousness—low	Irresponsibility, distractibility, <b>impulsivity</b> , <b>recklessness/risk taking</b>

*Note.* The current seven *DSM–5* traits for borderline personality disorder appear in boldface. Data from Widiger (2011a).

of BPD, neuroticism traits are relevant to mood, anxiety, and emotional dyscontrol (see Chapter 24, this volume). Such problems in emotion regulation might suggest pharmacologic interventions (e.g., mood stabilizers) or cognitive–behavioral interventions (e.g., dialectical behavior therapy; Linehan, 1993; see Chapter 24, this volume).

Another important question is whether clinicians actually find FFM information useful in their clinical formulations of BPD. To date, several studies have provided encouraging findings, at least for personality disorders in general (e.g., Samuel & Widiger, 2006). A related concern is whether an FFM diagnosis of BPD would be viewed as too cumbersome and not user-friendly. However, as detailed in this volume, an FFM formulation of personality disorder can proceed in logical steps. Further, evaluating individuals' standing on 30 trait facets is much easier and more time efficient than assessing almost 100 *DSM-IV-TR* personality disorder criteria or than assessing the 37 *DSM-5* traits and four variants of personality functioning called for in the *DSM-5* proposal (Trull, in press; Trull & Widiger, 1997; Widiger, 2011a; Widiger & Coker, 2002; Widiger & Lowe, 2007).

Although there are several published studies comparing the *DSM-IV-TR* and FFM accounts of personality disorders with regard to diagnostic accuracy and utility (e.g., Rottman, Ahn, Sanislow, & Kim, 2009) as well as comparing clinician preferences for the FFM account of personality disorders with those for alternative diagnostic systems (Mullins-Sweatt & Widiger, 2011; Spitzer, First, Shedler, Westen, & Skodol, 2008; see also Chapter 20, this volume), these studies have not focused on BPD specifically. Here we discuss a recent article focusing on a particular aspect of utility—prediction of outcome in BPD.

Hopwood and Zanarini (2010a) assessed the incremental validity of FFM personality traits and of BPD symptoms in predicting prospective patient functioning. Data were available for over 300 patients (approximately 70% of whom met criteria for a BPD diagnosis at baseline) over a 10-year follow-up period. BPD symptoms were assessed using the Diagnostic Interview for Borderlines—Revised (Zanarini, Gunderson, Frankenburg, & Chauncey,

1989). The 60-item short form of the NEO PI-R, the NEO Five-Factor Index (Costa & McCrae, 1992), was used to assess the five domains of the FFM. Patient functioning (a composite combining relationship, vocational, and leisure functioning scores) was assessed every 2 years over the 10-year follow-up period by trained raters. Results indicated that (a) BPD features correlated positively with FFM neuroticism and correlated negatively with extraversion and agreeableness scores and (b) FFM did provide significant incremental prediction of functioning over BPD features at each follow-up interval (2, 4, 6, 8, and 10 years); this pattern held even after controlling for baseline levels of functioning. Of the FFM scales, Extraversion and to a lesser extent Agreeableness were most commonly independent, significant predictors of functioning in these models. In contrast, the small but significant incremental validity effects of BPD features over FFM scores did not hold after controlling for baseline functioning. Although this is only one example of examining predictive validity of the FFM in characterizing BPD, Hopwood and Zanarini's (2010a) study is a good example of moving beyond simple consumer satisfaction studies in evaluating clinical utility.

## CONCLUSION

Ultimately, classification systems in general (and of BPD in particular) are judged by their ability to represent the clinical phenomena associated with the disorder, to account for findings from both the biological and psychological realm, to show associations with known risk factors (e.g., family history), and to evidence good predictive validity in accounting for outcome (Robins & Guze, 1970). To date, an FFM account of BPD has been shown to demonstrate good concurrent validity, to be relatively stable over time, to be associated with core features of the disorder, and to demonstrate good clinical utility. We have also pointed out how an FFM account of BPD had advantages over both the *DSM-IV-TR* BPD diagnosis as well as the proposed *DSM-5* borderline diagnosis. We encourage both clinicians and researchers to strongly consider incorporating an FFM approach to BPD in both clinical practice and clinical research.

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# NARCISSISTIC PERSONALITY DISORDER AND THE FIVE-FACTOR MODEL: DELINEATING NARCISSISTIC PERSONALITY DISORDER, GRANDIOSE NARCISSISM, AND VULNERABLE NARCISSISM

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Narcissistic personality disorder (NPD), as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; DSM-IV-TR; American Psychiatric Association, 2000) entails a “pervasive pattern of grandiosity (in fantasy or behavior), need for admiration, and lack of empathy” (p. 717). NPD is associated with functional impairment of a variety of forms but especially that of an interpersonal nature (Miller, Campbell, & Pilkonis, 2007). Although NPD has typically been found to be relatively rare in epidemiological studies, a recent study found lifetime prevalence rates of NPD to be quite high (i.e., 6.2%), particularly in certain demographic groups (e.g., younger individuals; Stinson et al., 2008).

The study of NPD and narcissism is at an interesting crossroads. As we have documented elsewhere (Miller & Campbell, 2010), research on trait narcissism, in which narcissism is viewed as a continuous trait on which all individuals can be placed, is thriving. Alternatively, there is a relative dearth of research on NPD as a categorical psychiatric diagnosis, especially compared with other Cluster B *DSM-IV-TR* personality disorders (PDs) such as

antisocial and borderline. Although we believe that the substantial body of research on trait narcissism is largely germane to the study of NPD, others may disagree. In fact, at one point NPD was no longer going to be an official PD diagnosis in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5)—a decision with which we disagreed (see Miller, Widiger, & Campbell, 2010)—in part because of the scant research literature on NPD (Skodol, 2010). This was unfortunate because we believe that NPD deserves a “place at the table” if the *DSM-5* is going to retain these types of diagnoses (i.e., the *DSM-5* proposal suggested that five of the 10 *DSM-IV-TR* PD diagnoses be retained in the *DSM-5*). Regardless of the fate of NPD in the *DSM-5*, the constructs of narcissism and NPD are likely to be relevant for the foreseeable future.

In the current chapter, we focus on what we perceive to be one of the most significant problems in the conceptualization, assessment, and study of NPD, which may have contributed to the scarcity of research on this construct: heterogeneity. That is, we review the growing empirical evidence that suggests that there are at least two dimensions of narcissism—grandiose

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and *vulnerable*— that (a) may be intermingled as part of the conceptualization of NPD and (b) have substantially different etiologies, underlying traits, and outcomes relevant to clinical psychology. We focus here on how the five-factor model (FFM) can help delineate areas in which these narcissism dimensions converge and diverge and how they may both be represented in the *DSM-IV-TR* conceptualization of NPD. Finally, we discuss how the existing data might be used by the *DSM-5* Personality and Personality Disorders Work Group to ensure that their new dimensional trait model has adequate content validity, particularly with regard to the assessment of narcissism.

### HETEROGENEITY WITHIN NARCISSISM AND NARCISSISTIC PERSONALITY DISORDER

As noted previously, there is substantial empirical support for the idea that there are at least two different dimensions of narcissism (i.e., grandiose vs. vulnerable; e.g., Dickinson & Pincus, 2003; Fossati et al., 2005; Miller & Campbell, 2008; Russ, Shedler, Bradley, & Westen, 2008; Wink, 1991). Cain, Pincus, & Ansell (2008) provided a detailed list of many of the terms that have been proffered for grandiose narcissism (e.g., *malignant, overt, manipulative, phallic, egotistical, oblivious, exhibitionistic, psychopathic*) and vulnerable narcissism (e.g., *covert, hypervigilant, shy, craving, contact shunning, thin-skinned*). In general, grandiose narcissism is associated with traits such as immodesty, interpersonal dominance, self-absorption, and callous manipulativeness; grandiose narcissism also tends to be positively related to self-esteem and negatively related to psychological distress. Alternatively, vulnerable narcissism is associated with increased rates of psychological distress and negative emotions (e.g., depression, anxiety, shame) and low self-esteem; despite these traits, these individuals interact with others in an egocentric, hostile manner. We have argued elsewhere that any immodesty or grandiosity put forth by individuals high on vulnerable narcissism is likely to be a brittle façade that might be easily pierced (Miller & Campbell, 2008; Miller, Dir, et al., 2010).

The extent to which these two dimensions can be found in the *DSM-IV-TR* conceptualization of

NPD is debatable. Factor analyses of the NPD symptoms indicate that the *DSM-IV-TR* NPD criteria set is either entirely (Miller, Hoffman, Campbell & Pilkonis, 2008) or primarily (Fossati et al., 2005) consistent with the grandiose dimension of narcissism. The *DSM-IV-TR* text associated with the NPD diagnostic criteria, however, certainly discussed NPD in a manner suggestive of vulnerability and fragility (e.g., “vulnerability in self-esteem makes individuals with Narcissistic Personality Disorder very sensitive to ‘injury’ from criticism or defeat. Although they may not show it outwardly, criticism may haunt these individuals and may leave them feeling humiliated, degraded, hollow, and empty”; American Psychiatric Association, 2000, p. 715). In addition, many self-report measures of NPD include questions that reference vulnerability and fragility when assessing NPD (see, e.g., Miller, Campbell, Pilkonis, & Morse, 2008). Ultimately, *DSM-IV-TR* NPD may be a blend of both grandiosity and vulnerability; Miller, Hoffman, et al. (2011) found that both grandiose and vulnerable narcissisms factors, derived from a factor analysis of three popular self-report measures of narcissism, manifested substantial correlations with a measure of *DSM-IV-TR* NPD ( $r_s = .48$  and  $.43$ , respectively). In the sections that follow, we examine the FFM trait correlates, theoretical and empirical, of *DSM-IV-TR* NPD and compare them with the correlates manifested by grandiose and vulnerable narcissism.

### THE FIVE-FACTOR MODEL AND NARCISSISTIC PERSONALITY DISORDER: PROTOTYPICALITY RATINGS OF NARCISSISTIC PERSONALITY DISORDER

Two sets of expert ratings have been developed in which researchers who had published on NPD (Lynam & Widiger, 2001) and clinicians (Samuel & Widiger, 2004) have been asked to rate the prototypical individual with NPD on the 30 facets of the FFM (see Table 9.1). In both studies, expert raters were asked to do the following:

describe the prototypic case for one personality disorder on a 1 to 5 point scale, where 1 indicates that the prototypic

TABLE 9.1

## Narcissistic Personality Disorder (NPD) and the Five-Factor Model (FFM)

<b>FFM/Big Five Personality</b>			
<b>Domains and Traits</b>	<b>Expert Ratings<sup>a</sup></b>	<b>Clinician Ratings<sup>b</sup></b>	<b>NPD (MA)<sup>c</sup></b>
<b>Neuroticism</b>	2.74	2.89	.11
Anxiety	2.33	2.71	.02
Angry hostility	<i>4.08</i>	3.90	.23
Depression	2.42	2.75	.03
Self-consciousness	<u>1.50</u>	<u>1.67</u>	-.03
Impulsiveness	3.17	3.57	.14
Vulnerability	2.92	2.76	-.01
<b>Extraversion</b>	3.51	3.63	.09
Warmth	<u>1.42</u>	2.05	-.07
Gregariousness	3.83	3.95	.04
Assertiveness	<i>4.67</i>	4.00	.19
Activity	3.67	4.14	.09
Excitement Seeking	<i>4.17</i>	4.10	.16
Positive Emotions	3.33	3.52	-.02
<b>Openness</b>	3.18	3.16	.07
Fantasy	3.75	3.82	.11
Aesthetics	3.25	3.32	.04
Feelings	<u>1.92</u>	2.68	.05
Actions	<i>4.08</i>	3.36	.04
Ideas	2.92	3.09	.07
Values	2.67	2.68	-.01
<b>Agreeableness</b>	<u>1.40</u>	<u>1.71</u>	-.37
Trust	<u>1.42</u>	<u>1.86</u>	-.20
Straightforwardness	<u>1.83</u>	<u>1.91</u>	-.31
Altruism	<u>1.00</u>	<u>1.73</u>	-.20
Compliance	<u>1.58</u>	<u>1.77</u>	-.26
Modesty	<u>1.08</u>	<u>1.23</u>	-.37
Tender-mindedness	<u>1.50</u>	<u>1.77</u>	-.17
<b>Conscientiousness</b>	2.81	2.73	-.10
Competence	3.25	3.00	.01
Order	2.92	3.00	-.03
Dutifulness	2.42	2.50	-.10
Achievement striving	3.92	3.18	.02
Self-discipline	2.08	2.23	-.09
Deliberation	2.25	2.45	-.13
FFM NPD clinician	.95*		
FFM NPD meta-analysis	.81*	.87*	

Note. FFM domain names are shown in boldface. Underlined data represent FFM facets thought to be low in the prototypical individual with NPD. Italicized data represent FFM facets thought to be high in the prototypical individual with NPD. MA = meta-analyzed effect sizes. Correlations at the bottom of the table represent the correlations among the three columns of data.

<sup>a</sup>Compilation of findings from Lynam and Widiger (2001). <sup>b</sup>Compilation of findings from Samuel and Widiger (2004). <sup>c</sup>Compilation of findings from Samuel and Widiger (2008b).

\**p* < .01.

person would be extremely low on the trait (i.e., lower than the average person), 2 indicates that the prototypic person would be low, 3 indicates that the person would be neither high nor low (i.e., does not differ from the average individual), 4 indicates that the prototypic person would be high on the trait, and 5 indicates that the prototypic person would be extremely high on that trait. (Lynam & Widiger, 2001, p. 403)

The two sets of NPD ratings were very similar (the two profiles were correlated at .95) and indicated that both researchers and clinicians viewed the prototypical individual with NPD as being high on traits of angry hostility, assertiveness, activity, and excitement seeking and low on traits of self-consciousness, warmth, trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness.<sup>1</sup> For the most part, individuals with NPD might be described as “disagreeable extraverts” (Paulhus, 2001) because the traits deemed most prototypic stem from the domains of Extraversion and Agreeableness (with the exception of angry hostility [high] and self-consciousness [low], which are facets of Neuroticism).

### FIVE-FACTOR MODEL CORRELATES OF NARCISSISTIC PERSONALITY DISORDER: RESULTS FROM SAMUEL AND WIDIGER’S (2008B) META-ANALYSIS

Following in the footsteps of the domain-level analyses provided by Saulsman and Page’s (2004) meta-analysis, Samuel and Widiger (2008b) meta-analyzed the relations between all DSM-IV-TR PDs and both the domains and facets of the FFM. The mean effect sizes for NPD are reported in Table 9.1. Overall, the profile of correlations manifested by NPD was strongly correlated with both the researcher and clinician FFM NPD profiles,  $r_s = .81$  and  $.87$ , respectively. Samuel and Widiger reported effect sizes of  $|.20|$  or higher for the following FFM facets: angry hostil-

ity (positive), trust (negative), straightforwardness (negative), altruism (negative), compliance (negative), and modesty (negative). The primary difference between the empirical correlates derived from the Samuel and Widiger meta-analysis and the expert ratings was the lack of significant empirical findings for the facets of self-consciousness, assertiveness, activity, and excitement seeking. In general, the empirical correlates between measures of the FFM and NPD emphasized the antagonistic aspects associated with NPD more strongly than traits indicative of emotional resilience and interpersonal dominance that are central to the expert conceptualizations of the disorder. These meta-analytic data also contained significant variance between NPD assessments that may explain some of the differences between these results and those from the prototype ratings. This variance might well reflect the mixed conceptualization of NPD that is found in the field (i.e., vulnerable and grandiose forms).

### GRANDIOSE AND VULNERABLE NARCISSISM

We next explore the use of the FFM as a tool for delineating these two forms of narcissism.

#### Self-Reported Five-Factor Model Data

As noted earlier, NPD may be best conceptualized as a blend of two relatively distinct dimensions of narcissism: grandiose and vulnerable. Unfortunately, the recognition of these two dimensions has only recently gained significant theoretical traction in the field and empirical attention from the perspective of the FFM. In Table 9.2, we present the mean effect sizes for grandiose and vulnerable narcissism in relation to measures of the FFM. Measures of NPD were not included in the derivation of either the grandiose or vulnerable factors. Instead, grandiose narcissism was measured most commonly with the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), whereas vulnerable narcissism was assessed with either the Hypersensitive Narcissism Scale (HSNS; Hinde & Cheek, 1997) or certain

<sup>1</sup>Throughout this chapter, we discuss correlations among FFM profiles related to NPD, grandiose narcissism, and vulnerable narcissism. These correlations involved correlating one column of data (e.g., research ratings of 30 facets of the FFM for NPD) with a second column of data (e.g., clinician ratings of 30 facets of the FFM for NPD). In some cases the data are prototypicality ratings made by experts; in other cases the data are correlations between measures of the FFM and some form of narcissism or NPD.

**TABLE 9.2**

Relations Between Grandiose and Vulnerable Narcissism and the Five-Factor Model (FFM)

<b>FFM domains and traits</b>	<b>Grandiose narcissism</b>	<b>Vulnerable narcissism</b>
<b>Neuroticism</b>	<b>-.17</b>	<b>.58</b>
Anxiety	-.25	.41
Angry hostility	.19	.45
Depression	-.24	.57
Self-consciousness	-.32	.54
Impulsiveness	.10	.30
Vulnerability	-.26	.45
<b>Extraversion</b>	<b>.33</b>	<b>-.27</b>
Warmth	.09	-.24
Gregariousness	.27	-.17
Assertiveness	.53	-.25
Activity	.33	-.13
Excitement seeking	.35	-.02
Positive emotions	.18	-.24
<b>Openness</b>	<b>.14</b>	<b>-.07</b>
Fantasy	.11	.09
Aesthetics	.06	.04
Feelings	.15	.11
Actions	.13	-.16
Ideas	.15	-.03
Values	.04	-.02
<b>Agreeableness</b>	<b>-.39</b>	<b>-.35</b>
Trust	-.10	-.38
Straightforwardness	-.44	-.18
Altruism	-.15	-.18
Compliance	-.38	-.18
Modesty	-.62	-.10
Tender-mindedness	-.23	-.10
<b>Conscientiousness</b>	<b>.09</b>	<b>-.16</b>
Competence	.20	-.19
Order	.05	-.03
Dutifulness	-.02	-.15
Achievement striving	.24	-.12
Self-discipline	.10	-.28
Deliberation	-.14	-.09
FFM NPD research	.78*	.06
FFM NPD clinician	.82*	.10
FFM NPD MA	.79*	.39

Note. FFM domain names and data are shown in bold. Correlations at the bottom of the table represent the correlations between the grandiose and vulnerable FFM profiles presented in this table with the Lynam and Widiger (2001) research NPD ratings, Samuel and Widiger (2004) clinician NPD ratings, and NPD effect sizes from the Samuel and Widiger (2008b) meta-analysis. NPD = narcissistic personality disorder; MA = meta-analyzed effect sizes. Effect sizes for grandiose and vulnerable narcissism are from a meta-analytic review of relevant studies. Expert research profiles for *DSM-IV-TR* personality disorders from Lynam and Widiger (2001). Clinician profiles for *DSM-IV-TR* personality disorders from Samuel and Widiger (2004). Meta-analytic profiles from Samuel and Widiger (2008b).

\* $p \leq .01$ .

subscales from the Pathological Narcissism Inventory (PNI; Pincus et al., 2009), which includes subscales believed to be either grandiose (i.e., three subscales) or vulnerable (i.e., four subscales) in nature.

The sets of correlations generated by grandiose and vulnerable narcissism scales and the FFM were unrelated ( $r = -.25$ ). This lack of agreement is easily discerned through an examination of the sets of correlations. Grandiose narcissism was most strongly correlated with Agreeableness (negatively) and Extraversion (positively), followed by small correlations with Neuroticism (negative) and Openness (positive). As in the earlier prototype data, individuals who score high on grandiose narcissism might be described as disagreeable extraverts (Paulhus, 2001). In contrast, vulnerable narcissism was most strongly correlated with Neuroticism (positively), Agreeableness (negatively), Extraversion (negatively), and Conscientiousness (negatively). In line with Paulhus' description, individuals high on vulnerable narcissism might be better described as "disagreeable neurotics."

Indeed, from an FFM perspective, the two narcissism dimensions share only a negative relation with Agreeableness; even here, however, the two manifested differential relations at the facet level. Vulnerable narcissism was most strongly related to trust ( $r = -.38$ ), which was not a substantial correlate of grandiose narcissism ( $r = -.10$ ), whereas grandiose narcissism evinced its largest correlation with the facet of modesty ( $r = -.62$ ), which was not substantially related to vulnerable narcissism ( $r = -.10$ ). Even with regard to their one shared domain, individuals high on either of the two narcissism dimensions appear to behave antagonistically in different ways. We discuss this in greater detail later in the chapter.

We next correlated the FFM profiles generated by grandiose and vulnerable narcissism with the FFM profiles provided in Table 9.1 (i.e., researcher ratings, clinician ratings, meta-analytically derived profile; see Table 9.2). The FFM correlates manifested by grandiose narcissism were significantly related to both sets of expert ratings and meta-analytically derived correlates of NPD ( $rs$  ranged from .78 to .82); this was not the case for the FFM

correlates of vulnerable narcissism ( $rs$  ranged from .06 to .39). The FFM correlates of vulnerable narcissism overlap, but to a smaller degree than grandiose narcissism, only with the meta-analytic FFM NPD profile, but the pattern was unrelated to the two expert-rated NPD profiles.

### Narcissism and Five-Factor Model Data Reports From Alternative Perspectives

The previous research on grandiose and vulnerable narcissism and the FFM was derived from a self-report perspective (i.e., self-report data on the FFM and narcissism). Recently, a few studies have examined these relations using alternative sources for the FFM data (see Table 9.3). Both Miller and Campbell (2008) and Miller, Dir, et al. (2010) reported correlations between grandiose and/or vulnerable narcissism and the FFM domains provided by parental reports. For the most part, the patterns of correlations are similar to those derived entirely from self-reports (e.g., data reported in Table 9.2) such that individuals who reported being high on grandiose narcissism were viewed by their parents as being higher in Extraversion and lower in Agreeableness and Neuroticism. Alternatively, individuals who reported being high on vulnerable narcissism were rated by their parents as being higher in Neuroticism and lower in Extraversion. Interestingly, the parental reports did not emphasize the interpersonal antagonism associated with vulnerable narcissism when using self-reported FFM traits.

Miller, Hoffman, et al. (2011) also examined these relations using a *thin slices* approach (see Oltmanns, Friedman, Fiedler, & Turkheimer, 2004, for a more detailed overview of this approach) in which self-report scores on grandiose and vulnerable narcissism were correlated with strangers' ratings of each individual on the FFM domains on the basis of viewing a 60-second video clip in which each participant answered the following question: What do you enjoy doing? As can be seen in Table 9.3, the same general pattern was found such that self-report grandiose narcissism was primarily associated with stranger ratings of Extraversion (positive) and Neuroticism (negative), whereas self-report vulnerable narcissism was most associated with the reverse

**TABLE 9.3**
**Relations Between Grandiose and Vulnerable Narcissism and Alternative Perspectives of the Five-Factor Model (FFM)**

FFM	Grandiose narcissism		Vulnerable narcissism	
	Parent reports <sup>a</sup>	Thin slices <sup>b</sup>	Parent reports <sup>c</sup>	Thin slices <sup>b</sup>
Neuroticism	-.15	-.25	.32	.16
Extraversion	.16	.34	-.23	-.18
Openness	.06	.10	.07	-.07
Agreeableness	-.22	-.10	.01	.00
Conscientiousness	-.06	-.13	.00	.11

<sup>a</sup>Compilation of findings from Miller and Campbell (2008) and Miller, Dir, et al. (2010).

<sup>b</sup>Compilation of findings from Miller et al. (2011). <sup>c</sup>Compilation of findings from Miller, Dir, et al. (2010).

pattern (negatively related to Extraversion, positively related to Neuroticism). It is noteworthy that neither narcissism dimension was associated with stranger ratings of Agreeableness. Grandiose narcissism, but not vulnerable narcissism, was also related to stranger ratings of likeability, attractiveness, and narcissism, which may have important implications for the social functioning associated with the two forms of narcissism.

#### **CONVERGENT AND DISCRIMINANT VALIDITY OF NARCISSISTIC PERSONALITY DISORDER, GRANDIOSE NARCISSISM, AND VULNERABLE NARCISSISM IN COMPARISON WITH OTHER PERSONALITY DISORDERS**

Next, we examined the correlations between the trait profiles of NPD (from the Samuel and Widiger, 2008b meta-analysis), grandiose and vulnerable narcissism (from Table 9.2), and expert prototypicality ratings of the remaining *DSM-IV-TR* PDs (Lynam & Widiger, 2001) and psychopathy (Miller, Lynam, Widiger, & Leukefeld, 2001). As seen in Table 9.4, the meta-analytically derived FFM NPD profile was significantly positively correlated with expert ratings for all four Cluster B PDs and psychopathy, with the highest correlation with the expert rating for NPD. The FFM NPD profile was also significantly negatively correlated with the dependent PD profile. The FFM profile for grandiose narcissism was significantly positively related

to the expert ratings for psychopathy, NPD, anti-social, and histrionic PDs and significantly negatively related with dependent, avoidant, and schizoid PDs. Finally, the FFM profile for vulnerable narcissism was significantly positively correlated with expert ratings for borderline, schizotypal, avoidant, and paranoid PDs; importantly, this profile was uncorrelated with the expert ratings of NPD.

Overall, the FFM profiles for grandiose and vulnerable narcissism are quite different with regard to the profiles generated by PD researchers for other PDs. Grandiose narcissism appears to manifest the strongest discriminant validity because it manifested significant positive correlations only with “near neighbors” such as psychopathy and antisocial PD, whereas vulnerable narcissism was uncorrelated with expert ratings of NPD and was most strongly correlated with the prototypical profile associated with borderline PD. This latter finding is consistent with previous work suggesting a substantial link between vulnerable narcissism and borderline PD with regard to etiological events (e.g., abuse, maltreatment), attachment styles, personality traits, and behavioral outcomes (Dickinson & Pincus, 2003; Miller, Dir, et al., 2010). The FFM NPD profile generated a pattern of correlations with other PDs that was more consistent with grandiose narcissism, although one again finds evidence supportive of the idea that NPD blends both grandiose and vulnerable dimensions because the meta-analytically derived FFM NPD profile was strongly related to expert ratings of FFM NPD and psychopathy (consistent with

TABLE 9.4

**Profile Correlations of Narcissism Personality Disorder (NPD), Grandiose and Vulnerable Narcissism, and Five-Factor Model (FFM) Personality Disorders**

<b>FFM personality disorders</b>	<b>NPD meta-analytic profiles</b>	<b>Grandiose narcissism</b>	<b>Vulnerable narcissism</b>
Cluster A			
Paranoid	.40	.09	.53*
Schizoid	-.34	-.57*	.30
Schizotypal	.05	-.45	.68*
Cluster B			
Antisocial	.78*	.69*	.12
Borderline	.68*	.22	.71*
Histrionic	.56*	.51*	.03
Narcissistic	.81*	—	—
Cluster C			
Avoidant	-.39	-.74*	.53*
Dependent	-.65*	-.79*	.19
Obsessive-compulsive personality disorder	-.29	-.22	-.06
Non- <i>DSM-IV-TR</i> personality disorder psychopathy	.76*	.82*	-.09

Note. Correlations between grandiose and vulnerable narcissism with narcissistic profiles are reported in Table 9.2. Expert research profiles for *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*) personality disorders use data from Lynam and Widiger (2001) or from Miller, Lynam, Widiger, and Leukefeld (2001). Meta-analytic profiles from Samuel and Widiger (2008b).

\* $p \leq .01$ .

grandiose narcissism) and FFM borderline PD (consistent with vulnerable narcissism).

### **UNDERSTANDING GRANDIOSE AND VULNERABLE NARCISSISM: LESSONS FROM THE FIVE-FACTOR MODEL**

As reviewed previously, there is compelling evidence that grandiose and vulnerable narcissism are two distinct dimensions of narcissism that are intermingled to some degree in the *DSM-IV-TR* conceptualization of NPD. We believe that this commingling has caused substantial problems for the field because there is a lack of agreement regarding the basic features of NPD (e.g., Do narcissistic individuals have high or low self-esteem? Are they high or low on Neuroticism?). Ultimately, we believe that grandiose and vulnerable narcissism overlap only to the degree that individuals with high scores on either tend to interact with others in a hostile, disagreeable manner (i.e., low

Agreeableness). Even here, these forms of narcissism are different. Despite relatively similarly sized and valenced correlations with this FFM domain, the two narcissism dimensions manifest substantially different correlations at the more specific facet level. As noted in Table 9.2, individuals high on vulnerable narcissism may behave antagonistically, but we believe this is driven by the existence of angry, distrustful cognitive schemas that are suggestive of a hostile attribution bias. Hostile attribution biases are associated with environmental events such as parental abuse and neglect (e.g., Dodge, Pettit, Bates, & Valente, 1995) that are known correlates of vulnerable but not grandiose narcissism (Miller, Dir, et al., 2010). Individuals high on vulnerable narcissism also manifest a fearful attachment style—indicative of both anxiety and avoidance of intimate relationships—which is consistent with their higher scores on neuroticism, introversion, and antagonism (Miller, Dir, et al., 2010; Miller et al., 2011). In

addition, the narcissism associated with vulnerable narcissism may be more reflective of neediness and egocentricity than immodesty or grandiosity. These findings are consistent with the fact that vulnerable narcissism appears to be a very near neighbor of borderline PD; in fact, we have argued elsewhere (Miller, Dir, et al., 2010) that the two are part of a “vulnerable dark triad” (with the third “point” being Factor 2 psychopathy).

Conversely, grandiose narcissism manifests a limited correlation with distrust and is more strongly correlated with Agreeableness facets such as immodesty, noncompliance, and manipulativeness. Interestingly, two of these facets—noncompliance and manipulativeness—are among the strongest FFM correlates of antisocial behavior (Miller, Lynam, & Leukefeld, 2003), and all three are central components of psychopathy (Lynam & Widiger, 2007). This is consistent with the empirical evidence suggesting that grandiose narcissism is a stronger correlate of externalizing behaviors, whereas vulnerable narcissism is a stronger correlate of internalizing symptoms. This is also consistent with the notion that grandiose narcissism is conceived of as being a core member of the dark triad that also includes psychopathy and Machiavellianism (Paulhus & Williams, 2002). Unlike vulnerable narcissism, there is no evidence supporting a link between traumatic events (e.g., childhood abuse) or problematic parenting (e.g., coldness, intrusiveness) in relation to grandiose narcissism (Horton, Bleau, & Drwecki, 2006; Miller, Dir, et al., 2010; Miller et al., 2011). These individuals do not appear to have problems with trusting or developing “quasi-normal” attachments toward others, probably because they are more likely to cause psychological distress to significant others (Miller et al., 2007) than experience it themselves (Campbell, Foster, & Finkel, 2002). We believe that individuals high on either narcissism dimension manifest different forms of antagonistic behavior (e.g., vulnerable: suspiciousness, coldness; grandiose: self-enhancement and bragging, lying and conning, oppositionality) for different reasons (vulnerable: antagonism that is reactive to the environment and driven by negative affect; grandiose: antagonism that is more instrumental in nature in

the pursuit of dominance and enhanced status). Again, an examination of the facet-level FFM correlates of these narcissism dimensions provides a more nuanced and informative picture of these two narcissism constructs than is available if one works only at the higher order domain level.

### THE FIVE-FACTOR MODEL AS A TOOL FOR EXPLICATING THE CONTENT OF ASSESSMENT MEASURES RELATED TO NARCISSISM

We believe that measures of the FFM also provide a very useful means of testing the construct validity of assessment instruments related to narcissism. That is, a simple correlation matrix between measures of narcissism and the FFM domains and/or facets can provide important information regarding whether the narcissism scale is yielding a construct that is generally in line with its hypothesized nomological network. For instance, if one believes that grandiose narcissism should be related to traits such as immodesty and dominance, one should find correlations with Agreeableness (negative) and Extraversion (positive), respectively. Alternatively, if one believes that vulnerable narcissism is related to traits such as distrust, noncompliance, shyness, and negative emotionality, one should find correlations with Agreeableness (negative), Extraversion (negative), and Neuroticism (positive).

In Table 9.5 we present data of this sort in the form of correlations between the domains from the Revised NEO Personality Inventory (Costa & McCrae, 1992) and three popular measures of narcissism (NPI, PNI, HSNS) and two traits believed to be related to the conceptualization of narcissism, self-esteem and psychological entitlement.<sup>2</sup> It is clear that three of the five putative measures of grandiose narcissism manifest a positive relation with Extraversion and a negative correlation with Agreeableness (i.e., NPI Leadership/Authority; NPI Exhibitionism/Entitlement; PNI Exploitativeness), as one would expect. Alternatively, the PNI scales of Grandiose Fantasies and Self-Sacrificing Self-Enhancement manifest positive correlations

<sup>2</sup>The data presented in Table 9.5 are from a single data set discussed in Miller et al. (2011).

TABLE 9.5

## The Five-Factor Model as a Tool for Discovering the Content of Narcissism-Related Scales

<b>Scale</b>	<b>Domain</b>				
	<b>N</b>	<b>E</b>	<b>O</b>	<b>A</b>	<b>C</b>
Grandiose narcissism					
NPI Leadership/Authority	-.26*	.45*	-.01	-.46*	.13
NPI Exhibitionism/Entitlement	-.15	.49*	.17*	-.41*	-.06
PNI Exploitativeness	-.09	.23*	.22*	-.49*	-.01
PNI Grandiose Fantasies	.19*	.12	.29*	-.15	.05
PNI Self-Sacrificing Self-Enhancement	.22*	.26*	.26*	.03	.15
Vulnerable narcissism					
PNI Hiding the Self	.30*	-.20*	.07	-.23*	-.04
PNI Contingent Self-Esteem	.67*	-.17*	.04	.00	-.15
PNI Devaluating	.51*	-.23*	-.03	-.15	-.11
PNI Entitlement Rage	.44*	-.07	-.07	-.38*	-.20*
Hypersensitive Narcissism Scale	.58*	-.24*	-.07	-.27*	-.13
Rosenberg Self-Esteem Scale	-.61*	.39*	.06	.01	.35*
Psychological Entitlement Scale	.03	.07	.04	-.29*	.10

Note. N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; NPI = Narcissistic Personality Inventory; PNI = Pathological Narcissism Inventory. Compilation of data from Miller et al. (2011).

\* $p \leq .01$ .

with Neuroticism and null correlations with Agreeableness; as such, it is less clear whether these scales are capturing traits consistent with notions of grandiose narcissism. Conversely, almost all of the putative measures of vulnerable narcissism manifested expected positive relations with Neuroticism and negative relations with Agreeableness and Extraversion. We also present data related to self-esteem and psychological entitlement because both constructs are theoretically linked with narcissism. In general, the most popular measure of self-esteem (i.e., Rosenberg Self-Esteem Scale; Rosenberg, 1965) typically manifests positive correlations with grandiose narcissism and negative correlations with vulnerable narcissism (Miller & Campbell, 2008; Miller, Dir, et al., 2010; Pincus et al., 2009). This overlap is most likely due to the fact that both grandiose narcissism and self-esteem manifest similar patterns of relations with Neuroticism and Extraversion, although self-esteem is unrelated to Agreeableness. This pattern is the opposite of the pattern typically manifested by vulnerable narcissism scales. Psychological entitlement, which is

related to both grandiose and vulnerable narcissism (e.g., Miller et al., 2011), seems to be almost a pure measure of interpersonal antagonism (see Pryor, Miller, & Gaughan, 2008), which explains its overlap with both forms of narcissism.

#### USING FIVE-FACTOR MODEL NARCISSISM PERSONALITY DISORDER AND NARCISSISM RESEARCH TO ENSURE CONTENT VALIDITY OF THE DSM-5 DIMENSIONAL TRAIT MODEL

As discussed at the outset of this chapter, the initial proposal for the *DSM-5* (<http://www.dsm5.org>) suggested that NPD no longer be an officially recognized PD type, deleted along with four other *DSM-IV-TR* PD diagnoses (i.e., paranoid, schizoid, histrionic, and dependent). Many viewed the rationale for such a deletion to be weak (Miller, Widiger, & Campbell, 2010; Ronningstam, 2011; Widiger, 2011) because it appeared to be based on the *DSM-5* Personality and Personality Disorders Work Group's sense that NPD is either or both less prevalent and less impairing

than the five PDs set for retention (Skodol, 2010). However, in response to these critiques, NPD was returned to the table (Skodol, in press).

The *DSM-5* NPD even appears to be shifting toward the FFM conceptualization by relying in large part on maladaptive personality traits for its diagnosis (Skodol, in press). The *DSM-5* is likely to include a dimensional trait model consisting of five domains (i.e., Negative Emotionality, Detachment, Antagonism, Disinhibition, Peculiarity [or Psychoticism]), which align closely with the FFM, and 25 underlying traits, the latter providing the bulk of the diagnostic criteria for each respective personality type. The *DSM-5* trait model has much in common with the FFM, although it differs in several important ways, some of which may have an important effect on its content validity for the assessment of narcissism-related constructs. Unlike the FFM, the *DSM-5* trait dimensions will be unipolar rather than bipolar. That is, the *DSM-5* model will not be able to assess content related to pathologically high levels of domains such as Extraversion or Agreeableness or pathologically low levels of Neuroticism. This is important because evidence suggests that grandiose narcissism is related to high levels of Extraversion (e.g., dominance, reward seeking, activity) and low levels of Neuroticism (e.g., glib charm). These decisions will have significant ramifications regarding the ability of this new personality model to capture all traits relevant to narcissism and NPD. Given the substantial focus on antagonism and negative emotionality in the *DSM-5* model, one would suspect that it will be able to capture constructs such as NPD and vulnerable narcissism, albeit even within the domain of antagonism the coverage is likely inadequate (i.e., NPD is currently being diagnosed by just two traits, grandiosity and attention seeking; Skodol, in press). Unfortunately, the *DSM-5* will likely be missing content that is quite important to the assessment of grandiose narcissism, notably traits indicative of pathologically high Extraversion. This is problematic because the high-Extraversion components of grandiose narcissism are partially responsible for the externalizing behaviors associated with this construct (e.g., Foster & Trimm, 2008; Miller, Campbell, et al., 2009).

## CONCLUSION

NPD is clearly grounded in basic personality traits that are well described with the FFM. It is also evident that there are two dimensions of narcissism, grandiose and vulnerable, that manifest significantly divergent personality profiles when examined from the perspective of the FFM. Given the growing recognition of the importance of accounting for these different narcissism dimensions (e.g., Cain et al., 2008; Miller & Campbell, 2008; Russ et al., 2008), because of their distinct etiologies, trait profiles, and clinically relevant behaviors and outcomes (e.g., Miller, Dir, et al., 2010; Pincus et al., 2009), it is unfortunate that the *DSM-5* Personality and Personality Disorders Work Group had (seemingly) not availed themselves fully of this empirical literature. It is our belief that the literature reviewed in the current chapter, based on significant amounts of empirical data grounded in the FFM, could be quite helpful in informing the validity of the soon to be released *DSM-5* trait model, including its ability to describe a variety of different aspects and conceptualizations of narcissism.

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# A FIVE-FACTOR MODEL PERSPECTIVE OF SCHIZOTYPAL PERSONALITY DISORDER

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## DEFINITION, FEATURES, AND CURRENT DIAGNOSTIC SYSTEMS

*Schizotypy* refers to a collection of maladaptive traits including aberrant perceptual experiences; suspiciousness; aberrant affect expression; poor social functioning characterized by social isolation and anxiety; and odd beliefs, thinking, speech, behavior, and/or appearance. Schizotypy has been described using various terms, including *schizotypal personality disorder* (American Psychiatric Association, 2000), *schizotypal disorder* (World Health Organization [WHO], 2007), *simple schizophrenia* (Diem, 1987), *latent schizophrenia* (Bleuler, 1911/1950), *ambulatory schizophrenia* (Zilboorg, 1941), *pseudoneurotic schizophrenia* (Hoch & Polatin, 1949), *schizotypal organization* (Rado, Buchenholz, Dunton, Karlen, & Senescu, 1956), *psychotic character* (Frosch, 1964), and *borderline schizophrenia* (Kety, Rosenthal, Wender, & Schulsinger, 1968). For the purposes of this chapter, *schizotypal personality disorder* (STPD) refers to the categorical diagnostic term for schizotypy, the underlying collection of maladaptive traits described here. Estimates of prevalence of STPD range from 0.3% to 6.5% of nonpsychiatric community samples (Parnas, Licht, & Bovet, 2005) and 3% of the general population (American Psychiatric Association, 2000). Studies suggest a higher proportion of STPD in men versus women (American Psychiatric

Association, 2000; Raine, 2006). Additionally, African American and Asian American individuals may be more likely to receive a diagnosis of STPD than European American or Latino/Latina individuals, though a concern has been raised regarding the attention paid to culturally accepted beliefs within racial and ethnic minority groups and the potentially normative effect of culture-specific environmental stressors on individuals within these groups (e.g., high suspiciousness may reflect a reaction to persistent experiences of discrimination rather than a pathological trait; Raine, 2006; Whaley, 1997).

The exact nature and structure of schizotypy remains unclear. Researchers and classification systems of mental disorders have variously described schizotypy as a personality disorder and, thus, an “enduring pattern of inner experience and behavior” (American Psychiatric Association, 2000, p. 689), a syndrome that predisposes individuals to developing schizophrenia (e.g., Meehl, 1990; WHO, 2007) and a collection of maladaptive variants of normal personality traits (e.g., Widiger, Trull, Clarkin, Sanderson, & Costa, 1994). Two major classification systems are used to diagnose STPD: the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; DSM-IV-TR; American Psychiatric Association, 2000), which is used mainly in the United States, and the *International Statistical Classification of Diseases and Related Health Problems* (10th revision; ICD-10;

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WHO, 2007), which is used elsewhere in the world. In the *DSM-IV-TR*, STPD is defined as “a pervasive pattern of social and interpersonal deficits marked by acute discomfort with, and reduced capacity for, close relationships as well as by cognitive or perceptual distortions and eccentricities of behavior” (American Psychiatric Association, 2000, p. 697) and is grouped with personality disorders. The *ICD-10*, on the other hand, defines schizotypal disorder as “a disorder characterized by eccentric behaviour and anomalies of thinking and affect which resemble those seen in schizophrenia” (WHO, 2007, Chapter V, Section F21, para. 1) and groups it with psychotic disorders, albeit the majority of persons who meet criteria for STPD never go on to develop schizophrenia (Raine, 2006). Though each classification system holds a differing position on the best classification of STPD, both diagnose the disorder using a categorical approach requiring individuals to exhibit a subset of specific diagnostic criteria to meet diagnostic threshold (*DSM-IV-TR* requires five of nine criteria; *ICD-10* requires four of nine).

Many problems, however, have been raised with respect to categorical diagnostic systems, including heterogeneity among persons sharing the same categorical diagnosis, arbitrary boundary with normal psychological functioning, and inadequate scientific foundation (Clark, 2007; Livesley, 2001; Trull & Durrett, 2005; Widiger & Trull, 2007). One limitation of the existing diagnostic categories is the provision of a single diagnostic term to describe a heterogeneous construct characterized by a constellation of maladaptive traits. For example, because the *DSM-IV-TR* requires any five of nine optional criteria to diagnose STPD (American Psychiatric Association, 2000), it is possible for two individuals to meet the *DSM-IV-TR* criteria for STPD yet have only one diagnostic feature in common.

## TAXOMETRIC ANALYSES

Researchers dating back to Meehl (1962) have argued that schizotypy represents a discrete taxon, or discontinuity in nature, rather than a fully dimensional trait (e.g., Lenzenweger & Korfine, 1992; Lenzenweger, McLachlan, & Rubin, 2007). This line

of reasoning suggests that schizotypy (and hence, the structure of the latent liability for schizophrenia) is characterized by a difference of type, not of degree (e.g., Meehl, 2004). Meehl (1992) pointed out that the examination of types in psychology and psychopathology is controversial and contrary to popular dimensional approaches. However, Lenzenweger and Korfine (1992) warned that the continuous measurement of a variable does not mean that the underlying construct is necessarily continuous in nature. Furthermore, there is often presumed to be dimensional expression of the construct among the taxon members. Taxometrics represent a family of analyses designed to determine the presence of taxa and their base rates in nature (e.g., Beauchaine, 2007; Waller, 2006; Waller & Meehl, 1998). In taxometrics, the patterns of covariance among indicators of a latent trait are examined graphically. Taxometric graphs that show a distinct peak are considered indicative of a taxon, whereas the latent trait is assumed to be dimensional if no distinct peak is seen (Waller & Meehl, 1998).

As described by Waller (2006), Meehl's development of taxometrics in many ways paralleled the development of his theory of schizotaxia and schizotypy. Meehl (1962, 1990) conjectured that a single dominant “schizogene” gave rise to a neurointegrative defect or process of disrupted neurodevelopment referred to as schizotaxia, which was necessary (though not sufficient) for the development of schizotypy (and by extension, schizophrenia). Meehl argued that schizotypy is taxonic in nature, adding that approximately 10% of the population are schizotypes and that about 10% of schizotypes decompensate into schizophrenia (neatly arriving at the approximately 1% lifetime prevalence rate of schizophrenia). Claridge and colleagues (Claridge, 1997; Claridge & Beech, 1995) offered an alternative “fully dimensional” model of schizotypy that builds from Eysenck (1986) and suggests that schizotypy is fully dimensional in nature and includes adaptive manifestations.

Thirteen taxometric studies of schizotypy have been published to date examining self-rated positive and negative schizotypy symptoms, mostly using four of the Chapman schizotypy scales: Magical Ideation Scale (MIS; Eckblad & Chapman, 1983),

Perceptual Aberration Scale (PAS; L. J. Chapman, Chapman, & Raulin, 1978), Revised Physical Anhedonia Scale (RPAS; L. J. Chapman, Chapman, & Raulin, 1976), and Revised Social Anhedonia Scale (RSAS; Eckblad, Chapman, Chapman, & Mishlove, 1982); clinician-reported behavior ratings; interviews; or neuromotor indicators of schizotypy (Blanchard, Gangestad, Brown, & Horan, 2000; Erlenmeyer-Kimling, Golden, & Cornblatt, 1989; Golden & Meehl, 1979; Horan, Blanchard, Gangestad, & Kwapis, 2004; Keller, Jahn, & Klein, 2001; Korfine & Lenzenweger, 1995; Lenzenweger, 1999; Lenzenweger & Korfine, 1992; Linscott, Marie, Arnott, & Clarke, 2006; Meyer & Keller, 2001; Rawlings, Williams, Haslam, & Claridge, 2008; Tyrka et al., 1995; Tyrka, Haslam, & Cannon, 1995). Three of these studies (Keller et al., 2001; Meyer & Keller, 2001; Rawlings et al., 2008) found schizotypal symptoms, particularly positive symptoms, to be dimensional, and two studies (Horan et al., 2004; Rawlings et al., 2008) reported inconclusive findings for investigations of the MIS. All of the other studies supported a taxonic model of schizotypy with base rates for the taxon in nonclinical samples generally approximating the 10% estimate.

Taxonic models of schizotypy and the findings supporting such models have not been without their criticisms. Widiger (2001) raised concerns that taxometric analyses may produce misleading results by inappropriately imbuing latent taxa for psychopathology with specific etiologies and implications for treatment. Widiger argued that mental disorders likely result from multifactorial genetic and non-genetic origins that are inconsistent with taxonic models. Furthermore, contrasting results have raised questions about methodological and statistical shortcomings. Rawlings et al. (2008) called previous taxometric research into question, stating that skewed indicators of schizotypy (e.g., the Chapman scales) can produce misleadingly taxonic results. Using a simulation method accounting for data skew, they compared obtained data with matched simulated taxonic and dimensional data. Rawlings et al. asserted that their results mostly favor a dimensional view of schizotypy in that obtained plots better resembled the simulated dimensional data and did not show unambiguously taxonic

peaks. Rawlings et al. were criticized by Beauchaine, Lenzenweger, and Waller (2008) for disconfirming previous taxometric studies using a single study with, in their opinion, poor recruitment methods, measurement choices, and understanding of taxometric analysis and the schizotypy construct.

At present, the majority of the limited number of studies supports a taxonic model of schizotypy. Additional studies and continued advancements in taxometric assessments should bring clarity to this issue. However, two significant issues still remain. First, schizotypy and schizophrenia are markedly heterogeneous in symptom presentation, etiology, and treatment response. This heterogeneity raises concerns about the extent to which separate etiological processes are occurring and how many taxa may be represented in the current conceptualization of schizotypy. For example, Horan et al. (2004) reported that taxa identified by the PAS–MIS and by the RSAS were essentially orthogonal. In line with this concern is the importance of using taxometric tools in a theory-driven and hypothesis-testing manner. As Widiger (2001) indicated, the identification of types must be linked to specific etiological pathways and developmental trajectories for it to be useful for understanding and treating complex phenotypes such as psychopathology.

## FACTOR STRUCTURE

Schizotypy has been conceptualized by many researchers as a collection of interrelated constructs rather than a unidimensional entity (J. P. Chapman, Chapman, & Kwapis, 1995), the exact structure of which, though, is not entirely clear (see Wuthrich & Bates, 2006). Proposed symptom structures of schizotypy have generally ranged from two to four factors. Two-factor models generally describe schizotypy as consisting of positive symptoms, such as cognitive and perceptual distortions, and negative symptoms, such as constricted or inappropriate affect and lack of close relationships (e.g., Livesley & Schroeder, 1990). Three- and four-factor models of schizotypy also tend to include a positive symptom (or *cognitive–perceptual*) factor and a negative symptom (or *interpersonal*) factor. However, the composition of the third and fourth factors of these

models is less clear. Three-factor conceptualizations of schizotypy have proposed a third factor consisting of social impairment (e.g., Venables & Rector, 2000), paranoia or suspiciousness (e.g., Wolfradt & Straube, 1998), nonconformity (Kandler & Hewitt, 1992), or disorganization or *oddness*, which includes odd speech and behavior (e.g., Bergman, Silverman, Harvey, Smith, & Siever, 2000; Reynolds, Raine, Mellingen, Venables, & Mednick, 2000). Most four-factor models include positive symptoms, negative symptoms, and disorganization as the first three factors but add fourth factors such as asocial behavior (e.g., Claridge et al., 1996), or paranoia (e.g., Handest & Parnas, 2005). An alternative four-factor model includes positive symptom and disorganization factors but splits the negative symptom factor into physical anhedonia and social anhedonia (Venables & Bailes, 1994).

## FIVE-FACTOR MODEL PERSPECTIVE

Given the limitations of categorical approaches to the diagnosis of STPD, critiques of taxonic descriptions of schizotypy, and the apparent multidimensional structure of schizotypy, several alternative dimensional models of classification have been proposed to describe the personality pathology of schizotypy. One such alternative dimensional model is the five-factor model (FFM; McCrae & Costa, 2003). The FFM of general personality was originally derived from studies of the English language in an effort to identify the fundamental domains of personality (Ashton & Lee, 2001). The relative importance of a trait is indicated by the number of terms within a language to describe the various degrees and nuances of that trait, and the structure of the traits is evident by the relationship among the trait terms. Subsequent lexical studies of many additional languages (e.g., Czech, Dutch, Filipino, German, Hebrew, Hungarian, Italian, Korean, Polish, Russian, Spanish, and Turkish) have confirmed reasonably well the existence of the FFM domains (Ashton & Lee, 2001). These five broad domains have been identified by various terms, such as *extraversion* (urgency or positive affectivity), *agreeableness versus antagonism*, *conscientiousness* (or constraint), *neuroticism* (emotional instability

or negative affectivity), and *openness* (intellect or unconventionality). Costa and McCrae (1995) further differentiated each of these five domains into six underlying facets through their development of and research with the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992).

Many studies within the current research literature indicate that the *DSM-IV-TR* personality disorders can be understood as maladaptive variants of the domains and facets of the FFM (Widiger & Costa, 2002). Studies examining the relationship between STPD and the FFM have generally included expert opinion studies and empirical investigation.

## Expert Opinion

Expert opinion studies of the FFM structure of schizotypy generally ask experts in personality pathology (i.e., researchers and clinicians) to indicate which of the 30 FFM facets would be included in a description of individuals high in schizotypy. Widiger et al. (1994) coded each of the diagnostic criteria for the personality disorders in the revised third edition of the *DSM* in terms of facets of the FFM, including the criterion set for STPD. Widiger, Trull, Clarkin, Sanderson, and Costa (2002) repeated this exercise using the *DSM-IV-TR* criterion set. The results of their coding are provided in Table 10.1. As indicated in Table 10.1, they concluded STPD includes maladaptive variants of high anxiousness, self-consciousness, openness to fantasy, openness to actions, and openness to ideas, and low warmth, gregariousness, positive emotions, and trust.

Lynam and Widiger (2001) subsequently asked 12 schizotypy researchers to describe a prototypic case of STPD in terms of the FFM using the Five-Factor Model Rating Form (FFMRF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006). The FFMRF uses a 1- to 5-point rating scale, where 1 is *extremely low*, 2 is *low*, 3 is *neither low nor high*, 4 is *high*, and 5 is *extremely high*. Samuel and Widiger (2004) extended this survey to the opinions of clinicians who were members of Division 42 (Private Practitioners) of the American Psychological Association. Table 10.1 identifies the facets for which the researchers and clinicians provided ratings of 4.00 or above (*high*) or 2.00 or below (*low*).

TABLE 10.1

## Expert Ratings of Five-Factor Model Facets for Schizotypal Personality Disorder

<b>Domains and facets</b>	<b>Widiger et al. (2002)</b>	<b>Lynam and Widiger (2001)</b>	<b>Samuel and Widiger (2004)</b>
Neuroticism			
Anxiousness (N1)	High	High	
Angry hostility (N2)			
Depressiveness (N3)			
Self-consciousness (N4)	High	High	
Impulsivity (N5)			
Vulnerability (N6)			
Extraversion			
Warmth (E1)	Low	Low	Low
Gregariousness (E2)	Low	Low	Low
Assertiveness (E3)			
Activity (E4)			
Excitement seeking (E5)			
Positive emotions (E6)	Low	Low	Low
Openness			
Fantasy (O1)	High		High
Aesthetics (O2)			
Feelings (O3)			
Actions (O4)	High		
Ideas (O5)	High	High	
Values (O6)			High
Agreeableness			
Trust (A1)	Low		
Straightforwardness (A2)			
Altruism (A3)			
Compliance (A4)			
Modesty (A5)			
Tender-mindedness (A6)			
Conscientiousness			
Competence (C1)			
Order (C2)		Low	
Dutifulness (C3)			
Achievement striving (C4)			
Self-discipline (C5)			
Deliberation (C6)			

Note. High = 4.00 or above. Low = 2.00 or below. Data from Lynam and Widiger (2001); Samuel and Widiger (2004); and Widiger, Trull, Clarkin, Sanderson, and Costa (2002).

There is an appearance of notable differences across these three sources of expert opinion. Neither the researchers nor the clinicians described prototypic STPD as being low in the facet of trust. However, their mean scores were quite close to the arbitrary cut point of 2.00 (i.e., 2.08 and 2.04, respectively). Similarly the clinicians did not describe prototypic STPD as being high in anxiousness, but the mean score for this facet was quite

close to 4.00 (i.e., 3.85). The researchers' mean score for openness to fantasy was 3.83.

One potentially significant discrepancy worth noting is that the researchers and clinicians did not describe prototypic STPD as being high in openness to actions despite the fact that in the FFMRF a high level of this facet is described as involving "unconventionality" and "eccentricity." Their mean ratings were 2.81 and 2.42, respectively, for this facet. The

correlation between the researchers' and clinicians' descriptions of prototypic STPD across all 30 facets of the FFM was .91. The correlation with the Widiger et al. (2002) coding of the diagnostic criteria was lower (.79 and .74, respectively), but this is due mostly to the fact that the latter was confined to FFM traits suggested by the *DSM-IV-TR* diagnostic criteria. No such constraint limited the researchers surveyed by Lynam and Widiger (2001), yielding thereby a more limited range of facets identified by Widiger et al (2002).

These expert opinion studies suggest an FFM description of STPD would potentially include high anxiousness and self-consciousness from neuroticism; low warmth, gregariousness, and positive emotions from extraversion; low trust from agreeableness; and high openness to fantasy, actions, and ideas.

## Empirical Research

Empirical research has generally examined the relationship of the FFM, as assessed through the NEO PI-R, NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992), FFMRF, Structured Interview for the Five-Factor Model of Personality (SIFFM; Trull & Widiger, 1997), or Experimental NEO PI-R (ExpNEO; Haigler & Widiger, 2001), to various measures of schizotypy and STPD. These studies have included measures devoted to assessing STPD, such as the Schizotypal Personality Questionnaire (Raine, 1991); the STPD subscales of comprehensive personality disorder inventories, such as the Coolidge Axis II Inventory (CATI; Coolidge, 1993), Millon Clinical Multiaxial Inventory—III (MCMI-III; Millon, 1994), OMNI Personality Inventory—IV (OMNI-IV; Loranger, 2001), Personality Diagnostic Questionnaire—4 (PDQ-4; Bagby & Farvolden, 2004), Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993), and Wisconsin Personality Disorder Inventory (WISPI; Klein et al., 1993); measures of personality dysfunction, such as the Minnesota Multiphasic Personality Inventory—2 (MMPI-2; Butcher et al., 2001); semistructured interviews for the diagnosis of STPD, such as the Diagnostic Interview for *DSM-IV* Personality Disorders (DIPD-IV; Zanarini, Frankenburg, Sickel, & Yong, 1996); and measures designed to assess specific aspects

of schizophrenia-spectrum experience, including the Chapman scales (i.e., the MIS, PAS, RPAS, and RSAS). Table 10.2 summarizes the sample characteristics of and assessment tools used in the empirical studies described in the sections that follow. Empirical studies can be broken up into domain-level and facet-level analyses.

**Domain-level analyses.** In a meta-analytic review, Saulsman and Page (2004) examined 12 studies, using 15 independent samples, which investigated the relationship between the FFM domains and the 10 *DSM-IV-TR* personality disorders. Their meta-analysis was confined to the domains of the FFM because there were too few studies at that time that had administered the NEO PI-R or any other measure of the FFM that included facet scales. Their results indicated that STPD involves high neuroticism and low extraversion, with average effect sizes across the 15 samples of .38 and  $-.28$ , respectively. The effect size for agreeableness was only  $-.17$ ; however, expert opinion indicates that prototypic STPD includes only a single facet from agreeableness: low trust. One might not expect that a relationship with a single facet of agreeableness would be evident in an analysis confined to the level of the FFM domain. The average effect size for openness to experience was .09.

Several additional studies have examined the relationship of the FFM domains with schizotypy; these studies used various sample types, including individuals with STPD (Gurrera et al., 2005; Morey et al., 2002), individuals with Cluster A personality disorders (Camisa et al., 2005), individuals referred for psychological assessment (Bagby, Sellbom, Costa, & Widiger, 2008), and college students (Chmielewski & Watson, 2008; Kwapil, Barrantes-Vidal, & Silvia, 2008). As with the Saulsman and Page (2004) study, these studies found relationships of schizotypy with high neuroticism, and all except Bagby et al. (2008) found relationships of schizotypy with low extraversion. Kwapil et al. (2008), however, found differential relationships between the FFM domains and symptoms of positive and negative schizotypy. In this study, positive schizotypy was significantly correlated with high neuroticism, whereas negative schizotypy correlated significantly with low extraversion. This demonstrates schizotypy's heterogeneous structure

TABLE 10.2

Sample and Assessment Tool Characteristics of Empirical Studies of the Relationship of the Five-Factor Model (FFM) With Schizotypy

Study	Population ( <i>n</i> )	FFM measures used	Schizotypy measures used	STPD measures used
<b>Level of analysis: Domain</b>				
Saulsman & Page (2004)	Meta-analysis (15 independent samples)	NEO PI-R, NEO-FFI, 50-BRSR, 23BB5 5PFT, clinician rating	CATI, MCMI, MMPI, PDE, PDQ, SCID-II, SIDP-R, VKP, clinician rating	
Bagby et al. (2008)	Referred for psychological assessment (187)	NEO PI-R	MMPI, SCID-II	
Camisa et al. (2005)	Diagnosed with Cluster A personality disorders (63)	NEO-FFI	SCID-II	
Chmielewski & Watson (2008)	College students (556)	BFI, Goldberg Big Five Markers	SPQ	
Gurrera et al. (2005)	Diagnosed with STPD (28)	NEO-FFI	SCID-II	
Kwapil et al. (2008)	College students (6,137)	NEO PI-R	IPDE	
<b>Level of analysis: Facet</b>				
Samuel & Widiger (2008)	Meta-analysis (18 independent samples)	NEO PI-R, FFMRF, SIFFM	ADP, MCMI, OMNI, PDI, PDQ, SCID-II, SNAP, SWAP	
Edmundson et al. (2011)	College students (143)	FFSI, NEO PI-R, ExpNEO, unconventionality	FFSI, SPQ, CATI, MCMI, OMNI, PDQ, SNAP, WISPI	
Morey et al. (2002)	Primary diagnosis of STPD (86)	NEO PI-R	DIPD	
Ross et al. (2002)	College students (476)	NEO PI-R	MIS, PAS, RPAS, RSAS	

Note. STPD = schizotypal personality disorder; NEO PI-R = NEO Personality Inventory—Revised (Costa & McCrae, 1992); NEO-FFI = NEO—Five-Factor Inventory (Costa & McCrae, 1992); FFMRF = Five-Factor Model Rating Form (Mullins-Sweatt et al., 2006); SIFFM = Structured Interview for the Five-Factor Model of Personality (Trull & Widiger, 1997); ExpNEO = Experimental NEO PI-R (Haigner & Widiger, 2001); 50-BRSR = 50 Bipolar Self-Rating Scales (Goldberg, 1992); 23BB5 = 23 Bipolar Big Five (Duijzer & Diekstra, 1995); 5PFT = 5 Personality Factor Test (Elshout & Akkerman, 1975); BFI = Big Five Inventory (John & Srivastava, 1999); Goldberg Big Five Markers (Goldberg, 1992); SPQ = Schizotypal Personality Questionnaire (Raine, 1991); CATI = Coolidge Axis II Inventory (Coolidge, 1993); MCMI = Millon Clinical Multiaxial Inventory (Millon, 1994); OMNI = OMNI Personality Inventory (Loranger, 2001); PDQ = Personality Diagnostic Questionnaire (Bagby & Farvolden, 2004); SNAP = Schedule for Nonadaptive and Adaptive Personality (Clark, 1993); WISPI = Wisconsin Personality Disorder Inventory (Klein et al., 1993); MMPI = Minnesota Multiphasic Personality Inventory (Butcher et al., 2001); DIPD = Diagnostic Interview for DSM-IV Personality Disorders (Zanarini et al., 1996); SCID-II = Structured Clinical II Interview for DSM-IV Personality Disorders (First, Gibbon, Spitzer, Williams, & Benjamin, 1997); ADP = ADP—IV Questionnaire (Schotte & De Doncker, 1994); SWAP = Sheldler and Westen Assessment Procedure (Sheldler, 2002); PDI = Personality Disorder Interview (Widiger, Mangine, Corbitt, Ellis, & Thomas, 1995); SIDP-R = Structured Interview for DSM-III-R Personality—Revised (Pfohl, Blum, Zimmerman, & Stang, 1989); PDE = VKP Questionnaire on Personality Traits (Duijzer, Eurelings-Bontekoe, Diekstra, & Ouwersloot, 1993); IPDE = International Personality Disorder Examination (World Health Organization, 1995); MIS = Magical Ideation Scale (Eckblad & Chapman, 1983); PAS = Perceptual Aberration Scale (L. J. Chapman et al., 1978); RPAS = Revised Physical Anhedonia Scale (L. J. Chapman et al., 1976); RSAS = Revised Social Anhedonia (Eckblad et al., 1982).

and suggests that the different aspects of schizotypy may relate differentially to components of the FFM.

Relationships between schizotypy and the other three domains, however, are less consistent. Five studies (Bagby et al., 2008; Camisa et al., 2005; Gurrera et al., 2005; Kwapil et al., 2008; Morey et al., 2002) noted significant negative correlations between schizotypy and the agreeableness domain. This finding is somewhat surprising given expert opinion that only the trust facet of agreeableness relates to STPD. This finding may be due to the fact that most of these studies examined the relationship of the FFM domains with specific schizotypal characteristics. For example, Camisa et al. (2005) found a significant negative correlation between agreeableness and social anhedonia, but not with measures of other schizotypal characteristics. Although experts did not tend to rate prototypic STPD as including low conscientiousness, this domain was negatively related to schizotypy in three studies (Bagby et al., 2008; Gurrera et al., 2005; Kwapil et al., 2008).

Though the openness domain was unrelated to schizotypy in two studies (Chmielewski & Watson, 2008; Morey et al., 2002), significant relationships were found with more specific analyses (e.g., Camisa et al., 2005). Kwapil et al. (2008) found that positive schizotypy (in this case, magical ideation, perceptual aberration, and partial variance for social anhedonia) correlated positively with openness, whereas negative schizotypy (here, physical anhedonia and partial variance for social anhedonia) correlated negatively with openness. Gurrera et al. (2005) found a significant positive relationship between STPD and openness when examining their entire sample, but this relationship changed when they examined women with STPD versus men with STPD. In their study, STPD in women was positively related to openness, whereas STPD in men was negatively related to openness.

**Facet-level analyses.** Samuel and Widiger (2008) extended the meta-analysis of Saulsman and Page (2004) to include a consideration of the 30 FFM facets, as assessed by the NEO PI-R, the FFMRF, or the SIFFM. In an examination of 18 independent samples from 16 studies, they found positive relationships for STPD with anxiousness and self-consciousness, and negative relationships with

warmth, gregariousness, positive emotions, and trust, as hypothesized. They also reported a moderating effect of instrument for facets of openness. More specifically, the hypothesized relationships with openness to fantasy and ideas were confirmed in studies using the SIFFM but not by studies using the NEO PI-R. Two additional significant positive relationships were noted for STPD with angry hostility and depressiveness from neuroticism.

Several additional studies have examined schizotypy's relationship with the facets of the FFM (Edmundson, Lynam, Miller, Gore, & Widiger, 2011; Morey et al., 2002; Ross, Lutz, & Bailley, 2002). Morey and colleagues (2002) assessed individuals with STPD as well as avoidant, borderline, and obsessive-compulsive personality disorders using the NEO PI-R. When examined at the facet level, STPD related to high anxiousness, angry hostility, depression, self-consciousness, and vulnerability from neuroticism; low warmth, gregariousness, and positive emotions from extraversion; low trust and compliance from agreeableness; and low competence and self-discipline from conscientiousness. Experts, however, did not rate STPD as being high in angry hostility, depression, or vulnerability or low in compliance, competence, or self-discipline, and of these facets, Samuel and Widiger (2008) only found relationships of STPD with angry hostility and depression. The presence of the additional facets of neuroticism, agreeableness, and conscientiousness may be due in part to group selection. Participants in this study were assigned to groups on the basis of primary diagnosis, though "patients often met criteria for more than one study diagnosis" (Samuel & Widiger, 2008, p. 220). Therefore, the additional significantly related facets may be an artifact of diagnostic comorbidity. Morey and colleagues (2002) found no significant relationship of STPD with openness.

Ross et al. (2002) reported the correlations of schizotypal characteristics, as assessed by the Chapman scales, with the FFM, as assessed by the NEO PI-R, in a sample of introductory psychology students. A distinct advantage of the Chapman scales is their provision of independent assessments of putative facets or components of schizotypy, rather than treating it as a unidimensional construct. The RPAS and RSAS correlated negatively with

warmth, gregariousness, positive emotionality, trust, altruism, and openness to feelings. Additionally, the RPAS correlated negatively with openness to fantasy, actions, and ideas. The MIS and PAS correlated positively with openness to fantasy in men but not in women; self-consciousness in women but not in men; and with one exception, openness to ideas (the PAS did not correlate with openness to ideas in women). Both scales also correlated with depression and openness to aesthetics for both sexes.

Edmundson et al. (2011) created the Five-Factor Schizotypal Inventory (FFSI), a measure designed to assess the maladaptive variants of the FFM facets that are specific to STPD. The FFSI includes nine subscales: social anxiousness (the STPD variant of FFM anxiousness), social discomfort (STPD variant of FFM self-consciousness), social anhedonia (low FFM warmth), social isolation and withdrawal (low FFM gregariousness), physical anhedonia (low FFM positive emotions), aberrant perceptions (openness to fantasy), odd and eccentric (openness to actions), aberrant ideas (openness to ideas), and interpersonal suspiciousness (low FFM trust). Each of the FFSI subscales correlated significantly with its respective facet scale from the NEO PI-R (e.g., FFSI social isolation and withdrawal correlated  $-.70$  with NEO PI-R gregariousness) as well as with each of the seven STPD scales included within the study: the SPQ and the STPD scales from the CATI, MCMI-III, OMNI-IV, PDQ-4, SNAP, and WISPI. The FFSI subscales, in this regard, served as a bridge between the normal traits of the FFM and the abnormal traits of STPD. This convergence supports the notion that STPD represents a collection of maladaptive variants of FFM facets.

Studies that examine schizotypy using the FFM at the facet level show greater consistency with regard to the included FFM elements, with the exception of openness. For example, these studies agreed that schizotypy includes high anxiousness and self-consciousness and low warmth, gregariousness, positive emotions, and trust. These are also in accordance with expert opinion. Three of these studies (Morey et al., 2002; Ross et al., 2002; Samuel & Widiger, 2008) also included high depression in schizotypy. Some studies (Morey et al., 2002; Samuel & Widiger, 2008) suggested the inclusion of angry

hostility, though this is not found in others (Ross et al., 2002). In regard to the facets of openness, two studies (Morey et al., 2002; Samuel & Widiger, 2008) found no relationship with STPD. However, Ross et al. (2002), using analyses between the FFM openness facets and component parts of schizotypy, found significant and, at times disparate, relationships.

### The Problem and Importance of Openness

Experts tend to rate prototypic STPD as including facets of openness. The facets of openness to fantasy and ideas are the logical FFM expressions of cognitive-perceptual aberrations, whereas openness to actions may be the FFM version of behavior oddity or eccentricity. However, empirical studies demonstrate relatively weak or inconsistent results regarding the inclusion of openness. This inconsistency has led to some controversy regarding the relationship of openness to schizotypy. The DSM-5 Personality and Personality Disorders Work Group, for example, stated that “only the ‘social and interpersonal deficits’ of schizotypal personality disorder, and not the ‘cognitive or perceptual distortions and eccentricities of behavior’ is tapped by FFM traits” (Clark & Krueger, 2010, “For the proposed trait section,” para. 2). This conclusion is consistent with meta-analyses of a subset of FFM personality disorder research by Saulsman and Page (2004) and O’Connor (2005). However, the subsequent meta-analysis of Samuel and Widiger (2008) indicated that the failure to confirm the hypothesis reflects limitations of some existing measures of openness, particularly the NEO PI-R. The relationship of STPD to openness was inconsistently confirmed when the FFM was assessed with the NEO PI-R, but it was confirmed when openness was assessed with the SIFFM. The SIFFM provides somewhat more emphasis on the assessment of maladaptive variants of the domains of the FFM. A fundamental limitation of using the NEO PI-R to assess *DSM-IV-TR* personality disorders is that the NEO PI-R lacks the fidelity as a measure of normal personality structure to fully account for personality disorder symptomatology (Reynolds & Clark, 2001; Trull, Widiger, Lynam, & Costa, 2003).

This was demonstrated empirically in a study that focused in part on STPD. Haigler and Widiger (2001)

suggested the weak and inconsistent findings for STPD were due in part to the failure of the NEO PI-R to include a sufficient number of items to assess for maladaptive variants of openness. Only 20% of the NEO PI-R openness items, when keyed in the direction of high openness, describe maladaptive personality functioning. Haigler and Widiger (2001) altered the existing NEO PI-R openness items by inserting words to indicate that the normal adaptive behavior described within each item was excessive, extreme, or maladaptive. The content of the items was not otherwise altered. Insignificant to marginal correlations, .04, -.09, and -.11, were obtained for NEO PI-R openness with STPD as assessed by the SNAP, MMPI-2, and PDQ-4, respectively ( $p > .05$  in each case). However, the experimentally manipulated version of the NEO PI-R openness scale obtained significant correlations of .28, .24, and .33 with the SNAP, MMPI-2, and PDQ-4, respectively ( $p < .01$  in each case).

This was further explored by Edmundson et al. (2011) using the openness subscales included in the FFSI, their FFM measure of STPD. The FFSI openness subscales aberrant perceptions and aberrant ideas obtained higher magnitude correlations with the ExpNEO (.42 and .61, respectively) as opposed to the NEO PI-R (.41 and .42, respectively) openness facets. Additionally, Edmundson et al. examined the relationship of the FFSI openness subscales with Tellegen's unconventionality scale (Tellegen & Waller, 2008), the aspect of Tellegen's seven-factor model of personality that "corresponds to the Big Five dimension of . . . (reversed) Openness" (Almagor, Tellegen, & Waller, 1995, p. 301). Tellegen's unconventionality scale also obtained higher magnitude correlations with FFSI aberrant perceptions and aberrant ideas than the NEO PI-R (.55 and .65, respectively). Further measures of FFM openness that include an assessment of magical ideation and/or cognitive perceptual aberrations within this domain are the Experiential Permeability Inventory developed by Piedmont, Sherman, Sherman, Dy-Liacco, and Williams (2009) to assess maladaptive variants of high (and low) openness as well as the 5-Dimensional Personality Test developed by van Kampen (2010).

Inconsistent findings for openness may also be due to assessment of schizotypy as a whole rather than

disaggregating it into its component parts. Openness to experience, as opposed to other FFM domains, appears to relate differently to the components of schizotypy. This is apparent both at the domain level (e.g., Kwapil et al., 2008) and the facet level (e.g., Ross et al., 2002) of analysis. Ross et al. (2002), for example, found positive relationships for openness with some aspects of schizotypy, such as magical ideation, and negative relationships with other aspects of schizotypy, such as physical anhedonia. It is possible that studies that do not disaggregate schizotypy into its component parts for analysis may miss significant relationships of schizotypy with openness by, in a sense, averaging across high and low facet scores.

Another possible explanation for schizotypy's inconsistent relationship with openness may be differential facet relationships in male versus female individuals with high schizotypy. Gurrera et al. (2005) found that STPD and the openness domain were positively related in women with STPD but were negatively related in men with STPD. Ross et al. (2002) found that magical ideation and perceptual aberration measures related to openness to fantasy in men but not in women. However, interaction effects by gender are not always found (e.g., Kwapil et al., 2008).

## CONCLUSION

This body of research suggests that schizotypy can be viewed as a collection of maladaptive variants of five-factor model facets. Specifically, this research suggests the inclusion of high anxiousness and self-consciousness from neuroticism; low warmth, gregariousness, and positive emotions from extraversion; and low trust from agreeableness within schizotypy. Some of the research described previously supports the potential inclusion of openness to fantasy, actions, and ideas as suggested by expert opinion.

This research has three important implications. First, schizotypy as a heterogeneous construct is better understood when disaggregated into its component parts. Without this disaggregation, results are inconsistent and tend to miss differential relationships of individual aspects of schizotypy with FFM facets. This is evident, for example, in the differential relationships of openness facets with physical anhedonia versus magical ideation (Ross et al., 2002).

Second, openness is an important aspect of an FFM understanding of schizotypy. Though inconsistencies have been reported for schizotypy's relationship with this domain, studies show significant relationships between schizotypy and openness when they have used measures of maladaptive variants of the FFM domains and facets (e.g., Haigler & Widiger, 2001) or disaggregated schizotypy into its component parts for analysis (e.g., Ross et al., 2002). When these factors are taken into account, a relatively consistent picture of schizotypy's relationship to the facets of openness is revealed.

Third, these results further support the notion that schizotypy can be understood as a collection of *maladaptive* variants of the FFM domains and facets. To fully understand how personality dysfunction might be described by a model of general personality structure, such as the FFM, one must include the assessments of the dysfunctional counterparts to the traits included within the model. In the case of schizotypy, the NEO PI-R did not include an assessment of maladaptive openness, meaning schizotypy's relationship with openness was missed. When the maladaptive variants of openness were used, schizotypy's relationship with openness was revealed.

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# DEPENDENCY AND THE FIVE-FACTOR MODEL

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Dependent personality disorder (DPD) is “a pervasive and excessive need to be taken care of that leads to submissive and clinging behavior and fears of separation” (American Psychiatric Association, 2000, p. 721). Persons with DPD are said to have difficulty initiating or doing projects on their own, making everyday decisions without substantial advice, and expressing disagreements. They feel uncomfortable and helpless when alone and are preoccupied with fears of being left to care for themselves. Thus, they go to excessive lengths to obtain nurturance and support from others and hand over responsibility for major areas of their lives to others. They urgently seek another relationship as a source of care and support when a close relationship ends (American Psychiatric Association, 2000).

The purpose of this chapter is to provide and discuss a conceptualization of DPD from the perspective of the five-factor model (FFM). Long before becoming familiar with the personality disorder literature, McCrae and Costa (1987) had said that extremely high scores on the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992) agreeableness may describe a “dependent and fawning” (p. 88) person. The FFM conceptualization of dependency is indeed primarily informed by facets of agreeableness as well as by facets of neuroticism and low conscientiousness (Samuel & Gore, in press). From the domain of agreeableness are maladaptive variants of trust (i.e., gullibility),

altruism (i.e., selfless self-sacrifice), compliance (i.e., submission, failure to express disagreements), and modesty (i.e., meekness; Presnall & Widiger, in press; Widiger & Presnall, 2011). From the domain of neuroticism are facets of self-consciousness, anxiety, and vulnerability (e.g., feels unable to care for self, feels uncomfortable or helpless when alone, lacks self-confidence in judgments or abilities, and fears loss of support or approval). From the domain of conscientiousness are the facets of low competence (unable to function independently) and low self-discipline (fails to complete tasks and responsibilities; Lowe, Edmundson, & Widiger, 2009; Miller & Lynam, 2008; Samuel & Widiger, 2008).

Conceptualizing dependency as involving maladaptive variants of agreeableness parallels closely the interpersonal circumplex (IPC) model of DPD. Much of personality is interpersonal, and what is interpersonal can be elegantly organized through the crossing of two fundamental dimensions of personality: agency and communion (Horowitz, 2004; A. L. Pincus, Lukowitsky, & Wright, 2010; Wiggins, 1991). The IPC domains of agency and communion have repeatedly been shown to be essentially 45-degree rotated variants of the FFM domains of extraversion and agreeableness (McCrae & Costa, 1989; Wiggins & Pincus, 2002). All manner of interpersonal relatedness can be understood in terms of IPC agency and communion, and FFM agreeableness and extraversion.

The conceptualization of personality disorder from the perspective of the IPC has proved to be rich and productive (Benjamin, 1996, 2003; A. L. Pincus, 2005; A. L. Pincus & Hopwood, *in press*). Early conceptualizations proposed that personality disorders reflect to a great extent extreme and rigid interpersonal behavior. Leary (1957) specifically devoted a chapter of his seminal text to “the dependent personality” (p. 292), located in the lower right (docile-dependent) octant of the IPC. In its less severe form it was said to involve a “poignant or trustful conformity,” in its more severe form a “helpless dependency.” Although the contemporary interpersonal perspective on psychopathology now complements extreme and rigid interpersonal functioning with a broader set of behavioral dynamics (A. L. Pincus et al., 2010; A. L. Pincus & Hopwood, *in press*; A. L. Pincus & Wright, 2010), DPD does appear to be associated with a prominent friendly submissive interpersonal theme (A. L. Pincus & Hopwood, *in press*; Wiggins & Pincus, 1989). Figure 11.1 provides the typical locations for seven of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000) personality disorders in terms of the IPC (Widiger & Hagemoser, 1997) as well as the location of the FFM dimensions of agreeableness and extraversion. DPD is placed within the lower right octant, the same location as FFM agreeableness.

## DELETION OF DPD FROM THE AMERICAN PSYCHIATRIC ASSOCIATION'S DSM

Before we continue our discussion of the FFM conceptualization of DPD, it is important to address the question of whether any such conceptualization is even worthwhile given that DPD might in fact be deleted from the American Psychiatric Association's *DSM* (Skodol et al., 2011). It is indeed the case that some personality disorders have been added to the *DSM* in the absence of much empirical support (H. A. Pincus, Frances, Davis, First, & Widiger, 1992), and some of the *DSM-IV-TR* personality disorders have failed to generate substantial attention by researchers (Blashfield & Intoccia, 2000; Boschen & Warner, 2009). However, the meta-

analysis by Blashfield and Intoccia (2000) was limited by the fact that their search terms were confined to studies in which the full title of the disorder (i.e., *dependent personality disorder*) had to be included in the study title, effectively missing a considerable amount of empirical research concerning, for instance, dependent personality traits, *dependency*, or even *dependent personality* (some of which is summarized in the paragraphs that follow). A subsequent meta-analysis by Boschen and Warner (2009) was potentially more inclusive in that they used the combination of the two search terms *dependent* and *personality disorder* (rather than *dependent personality disorder*), but this search again failed to identify studies concerning dependent personality traits.

Skodol et al. (2011) provided a review of the literature that led to the decision to recommend the deletion of DPD. They indicated, for instance, that it is difficult to discern the actual prevalence of DPD because it fluctuates widely from study to study. However, in the seminal review of personality disorder epidemiology by Torgersen (2009), the fluctuation in prevalence was actually worse for the schizotypal (ranging from 0.0–3.2), antisocial (0.0–4.5), borderline (0.0–3.2), avoidant (0.4–5.0), and obsessive-compulsive (0.0–9.3) personality disorders, the five to be retained, than it was for dependent (0.4–1.8) personality disorder. DPD was also said to be associated with only “moderate to low” impairment in functioning, but its level of impairment has been consistently higher than has been obtained for obsessive-compulsive personality disorder in the studies considered by Skodol et al. (i.e., Cramer, Torgersen, & Kringlen, 2006; Crawford et al., 2005; Ullrich, Farrington, & Coid, 2007). Finally, Skodol et al. indicated that it “was one of the two least common PDs (0.7%) (along with narcissistic) in the community, according to the review by Torgersen (2009)” (p. 151). However, this was not in fact the case. According to Torgersen's review, DPD had a higher prevalence than schizotypal personality disorder (and higher than four other personality disorders) when considering the median rate of prevalence across the eight epidemiology studies he considered. When the prevalence rates were pooled across these eight epidemiology

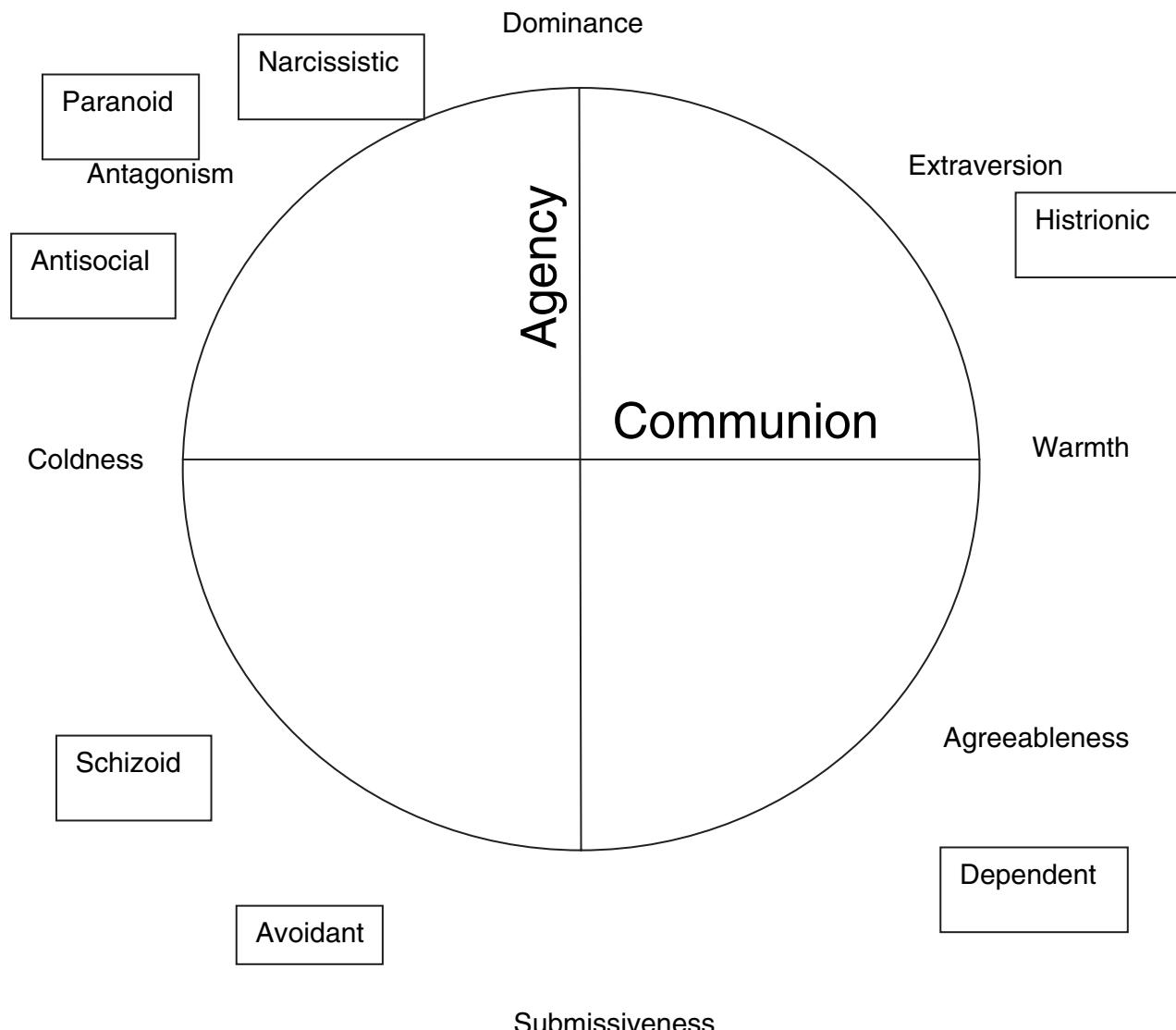


FIGURE 11.1. The interpersonal circumplex and personality disorders. From “Personality, Interpersonal Circumplex, and DSM-5: A Commentary on Five Studies,” by T. A. Widiger, 2010, *Journal of Personality Assessment*, 92, p. 529. Copyright 2010 by Taylor & Francis. Reprinted with permission.

studies, DPD had a higher prevalence than either schizotypal or borderline personality disorder.

Kandler, Kupfer, Narrow, Phillips, and Fawcett (2009) provided guidelines to the DSM-5 Personality and Personality Disorders Work Group members for the deletion of diagnostic categories. They indicated that diagnoses should be considered for deletion if “the empirical support for their validity is minimal” (p. 8). This does not appear to be the case for DPD (Widiger, 2011a). Bornstein (2011) summarized some of the empirical support for the validity of DPD. The validity evidence

for DPD appears to be strong rather than minimal (Bornstein, 2011) and stronger than for two of the diagnoses (avoidant and obsessive-compulsive personality disorders) that will be retained. As Bornstein indicated, diagnoses of DPD are stable compared with the other personality disorders. Studies have shown commensurate test-retest stability for DPD compared with the other personality disorders when measured for time periods ranging between 7 to 10 days and 3 to 4 months (Barber & Morse, 1994; First, Spitzer, Gibbon, & Williams, 1995; Zanarini et al., 2000). DPD is consistently

associated with a number of clinically significant correlates and impairments, including suggestibility, excessive help seeking, trait anxiety, insecurity, fear of abandonment, fear of negative evaluation, loneliness, eating disorders, and somatoform disorders (Bornstein, 1993, 2005, 2011). Dependency is related to increased risk for suicide in psychiatric outpatients and inpatients (Bolton, Pagura, Enns, Grant & Sareen, 2010), excessive use of health and mental health services (O'Neill & Bornstein, 2001), and increased risk for perpetration of child abuse (Bornstein, 2005). Dependency is also one of the few personality traits with a well-established role in the etiology of depression (Blatt, 2004; Bornstein, 2005; Zuroff, Mongrain, & Santor, 2004). Multiple prospective, longitudinal studies have confirmed that dependent cognitions and behaviors result in increased feelings of depression in a reaction to interpersonal loss or rejection (Hammen, 2005).

### **REPRESENTATION OF DPD WITHIN THE DSM-5 DIMENSIONAL MODEL**

Skodol et al. (2011) indicated that a diagnosis of DPD can be still be recovered in the *DSM-5* through the dimensional trait classification. The *DSM-5* will also include a supplementary list of maladaptive personality traits that can also be used to describe a patient. The original version of this list consisted of 37 traits organized within six broad domains (Clark & Krueger, 2010). More specifically, it was suggested that DPD can be diagnosed using the three traits of submissiveness, anxiousness, and separation insecurity (Skodol, 2010). A subsequent version of this trait model consists of just 25 traits but still retains the three for DPD (Krueger, Eaton, Derringer, et al., 2011). There are, however, a few concerns with respect to this suggestion.

One concern is that the dimensional trait classification is unlikely to have much official recognition for patient diagnosis, other than the nonspecific wastebasket diagnosis of personality disorder not otherwise specified (Widiger, 2011b). Whereas the avoidant and obsessive-compulsive disorders will have official code numbers specific to them that will be used by clinicians to obtain insurance coverage for their treatment, no specific code number will be

available for the diagnosis of dependent personality traits. Instead, clinicians will have to use personality disorder not otherwise specified to represent the presence of these traits. The code number for this diagnosis is the same no matter what traits are present within a patient and therefore does not provide any clue as to what traits are in fact actually present. A section of the *DSM-5* will be devoted to borderline, avoidant, and obsessive-compulsive personality disorders; specify their associated features and course; and include a considerable amount of other relevant information. No such information will be provided for DPD. The status of dependent personality traits in the *DSM-5* will be comparable to the current status of such traits as sadistic, alexithymic, passive-aggressive, and depressive. Whether or not the concern is valid that researchers are not currently focusing sufficient attention on DPD (Blashfield & Intoccia, 2000; Boschen & Warner, 2009), research interest in DPD might now diminish once it loses official recognition and specific attention within the diagnostic manual. Similarly, clinicians may not in fact make much use of the 25-trait dimensional model given its length, complexity, and lack of official recognition within the medical record (Widiger, 2011b).

An additional concern is whether the traits of submissiveness, anxiousness, and insecure attachment provide an adequate representation of DPD. The basis for selecting the 25 traits included within the *DSM-5* list is not very clear (Clark & Krueger, 2010; Krueger, Eaton, Clark, et al., 2011; Widiger, 2011a). There was no empirical research to indicate that these three traits would provide an adequate or sufficient means to diagnose DPD, albeit by the time the final decision is made there might be at least some supportive research (Krueger, Eaton, Clark, et al., 2011). These traits do appear to have some face validity for representing DPD. The trait of submissiveness does align conceptually with FFM compliance; anxiousness aligns with FFM anxiousness; and insecure attachment might align with FFM self-consciousness and vulnerability. However, missing from the *DSM-5* description would be the additional traits of low competence and low self-discipline from conscientiousness (Lowe et al., 2009; Miller & Lynam, 2008; Samuel & Widiger, 2008) as well as the traits of gullibility (maladaptive trust), selfless

self-sacrifice (maladaptive altruism), and meekness (maladaptive modesty) from agreeableness.

The failure to include the additional traits of gullibility, selfless self-sacrifice, and meekness are probably due largely to the fact that the *DSM-5* dimensional model does not include agreeableness or the affiliative–submissive quadrant of the IPC as one of its six broad domains (A. L. Pincus, 2011). In fact, submissiveness is conceptualized in the proposal for the *DSM-5* as a variant of the negative emotionality domain (Clark & Krueger, 2010; Krueger, Eaton, Clark, et al., 2011). The failure to conceptualize submissiveness as a core aspect of the interpersonal functioning domain (Wiggins, 1979, 1991, 2003) in the *DSM-5* is inconsistent with virtually all prior research on personality trait structure.

### EMPIRICAL SUPPORT FOR THE FFM AND INTERPERSONAL CIRCUMPLEX CONCEPTUALIZATIONS

Studies have consistently reported a clear relationship between agreeableness and dependency when assessments are provided by clinicians, researchers, and other persons (Samuel & Gore, in press). Blais (1997) had 100 clinicians participating in a personality disorder workshop describe one of their patients in terms of the *DSM-IV-TR* personality disorders and the domains of the FFM. They reported a relationship between DPD and both neuroticism ( $r = .37$ ) and agreeableness ( $r = .33$ ). Lynam and Widiger (2001) asked researchers to describe prototypic cases of each of the 10 *DSM-IV-TR* personality disorders in terms of the domains and facets of the FFM. Consistent with the results of Blais, they described a prototypic case of DPD as involving primarily neuroticism facets (i.e., anxiousness and self-consciousness) as well as agreeableness facets (i.e., trust, compliance and modesty). Samuel and Widiger (2004) replicated the method used by Lynam and Widiger (2001) but this time surveyed clinicians treating patients with personality disorders. The clinicians' description of a prototypic case of DPD again involved facets of neuroticism (i.e., anxiousness, depressiveness, self-consciousness, and vulnerability) as well as facets of agreeableness (i.e., compliance and modesty).

Srock (2002) asked clinicians to describe prototypic and nonprototypic vignettes of personality disorder cases in terms of the 30 FFM facets. Their description of a case involving both dependent and avoidant traits correlated positively with both neuroticism facets (i.e., anxiousness, depressiveness, self-consciousness, and vulnerability) and agreeableness facets (i.e., compliance and modesty). Mullins-Sweatt and Widiger (2007) had 94 persons describe someone they personally knew well who had significant personality pathology in terms of both the Shedler-Westen Assessment Procedure—200 (SWAP-200; Shedler & Westen, 2004) and the FFM. They reported a significant relationship between SWAP-200 DPD and four agreeableness facets (i.e., straightforwardness,  $r = .31$ ; compliance,  $r = .44$ ; modesty,  $r = .56$ ; and tender-mindedness,  $r = .36$ ). Expert ratings of an FFM view of DPD are presented in Table 11.1 (Lynam & Widiger, 2001; Samuel & Widiger, 2004; Widiger, Trull, Clarkin, Sanderson, & Costa, 2002).

Quite a few studies have also confirmed a close relationship of dependency with the lower right friendly–submissive quadrant of the IPC, which aligns conceptually and empirically with FFM agreeableness (McCrae & Costa, 1989; Wiggins & Pincus, 2002). Trait terms such as *docile*, *servile*, *self-sacrificing*, *modest*, *compliant*, *clinging*, *obedient*, *gullible*, *submissive*, *self-effacing*, and *dependent* have long been considered interpersonal in nature (Wiggins, 1982), and IPC research has confirmed this interpersonal understanding of DPD (e.g., Morey, 1985; Sim & Romney, 1990). For example, Soldz, Budman, Demby, and Merry (1993) assessed 102 clients referred for group therapy for personality disorders, measuring their placement in the IPC using the Inventory of Interpersonal Problems Circumplex Scales (IIP-C; Alden, Wiggins, & Pincus, 1990). They assessed personality disorders using an earlier edition of the Millon Clinical Multiaxial Inventory—II (MCMI-II; Millon, Millon, & Davis, 1997) as well as the Personality Disorder Examination (PDE; Loranger, 1988). DPD as assessed by the MCMI-II and the PDE was empirically located within the lower right exploitable octant of the IPC. Trobst, Ayearst, and Salekin (2004) administered the Interpersonal Adjective

TABLE 11.1

## Expert Ratings of Five-Factor Model (FFM) Facets for Dependent Personality Disorder

<b>FFM facet</b>	<b>Widiger et al. (2002)</b>	<b>Lynam and Widiger (2001)</b>	<b>Samuel and Widiger (2004)</b>
Neuroticism			
Anxiety	High	High	High
Angry hostility			
Depression			High
Self-consciousness	High	High	High
Impulsivity			
Vulnerability	High	High	High
Extraversion			
Warmth	High	High <sup>a</sup>	
Gregariousness			
Assertiveness	Low	Low	Low
Activity			
Excitement seeking			Low
Positive emotions			Low <sup>a</sup>
Openness			
Fantasy			
Aesthetics			
Feelings			
Actions			Low
Ideas			
Values			Low <sup>a</sup>
Agreeableness			
Trust	High	High	High <sup>a</sup>
Straightforwardness			
Altruism	High	High <sup>a</sup>	High <sup>a</sup>
Compliance	High	High	High
Modesty	High	High	High
Tender-mindedness		High <sup>a</sup>	
Conscientiousness			
Competence			
Order			
Dutifulness			
Achievement striving			
Self-discipline			
Deliberation			

Note. High<sup>a</sup> for Warmth = 3.84; for Altruism = 3.95; for Tender-mindedness = 3.89 for Lynam and Widiger (2001). High<sup>a</sup> for Trust = 3.95; for Altruism = 3.85 for Samuel and Widiger (2004). Low<sup>a</sup> for Positive emotions = 2.03; for Values = 2.05 for Samuel and Widiger (2004). Facets were designated as high for Lynam and Widiger (2001) and for Samuel and Widiger (2004) if the mean score was 4 or higher and low if the mean score was 2 or lower. Data from Widiger et al. (2002), Lynam and Widiger (2001), and Samuel and Widiger (2004).

Scales Revised—Big 5 Version (Trapnell & Wiggins, 1990) to assess the IPC along with four alternative measures of DPD, including the Personality Diagnostic Questionnaire—4 (Bagby & Farvolden, 2004); the Morey, Waugh, and Blashfield (1985) and the Somwaru and Ben-Porath (1995) versions of the Minnesota Multiphasic Personality Inventory—

2 measures of DPD; and the Personality Adjective Checklist (Strack, 1991). They reported that DPD was located within the lower right quadrant of the IPC, although spread apart along the unassured–submissive, unassuming–ingenuous, and warm–agreeable octants depending on which measure of DPD was used. Finally, S. W. Smith, Hilsenroth, and

Bornstein (2009) more recently conducted a study with a clinical sample evaluating the convergent validity of the SWAP–200 Dependency scales, investigating their relationship to the IIP–C and DSM–IV–TR diagnoses of DPD. S. W. Smith et al. found that the closer patients resembled the prototypic case of DPD, the more they described their relational style as affiliative–submissive, nonassertive, and overly accommodating as measured by the IIP–C, all located within the lower right quadrant of the IPC.

In sum, IPC research (Morey, 1985; Sim & Romney, 1990; S. W. Smith et al., 2009; Soldz et al., 1993; Trobst et al., 2004) and research in which dependent persons are described by others have consistently supported a relationship of dependency with FFM agreeableness (Blais, 1997; Lynam & Widiger, 2001; Mullins-Sweatt & Widiger, 2007; Samuel & Widiger, 2004; Srock, 2002). Some self-report inventory studies have also confirmed the relationship of FFM agreeableness to DPD (e.g., Bagby et al., 2001; Mongrain, 1993; Wiggins & Pincus, 1989; Zuroff, 1994). However, many self-report inventory studies have failed to report a strong relationship, as indicated in a number of meta-analyses of this literature.

For example, Bornstein and Cecero (2000) conducted a meta-analysis focusing on the relationship between dependency and the domains of the FFM. They reported an effect size for agreeableness ( $r = .08$ ) that was statistically significant but lower than expected. (One of the worst individual study effect sizes was reported to be  $-.32$ , although it was actually  $.32$ , but even with this correction the overall effect size increased to only  $.10$ .) Saulsman and Page (2004) conducted a meta-analysis of 15 independent samples correlating the domains of the FFM with self-report measures of DPD. The statistically significant effect size (.05, weighted) fell well below a meaningful effect size (i.e., .20). Samuel and Widiger (2008) replicated this finding in their subsequent meta-analysis of 16 FFM studies (only one of which overlapped with Saulsman & Page, 2004) that reported correlations between the facets of agreeableness and DPD. They reported an average effect size of  $.08$  between agreeableness and DPD and found that the highest effect size for an agreeableness facet was only  $.16$  for modesty. Finally,

Miller and Lynam (2008) reported in their meta-analysis of eight studies weak relationships with all six facets of agreeableness, ranging from  $-.18$  (trust) to  $.10$  (modesty).

Morgan and Clark (2010) conducted a factor analysis of a variety of measures of dependency, yielding two factors that they interpreted as submissive dependency (lack of self-confidence or assertiveness in presence of others) and emotional dependency (emotional neediness in personal relationships). Both factors correlated with a measure of neuroticism. They did not test empirically the relationship with agreeableness, but it would not have been surprising to find no strong relationship to emerge. Both the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993) and the Dimensional Assessment of Personality Pathology—Basic Questionnaire (DAPP–BQ; Livesley & Jackson, in press) include Dependency and Diffidence scales, respectively. In factor analyses of the SNAP and the DAPP–BQ, the Dependency and Diffidence scales consistently load onto a neuroticism factor even when the factor structure does appear to include agreeableness (e.g., Clark, Livesley, Schroeder, & Irish, 1996; Clark, Vorhies, & McEwen, 2002).

This perspective of dependency is consistent with the HEXACO Personality Inventory of Lee and Ashton (2004), a six-factor model of personality that includes the domains of emotional instability, agreeableness, and honesty-humility (which they split off from FFM agreeableness). Lee and Ashton (2004) included trait dependency as a maladaptive variant of general personality structure (defined as a “need for emotional support from others,” p. 334) but placed it within the domain of emotional instability rather than within the domains of agreeableness or honesty-humility.

These negative results within the self-report inventory research contributed to the decision of the DSM–5 Personality and Personality Disorders Work Group not to include within their dimensional model of personality disorder any representation of FFM agreeableness (Clark & Krueger, 2010; Krueger, Eaton, Clark, et al., 2011). The five-domain and 25-trait model does include scales that are said to assess dependency, more specifically, separation insecurity, anxiousness, and submissiveness,

all of which they place within the domain of negative emotionality (the same was true for the six-domain, 37-trait model).

However, the weak and inconsistent relationship of agreeableness to dependency that has been reported within self-report inventory research appears to reflect how both dependency and agreeableness are being assessed. A. L. Pincus and Gurtman (1995) distinguished between a love dependency (mostly confined to the communion dimension of the IPC), a submissive dependency (confined to the submission or low-agency IPC dimension), and an exploitable dependency (which represents a combination of high communion and low agency). They hypothesized that the love and exploitable variants of dependency would be related to agreeableness, whereas the submissive variant would not. In particular, the love variant would be related to agreeableness facets such as trust, altruism, and tender-mindedness, whereas the exploitable variant would be related to agreeableness facets such as straightforwardness, compliance, and modesty (A. L. Pincus, 2002).

Cogswell and Alloy (2006) and Dunkley, Blankstein, Zuroff, Lecce, and Hui (2006) distinguished between neediness and connectedness elements of dependency as assessed by subscales of the Depressive Experiences Questionnaire (Blatt, D'Aflittie, & Quinlan, 1976). Dunkley et al. and Zuroff, Moskowitz, and Koestner (1996) reported that dependency neediness correlated with NEO PI-R Neuroticism, whereas dependency connectedness correlated with NEO PI-R Agreeableness. This parallels a distinction made by Bornstein and Huprich (2006), using the Relationship Profile Test (Bornstein & Languirand, 2003), to distinguish between a destructive overdependence and a healthy dependence. Destructive overdependence correlated with NEO PI-R Neuroticism and not with Agreeableness, whereas healthy dependence correlated positively with Agreeableness and negatively with Neuroticism. A. L. Pincus and Wilson (2001) similarly proposed that their submissive and exploitable dependency variants possess more of a maladaptive quality than love dependency, which involves an adaptive desire to develop and maintain close relationships in a manner comparable to

Cogswell and Alloy's and Dunkley et al.'s connectedness. However, it should be noted that the association between connectedness and Agreeableness was not replicated by Bacchichiochi, Bagby, Cristi, and Watson (2003) or McBride, Zuroff, Bagby, and Bacchichiochi (2006).

Just as there may be adaptive and maladaptive variants of dependency, so too there may be adaptive and maladaptive variants of FFM agreeableness. None of the previously discussed meta-analyses reported an instrument effect on the relationship between agreeableness and dependency. However, there was very little variation in the FFM assessment instruments across these meta-analyses. Seventeen of the 18 studies considered by Bornstein and Cecero (2000), 11 of the 15 samples considered by Saulsman and Page (2004), all of the studies considered by Miller and Lynam (2008), and all of the studies considered by Samuel and Widiger (2008) used either the NEO PI-R or an instrument closely modeled after the NEO PI-R to assess FFM agreeableness.

Haigler and Widiger (2001) indicated that the NEO PI-R is heavily imbalanced in its assessment of adaptive and maladaptive variants of high versus low conscientiousness, neuroticism, extraversion, openness, and most relevant to the current topic, agreeableness. Haigler and Widiger reported that 83% of the NEO PI-R Agreeableness items were measuring adaptive rather than maladaptive agreeableness. They created an experimentally altered version of the NEO PI-R by inserting words in the test items to change the direction of the maladaptivity without changing the content of the items. For example, the NEO PI-R altruism items "I try to be courteous to everyone I meet"; "Some people think of me as cold and calculating" (reverse keyed); "I think of myself as a charitable person"; "Some people think I'm selfish and egotistical" (reverse keyed); and "I go out of my way to help others if I can" (Costa & McCrae, 1992, p. 72) all describe behavior for which it would be preferable (or adaptive) to endorse the item in the altruistic direction. The experimentally altered versions were "I am overly courteous to everyone I meet"; "I can be cold and calculating when it's necessary"; "I am so charitable that I give more than I can afford"; "Most people think that I take good care

of my own needs"; and "I have sacrificed my own needs to help others," respectively. Experimentally altering these items meant that 83% of the items contained within the experimentally altered version of the NEO PI-R described maladaptive, dysfunctional variants of agreeableness. NEO PI-R Agreeableness correlated .04, .17, and .04 with three independent measures of DPD. The correlations increased to .57, .66, and .45, respectively, with the experimentally altered version.

Lowe et al. (2009) replicated and extended the findings of Haigler and Widiger (2001), including three measures of DPD, eight measures of trait dependency, and two measures of dependency from alternative dimensional models of personality disorder (i.e., diffidence from the DAPP-BQ, and dependency from the SNAP). They found that only 1 of the 13 measures of trait dependency and/or DPD in a student sample and only 2 of 13 within a clinical sample correlated significantly with NEO PI-R Agreeableness. When the experimentally altered version of the NEO PI-R Agreeableness scale was administered, 12 of the 13 trait dependency or DPD measures correlated significantly with Agreeableness in the clinical sample, and 10 of 13 correlated significantly in the student sample.

In sum, the opinions of researchers (Lynam & Widiger, 2001), clinicians (Blais, 1997; Samuel & Widiger, 2004; Srock, 2002), and the ratings of persons who know the dependent person well (Mullins-Sweatt & Widiger, 2007) indicate that dependency does involve agreeableness. Dependency involves a manner of interpersonal relatedness (S. W. Smith et al., 2009; Soldz et al., 1993; Trobst et al., 2004). This is not to say that neuroticism is not also an important component of dependency. That relationship is well established. However, a complete understanding of dependency would not be confined solely to feelings of self-consciousness, insecurity, anxiousness, and vulnerability (Samuel & Gore, *in press*). It would also recognize the excessive and extreme gullibility, self-effacement, self-sacrifice, compliance, and submission of persons with this personality disorder (as well as perhaps low competence and low self-discipline; Lowe et al., 2009; Miller & Lynam, 2008; Samuel & Widiger, 2008).

## FUTURE RESEARCH

An advantage of the FFM (and IPC) dismantling of DPD into its component parts is that one can determine empirically what particular aspect of the personality disorder explains a particular finding in future research (G. T. Smith & Zapolski, 2009). For example, the basis for a dependent person's vulnerability to depressive mood disorders may not be specific to attachment needs but may reflect instead a more general emotional instability or insecurity (e.g., neuroticism) that is shared with other disorders of personality (Bagby et al. 2001; Bornstein & Cecero, 2000; Mongrain, 1993; Zuroff, 1994). The predominant view is that dependency contributes to the development of mood disorders through pathologic cognitions (Hammen, 2005) and/or interpersonal mechanisms that would concern facets of agreeableness (Pettit & Joiner, 2006). However, in some instances it may be that maladaptively extreme temperaments both provide an affective underpinning to the risk and contribute to the cognitive and interpersonal difficulties. Complicating the existing research is the possibility that some measures of dependency are predominated by indicators of neuroticism (e.g., DAPP-BQ Dependency), whereas other measures (e.g., MCMI-III; Millon et al., 1997) place more emphasis within the domains of agreeableness (emphasizing instead the compliance, gullibility, and meekness).

It will be useful for future research to dismantle the components of dependency to further isolate the specific mechanisms that are contributing to the development of depressive mood disorders in response to rejection and loss (e.g., Dunkley et al., 2006; A. L. Pincus, 2002; Shahar, Joiner, Zuroff, & Blatt, 2004). For example, Adams, Abela, Auerbach and Skitch (2009) conducted a study with children and adolescents using experience sampling to measure personality traits such as self-criticism and dependency as well as the potential for subsequent vulnerability to depression. They found that participants who reported higher levels of self-criticism and dependency did, in fact, endorse greater elevations in depressive symptoms when they had experienced more hassles in the week prior. Given these results, it might be worthwhile to conduct

experience-sampling studies in which a person's level of anxious self-consciousness as well as interpersonal submission, meekness, and other aspects of agreeableness are closely monitored. Such research might be helpful in determining whether displays of submission are an immediate, causal result of anxious self-consciousness (i.e., neuroticism) or represent instead the person's characteristic interpersonal style that is independent of mood state.

Another approach to this question could be a pharmacologic investigation. Studies have indicated that FFM neuroticism (even within normal participants) is responsive to pharmacotherapy (e.g., Tang et al., 2009). For example, Knutson et al. (1998) examined the effects of a serotonergic reuptake blockade on personality and social behavior in a double-blind protocol by randomly assigning healthy volunteers to treatment with a selective serotonin reuptake inhibitor (SSRI), paroxetine, or a placebo. None of the participants met currently, or throughout their lifetime, diagnostic criteria for any mental disorder. None had ever received a psychotropic medication, had ever abused drugs, or had ever been in treatment for a mental disorder, and none were currently seeking or desiring treatment for a mental disorder. Knutson et al. reported that the SSRI administration (relative to placebo) reduced significantly scores on a self-report measure of neuroticism. The magnitude of change even correlated with plasma levels of SSRI within the SSRI treatment group. These findings have since been replicated (Tang et al., 2009), albeit the effects of anxiolytic and antidepressant medications on normal persons have been mixed (Knorr & Kessing, 2010; Serretti et al., 2010). In addition, the effect of pharmacologic treatment on FFM domains does not appear to be specific to neuroticism. The researchers aan het Rot, Moskowitz, Pinard, and Young (2006) examined the effect of serotonin on agreeable and quarrelsome behaviors by administering tryptophan and asking clients to characterize social interactions according to a list of social behaviors organized according to the IPC. Their findings showed that participants who were administered higher doses of tryptophan engaged in more agreeable behaviors and fewer quarrelsome behaviors. These results

were replicated when persons with mild seasonal mood dysregulation were exposed to increased sunlight (aan het Rot, Moskowitz, & Young, 2008). Neither sunlight nor tryptophan was found to significantly alter submissive behaviors (aan het Rot et al., 2006, 2008; Moskowitz, Pinard, Zuroff, Annable, & Young, 2001). It would be useful in future research to explore whether pharmacologic interventions show an increase in FFM agreeableness even after controlling for FFM neuroticism and to determine whether scores on measures of DSM-IV-TR dependency are comparably responsive to pharmacologic interventions. Of course, any such study would need to control for the extent to which the measure of dependency included neuroticism as well as just interpersonal agreeableness and submission.

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# DEPRESSIVE PERSONALITY DISORDER AND THE FIVE-FACTOR MODEL

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Depressive personality disorder (DPS) is characterized by a pervasive pattern of depressive thinking and behavior beginning in adolescence or early adulthood and occurring across a range of life domains. The diagnostic criteria for DPS are found in Appendix B (“Criteria Sets and Axes Provided for Further Study”) of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000), and the inclusion of DPS in the appendix of *DSM-IV-TR* has encouraged additional research to better determine its validity and clinical utility. To receive a diagnosis of DPS, a person needs to meet at least five of seven criteria: (a) usual mood is dominated by dejection, gloominess, cheerlessness, joylessness, unhappiness; (b) self-concept centers around beliefs of inadequacy, worthlessness, and low self-esteem; (c) is critical, blaming, and derogatory toward self; (d) is brooding and given to worry; (e) is negativistic, critical, and judgmental toward others; (f) is pessimistic; and (g) is prone to feeling guilty or remorseful. In addition, DPS symptoms cannot occur exclusively during major depressive episodes and cannot be better accounted for by dysthymic disorder (dysthymia; American Psychiatric Association, 2000).

The *DSM-IV-TR* DPS criteria set was derived from the research criteria set forth by Akiskal (1983), which included the following seven sets of personality traits: (a) quiet, introverted, pas-

sive, and nonassertive; (b) gloomy, pessimistic, serious, and incapable of fun; (c) self-critical, self-derogatory, and self-reproaching; (d) skeptical, hypercritical, and hard to please; (e) conscientious, responsible, and self-disciplined; (f) brooding and given to worry; and (g) preoccupied with negative events, feelings of inadequacy, and personal shortcomings. One notable difference between Akiskal’s criteria and the final *DSM-IV-TR* criteria is the removal of the “conscientious, responsible, and self-disciplined” criterion set. A number of studies (e.g., Dyce & O’Connor, 1998; Huprich, 2000, 2003; see below) have subsequently provided empirical support for this decision, and it is now understood that persons with DPS more often exhibit lower (not higher) levels of conscientiousness. In particular, lower levels of the five-factor model (FFM) facets of competence, achievement striving, and self-discipline have consistently been associated with DPS symptoms.

## ASSESSMENT OF DPS

A number of clinical interviews and self-report measures to assess PDs, as well as instruments specifically designed to assess DPS, have been developed. In the current chapter, we mention only those assessment instruments used in the empirical studies reviewed herein, and the interested reader is directed to Bagby, Watson, and Ryder (in press) for a comprehensive

examination of DPS assessment instruments. The Diagnostic Interview for Depressive Personality (DIDP; Gunderson, Phillips, Triebwasser, & Hirschfeld, 1994) is a 63-item semistructured interview that was developed to assess DPS. Respondents are instructed to answer questions on the basis of their typical behavior since childhood or adolescence, and not their behavior during severe depressive episodes. The range of possible scores is 0 to 126, and cutoff scores ranging from 30 to 42 have been used to assign a DPS diagnosis (Gunderson et al., 1994; Huprich, 2000; Lyoo, Gunderson, & Phillips, 1998). The Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First, Gibbons, Spitzer, Williams, & Benjamin, 1997) is a 140-item semistructured interview that was explicitly developed to assess each of the *DSM-IV-TR* personality disorder (PD) criteria, and the Structured Interview for *DSM-IV* Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997) is a 101-item semistructured interview of Axis II disorders including DPS. Both the SCID-II and the SIDP-IV contain a module for the assessment of DPS.

The Depressive Personality Disorder Inventory (DPDI; Huprich, Margrett, Barthelemy, & Fine, 1996) is a 41-item self-report measure that was developed specifically for the assessment of DPS symptoms. When using the DIDP as the criterion to establish a DPS diagnosis, a cutoff score of 170 on the DPDI was found to be optimal (81% correct classification). The SCID-II Patient Questionnaire (SCID-II PQ, also termed the SCID-II Self Report; First et al., 1997), is a 119-item self-report measure of *DSM-IV* PDs, with eight items to assess DPS. Each SCID-II PQ question corresponds to a diagnostic criterion for the *DSM-IV* PDs, including DPS. The Millon Clinical Multiaxial Inventory—III (MCMI-III; Millon, Davis, & Millon, 1997) is a 175-item self-report measure that contains 24 clinical scales and 3 validity scales to assess response distortion. There are 14 scales designed to assess the *DSM-IV* PDs, including a DPS scale, and 10 clinical syndrome scales to assess Axis I disorders. A feature of each of the clinician-rated and self-report instruments described in this section is that they can be used to assign a categorical diagnosis of DPS according to a specified cutoff score or as a dimensional

assessment of DPS, with higher scores on the instrument reflecting a greater degree of severity of DPS symptoms.

## PREVALENCE OF DPS

A DPS prevalence rate of 2.0% was observed in a large population-based study of DPS that included 2,801 Norwegian young adult twins who were assessed using a Norwegian version of the SIDP-IV (Ørstavik, Kendler, Czajkowski, Tambs, & Reichborn-Kjennerud, 2007), with 0.7% of male and 2.7% of female participants meeting criteria for a DPS diagnosis. In contrast, considerably higher prevalence rates for DPS have been reported in outpatient mental health settings (Klein, 1990; McDermut, Zimmerman, & Chelminski, 2003). For example, McDermut et al. (2003) assessed 900 adult psychiatric outpatients using the SIDP-IV and found that 22.0% of the sample met *DSM-IV-TR* criteria for DPS (18.3% of male and 24.3% of female participants).

A number of studies have examined the family history of psychiatric disorders in relatives of people with DPS. Overall, higher rates of major depressive disorder and bipolar disorder have been found in relatives of people with DPS than in relatives of those without DPS (Cassano et al., 1999; Klein, 1990; Klein & Miller, 1993; Kwon et al., 2000). A higher rate of DPS has been observed in the first-degree relatives of outpatients with early-onset dysthymia than in relatives of outpatients with recurrent MDD and relatives of healthy control participants (Klein, 1999b).

## ASSOCIATED FEATURES OF DPS

The various forms of impairment associated with a diagnosis of DPS or elevated DPS symptoms has been the subject of numerous investigations (for a review, see Bagby et al., in press). For example, McDermut et al. (2003) found that patients with DPS had higher levels of Axis I and Axis II comorbidity, higher levels of suicidality, a higher rate of suicide attempts, poorer social functioning, and higher rates of unemployment compared with patients without DPS. In contrast to the greater overall impairment associated with DPS, few differences

have been found between people with DPS and without DPS in regard to age, sex, race, marital status, education, and socioeconomic status (Hirschfeld & Holzer, 1994; Klein, 1990; Klein & Miller, 1993; Perugi et al., 1990; Phillips, Gunderson, Kimball, Triebwasser, & Faedda, 1992). Additionally, Huprich, Porcerelli, Binienda, and Karana (2005) found that whereas major depressive disorder and dysthymia were associated with a greater severity of somatic complaints, DPS symptoms were found to be unrelated to somatic problems.

### OVERLAP WITH DYSTHYMIA

One of the major problems with the *DSM-IV* DPS criteria concerns the difficulties in distinguishing DPS from dysthymia (Bagby, Schuller, & Ryder, 2003; Ryder & Bagby, 1999; Ryder, Bagby, & Dion, 2001; Ryder, Bagby, & Schuller, 2002; Ryder, Schuller, & Bagby, 2006). Akiskal (1995, 1997) proposed that DPS stems from the same processes underlying dysthymia and could potentially be conceptualized as an alternative expression or milder form. Examination of the *DSM-IV-TR* criteria for DPS find it to be characterized less by mood disturbance and neurovegetative symptoms and more by persistent and pervasive psychological symptoms of negativity, gloominess, self-criticism, and pessimism compared with criteria for dysthymia and major depressive disorder (American Psychiatric Association, 2000). Klein (1999a) suggested that an important area of difference between DPS and dysthymia is that whereas a depressed mood is required for a diagnosis of dysthymia, chronic anhedonia may be a differentiating feature of DPS.

In an attempt to synthesize the research that has been conducted on this contentious issue, Ryder et al. (2002) reviewed a number of studies and found a wide range of overlap rates, with the majority of studies demonstrating substantial comorbidity between the two disorders (i.e., >50%). In contrast, some research studies (Hirschfeld & Holzer, 1994; Klein, 1990; Klein & Miller, 1993; Klein & Shih, 1998; Markowitz et al., 2005; McDermut et al., 2003; Phillips et al., 1998) have found a more modest degree of overlap between DPS and dysthymia, with there being less than 50% of individuals with

one of the two disorders who end up meeting diagnostic criteria for the other disorder. Huprich (2009) recently provided an updated review and concluded that more recent and methodologically more sophisticated studies generally support the discriminability of DPS and dysthymia.

A recent comparison of DPS and dysthymia revealed that DPS symptoms were more strongly associated with the experience and management of aggressive impulses than were symptoms of dysthymia, leading to the speculation that underlying levels of anger and aggression may be useful ways to distinguish DPS from dysthymia (Huprich, Porcerelli, Binienda, Karana, & Kamoo, 2007). A related area for future research consideration is the speculation that one approach to understanding the differences between DPS and dysthymia is through the use of a dimensional personality measure to differentiate DPS and dysthymia. Huprich (2009) suggested a study involving three groups of patients: a DPS-only group, a dysthymia-only group, and a third group with comorbid DPS and dysthymia. If it turned out that patients comprising the DPS-only group demonstrated similar personality profiles and the dysthymia-only group had much more diverse profiles, this would provide further support for the notion that DPS is better conceptualized as a PD rather than a mood disorder.

### OVERLAP WITH OTHER PDS

In addition to the significant overlap observed between DPS and dysthymia, a number of studies have also documented high rates of comorbidity with other PDs. For example, Klein and Shih (1998) found that 58% of outpatients with a diagnosis of DPS met criteria for one or more additional PDs; the highest rates of comorbidity for patients with DPS were with borderline PD (26%), avoidant PD (20%), histrionic PD (17%), and paranoid PD (16%). Another study reported a 66% comorbidity rate between DPS and other PDs; the highest rates of comorbidity for patients with DPS were with avoidant PD (43%), borderline PD (22%), obsessive-compulsive PD (21%), and paranoid PD (16%; McDermut et al., 2003). The observed comorbidity rates between DPS and other *DSM-IV-TR* PDs is

similar to the comorbidity rates found for the majority of PDs, which is considered a problematic feature for the *DSM-IV-TR* categorical approach to PD diagnosis (Widiger & Trull, 2007).

### CATEGORICAL VERSUS DIMENSIONAL APPROACHES TO DPS

Although more recent research has generally supported the discriminability of DPS and dysthymia, more so than research reviewed by Ryder et al. (2002), most of these studies assume that a robust and discriminable DPS construct should be a categorical diagnosis. There are questions, however, as to whether personality psychopathology is best seen as categorical or dimensional. One methodology that has been recently used to compare the validity of categorical versus dimensional approaches to DPS (as well as PDs and various Axis I disorders) is *taxometric analysis* (e.g., Meehl, 1973, 1995; Waller & Meehl, 1998). This group of statistical procedures is designed to provide information on whether a latent construct (e.g., DPS) is better represented by a categorical or a dimensional model. Arntz et al. (2009) conducted the only study of DPS to date that used taxometric analysis, and they found that a dimensional model was superior to a categorical model. This finding emerged when the data were analyzed using three taxometric procedures (MAMBAC, MAXEIG, and L-MODE), providing strong support for an underlying dimensional structure for DPS. These results lend credibility to the notion that DPS should be conceptualized using a dimensional model of personality, such as the FFM.

### CONCEPTUALIZING DPS USING A DIMENSIONAL APPROACH

A large number of personality traits have been theorized to be associated with DPS. For example, early psychoanalytic and psychodynamic theories suggested that DPS is associated with orality-dependence, fear of abandonment, fear of disapproval, anality-obsessiveness, low self-esteem, helplessness, guilt, dependence, inability to love, hypercriticism, self-punishment, harsh self-scrutiny, self-deprecation, hopelessness, emptiness, and hypo-

chondriasis (Arieti & Bemporad, 1980; Berliner, 1966; Blatt, 1974; Kahn, 1975; Kernberg, 1987).

In more recent empirical studies, DPS is related to a number of higher order (domain) and lower order (facet) personality traits. For example, neuroticism, negative affectivity, depression, hostility, stress reactivity, anxiety, self-criticism, fragile self-esteem, negative attributional style, self-consciousness, vulnerability, harm avoidance, perfectionism, low gregariousness, low tender-mindedness, low novelty seeking, low extraversion, low positive affectivity, and low openness have all been found to be related to a categorical DPS diagnosis or with DPS symptom severity (e.g., Abrams et al., 2004; Huprich, 2003; Klein, 1990; Klein & Shih, 1998; Lyoo et al., 1998; Reynolds & Clark, 2001; Ryder et al., 2002; Tritt, Ryder, Ring, & Pincus, 2010).

### DPS AND THE FFM

The categorical approach to the conceptualization of PDs, including DPS, has been widely criticized (e.g., Widiger & Trull, 2007), prompting research into the development of alternatives. Widiger, Trull, Clarkin, Sanderson, and Costa (2002) suggested that a suitable option for understanding PDs is through the framework of the FFM, and they described how each of the *DSM-IV-TR* PDs can be represented by a group of relevant FFM traits. A substantial body of evidence has since emerged demonstrating that the PDs exhibit meaningful and unique relations to the five domains of the FFM (Saulsman & Page, 2004), with the most detailed descriptions occurring at the facet level (Samuel & Widiger, 2008). The possibility of conceptualizing DPS using the FFM facets was proposed earlier by Widiger (Widiger, 1993; Widiger, Trull, Clarkin, Sanderson, & Costa, 1994), who predicted that DPS should be represented by high levels of the anxiety, depression, and self-consciousness facets, combined with low levels of the tender-mindedness facet. Brief descriptions of the four facets predicted to be associated with DPS are presented in Table 12.1. As pointed out by Dyce and O'Connor (1998), one difficulty in attempting to evaluate the support for these facet-level predictions is that effect sizes were not specified by Widiger and colleagues, leaving

TABLE 12.1

## Bivariate Correlations Between Five-Factor Model Facets and Depressive Personality Disorder Symptom Scores

NEO PI-R	MCMII-III <sup>a</sup>	DPDI <sup>b</sup>	DIDP <sup>b</sup>	SCID-II PQ <sup>b</sup>	SCID-II PQ <sup>c</sup>	SCID-II PQ <sup>d</sup>
Neuroticism	.72 <sup>e</sup>					
Anxiety	.61 <sup>e</sup>	.39 <sup>e</sup>	.28 <sup>e</sup>	.36 <sup>e</sup>	.62 <sup>e</sup>	0.47 <sup>e</sup>
Angry hostility	.48 <sup>e</sup>	.31 <sup>e</sup>	.15	.33 <sup>e</sup>	.49 <sup>e</sup>	0.45 <sup>e</sup>
Depression	.75 <sup>e</sup>	.50 <sup>e</sup>	.37 <sup>e</sup>	.47 <sup>e</sup>	.72 <sup>e</sup>	0.53 <sup>e</sup>
Self-consciousness	.56 <sup>e</sup>	.59 <sup>e</sup>	.52 <sup>e</sup>	.54 <sup>e</sup>	.63 <sup>e</sup>	0.48 <sup>e</sup>
Impulsiveness	.28 <sup>e</sup>	.14	.27 <sup>e</sup>	.04	.30 <sup>e</sup>	0.36 <sup>e</sup>
Vulnerability	.56 <sup>e</sup>	.44 <sup>e</sup>	.37 <sup>e</sup>	.47 <sup>e</sup>	.62 <sup>e</sup>	0.55 <sup>e</sup>
Extraversion	-.36 <sup>e</sup>					
Warmth	-.25 <sup>e</sup>	-.48 <sup>e</sup>	-.52 <sup>e</sup>	-.49 <sup>e</sup>	-.38 <sup>e</sup>	-.39 <sup>e</sup>
Gregariousness	-.20 <sup>e</sup>	-.41 <sup>e</sup>	-.34 <sup>e</sup>	-.40 <sup>e</sup>	-.30 <sup>e</sup>	-.38 <sup>e</sup>
Assertiveness	-.21 <sup>e</sup>	-.37 <sup>e</sup>	-.56 <sup>e</sup>	-.43 <sup>e</sup>	-.34 <sup>e</sup>	-.29 <sup>e</sup>
Activity	-.24 <sup>e</sup>	-.38 <sup>e</sup>	-.27 <sup>e</sup>	-.46 <sup>e</sup>	-.22	-.11
Excitement seeking	-.22 <sup>e</sup>	-.35 <sup>e</sup>	-.44 <sup>e</sup>	-.27	-.15	-.14
Positive emotions	-.37 <sup>e</sup>	-.56 <sup>e</sup>	-.52 <sup>e</sup>	-.62 <sup>e</sup>	-.51 <sup>e</sup>	-.45 <sup>e</sup>
Openness	-.05					
Fantasy	-.04	-.06	-.22	-.17	.31 <sup>e</sup>	0.14
Aesthetics	.00	-.31 <sup>e</sup>	-.37 <sup>e</sup>	-.26	.15	-.07
Feelings	.09	-.01	-.26	-.07	.23	0.12
Actions	-.20 <sup>e</sup>	-.41 <sup>e</sup>	-.42 <sup>e</sup>	-.49 <sup>e</sup>	-.05	-.17
Ideas	-.09	-.08	-.35 <sup>e</sup>	-.24	-.01	-.19
Values	.05	-.08	-.24	-.11	-.05	-.16
Agreeableness	-.12					
Trust	-.34 <sup>e</sup>	-.36 <sup>e</sup>	-.40 <sup>e</sup>	-.32 <sup>e</sup>	-.45 <sup>e</sup>	-.39 <sup>e</sup>
Straightforwardness	-.05	.10	.04	.17	-.11	-.10
Altruism	-.11	-.08	.04	-.06	-.10	-.17
Compliance	-.19 <sup>e</sup>	-.10	-.01	-.01	-.16	-.18
Modesty	.20 <sup>e</sup>	.26	.24	.33 <sup>e</sup>	.20	0.15
Tender-mindedness	.03	-.27	-.23	-.27	-.03	-.05
Conscientiousness	-.22					
Competence	-.35 <sup>e</sup>	-.30 <sup>e</sup>	-.42 <sup>e</sup>	-.30	-.46 <sup>e</sup>	-.50 <sup>e</sup>
Order	-.04	.03	-.12	.03	-.20	-.31 <sup>e</sup>
Dutifulness	-.07	.13	.14	.13	-.23	-.26 <sup>e</sup>
Achievement striving	-.17 <sup>e</sup>	-.43 <sup>e</sup>	-.53 <sup>e</sup>	-.43 <sup>e</sup>	-.34 <sup>e</sup>	-.24 <sup>e</sup>
Self-discipline	-.30 <sup>e</sup>	-.18	-.26	-.19	-.41 <sup>e</sup>	-.46 <sup>e</sup>
Deliberation	-.02	-.02	-.14	-.02	-.25 <sup>e</sup>	-.38 <sup>e</sup>

Note. DIDP = Diagnostic Interview for Depressive Personality; DPDI = Depressive Personality Disorder Inventory; NEO PI-R = Revised NEO Personality Inventory; SCID-II PQ = Structured Clinical Interview for DSM-IV Axis II Personality Disorders Patient Questionnaire.

<sup>a</sup>Compilation of data from Dyce and O'Connor (1998). <sup>b</sup>Compilation of data from Huprich (2003).

<sup>c</sup>Compilation of data from Bagby et al. (2004). <sup>d</sup>Compilation of data from Vachon et al. (2009).

<sup>e</sup>Significant *p* values.

uncertain the exact strength of the hypothesized positive and negative relations between DPS and the FFM facets.

Nine studies were identified that have examined DPS using the FFM, each of which is described in this section. The majority of studies examining the

relations between DPS and the FFM have focused on the associations between self-reported DPS symptoms and the FFM facets, as assessed using the Revised NEO Personality Inventory (NEO PI-R). Four of these nine studies included the entire set of correlations between FFM facets and dimensional

**EXHIBIT 12.1****Descriptions of the NEO Personality Inventory—Revised Facets Predicted to Conceptualize Depressive Personality Disorder**

Anxiety (high)	Anxious individuals are apprehensive, fearful, prone to worry, nervous, tense, and jittery. The scale does not measure specific fears or phobias, but high scorers are more likely to have such fears and free-floating anxiety.
Depression (high)	High scorers are prone to feelings of guilt, sadness, hopelessness, and loneliness. They are easily discouraged and often dejected.
Self-consciousness (high)	Self-conscious individuals are uncomfortable around others, sensitive to ridicule, and prone to feelings of inferiority. Self-consciousness is akin to shyness and social anxiety.
Tender-mindedness (low)	This facet scale measures attitudes of sympathy and concern for others. Low scorers are more hard headed and less moved by appeals to pity. They consider themselves realists who make rational decisions based on cold logic.

measures of DPS symptom severity, which are displayed in Exhibit 12.1.

Dyce and O'Connor (1998) conducted the first test of Widiger et al.'s (1994) predictions using a nonclinical sample of 614 undergraduate students (mean age = 22 years; 69.5% female). Participants completed the NEO PI-R to obtain information on FFM domains and facets, and the MCMI-III was administered to obtain information on DPS symptoms. Support was obtained for three of the four facets predicted to represent DPS. Specifically, each of the hypothesized neuroticism facets was positively correlated with MCMI-III DPS scores, but contrary to predictions, tender-mindedness was not correlated with DPS symptoms ( $r = .03$ ). A number of other FFM facets not previously predicted were found to be significantly correlated with DPS symptoms, including the remaining neuroticism facets (angry hostility, impulsiveness, and vulnerability; all negatively correlated), each of the six extraversion facets (all negatively correlated), three of the agreeableness facets (trust and compliance were negatively correlated whereas modesty was positively correlated), three of the conscientiousness facets (competence, achievement striving, and self-discipline; all negatively correlated), and one of the openness facets (actions; negatively correlated).

Stepwise regression analyses were then conducted to evaluate the relative importance of FFM domains and facets in the prediction of PD scores. For DPS, the multiple  $r$  was significant at  $p < .0001$

and similar for the five domains (multiple  $r = .73$ ; neuroticism standardized beta = .68, extraversion standardized beta = -.13) and for the 30 facets (multiple  $r = .76$ ; angry hostility standardized beta = 0.13, depression standardized beta = .69). On the basis of their findings, Dyce and O'Connor (1998) suggested that although general support for the predictions was observed across PDs, some revisions should be made to the FFM predictions to take into account the additional facets found to be associated with PDs (including DPS). Because their findings were based on a nonclinical sample, they suggested that future studies seek to replicate findings using clinical samples and other measures of PDs and the FFM to better delineate the relations between DPS and the FFM domains and facets.

In an attempt to address the limitations of using a nonclinical sample, Huprich (2000) tested Widiger et al.'s (1994) FFM predictions for DPS in a small ( $n = 7$ ) analogue sample of undergraduate students (mean age = 18.1 years,  $SD = 0.33$ ; 42.9% females) with high levels of DPS symptoms (DIDP mean score = 34.6,  $SD = 2.3$ ). The participants included in the DPS analogue group were carefully screened for the presence of DPS symptoms; each participant selected had a DPSI score of 149 or greater, and each met the required cutoff scores for a DPS diagnosis according to the SCID-II PQ. Study participants completed the NEO PI-R to obtain information on the FFM facets. As predicted, high scores were found for the NEO PI-R facets of depression and self-consciousness. However, only

average levels of anxiety and high (not low) levels of tender-mindedness were observed in the analogue DPS group. Overall, participants with DPS reported high scores on the neuroticism domain, low scores on the extraversion and conscientiousness domains, and low scores on the gregariousness, positive emotions, competence, and self-discipline facets. The study results support earlier findings of additional facets being significantly related to DPS (Dyce & O'Connor, 1998; Lyoo et al., 1998); however, caution must be taken in interpreting them given the small sample size.

To determine the relations between DPS and the FFM in a clinical sample, Lyoo et al. (1998) used the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1985, 1992), a 60-item self-report measure that was designed to assess the FFM. Study participants included 26 patients with DPS and comorbid chronic, early-onset depression and 20 patients with chronic, early-onset depression but without DPS. Normative data from the NEO-FFI was also used to compare participants' scores to that of healthy control participants. A DPS diagnosis was assigned using the DIDP (Gunderson et al., 1994), with a score of 30 or higher used to assign a diagnosis of DPS. No age or gender differences were found for participants with DPS (mean age = 38.5 years;  $SD = 10.1$ ; 53.8% female) and participants without DPS (mean age = 43.0 years;  $SD = 13.6$ ; 65.0% female).

Examination of Lyoo et al.'s (1998) findings revealed that the DPS group had significantly higher scores on the Neuroticism domain ( $M = 35.8$ ;  $SD = 6.1$ ) than the non-DPS group ( $M = 28.3$ ;  $SD = 8.4$ ;  $F = 11.1$ ,  $p < .01$ ) and significantly lower extraversion scores (DPS group  $M = 17.6$ ;  $SD = 5.3$  vs. non-DPS group:  $M = 22.2$ ;  $SD = 4.7$ ;  $F = 10.4$ ,  $p < .01$ ). No significant differences were found between groups on the openness, agreeableness, or conscientiousness domains. Comparisons to the normative data available for the NEO-FFI (i.e., scores from 983 healthy control participants) revealed that study participants with and without DPS had significantly higher scores than control participants on the neuroticism domain, and significantly lower scores on the extraversion and conscientiousness domains. No differences were found between study participants and healthy control participants on the agreeable-

ness domain, but unexpectedly, both the DPS and non-DPS groups had significantly higher levels of openness than healthy control participants. Stepwise regression analyses were then conducted, controlling for age, sex, and the presence of major depression. Partial correlation coefficients were calculated between DIDP scores and NEO-FFI domain scores, both for participants with DPS and for those without DPS. The only significant partial correlation was found for neuroticism scores for the DPS group (.39;  $p = .003$ ), and the other partial correlation coefficients for the DPS group were not significant (extraversion = -.24; openness = .31; agreeableness = -.12; conscientiousness = .27).

Overall, Lyoo et al. (1998) found that an FFM profile of high neuroticism and low extraversion distinguished participants with DPS and chronic, early-onset depression from participants with chronic, early-onset depression without DPS. Additionally, an examination of the results revealed that a small subset of participants with DPS who did not meet criteria for lifetime depression or dysthymia ( $n = 4$ ) exhibited a similar FFM profile. Unfortunately, no analyses were conducted at the facet-level of the FFM, and an additional study limitation was the small sample size.

Reynolds and Clark (2001) examined the utility of the FFM facets in providing detailed descriptions of *DSM-IV-TR* PDs, including DPS, in a clinical sample consisting of 36 inpatients and 58 outpatients. The 94 study participants had a mean age of 34.6 years ( $SD = 10.5$ ), and 73.4% were women. PD diagnoses were obtained using the SIDP-IV, and 28 participants (29.8%) met criteria for a diagnosis of DPS. All participants completed both the NEO PI-R and the Big Five Inventory (John, Donahue, & Kentle, 1991), a 54-item self-report measure that provides an alternative method for measuring the FFM. Participants also completed the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993), which is a 375-item self-report measure that contains 15 scales relevant to PDs. Twelve scales represent personality traits (mistrust, manipulativeness, aggression, self-harm, eccentric perceptions, dependency, exhibitionism, entitlement, detachment, impulsivity, propriety, and workaholism), and three scales represent

temperament dimensions (negative temperament, positive temperament, and disinhibition). Clark (1993) originally predicted that DPS would be best described by a combination of high levels of negative temperament and self-harm and low levels of positive temperament.

To evaluate the utility of the three SNAP scales predicted by Clark (1993) and the four FFM facets predicted by Widiger et al. (1994) to predict SIDP-IV DPS ratings, Reynolds and Clark (2001) conducted a series of hierarchical multiple regression analyses. When the four FFM DPS facets were entered in Step 1 and the three SNAP DPS scales were entered in Step 2, the four FFM facets were found to account for a significant proportion of variance in DPS ratings ( $R^2 = .54$ ,  $p < .001$ ), whereas the three SNAP scales did not provide a significant increase in incremental validity (change in  $R^2 = .02$ , ns). In contrast, when the three SNAP DPS scales were entered in Step 1 and the four FFM DPS facets were entered in Step 2, the SNAP scales accounted for a significant proportion of variance in DPS ratings ( $R^2 = .44$ ,  $p < .001$ ), and the FFM provided an additional significant increase in incremental validity (change in  $R^2 = .12$ ,  $p < .001$ ). Overall, their results support the use of the FFM facets in the description and prediction of DPS.

Huprich (2003) followed up his previous examination of the FFM facets (Huprich, 2000) by conducting a study that tested Widiger et al.'s (1994) predictions in a clinical sample. Study participants included 67 psychiatric outpatients (mean age = 46.2 years,  $SD = 8.0$ ) recruited from either a Veterans Administration clinic ( $n = 51$ ; 22% female) or a community mental health center ( $n = 16$ ; 56% female). Participants completed the DPDI and the SCID-II PQ (termed SCID-II Self Report in the study write-up), and within 30 days, they were interviewed using the DIDP, after which they completed the NEO PI-R. The associations between the 30 NEO PI-R facet scores and the scores from each of the three DPS measures (DPDI, SCID-II PQ, DIDP) were then evaluated using bivariate correlations and regression analyses.

Examination of the results indicated that all three DPS measures were significantly associated with three of the four predicted facets (anxiety,

depression, and self-consciousness). Contrary to predictions, the tender-mindedness facet was not significantly related to any of the measures; however, this facet was nonsignificantly correlated in the expected negative direction on all three measures (DPDI =  $-.27$ ; SCID-II PQ =  $-.27$ ; DIDP =  $-.23$ ). In addition to confirming the previous predictions, it was observed that all three measures were negatively correlated with the seven additional FFM facets (warmth, gregariousness, assertiveness, positive emotions, actions, trust, and achievement striving) and positively correlated with the vulnerability facet.

The results of regression analyses revealed that when the four hypothesized DPS facets were used to predict the variance in DPS scores, the combination of these four facets predicted 28% of the variance in DIDP scores, 39% of the variance in DPSI scores, and 40% of the variance in SCID-II PQ scores. Further examination of results revealed that the self-consciousness and tender-mindedness facets significantly and uniquely predicted variance in all three DPS measures (self-consciousness standardized betas ranged from .47 to .62, and tender-mindedness standardized betas ranged from  $-.26$  to  $-.42$ ). On the basis of these findings, Huprich suggested that the self-consciousness and tender-mindedness facets may be particularly useful in distinguishing DPS from other disorders.

Another clinical study was conducted that examined the relations between DPS and the FFM facets in a sample of 169 outpatients (mean age = 40.5 years,  $SD = 12.6$ ; 52.7% female) of a large university-affiliated teaching and research hospital in Canada (Bagby, Schuller, Marshall, & Ryder, 2004). Participants completed the SCID-II PQ and the NEO-PI-R, after which they were administered the SCID-II interview to determine PD diagnoses, including DPS. A total of 15 participants (9%) met criteria for a diagnosis of DPS using the SCID-II. Significant positive correlations were found between SCID-II PQ DPS scores and each of the six facets of neuroticism, and negative correlations with four of the extraversion facets (warmth, gregariousness, assertiveness, and positive emotions) and four of the conscientiousness facets (competence, achievement striving, self-discipline, and deliberation). DPS symptoms were also negatively associated

with the trust facet of the agreeableness domain, and positively correlated with the fantasy facet of the openness domain, an unexpected finding not observed in other studies. Results obtained from regression analyses revealed that Widiger et al.'s (1994) set of four predicted DPS facets (high levels of anxiety, depression, and self-consciousness, and low levels of tender-mindedness) accounted for 55% of the variance in DPS SCID-II PQ scores. The amount of variance accounted for using these facets was significantly larger for DPS than for 9 of the 10 *DSM-IV-TR* main text PDs. However, the four predicted facets failed to differentiate DPS from Avoidant PD, as 53% of the variance in Avoidant PD SCID-II PQ scores was explained by the four DPS facets. Examination of the standardized beta weights revealed that the depression facet was associated with the greatest capacity to predict DPS (standardized beta = .36), whereas the self-consciousness facet had the greatest capacity for predicting Avoidant PD (standardized beta = .49).

Given the high rates of comorbidity between DPS and other PDs (in particular, avoidant PD) discussed earlier, there have been attempts to differentiate DPS from other PDs. Huprich (2005) examined the ability of the NEO PI-R facet scores to differentiate DPS and Avoidant PD in a sample of 68 psychiatric outpatients who were recruited for a previous study detailed earlier (Huprich, 2003). Support was obtained for using the FFM facets to distinguish DPS from avoidant PD. In particular, DPS symptoms (assessed using the SCID-II PQ) were significantly related to angry hostility facet scores ( $r = .33, p < .05$ ), whereas avoidant PD symptoms were not ( $r = .21, ns$ ). A comparison of mean facet scores on the NEO PI-R between 11 participants who met criteria for a diagnosis of DPS (but not avoidant PD) using the SCID-II interview and 9 participants meeting SCID-II criteria for a diagnosis of avoidant PD (but not DPS) revealed significantly higher NEO PI-R T scores for participants with DPS on the Angry Hostility facet (DPS group  $M = 71.9, SD = 23.6$  vs. the avoidant PD group:  $M = 59.6, SD = 6.4; F = 6.63, p < .05, d = 0.51$ ). Examination of the mean T scores on the angry hostility facet revealed that, on average, the DPS group fell within the "very high" range, whereas the avoidant PD group, on

average, fell at the cutoff between the "average" and "high" ranges. In contrast, no significant between-group differences were observed for the angry hostility facet scores when the DPSI was used to diagnose DPS (DPS group  $M = 66.4, SD = 17.3$  vs. avoidant PD group:  $M = 64.0, SD = 12.8$ ). Overall, these findings suggest that the FFM angry hostility facet may be of value in differentiating DPS from avoidant PD, but it appears to be dependent on the measure used to assign a diagnosis of DPS. Because the majority of participants in this study were male veterans and the sample size was small, further examination of the utility of the angry hostility facet in differentiating DPS from avoidant PD is needed.

One method that has been developed to conceptualize the PDs within a dimensional framework is the prototype-matching approach (e.g., Lynam & Widiger, 2001; Miller, Lynam, Widiger, & Leukefeld, 2001). In this approach, an individual's personality profile is derived from a combination of FFM facets and then compared with the empirically derived FFM prototypical personality profiles that have been developed for each of the *DSM-IV* PDs. Several methods could be used to create PD prototype profiles: the use of clinicians with experience in the assessment or treatment of PDs, the use of experts (i.e., those that have published in the area of the FFM and PDs), or the use of the PD prototype profiles previously created by Widiger et al. (2002), which could be considered a hybrid of the clinician and expert approaches. A potential strength of the clinician approach is the possibility of enhancing the clinical utility of the FFM ratings (i.e., facilitating the ease of use and applicability of the FFM traits among clinicians). In contrast, the expert approach has the advantage of being derived from empirical research (and thus minimizes clinician biases) and further substantiates a more empirical-scientific approach to informing personality psychopathology.

Vachon et al. (2009) described three ways in which one can determine the relevant facets for creating accurate prototypical personality profiles: (a) through a review of empirical research documenting the observed correlations between FFM facets and PDs, (b) through a direct translation of the specific *DSM-IV* PD criteria into the language of the FFM, and (c) through an expert consensus of the salient

facets for a particular PD. Of the three methods, the expert consensus approach seems to be the preferred methodology because it uses participants with familiarity with both PDs and the FFM, aggregates across multiple experts to minimize any idiosyncratic interpretations of the criteria, and draws attention to potentially relevant facets not mentioned in the *DSM-IV-TR* PD criteria sets (Lynam & Widiger, 2001).

To address the limitations in the original DPD FFM profile suggested by Widiger et al. (1994), Vachon et al. (2009) sought to determine the relevant FFM facets for conceptualizing DPD using all three approaches. Twenty-five experts in the areas of DPD, normal personality, or pathological personality (or in a combination of these) were instructed to generate ratings for each of the 30 NEO PI-R facets to create a prototypical FFM profile for an individual with DPD. The final DPD profile was obtained by averaging the expert ratings for each of the facets rated as high or low. Vachon et al. found that the overall expert-generated profile was characterized by high levels of anxiety, depression, vulnerability, and modesty, as well as low levels of activity, excitement seeking, and positive emotions. The two previously described FFM profiling methods (i.e., empirical association and criteria translation) were then used to obtain additional facets that could also be viewed as relevant to DPD but not obtained through the expert consensus approach. The result of this effort was the derivation of a composite set of core personality traits for DPD that included 15 facets spanning four of the five FFM domains (Exhibit 12.2).

After reviewing the final set of personality traits comprising the DPD profile, Vachon et al. (2009) observed that the *DSM-IV-TR* DPS criteria set makes no mention of certain facets that are either rated by experts as relevant to DPS or are related to DPS using the empirical association approach. In particular, the FFM traits of vulnerability, modesty, warmth, gregariousness, assertiveness, activity, excitement seeking, positive emotions, trust, tender-mindedness, competence, or achievement striving are not explicitly part of the *DSM-IV* DPD criteria. On the basis of their findings, Vachon et al. suggested that future definitions of DPD (e.g., the upcoming fifth edition of the *DSM*) be modified

## EXHIBIT 12.2

### Five-Factor Model Prototype for Depressive Personality Disorder

Neuroticism
Anxiety (high)
Depression (high)
Self-consciousness (high)
Vulnerability (high)
Extraversion
Warmth (low)
Gregariousness (low)
Assertiveness (low)
Activity (low)
Excitement seeking (low)
Positive emotions (low)
Agreeableness
Trust (low)
Tender-mindedness (low)
Modesty (high)
Conscientiousness
Competence (low)
Achievement striving (low)

Note. Compilation of findings reported in Vachon et al. (2009).

to represent these additional related personality traits.

Miller, Tant, and Bagby (2010) recently examined the validity of Vachon et al.'s (2009) 15-facet FFM DPS prototype in a nonclinical sample of 182 undergraduate students (mean age = 19.4 years,  $SD = 2.2$ ; 69% female). Study participants completed the NEO PI-R, the SCID-II PQ, and the DPSI; the Dimensional Assessment of Personality Pathology – Basic Questionnaire (DAPP-BQ; Livesley, 1990) was also completed as a validation measure of pathological personality traits. The DAPP-BQ comprises 18 scales identifying the following areas of personality pathology: submissiveness, cognitive dysregulation, identity problems, affective lability, stimulus seeking, compulsivity, restricted expression, callousness, oppositionality, intimacy problems, rejection, anxiousness, conduct problems, suspiciousness, social avoidance, narcissism, insecure attachment, and self-harm.

Miller et al. (2010) calculated the intraclass correlation coefficient for each participant's set of scores on the 30 facets of the NEO PI-R and Vachon et al.'s (2009) expert-generated NEO PI-R DPD profile to

create a *similarity score*. Using Vachon et al.'s (2009) expert-generated NEO PI-R profile to represent DPS, Miller et al. (2010) found that the FFM DPS similarity scores were significantly correlated with the SCID-II PQ DPS scores ( $r = .57$ ) and DPSI scores ( $r = .55$ ), suggesting that a FFM dimensional approach can be used to reliably conceptualize and assess DPS. The FFM DPS similarity scores were, on average, correlated at .24 with the 10 main text DSM-IV-TR PDs (assessed using the SCID-II PQ). Similarity scores were significantly positively correlated with 13 of 18 DAPP-BQ scales; only the DAPP-BQ Stimulus Seeking, Compulsivity, Rejection, Conduct Problems, and Narcissism scales were not significantly associated with FFM DPS similarity scores. The FFM DPS similarity scores differed from the DSM-IV-TR approach primarily in regard to the stronger weighting of low positive emotionality. Overall, these results lend additional evidence to the notion that the FFM can be used to capture the personality traits associated with the DPS construct.

## CONCLUSION

A review of the empirical research concerning the relations between DPS symptoms and FFM facets revealed certain areas of agreement as well as some equivocal findings. Overall, DPS has been found to be consistently related to high levels of the neuroticism domain and the majority of its facets (i.e., high levels of anxiety, angry hostility, depression, self-consciousness, vulnerability) and low levels of the extraversion domain and each of its facets (i.e., low levels of warmth, gregariousness, assertiveness, activity, excitement seeking, positive emotions). Additionally, there is some support for certain facets of conscientiousness to be negatively associated with DPS (i.e., low levels of competence, achievement striving, self-discipline). There is evidence for DPS to be related to low levels of trust; however, there is mixed evidence for high levels of modesty being a feature of DPS. There is also some evidence that DPS is associated with low levels of the actions facet, but this has not been a consistent finding. It is our belief that the personality traits that comprise the FFM, especially at the facet level, can adequately capture and characterize the DPS construct.

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# ALEXITHYMY AND THE FIVE-FACTOR MODEL OF PERSONALITY

Graeme J. Taylor and R. Michael Bagby

Alexithymia is a personality construct characterized by difficulties in identifying and describing subjective feelings, a restricted imaginal capacity, and an externally oriented cognitive style. These characteristics are thought to reflect individual differences in the cognitive processing and regulation of affects (Taylor, Bagby, & Parker, 1997). Individuals with high alexithymia are prone to experience dysphoric affects and to use maladaptive strategies for coping with stressful situations, appear incapable of experiencing positive affects fully, and express little empathy (Guttman & Laporte, 2002; Parker, Taylor, & Bagby, 1998; Taylor et al., 1997). There is also evidence that alexithymia is associated with insecure attachment styles, which indicates less effective emotion-regulating skills than found in individuals with secure attachment styles (Priel & Shamai, 1995; Taylor & Bagby, 2004).

The alexithymia construct was formulated during the early 1970s and at that time was thought to encompass a specific set of cognitive and affective characteristics that was observed among patients with so-called classic psychosomatic diseases and later also among patients with certain psychiatric disorders—in particular, substance use disorders, posttraumatic stress disorder (PTSD), eating disorders, and panic disorder (Nemiah & Sifneos, 1970; Sifneos, 1973; Taylor et al., 1997). In conceptualizing alexithymia as a multifaceted construct, Nemiah, Freyberger, and Sifneos (1976) noted that the combination of a limited imaginal capacity and

externally oriented cognitive style corresponds to the phenomenon of *pensée opératoire* (operator thinking), which had been observed a decade earlier among somatically ill patients in France (Marty & de M'Uzan, 1963). Sifneos (1973) coined the term *alexithymia* (from the Greek: *a* = lack, *lexis* = word, *thymos* = emotion) to denote the constricted emotional functioning, poverty of fantasy life, and difficulty these patients have in finding words to describe their emotions. Krystal (1988) observed that in addition to the salient features of the construct, individuals with a high degree of alexithymia have difficulty tolerating and regulating emotional states and show a limited capacity to be self-reflective and introspective. It has been suggested that the alexithymic deficit in cognitively processing and modulating emotional states plays a role in the pathogenesis of the various disorders with which alexithymia is associated (Taylor et al., 1997).

In addition to the strong association between alexithymia and several common psychiatric disorders, there is evidence that the construct may intensify psychiatric symptoms, interfere with recovery from depression, and predict poor response to short-term individual psychotherapy and short-term group therapy (Honkalampi, Alden, Wiggins, & Pincus, 2007; McCallum, Piper, Ograniczuk, & Joyce, 2003; Ograniczuk, Piper, & Joyce, 2004). Despite these findings, alexithymia has never been recognized by the American Psychiatric Association as a form

of personality disorder or maladaptive personality trait. Unlike the Personality Disorders section of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994), alexithymia can be accommodated within the five-factor model (FFM) of personality and thereby acknowledged as a clinically important personality trait. Given the impoverished imagination and reduced attention to emotional feelings associated with alexithymia, Costa and McCrae (1987) suggested many years ago that it could be classified as part of the Openness to Experience dimension within the FFM. In this chapter, we review empirical evidence supporting the conceptual overlap of alexithymia with some facets of openness to experience but also review evidence that the alexithymia construct combines elements from both higher and lower order traits across the FFM as measured by the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992b). First we describe some methods for measuring alexithymia and review findings from research exploring the latent structure and stability of the construct.

## ASSESSMENT OF ALEXITHYMYIA

Since the alexithymia construct was introduced, several valid and reliable methods for measuring it have been developed. These include self-report scales, observer-rated measures, structured interviews, and a projective test. Although a multimethod approach to measurement of alexithymia is preferable, most research to date has relied on a single measure of the construct. This limitation should not detract from the validity of the research findings we review in this chapter because there is generally good agreement between self-report and observer-rated or structured interview measures of alexithymia (Bagby, Taylor, & Parker, 1994b; Bagby, Taylor, Parker, & Dickens, 2006; Grabe et al., 2009).

By far the most widely used method for assessing alexithymia is the self-report 20-item Toronto Alexithymia Scale (TAS-20; Bagby, Parker & Taylor, 1994a; Bagby et al., 1994b). This scale is a revised version of the Toronto Alexithymia Scale, which consists of 26 items and four factors: (a) DIF—difficulty identifying feelings and distinguishing them from bodily sensations of emotions, (b) DDF—dif-

ficulty describing feelings to others, (c) EOT—an externally oriented style of thinking, and (d) RF—reduced fantasy and imaginal activity (Taylor, Ryan, & Bagby, 1985). In the process of revising the TAS and rewording or replacing several items, the items for assessing fantasy and imaginal activity were eliminated because they were found to be confounded by a social desirability response bias and had low-magnitude corrected item-total correlations with the full TAS. The TAS-20 therefore comprises three factors—DIF, DDF, and EOT. There is some evidence, however, that the EOT factor of the TAS-20 indirectly assesses the reduced fantasy and imaginal activity facet of the alexithymia construct. The recently developed Toronto Structured Interview for Alexithymia (TSIA), for example, contains a factor for assessing imaginal activity, as well as factors for assessing the other three facets of the construct (Bagby et al., 2006). In investigations with English-, German-, and Italian-language versions of the TSIA, the EOT factor of the TAS-20 correlated significantly with both the externally oriented thinking factor and the imaginal processing factor of the TSIA (Bagby et al., 2006; Caretti et al., 2011; Grabe et al., 2009).

## THE DIMENSIONAL NATURE OF ALEXITHYMYIA

Over the years, questions have been raised as to whether alexithymia should be conceptualized as a dimensional construct or as a categorical phenomenon. This uncertainty can be traced to the originators of the construct, who on one hand presented a dimensional view of alexithymia and, on the other hand, devised instruments that dichotomized individuals into those with and without alexithymia, implying that alexithymia is a categorical diagnostic entity (Apfel & Sifneos, 1979; Nemiah & Sifneos, 1970; Nemiah et al., 1976). The persistence of this unresolved issue was revealed in a recent editorial article in which Zackheim (2007) noted that “the construct is currently accepted as an affective deficit disorder as well as a normally distributed personality trait” (p. 14). However, two recent investigations exploring the nature of the latent structure of the construct have yielded strong empirical support for alexithymia being a dimensional trait.

Parker, Keefer, Taylor, and Bagby (2008) applied various taxometric procedures to large English-speaking community and undergraduate student samples and to a smaller sample of psychiatric outpatients in Canada. Using the three factor scales of the TAS-20 as indicators, these investigators found strong support for conceptualizing alexithymia as a dimensional construct rather than a taxon. Given that the results might not be generalizable to non-English-speaking samples and that typological distinctions may exist between men and women, a second study was conducted to determine whether a dimensional structure could be recovered in separate samples of men and women from the general population in Finland and also in the combined sample (Mattila et al., 2010). The same taxometric procedures were applied as in the Canadian study, using the three factor scales of the TAS-20 as indicators. The results for the male and female samples and for the combined sample were similar to those in the Canadian study, providing further evidence that alexithymia is a dimensional construct.

### STABILITY OF ALEXITHYMYIA

Another question over the years has been whether to regard alexithymia as a stable and enduring personality trait or as a situational state secondary to negative affects (Haviland, Hendryx, Shaw, & Henry, 1994; Lumley, 2000). Evidence has accumulated, however, that alexithymia is a stable trait that can be distinguished from transient emotional states or moods with which it is often associated. For example, numerous cross-sectional studies have reported positive correlations between measures of alexithymia and measures of anxiety, depression, and somatization (Deary, Scott, & Wilson, 1997; De Gucht & Heiser, 2003; Hendryx, Haviland, & Shaw, 1991); although some longitudinal studies have found no change in alexithymia scores over time (Saarijärvi, Salminen, & Toikka, 2001; Salminen, Saarijärvi, Äärelä, Toikka, & Tamminen, 1994), others found that alexithymia scores decreased as scores on measures of depression or psychological distress declined (Honkalaampi et al., 2001). These longitudinal studies were limited, however,

by failing to distinguish between *absolute stability*, which refers to the extent to which personality scores change over time, and *relative stability*, which indicates the extent to which the relative differences among individuals remain the same over time. Luminet, Bagby, and Taylor (2001) evaluated both the absolute and the relative stability of alexithymia in a sample of depressed patients who experienced a marked reduction in the severity of their depressive symptoms after 14 weeks of treatment with antidepressant medication. Although TAS-20 scores changed significantly from baseline to follow-up, indicating a lack of absolute stability, there was strong evidence of relative stability because baseline TAS-20 scores correlated significantly with TAS-20 scores at follow-up and were also a significant predictor of follow-up TAS-20 scores, after partialling the effects of depression severity. Similar results were obtained in a study with a sample of women with breast cancer who were assessed for alexithymia, anxiety, and depression the day before surgery and 6 months later (Luminet, Rokbani, Ogez, & Jadoulle, 2007).

The relative stability of alexithymia has also been demonstrated over a 1-month period in a sample of university students (Picardi, Toni, & Caroppo, 2005), a 6-month period in a sample of patients with functional gastrointestinal disorders (Porcelli et al., 2003), and a 5-year period in a general population sample from Finland (Salminen, Saarijärvi, Toikka, Kauhanen, & Äärelä, 2006).

### RELATIONS BETWEEN ALEXITHYMYIA AND THE FFM

As emphasized by Costa and McCrae (1987), the evaluation of any new hypothetical personality construct should include an examination of the relationship of measures of the construct with a standard taxonomy of personality traits. Examining alexithymia in relation to the FFM is particularly relevant because some personality psychologists and emotion theorists give affects a central role in the organization of personality (Malatesta, 1988; Pervin, 1993; Watson & Clark, 1992). Indeed Magai and McFadden (1995) contended that "the five dimensions of personality rendered by factor analytic studies are more legitimately seen as

being related to emotion traits" (p. 228). Although Costa and McCrae (1992a, 1992b) did not propose a theoretical explanation for why or how human personality is organized according to five dimensions nor postulate how the dimensions can be linked with developmental history, emotions are an important part of their definition of traits. Whereas neuroticism (N) is a disposition to negative emotions and extraversion (E) is a disposition to positive emotions (Larsen & Ketelaar, 1991), openness to experience (O) refers to an individual's general interest and involvement in the world and, thus, captures the influence of the innate affect of interest within the structure and organization of the personality (McCrae & Costa, 1985). It has been suggested that the agreeableness (A) domain reflects the "hostile" triad of emotions (anger, contempt, and disgust) and that conscientiousness (C) may reflect guilt or the defensive avoidance of guilt and other emotions (Magai & McFadden, 1995), as well as the ability to control impulses (Costa & McCrae, 1992b). It appears that there are also some interactive effects, in that high A and C are associated with more positive and less negative affect and therefore contribute to higher levels of well-being (McCrae & Costa, 1991); furthermore, high O individuals experience both positive and negative affects more intensely than do closed individuals (Costa & McCrae, 1992b).

To date, investigations of the relation between alexithymia and the FFM have used only the TAS or the TAS-20 to assess alexithymia. Wise and Mann (1994) administered the TAS and the NEO Five-Factor Inventory (NEO-FFI) to a group of 101 psychiatric outpatients, most of whom exhibited depressed moods or anxious states. Partial correlation coefficients, controlling for depression, revealed the TAS to correlate positively with N ( $r = .38$ ), and negatively with E ( $r = -.40$ ), O ( $r = -.40$ ), and C ( $r = -.32$ ); the TAS did not significantly correlate with A.

In subsequent studies, investigators examined relations between alexithymia, measured with the TAS-20, and the FFM, measured with either the NEO PI or the Revised NEO PI (NEO PI-R; Costa & McCrae, 1992b). These investigations included four independent university student samples—two from Canada, one from the United Kingdom, and one from Switzerland (Bagby et al., 1994b; Luminet

et al., 1999; Zimmerman, Rossier, de Stadelhofen, & Gaillard, 2005); the correlations between the TAS-20 and the NEO PI and NEO PI-R are displayed in Table 13.1. Across all four samples, the TAS-20 correlated significantly and positively with the N domain and with three facets of N—depression, self-consciousness, and vulnerability. Apart from the sample of British students, the TAS-20 also correlated positively with the Anxiety facet of N. Three of the four samples had significant negative correlations between the TAS-20 and E and the warmth facet of this domain; all four samples had significant negative correlations with the positive emotions and assertiveness facets of E. Alexithymia was unrelated to the gregariousness and excitement seeking facets. Apart from the Swiss sample, the TAS-20 correlated significantly and negatively with the O domain and also with the feelings and ideas facets of O. In both the British sample and the smaller Canadian sample, the TAS-20 correlated negatively with the fantasy and action facets. Alexithymia was unrelated to the A domain in all four samples; however, the TAS-20 correlated significantly and negatively with the altruism facet of A in the British and larger Canadian samples. In the larger Canadian sample, the TAS-20 correlated significantly and negatively with C and all of its facets. Although alexithymia was not significantly related to the C domain in the other three samples, the TAS-20 correlated significantly and negatively with the competence facet in the British and Swiss samples, with the achievement striving facet in the British sample, and with the self-discipline facet in the Swiss sample.

There are findings also from a sample of 221 Italian university students who were administered the Big Five Questionnaire to measure the FFM (Picardi, Toni, & Caroppo, 2005). The TAS-20 correlated significantly and negatively with the emotional stability factor (which corresponds to neuroticism, but with reverse scoring;  $r = -.42$ ), the Energy factor (which corresponds to extraversion) ( $r = -.28$ ), the openness to experience factor ( $r = -.36$ ), and the friendliness factor (which corresponds to agreeableness;  $r = -.20$ ) but was not significantly correlated with conscientiousness ( $r = -.04$ ).

Although the results from these studies show fairly consistent relations between alexithymia and

TABLE 13.1

Correlations Between the 20-Item Toronto Alexithymia Scale and the Original and Revised NEO Personality Inventories in Canadian, British, and Swiss University Student Samples

Domain and facet	Canadian <sup>a</sup> ( <i>N</i> = 85)	Canadian ( <i>N</i> = 255)	British <sup>b</sup> ( <i>N</i> = 101)	Swiss <sup>c</sup> ( <i>N</i> = 136)
Neuroticism	.27*	.34**	.38**	.44**
Anxiety	.25*	.18**	.10	.36**
Angry hostility	-.05	.19**	.14	.26**
Depression	.36**	.35**	.44**	.37**
Self-consciousness	.30**	.20**	.31**	.39**
Impulsiveness	-.10	.20**	.06	.19*
Vulnerability	.35**	.37**	.39**	.49**
Extraversion	-.21	-.24**	-.36**	-.19*
Warmth	-.08	-.24**	-.29**	-.19*
Gregariousness	-.08	-.04	.10	-.01
Assertiveness	-.22*	-.26**	-.34**	-.32**
Activity	-.19	-.10	-.30**	-.15
Excitement seeking	.07	-.04	.00	-.11
Positive emotions	-.36**	-.29**	-.37**	-.19*
Openness	-.49**	-.28**	-.41**	-.13
Fantasy	-.30**	-.10	-.26**	-.05
Aesthetics	-.29**	-.12	-.17	.08
Feelings	-.55**	-.26**	-.39**	-.12
Actions	-.24*	-.06	-.33**	-.16
Ideas	-.33**	-.23**	-.28**	-.12
Values	.17	-.26**	-.21*	-.16
Agreeableness	-.09	-.09	-.14	.04
Trust	—	-.12	-.25*	-.08
Straightforwardness	—	-.09	-.05	.04
Altruism	—	-.26**	-.33**	-.11
Compliance	—	.02	.13	.08
Modesty	—	.12	.15	.16
Tender-mindedness	—	-.09	-.25*	.04
Conscientiousness	-.21	-.40**	-.16	-.16
Competence	—	-.38**	-.40**	-.22**
Order	—	-.19**	-.10	-.01
Dutifulness	—	-.29**	-.04	-.05
Achievement striving	—	-.26**	-.20*	-.11
Self-discipline	—	-.37**	-.02	-.22*
Deliberation	—	-.29**	-.05	-.11

Note. The NEO does not have facet scales for the domains of agreeableness and conscientiousness.

<sup>a</sup>Compilation of findings from Bagby et al. (1994b). <sup>b</sup>Compilation of findings from Luminet et al. (1999). <sup>c</sup>Compilation of findings from Zimmerman et al. (2005).

\* *p* < .05. \*\* *p* < .01.

the domain and facet traits of the FFM, the larger Canadian university student and the psychiatric outpatient samples differ from the others with the finding of a significant negative correlation with C; in the Swiss student sample, alexithymia was unrelated to the O domain. Because the findings relate to specific

populations, it is important to compare them with findings from a large adult community population. Such data were obtained from a sample of 823 adults (457 men and 366 women) residing in several small cities and towns in Ontario, Canada. The mean age of the sample was 34.95 years (*SD* = 14.46), and the

mean level of education was 14.37 years ( $SD = 2.8$ ; Parker, Taylor, & Bagby, 1997).

The correlations between the TAS-20 and its three factor scales and the NEO PI-R for the community sample are displayed in Table 13.2. Consistent with all four university student samples, alexithymia

was related positively to the N domain and to the depression, self-consciousness, and vulnerability N facets. The correlations with the TAS-20 factor scales show that these relations are accounted for by the difficulty identifying feelings and difficulty describing feelings facets of the alexithymia construct.

TABLE 13.2

**Correlations Between the 20-Item Toronto Alexithymia Scale (TAS-20) and Factor Scales and the Revised NEO Personality Inventory (NEO PI-R) in a Community Adult Sample ( $N = 809$ )**

NEO PI-R	TAS-20 total	DIF	DDF	EOT
Neuroticism	.35**	.48**	.29**	-.01
Anxiety	.20**	.32**	.18**	-.07*
Angry hostility	0.21**	0.28**	0.14**	0.05
Depression	.31**	.42**	.28**	-.02
Self-consciousness	.27**	.30**	.32**	-.01
Impulsiveness	.07*	.21**	.01	-.09*
Vulnerability	.37**	.44**	.26**	.11**
Extraversion	-.24**	-.09*	-.30**	-.18**
Warmth	-.27**	-.12**	-.32**	-.20**
Gregariousness	-.13**	-.08*	-.19**	-.04
Assertiveness	-.27**	-.16**	-.30**	-.17**
Activity	.08*	.12**	.06	.00
Excitement seeking	.03	.07*	.00	-.02
Positive emotions	-.26**	-.13**	-.24**	-.25**
Openness	-.38**	-.06	-.24**	-.58**
Fantasy	-.13**	.08*	-.10**	-.30**
Aesthetics	-.29**	-.01	-.19**	-.49**
Feelings	-.38**	-.08*	-.29**	-.52**
Actions	-.20**	-.09*	-.16**	-.22**
Ideas	-.28**	-.05	-.13**	-.46**
Values	-.22**	-.13**	-.08*	-.27**
Agreeableness	-.12**	-.10**	-.06	-.10**
Trust	-.17**	-.14**	-.15**	-.09*
Straightforwardness	-.14**	-.16**	-.10**	-.05
Altruism	-.21**	-.16**	-.17**	-.14**
Compliance	.07*	.01	.11**	.04
Modesty	.11**	.06	.13**	.07*
Tender-Mindedness	-.13**	-.01	-.06	-.23**
Conscientiousness	-.26**	-.28**	-.17**	-.13**
Competence	-.31**	-.29**	-.24**	-.17**
Order	-.08*	-.08*	-.07*	-.03
Dutifulness	-.10**	-.10**	-.04	-.09*
Achievement striving	-.20**	-.18**	-.11**	-.15**
Self-discipline	-.24**	-.29**	-.15**	-.07*
Deliberation	-.19**	-.22**	-.10**	-.08*

*Note.* Compilation of findings from Parker et al. (1997). After adjusting for missing data,  $N = 809$ . DIF = difficulty identifying feelings; DDF = difficulty describing feelings; EOT = externally oriented thinking.

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

Consistent with three of the four student samples, alexithymia was related significantly and negatively to the E domain and to the warmth facet of E; as with all four university student samples, alexithymia was also correlated negatively to the assertiveness and positive emotions facets of the E domain. The significant associations with E and these three facets are accounted for mostly by the difficulty describing feelings facet of the alexithymia construct and partly by the externally oriented thinking facet.

A significant negative correlation between the TAS-20 and the O domain in the community sample is consistent with findings from the psychiatric outpatient sample and the student samples, except for the Swiss student sample. As with the British and two Canadian university student samples, alexithymia was related negatively to the openness to feelings and openness to ideas facets; and as found with the British and smaller Canadian student samples, alexithymia was correlated negatively to the Fantasy facet. As to be expected, the negative relations between alexithymia and O were accounted for primarily by the externally oriented thinking facet of alexithymia, with the EOT factor of the TAS-20 correlating significantly with all of the facets within this domain.

Although in the community sample the TAS-20 and two of its factors correlated significantly and negatively with the A domain, the magnitudes of these correlations were small. As with the British and larger Canadian student samples, a significant negative correlation was found between alexithymia and the altruism facet of A.

The TAS-20 correlated significantly and negatively with C and its facets, but the correlations were generally smaller in magnitude than those obtained in the larger Canadian sample. As in the student samples, the competence facet was related inversely to alexithymia.

Overall, the findings from these empirical investigations support the view that alexithymia reflects an individual difference in the experiencing of emotions and in the way emotions influence behavior. The construct corresponds not to any single domain or lower order trait within the FFM but is captured by a complex admixture of personality traits across the domains and facets of the FFM. The moderate positive association between alexithymia and the N domain and its facet scales reflect the tendency to

experience the negative affects of anxiety, depression, and self-consciousness and are consistent with the clinical impression that individuals with high alexithymia are prone to dysphoric affects. The positive association with the Vulnerability facet of N suggests that high alexithymia individuals feel unable to cope with stressful situations. The finding of negative associations with Extraversion, and especially with the Warmth and Positive Emotions facets of this domain, are consistent with clinical reports that high alexithymia individuals show a limited capacity to experience positive affects such as joy, happiness, and love (Krystal, 1988; Sifneos, 1987) and tend to be unaffectionate and emotionally distant in their interpersonal relationships (Vanheule, Desmet, Meganck, & Bogaerts, 2007). The negative association between alexithymia and O supports the view that high alexithymia individuals are unreceptive to their inner feelings and emotions, give little importance to subjective feelings, lack imagination, and are uninterested in art and beauty and in considering new ideas. Although the weak or non-significant associations with the A domain suggest that high alexithymic individuals are experienced as agreeable rather than antagonistic in their interpersonal relationships, the negative association with Altruism indicates that they are somewhat self-centered and reluctant to assist those in need of help. Within the domain of C, alexithymia is consistently associated negatively with the competence facet, which of all the facets in this domain is the facet most highly associated with self-esteem and internal locus of control (Costa & McCrae, 1992b). This finding is consistent with previous investigations in which alexithymia was found to be associated negatively with self-esteem and positively with the powerful others and chance dimensions of external locus of control (Verissimo, Taylor, & Bagby, 2000; Yelsma, 1995; Zimmerman et al., 2005).

## **ALEXITHYMYA, PERSONALITY DISORDER TRAITS, AND INTERPERSONAL PROBLEMS**

As a clinically derived construct, alexithymia has captured the interest of numerous psychosomatic physicians and health psychologists, who have generated a substantial body of research investigating

relations between alexithymia and health (Lumley, Neely, & Burger, 2007; Taylor, 2004; Taylor et al., 1997). For the purpose of this chapter, however, we focus on relations between alexithymia and personality disorder traits and on the specific impact of alexithymia on interpersonal relationships.

In a preliminary study with a sample of overweight women who participated in a treatment program for weight loss, schizotypal, dependent, and avoidant personality disorder traits were associated with alexithymia (Bach, Alden, Wiggins, & Pincus, 1994). In a later study with a sample of alcoholic inpatients, schizoid, avoidant, and antisocial personality disorder traits were associated with alexithymia (De Rick & Vanheule, 2007). Apart from the dependent personality trait, the other traits, as De Rick and Vanheule (2007) pointed out, share the common features of social isolation, detachment, or discomfort in interpersonal relationships.

These features are consistent with evidence that alexithymia is associated with insecure attachment styles, either an avoidant-dismissing style or a fearful or anxious-preoccupied style (Taylor & Bagby, 2004). Insecure attachment styles may account partly for the low level of social support that has been found among high alexithymia individuals (Lumley et al., 1996; Posse, Hällstrom, & Backenroth-Ohsako, 2002); the lack of social support further increases the difficulty these individuals have in regulating distressing emotions and generating positive affective experiences.

The interpersonal relating style associated with alexithymia has been investigated also with the Inventory of Interpersonal Problems—Circumplex Scales (IIP-C; Horowitz, Alden, Wiggins, & Pincus, 2000). In a sample of 149 psychiatric inpatients, mean scores on the cold and socially avoidant dimensions of the IIP-C before treatment were significantly higher in patients with high alexithymia than in those with low alexithymia; similar results were obtained in a subsample of these patients ( $n = 100$ ) after several weeks of treatment with psychodynamic group therapy (Spitzer, Siebel-Jürges, Barnow, Grabe, & Freyberger, 2005).

It is noteworthy that the DDF factor of the TAS-20 showed the strongest associations with the various dimensions of interpersonal problems assessed

with the IIP-C. Moreover, there is evidence from other research that the lack of closeness in interpersonal relationships is related to problems in the communication of emotional affection and that this partially or fully mediates the relationships between alexithymia and several variables including mood, the need for intimacy, anxious-avoidant attachment, and the number of close relationships (Hesse & Floyd, 2008, 2011). Even among young adults, there is evidence of a moderate negative relationship between alexithymia and relationship satisfaction (Humphreys, Wood, & Parker, 2009).

In addition to the difficulty describing feelings facet of alexithymia interfering with the establishment of close interpersonal relationships, high alexithymia individuals have difficulty reading the emotional states of others, a capacity that corresponds to empathy. Several studies have reported negative associations between alexithymia and self-report measures of empathy (Gutman & Laport, 2002; Moriguchi et al., 2006; Sonnby-Borgström, 2009), and a recent brain imaging investigation demonstrated a negative relation between alexithymia and empathy-related activity in the insula of the brain while the participant is observing a partner receiving pain (Bird et al., 2010).

## SOME CLINICAL CONSIDERATIONS

Although many psychiatric patients with substance use disorders, eating disorders, PTSD, or panic disorder are found to have a high degree of alexithymia and to rely on maladaptive behaviors and ego defenses to regulate distressing affects, pressure from a discontented spouse or romantic partner is a common reason for high alexithymia individuals to seek treatment (Swiller, 1988). Given that patients with high degrees of alexithymia respond poorly to insight-oriented forms of psychotherapy, it is useful to conduct psychological testing to obtain a broad profile of each patient's personality that can help clinicians plan suitable treatment approaches. In addition to administering the TAS-20 and the NEO PI-R, in our own clinical practices we usually have patients complete the self-report Bar-On Emotional Quotient Inventory (EQ-i; Bar-On, 1997), which includes subscales for assessing emo-

tional self-awareness and empathy. The following case examples illustrate the usefulness of the information obtained from these psychological tests.

### CASE EXAMPLE 1

Jenny, a 45-year-old married woman with three children, sought psychiatric consultation at the insistence of her husband who complained of a lack of warmth and intimacy in the marriage. Jenny indicated that she and her husband have very different personalities; she described herself as a pragmatic, unemotional person who rarely gets excited, and her husband as a passionate and highly emotionally expressive person. Jenny said that she had always been emotionally reserved, even during her childhood; she remembered having minimal emotional reaction when her parents decided to separate during her adolescence and an absence of feelings when a cousin died a few years earlier. Whereas her husband was raised in a family that expressed a lot of affection and emotion, there was little display of love and affection in her family. Acknowledging that her husband often complained that she was insensitive and hurt his feelings, Jenny said that she generally speaks her mind and does not consider how the other person will experience her directness. She was considered reliable and accomplished in her job with a community resource center but did not develop close friendships.

Jenny obtained a score of 72 on the TAS-20, which is in the high range for alexithymia. Consistent with this score, she scored in the very low range on the Emotional Self-Awareness subscale of the EQ-i, and in the low range of the Empathy subscale. Her NEO PI-R profile is shown in Figure 13.1. Consistent with Jenny's high alexithymia score, she scored in the very low ranges of openness to experience and the feelings facet. Although her score on the Fantasy facet was in the average range, suggesting that she was open to using her imagination, a very low score on the aesthetics facet indicated that Jenny had minimal interest in art and beauty. Jenny scored in the very low ranges of extraversion and its warmth, gregariousness, and positive emotions facets. These low scores are consistent with her limited ability to give and receive warmth and affection in her marriage,

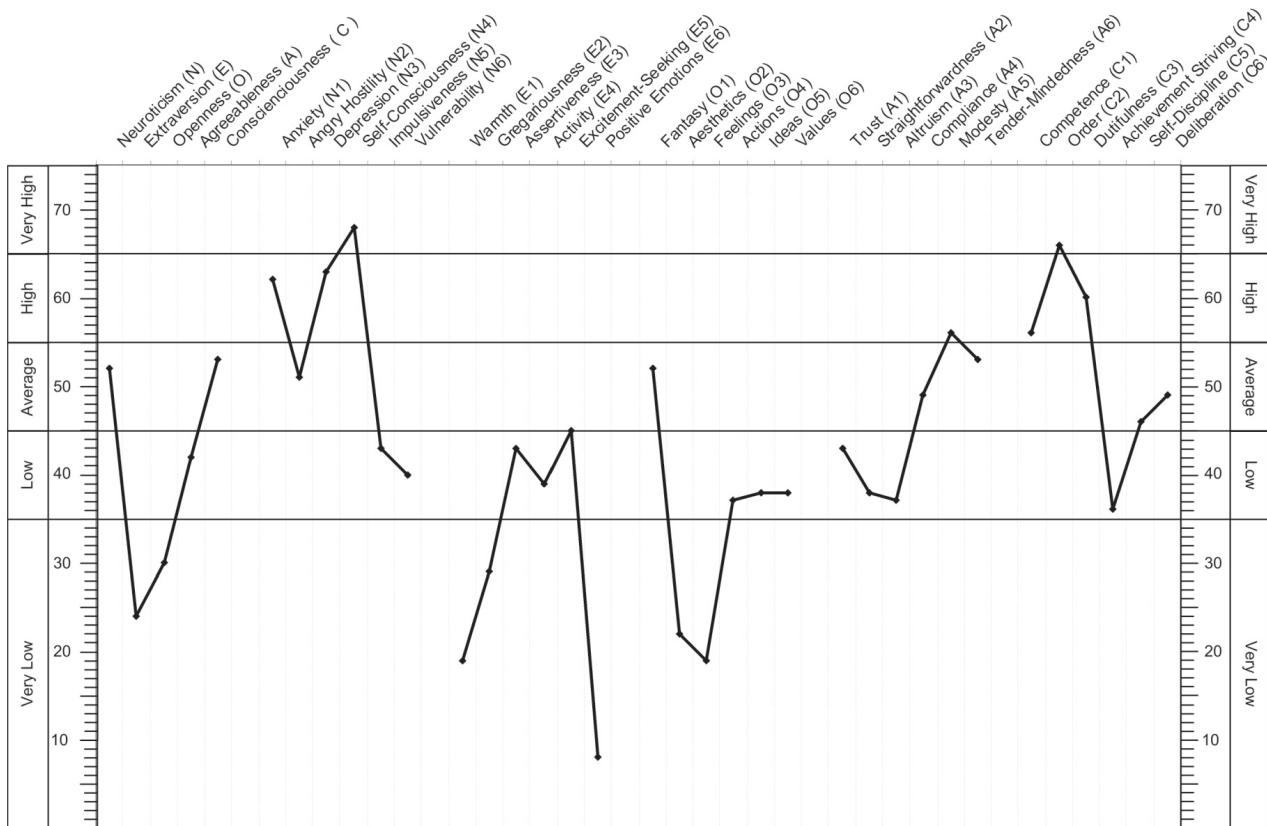
her reserve and lack of close friends, and the anhedonia that many alexithymic individuals experience (Krystal, 1988; Sifneos, 1987).

Although Jenny scored in the average range of neuroticism, her scores in the high ranges of the anxiety and depression facets, and in the very high range of self-consciousness, indicate a tendency to experience distressing affects; her alexithymic deficit, however, would make it difficult to differentiate among various negative affect states and to describe them to others. A score in the low range of the vulnerability facet indicates that she copes reasonably well with stressful situations. Scores in the low range of the agreeableness domain and the trust, straightforwardness, and altruism facets indicate that she is somewhat self-centered and can be cynical, skeptical, and abrasive. Jenny is average on conscientiousness, well organized, and adheres strictly to her ethical principles but has limited aspirations.

Given Jenny's personality profile, high degree of alexithymia, and low capacity for empathy, the psychiatrist recommended a form of group therapy that focuses on helping patients identify and communicate affects, enhance their imaginal capacity, and become more aware of and sensitive to the feelings of others (Beresnevaite, 2000; Swiller, 1988). Jenny and her husband received some educational counseling to help them understand the nature of alexithymia and the basis for their personality differences; they were also referred for marital therapy.

### CASE EXAMPLE 2

Robert is a 54-year-old married man with two children and a longstanding history of psychoactive substance use, principally alcohol and cocaine. He requested psychiatric consultation because of a depressed mood, low self-esteem, and marital problems related to repeated extramarital affairs. He regarded his substance use and search for sexual conquests as ways of improving his mood and increasing self-esteem. He said that his wife and siblings tell him he is self-centered and lacks empathy; others say he is too cerebral and out of touch with his emotions. Robert was aware that he is easily slighted by critical comments from other people.



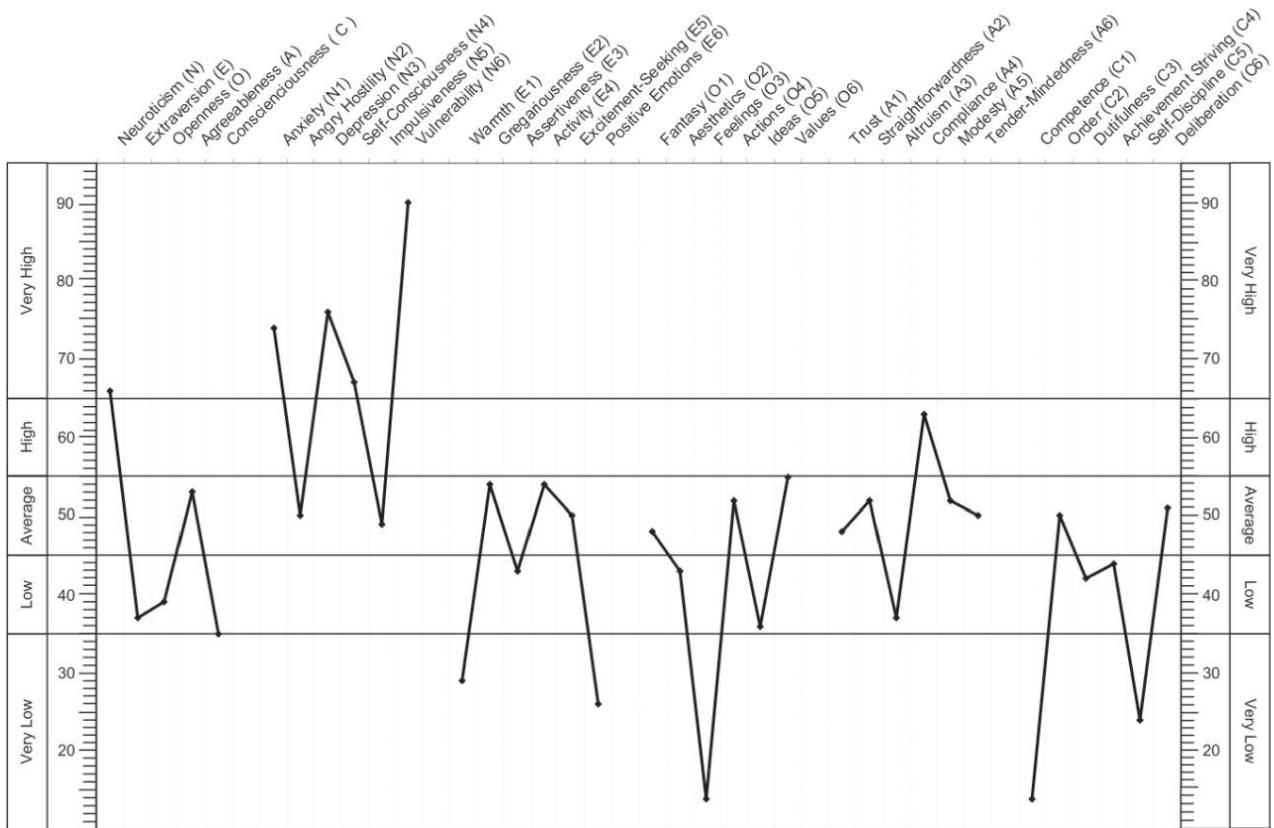
Case 1

FIGURE 13.1. Revised NEO Personality Inventory (Costa & McCrae, 1992a) profile of Case 1. N = neuroticism; E = extraversion; O = openness to experience; A = agreeableness; C = conscientiousness. Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16024 North Florida Avenue, Lutz, Florida 33549, from the NEO Personality Inventory—Revised by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1991, 1992 by Psychological Assessment Resources, Inc. (PAR). Further reproduction is prohibited without permission of PAR.

In the consultation interview, Robert appeared confident and mildly theatrical when presenting his history; he did not seem anxious or depressed. He obtained a high score of 74 on the TAS-20 and markedly low scores on the Emotional Self-Awareness and Empathy subscales of the EQ-i. Robert's NEO PI-R profile is shown in Figure 13.2. He scored in the very high range of neuroticism, in the low ranges of extraversion, openness to experience, and conscientiousness, and in the average range of agreeableness. Examination of the NEO PI-R facet scale scores provides more detailed information about Robert's personality characteristics. Consistent with alexithymia, he scored in the very low range of the feelings facet; but in contrast to

many alexithymic individuals, he scored in the average range of the fantasy facet. His scores in the low ranges of the aesthetics and ideas facets of openness indicate a lack of interest in the arts and in intellectual pursuits, suggesting a concrete thinking style.

Robert's scores on the facets of neuroticism indicate an extremely high vulnerability to stress and a strong tendency to experience the negative affects of anxiety, depression, and self-consciousness. These characteristics, coupled with his proneness to anhedonia, as reflected by a very low score on the positive emotions facet of extraversion, help in understanding his reliance on alcohol and street drugs to relieve distressing emotional states and to induce pleasurable feelings. Robert's score in the



### Case 2

FIGURE 13.2 Revised NEO Personality Inventory (Costa & McCrae, 1992a) profile of Case 2. N = neuroticism; E = extraversion; O = openness to experience; A = agreeableness; C = conscientiousness. Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16024 North Florida Avenue, Lutz, Florida 33549, from the NEO Personality Inventory—Revised by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1991, 1992 by Psychological Assessment Resources, Inc. (PAR). Further reproduction is prohibited without permission of PAR.

very low range of the warmth facet indicates that he does not easily express affection or form close attachments to others, which presumably contributes to his marital problems. His scores on the other facets of extraversion indicate that he is reluctant to assert himself, but excitement and thrills have some appeal to him. A low score on the altruism facet of agreeableness indicates that Robert is somewhat self-centered and reluctant to get involved in the problems of others; however, his scores on other facets of agreeableness indicate that he has moderate trust in others, is generally frank and sincere, and is average in his concern for those in need.

Consistent with Robert's complaint of low self-esteem, he obtained a very low score on the competence facet of conscientiousness. A score in the very

low range of the self-discipline facet suggests that he has difficulty motivating and applying himself, which may help understand his difficulty in controlling his proneness to addictive behaviors. His scores on other facets of conscientiousness indicate that he has limited aspirations and that he is sometimes less dependable and reliable than he should be, and more likely to bend the rules.

This patient's high alexithymia, coupled with his being closed to experience and low in conscientiousness, made him a poor candidate for individual psychodynamic psychotherapy because he was not inclined to introspection and was likely to lack the determination to be committed to the process. The psychiatrist recommended a psychoeducational treatment approach to help Robert learn how to

increase his emotional self-awareness and empathizing ability; develop more adaptive strategies for coping with stress; and thereby become better able to regulate his moods, lessen his substance use, and improve the quality of his marital and other close relationships.

## CONCLUSION

Alexithymia is best understood as a stable personality trait that exists on a continuum with normal functioning. The data reviewed in this chapter are consistent with the theoretical view that the characteristics comprising the construct reflect a deficit in emotional self-awareness and emotion regulation. In particular, the positive relations of alexithymia with facets of the N domain of the FFM, as well as the negative relations with facets of the E and O domains, provide further understanding of the affective experience of individuals with high degrees of alexithymia and of the problems that often arise in their interpersonal relationships. The low emotional self-awareness of alexithymia and the associated low empathizing capacity are captured by the feelings facet of O and by negative correlations between the TAS-20 and measures of empathy. The case examples show the benefit of administering the NEO PI-R to determine personality strengths and limitations of high alexithymia patients that are potentially clinically useful, especially in planning treatment.

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# FIVE-FACTOR MODEL PERSONALITY FUNCTIONING IN ADULTS WITH INTELLECTUAL DISABILITIES

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The aim of this chapter is to provide an overview of personality functioning in adult individuals with intellectual disability (ID). To that end, I summarize the most prominent theories regarding the relationship between the constructs of intelligence and five-factor model (FFM) personality traits and describe the existing literature related to personality functioning in adults with ID. I provide some initial results from a study of FFM personality functioning in a sample of adults with ID, and then I discuss future directions for research into personality and individuals with ID.

First, it is necessary to provide a bit of background into the terminology and definition used throughout this chapter. The term *intellectual disability* has replaced *mental retardation* as the convention of many professional organizations, including the American Association on Intellectual and Developmental Disabilities (AAIDD; formerly the American Association on Mental Retardation) and the President's Committee on Intellectual Disability (formerly the President's Committee on Mental Retardation). This new terminology is described as more accurate, more modern, and less stigmatizing (Schalock et al., 2007).

As a diagnosis, intellectual disability is defined by the AAIDD as "characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills" (AAIDD, 2002, p. 8).

*Significant limitation* in intellectual functioning is defined by the AAIDD and the American Psychiatric Association as approximately 2 standard deviations below the mean of intelligence scores, with appropriate consideration of the standard error of measurement for the instrument used. The prevalence of intellectual disability is estimated to be 1% of the population. Approximately 85% of individuals with intellectual disability have IQs situated in the mild range of impairment (Szymanski & King, 1999). The proportion of cases of intellectual disability clearly accounted for by a genetic syndrome is roughly 20%, with genetic causes much more likely to be identified in individuals with moderate to severe levels of impairment (Rauch et al., 2006).

## WHAT IS THE RELATIONSHIP BETWEEN IQ AND PERSONALITY FUNCTIONING?

To generate rational and theoretically grounded hypotheses regarding personality functioning in adults with ID, it is necessary to examine the extant literature on the relationship between personality and IQ. The two constructs are not entirely extricable. Wechsler (1975) described intelligence as "a multifaceted entity, a product of many factors and subject to innumerable influences" (p. 137), and he specifically noted the importance of "conative, affective, or personality traits" (p. 136), also referred to as *nonintellective factors*. Several researchers have

worked to identify the relationship and interaction between personality and IQ, typically emphasizing either the prediction of IQ based on personality traits or the divergence–differentiation theories. In general, personality and intelligence correlations fall within the range of .05 to .15, with agreeableness and conscientiousness correlating the least to intellectual ability (Ackerman & Heggestad, 1997).

Neuroticism has been found to have a consistent negative correlation with intelligence, whereas the findings for extraversion are mixed, with both negative and positive correlation results in meta-analyses (Ackerman & Heggestad, 1997; Austin et al., 2002). In recent years, the domain of conscientiousness has been found to correlate negatively with fluid intelligence (Moutafi, Furnham, & Crump, 2006; Moutafi, Furnham, & Paltiel, 2004). Openness to experience has been most consistently correlated with intelligence, especially crystallized intelligence (Ashton, Lee, Vernon, & Jang, 2000). McCrae (1993) reported a .33 correlation between the NEO Personality Inventory—Revised (NEO PI-R) openness domain and the Wechsler Adult Intelligence Scale (WAIS) Full Scale IQ, and Holland and colleagues (1995) reported a correlation of .42 between WAIS Full Scale IQ and NEO PI-R openness. For individuals with ID, it is reasonable to expect a similar pattern of results; that is, a rational hypothesis would posit that IQ and openness would relate in a similar fashion in individuals with ID.

Although the relationship between personality and intelligence has received attention, in practice, the two constructs are assessed separately, and each demonstrates substantial incremental validity over the other with respect to predicting important outcomes, such as job performance (De Fruyt, Aluja, Garcia, Rolland, & Jung, 2006). Researchers have suggested a more complex relationship between IQ and personality, based on differentiation theory. This theory posits that individuals with higher IQs may have greater variability among the component personality trait scores, just as individuals with higher IQs appear to exhibit more variability in IQ factor scores (Harris, Vernon, & Jang, 2005). There is some evidence for differential correlations between personality traits and IQ when comparing high versus low cognitive functioning groups (Allik

& Realo, 1997), although it is not well understood whether this phenomena is the result of actual differentiation or other factors such as relatively strong ability to understand and describe personality characteristics (in individuals with higher IQs). A reasonable corollary to this observation is that individuals who are functioning at the opposite end of the intelligence spectrum (i.e., individuals with ID) may not be able to provide valid reports of their own personality because of their limited ability to understand the concepts and communicate their experience. This supports the use of observer rating instruments with samples of individuals with lower IQs because their ability to describe and communicate personality traits may not be commensurate with their actual degree of personality differentiation. In Allik and McCrae's (2004) study of congruence of word meanings among cognitive ability subgroups, their analysis produced "no support for the hypothesis that the structure of personality is influenced by the concreteness or abstractness of the respondent's thinking style" (p. 264). The simple inability of an individual to judge and report his or her own personality is not necessarily a reflection on the structure of the personality itself. However, these authors noted that "in dealing with young children, or cognitively impaired adults . . . it may be appropriate to use observer ratings . . . instead of self-reports" (p. 264).

The availability of the NEO PI-R Form R (observer rating) form is a strength in the assessment of personality in individuals who may have substantially impaired communication skills in addition to or as a result of ID. Costa and McCrae (1992) implied utility across the continuum of intelligence when they specifically noted that

although there are certainly circumstances (such as advanced dementia or catatonia) in which the assessment of normal personality is impossible and perhaps meaningless, we believe that most patients can be profitably described in terms of the dimensions of the five factor model, and that the NEO PI-R will be a useful way to measure standing on these dimensions. (p. 7)

Use of an observer rating form helps address the concern that personality assessment results for individuals with ID may be invalidated by limitations in insight or expressive language. Therefore, the NEO PI-R offers the potential for an evaluation of the differentiation hypothesis at the lower end of the spectrum of intellectual functioning. In addition to assessing variability and differentiation, with sufficient sample size, researchers can attempt to replicate the factor structure of the FFM, thus providing evidence that this structure holds even when intellectual functioning is significantly impaired and supporting the idea that IQ and personality are and should be treated as relatively independent constructs.

If use of the NEO PI-R for assessment of individuals with ID can be supported, an expanded range of intellectual functioning can be brought into the fold of personality for the purposes of research and treatment. Additionally, it is reasonable to predict that individuals with ID would benefit from the application of FFM personality assessment in much the same way as individuals without ID.

### **WHAT IS KNOWN ABOUT PERSONALITY FUNCTIONING IN ADULTS WITH ID?**

General and nonpathological personality functioning in adults with ID has not been extensively researched. The presence and impact of personality disorder has an evidence base, albeit also relatively small. Among the various types of mental disorder, personality disorder is notable for the broad and substantial impact on the lives of adults with ID. Some authors have argued that for individuals with ID, the presence of a personality disorder has the potential to be more disabling than the intellectual disability itself. In a 5-year follow-up survey of individuals with ID living in the community, Lidher, Martin, Jayaprakash, and Roy (2005) found that individuals diagnosed with a personality disorder were more likely to receive psychotropic drugs, show increased offending behavior, and have more hospital admissions. Several other researchers have observed that personality disorder seems to be a prominent factor in the ability of individuals with ID to successfully transition to and remain in the community.

Personality disorder may also be linked to the development and expression of Axis I disorders in individuals with ID. Lidher et al. (2005) found that individuals with a personality disorder diagnosis were likely to have additional psychiatric disorders, and Goldberg, Gitta, and Puddephatt (1995) also found increased prevalence of Axis I disorders in individuals with ID and personality disorder. This is consistent with the literature on comorbidity of personality disorder and Axis I disorders in the general population. Similarly, the personality features of individuals with intellectual disability, both normal and pathological, may influence the manifestation and form of Axis I disorders, as well as the use of coping strategies. In other words, general personality functioning, in addition to personality disorder, should perhaps also be of interest to investigators.

The closest approximation of a widely used personality assessment instrument for adults with ID is the Reiss Profile Mental Retardation/Developmental Disabilities (MR/DD) version. This observer-rating instrument is based on Reiss's theory of fundamental motives (Reiss & Havercamp, 1998). This theory emphasizes the role of intrinsic, universal motives in human behavior. It is noteworthy that the theoretical conceptualization of motives and their role in behavior is the same for people with and without intellectual disabilities. The 16 fundamental motives assessed by the Reiss Profile are modeled in part after the 14 fundamental needs assessed by the Personality Research Form (Jackson, 1976), a dimensional model of personality developed for the general population. The Reiss Profile MR/DD has stimulated several validity-related studies, examining and supporting the instrument's interrater reliability (Lecavalier & Havercamp, 2004), factor structure (Reiss & Havercamp, 1998), and stability of motivational profile (Lecavalier & Tasse, 2002).

The Reiss Profile though has not been comprehensively compared to the NEO PI-R, either in intellectually typical populations or with samples of individuals with intellectual disability. Olson and Weber (2004) did conduct an investigation at the domain level. This study found that the Reiss motives related to NEO PI-R domains (results were reported solely at the level of domains) in logical patterns; for example, the Reiss motive of social

contact showed a strong positive relationship with the NEO PI-R facet of extraversion. The only Reiss motive that failed to correlate statistically significantly with a NEO PI-R domain was Activity. The authors also described the finding that overall motive strength (as measured by strength/frequency of item endorsement) tended to be associated with high extraversion and neuroticism and low agreeableness.

Personality assessment for intellectually typical individuals is currently used across a variety of domains, including clinical, forensic, medical, occupational, and educational settings. Unless it can be determined that personality is absent, substantially limited, or radically transformed in individuals with ID, it is reasonable to predict that personality assessment will benefit individuals with ID in these same domains. For people with ID who receive support services, integration of personality assessment results with Person-Centered Planning (PCP) is a widely used team-based approach for identifying interventions and supports (such as vocational training, residential placement, and psychological or behavioral treatment) for individuals with ID. Personality assessment is likely to have practical utility for PCP, given that the first hallmark of the PCP process is that “the person’s activities, services, and supports are based upon his or her dreams, interests, preferences, strengths, and capacities” (Holburn, Jacobson, Vietze, & Sersen, 2000, p. 403). Assessment of general personality functioning would provide information relevant to these characteristics.

The goal of PCP is the inclusion of the individual with ID as a voice in his or her own service and treatment planning, focusing on strengths and capacities of the individual in addition to an acknowledgment of needs and deficiencies, mobilizing family and friends from the individual’s wider social network, and providing support to achieve goals as defined by the individual instead of limiting goals to the existing capacities of the service provider. Personality assessment could be an efficient and effective way to increase the amount of information and understanding regarding the personal strengths, needs, preferences, and characteristics of the individuals receiving services because the mea-

sures of the FFM are currently used effectively with the intellectually typical individuals for job placement and social planning.

## THE FIVE-FACTOR MODEL PERSONALITY IN ADULTS WITH ID: A STUDY

To examine personality functioning in adults with ID and to evaluate the validity of the NEO PI-R Form R as an assessment instrument for use with this population, I conducted a study using a sample of 35 individuals with ID. Data were collected from two agencies, located in Illinois and Kentucky. Participants were community-dwelling adults who were receiving support services such as residential services and vocational training. Participants ranged in age from 22 to 68; 46% were women and 54% were men.

Participants provided consent for file data collection as well as collection of observer ratings from direct care staff who knew the individual well (i.e., weekly contact for at least 3 months). File data collection included variables such as adaptive behavior scores, IQ, demographic variables, and current medications. Staff were asked to complete the Reiss Profile MR/DD version and the NEO PI-R.

## Instruments

The Reiss Profile MR/DD version is a 100-item observer-report instrument, developed to assess the 16 fundamental human motives that the test developers have identified, such as frustration, curiosity, independence, and social contact.

**NEO PI-R (form R):** This observer-report measure of the FFM comprises 240 questions, each one rated on a 5-point scale, and it produces scores for the five factors, or domains, of general personality functioning: conscientiousness, agreeableness, neuroticism and emotional instability, openness to experience, and extraversion. Additionally, the measure provides scores for the six facets comprising each domain.

**Inventory for Client and Agency Planning (ICAP):** The ICAP is a widely used measure of adaptive and maladaptive behaviors that is intended to determine the type and intensity of assistance required by individuals with disabilities. The ICAP assesses motor skills, social and communication skills, personal

living skills, and current support services used. The ICAP was not administered by research personnel; results were obtained from the participants' files.

## Results

First, correlations between Reiss Profile motives and NEO PI-R facets were calculated. Although a large number of correlations were calculated, alpha was set at .05 because predictions were a priori. In general, these predictions held; Reiss Profile motives and NEO PI-R facets related in rational patterns. For example, the Reiss motive of vengeance, described by Reiss as the desire to get even with people who offend us, was positively correlated with angry hostility ( $r = .48$ ) and negatively with all facets of agreeableness (domain  $r = -.72$ ). The Reiss motive of food was positively correlated with openness to fantasy ( $r = .47$ ) and Impulsivity ( $r = .66$ ), and negatively correlated with self-discipline ( $r = -.44$ ). See Table 14.1 for correlations between Reiss Profile Motives and NEO PI-R facets and Table 14.2 for Reiss Profile motives correlation results with NEO PI-R domains.

Next, multiple regression was used to evaluate the amount of variance in adaptive functioning accounted for by the NEO PI-R and Reiss Profile, respectively. Table 14.2 provides these results in detail. The ICAP was used as a measure of adaptive functioning. The ICAP provides a total service score, reflecting the intensity of support needed by the individual being assessed, as well as scores for individual adaptive behavior scales, such as motor skills and behavior problems. Only adaptive behavior scales not obviously related to physical limitations were included in these analyses (i.e., Community Living, Behavior Problems, and Total Service Score).

The Reiss Profile predictors produced  $R^2$  values ranging from .09 (Total Service Score) to .17 (Behavior Problems). The NEO PI-R predictors produced higher  $R^2$  values ranging from .34 (Community Living) to .37 (Behavior Problems). In incremental validity analyses (using hierarchical regression of blocks of NEO PI-R and Reiss predictors), the Reiss predictors did not demonstrate statistically significant incremental validity over the NEO PI-R. However, the NEO PI-R predictors

TABLE 14.1

### Correlations Between Reiss MR/DD Motives and NEO PI-R Facets and Domains

<b>Reiss Motives</b>	<b>NEO PI-R Significant Correlations (<math>r</math>)</b>
Vengeance	Angry hostility (.48), warmth (−.37), positive emotions (−.43), agreeableness (domain; −.72), dutifulness (−.61), deliberation (−.43)
Help Others	Warmth (.43), gregariousness (.41), activity (.55), excitement seeking (.50), positive emotions (.54), openness to experience (domain; .66), agreeableness (domain; .64), conscientiousness (domain; .61)
Food	Impulsivity (.76), openness to fantasy (.47), self-discipline (−.44)
Rejection	Neuroticism (domain; .59), openness to feelings (.38)
Pain	No correlations
Sex	Openness to fantasy (.57)
Activity	Extraversion (domain; .56), dutifulness (.41), achievement striving (.50), self-discipline (.44)
Order	Conscientiousness (domain; .57), neuroticism (domain; .47)
Frustration	Neuroticism (domain; .62), agreeableness (−.53), deliberation (−.55)
Independence	Conscientiousness (domain; .52), activity (.46), openness to ideas (.47)
Curiosity	Openness to experience (domain; .74), agreeableness (domain; .44), conscientiousness (domain; .53), anxiety (.47)
Attention	Impulsivity (.37), warmth (.38), excitement seeking (.38), openness to fantasy (.40), straightforwardness (−.57), compliance (−.41), dutifulness (−.43), self-discipline (−.48), deliberation (−.38)
Anxiety	Anxiety (.45), depression (.55), openness to feelings (.46)
Social Contact	Extraversion (domain; .83), impulsivity (.42), openness to action (.48), altruism (.46), tender-mindedness (.43)
Morality	Conscientiousness (domain; .72), agreeableness (domain; .53), self-consciousness (.40), openness to ideas (.73)

Note. NEO PI-R = NEO Personality Inventory—Revised; Reiss Profile MR/DD = Mental Retardation/Developmental Disabilities.

TABLE 14.2

## Hierarchical Regression of Adaptive Behavior Scales on Reiss Motives and NEO PI-R Domains/Facets

<b>ICAP scale</b>	<b>NEO PI-R predictors</b>	<b>R<sup>2</sup></b>	<b>Reiss predictors</b>	<b>R<sup>2</sup></b>	<b>p of Δ when Reiss added last</b>	<b>p of Δ when NEO PI-R added last</b>
COMMUNITY LIVING	Neuroticism, extraversion, agreeableness	.34	Attention, rejection, social contact	.15	.08	.01
Behavior Problems	Angry hostility, impulsivity, straightforwardness, compliance	.37	Vengeance, rejection, pain, frustration, anxiety	.17	.42	.21
Total Service Score	Warmth, competence, depression, vulnerability to stress	.35	Independence, pain, activity	.09	.35	.04

Note. The sixth column provides the *p* value for the increment in variance achieved over the NEO Personality Inventory—Revised (NEO PI-R) predictors once the set of Reiss predictors were entered into the regression model; the seventh column provides a parallel *p* value for when the Reiss predictors were entered first and the NEO PI-R predictors last. ICAP = Inventory for Client and Agency Planning.

obtained incremental validity over the Reiss MR/DD for both Total Service Score and Community Living scales of the ICAP.

In sum, NEO PI-R facets and domains tended to relate in a rational manner to the Reiss Motives, as measured by bivariate correlation analyses; in multiple regression analyses, the NEO PI-R was able to predict a higher proportion of variance, compared with the Reiss MR/DD motives, in adaptive behavior scale scores as measured by the ICAP, and the NEO PI-R captured statistically significant incremental variance in ICAP adaptive behavior scores over and above the Reiss MR/DD motives. Furthermore, the Reiss MR/DD motives did not obtain statistically significant incremental variance over and above the NEO PI-R. Overall, the results of these analyses suggest that the NEO PI-R was able to predict adaptive behavior and need for support in a sample of adults with ID. Also, the NEO PI-R appears to outperform the most widely used personality-related assessment currently used with this population. Taken together, these results provide strong support for the use of the NEO PI-R Form R for use with adults with ID.

## Discussion

Just as personality has been shown to predict important life outcomes for people without ID, it is likely that the same is true for individuals with ID. The

early evidence appears to provide support for the argument that personality predicts how well people with ID function in the community, socially, and in other adaptive functioning domains. Future research should include larger samples, using participants who live in a variety of residential settings (including group homes, supervised apartment living, and residing in the family home) and including assessments that parallel those used in studies similar to those reviewed by Ozer and Benet-Martínez (2006). The body of literature describing the health impact of personality traits such as neuroticism and conscientiousness (Lahey, 2009; Sutin et al., 2010) may be of particular interest and utility given that people with ID have relatively high rates of obesity, secondary medical conditions such as metabolic syndrome, and 4 to 6 times the preventable mortality rate of the general population (Tyrer, Smith, & McGrother, 2007).

Establishing external validity for the use of the FFM model measures with adults with ID is of practical utility, but it is also necessary to evaluate the validity of self-reported FFM personality by individuals with ID because there is evidence that both self and observer reports capture incremental personality-related variance in intellectually typical individuals (Kraemer et al., 2003; Vazire & Mehl, 2008). In the study of adults with ID and adaptive behavior described in the foregoing, observer versions of the NEO PI-R were used. If literacy

appears to be the primary concern, the Structured Interview for the Five-Factor Model (Trull & Widiger, 1997) is a semistructured interview for assessing FFM personality that might also prove to be advantageous if modified somewhat for the ID population. FFM self-report measures of personality that do not rely on literacy may also provide helpful examples. Many of these measures were developed for use with children; measures for use with adults with ID should be age-appropriate, but the essential strategies or modifications may be similar to the child instruments (see, for instance, Chapter 4 in this volume). Insight may be limited by intellectual ability, but a specific cutoff (based on IQ) for relying on self-report versus observer ratings is not known. Research on test-retest reliability for self-report, as well as convergence between observer ratings and self-observer convergence, should assist in elucidating the point on the spectrum of intellectual functioning where self-report is not sufficiently accurate. For individuals who function below the cutoff, observer ratings are likely to be the only way to obtain a reasonably valid personality assessment. All of this, of course, suggests that there is plenty of work to be done to document the psychometric characteristics of FFM measures when assessing personality of people with ID.

FFM data would be ideal for incorporation into PCP planning process because it provides a structured method for assessing and communicating an individual's unique constellation of traits. However, additional research needs to be done to establish that including these data is perceived as valuable by team members and improves outcomes associated with this process and that the personality-related data can be used in a way that promotes inclusion and participation by the individual with ID or developmental disability (DD; as opposed to becoming another source of information used by "experts" who make decisions for the individual instead of in collaboration with him or her).

Constraints on ability to more freely choose work and residential settings, as well as limited community involvement, may impair individuals' opportunities to demonstrate personality. For example, an adult with ID who is living with several other people may have limited opportunities to

seek out other social interaction in the community because access may be based on household schedules, staffing ratios, and other factors over which the individual has little control. An individual living in an institutional environment may have an interest in dance or visual arts but limited or no opportunities to attend arts-related events. Also, these more restrictive and supervised environments may create different contingencies for behavior, thus promoting or discouraging the expression of traits. Thus, compliance and agreeableness may be overvalued and rewarded in institutional or large group living environments, whereas assertiveness may be viewed as an undesirable or even problematic trait.

It is also possible that some traits may be more or less prevalent among individuals with ID as a consequence of the genetic etiology of the ID. Down syndrome, for example, has a fairly recognizable physical and medical phenotype, characterized by features such as midface hypoplasia, epicanthal folds, congenital heart valve defect, joint laxity, and intellectual disability. There are also patterns of cognitive strengths and weaknesses associated with this genetic disorder (Silverman, 2007). It is certainly possible that there are personality and behavioral phenotypes associated with these genetic syndromes, and several researchers have pursued inquiries along these lines (e.g., Dykens, 1999; Morris, 2010). However, researchers studying these behavioral phenotypes have not drawn on the FFM literature, perhaps because FFM instruments have historically not been used or studied with the population of individuals with ID or DD. Given that several investigators have noted the need for a finer-grained methods for measuring behavior and endophenotypes within these genetic syndromes (Harris, 2010; Siegel & Smith, 2010) and the evidence for a molecular genetic basis of FFM personality (Terracciano et al., 2010), the FFM has strong appeal as a strategy for measuring personality-related aspects of these phenotypes.

All in all, FFM personality assessment has the potential have a positive impact on people with ID by (a) providing methods for assessing individual differences that may affect risk for physical and mental illness; (b) improving residential and vocational service delivery by providing information

about an individual's preferences, traits, and behavior; and (c) using assessment instruments that provide both scope and detail about potential endophenotypes related to genetic syndromes causing ID. Although much work remains to be done, there is a great deal of potential for researchers to investigate questions that are conceptually intriguing while generating a body of literature that can translate into meaningful improvements in the lives of people with ID.

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PART III

# ASSESSMENT



# ASSESSING THE FIVE-FACTOR MODEL OF PERSONALITY DISORDER

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As described throughout this volume, a great deal of research over the past 2 decades has explored the notion that the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) personality disorders (PDs), and all of personality pathology, can be understood as maladaptive variants of the same traits that assess normal personality (e.g., Widiger & Trull, 2007). The purpose of this chapter is to cover the instruments that assess the five-factor model (FFM) of personality disorder. In particular, the chapter does not aim to provide a broad survey of all possible measures of the FFM because this is available elsewhere (De Raad & Perugini, 2002) but instead focuses explicitly on the ability of existing instruments to provide coverage of the maladaptive range of personality. The chapter begins with a discussion of major self-report inventories, followed by abbreviated measures and a semistructured interview. The chapter concludes with a discussion of future measures.

## SELF-REPORT INVENTORIES

### NEO Personality Inventory—Revised

Any discussion of FFM instruments should likely begin with the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992) because it is, by far, the predominant measure and conceptualization of the FFM. This predominance is for good reason; it has considerable empirical validation and a

strong research foundation (Costa & McCrae, 1992; Trull & Widiger, 1997; see also Chapter 2, this volume). The NEO PI-R contains 240 items, which are in the form of sentences. The respondent indicates his or her agreement with each sentence by selecting *strongly disagree, disagree, neutral, agree, or strongly agree* from a Likert-type scale. The NEO PI-R provides scores for the five domains of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. An important innovation of the NEO PI-R, relative to the original NEO PI (Costa & McCrae, 1985) or the abbreviated NEO Five-Factor Inventory (Costa & McCrae, 1992) is that it also provides an assessment of six facets, or subtraits, within each domain that provide fine distinctions. For example, the domain of neuroticism is underlain by facets labeled anxiousness, angry hostility, depressivity, self-consciousness, impulsivity, and vulnerability.

In constructing these facets, Costa and McCrae sought to make them similar in breadth and scope so that the entire domain could be covered with equivalent precision. Additionally, although it would be impossible (and perhaps unwise) to include facets that were entirely independent of others from the same domain (because they represent components of a common underlying disposition), Costa and McCrae (1995) did seek to develop facets that would “represent the more closely covarying elements within the domain, not

arbitrary combinations of elements" (p. 25), to maximize the facets' discriminant validity. Finally, and perhaps most important, they also attempted to have the facets be as consistent as possible with traits already recognized as important within the existing psychological literature.

These facet selections have received criticism, with some critics lamenting that their development occurred outside of the lexical tradition (Saucier & Goldberg, 2002). Additionally, because the FFM domains themselves are not entirely orthogonal, it is not surprising that some facets relate to more than a single domain (e.g., impulsiveness within neuroticism correlates with conscientiousness, and angry hostility within neuroticism correlates with antagonism; Costa & McCrae, 1992). Despite the potential criticisms, the NEO PI-R facets have proven to be quite useful for the assessment of personality pathology. In fact, research has suggested that these lower order traits are necessary to distinguish between the existing PD categories (Axelrod, Widiger, Trull, & Corbitt, 1997; Reynolds & Clark, 2001), which was an early criticism of the FFM of PD (e.g., Clark, 1993). In addition, the hypotheses regarding the FFM's ability to account for the PDs of the revised third edition (*DSM-III-R*; American Psychiatric Association, 1987) and fourth edition, text revision (*DSM-IV-TR*; American Psychiatric Association, 2000) of the *DSM*, which were advanced in previous editions of this text (Widiger, Trull, Clarkin, Sanderson, & Costa, 1994, 2002), were explicitly in terms of the NEO PI-R's facets. Those hypotheses have been tested in a number of studies (e.g., Lynam & Widiger, 2001), and a meta-analysis suggested reasonably strong support for a majority of the facet-level hypotheses (Samuel & Widiger, 2008).

Despite the fact its items were written to assess general personality structure, the NEO PI-R also has extensive support in terms of its ability to assess personality disorder. This includes obtaining strong and predictable associations with the *DSM-IV* PD constructs (Samuel & Widiger, 2008; Saulsman & Page, 2004; Widiger & Costa, 2002). The NEO PI-R can even be used as a proxy measure of the *DSM-IV* PDs. Trull, Widiger, Lynam, and Costa (2003) used as their FFM measure of borderline personality disorder (BPD) the extent to which an individual's

NEO PI-R profile matched the FFM profile of a prototypic case of BPD (Lynam & Widiger, 2001). They found that this borderline index obtained strong relationships with measures explicitly designed to assess BPD and, perhaps more impressively, that the NEO PI-R borderline index even obtained incremental validity with respect to external validators after variance accounted for by other BPD measures, including a semistructured interview, was removed (Trull et al., 2003). These resemblance scores, or prototype matching indices, have also been quite successful for a number of other PDs (e.g., Miller, Reynolds, & Pilkonis, 2004).

Because of its general validity as a measure of personality as well as its ability to capture aspects of personality pathology, the NEO PI-R is commonly used to assess the FFM in studies concerning personality disorder (e.g., Morey et al., 2007). Nonetheless, the widespread use of the NEO PI-R for assessing the FFM might even be said to be somewhat problematic inasmuch as the two have become almost synonymous. No single measure should be understood as providing an operational definition of any construct (Meehl, 1978) because it might have idiosyncrasies or limitations. For example, Miller and colleagues (Kamen, Pryor, Gaughan, & Miller, 2010; Miller & Pilkonis, 2006) argued that affective instability (a construct that is central to the *DSM-IV* BPD and histrionic PD) is related to, but distinct from, FFM neuroticism. A difficulty with their findings is that they rely exclusively on the assessment of neuroticism provided by the NEO PI-R, which does not have a facet dealing with emotional lability or the tendency to display shifting affective states. However, this does not necessarily indicate that affective instability is outside the FFM. In fact, measures from the Big Five tradition actually reverse code this domain and label it emotional stability. In addition, De Young, Quilty, and Peterson's (2007) Big Five Aspects Scale (BFAS; described in more detail later in the chapter) includes a subtrait labeled *volatility* beneath the domain of neuroticism. There are also other specific aspects of the five higher order domains not included in the NEO PI-R that provide a more clear assessment of the maladaptive aspects of the domain.

Beyond the potential for alternative facet scales or labels, one potential limitation of using the NEO

PI-R to assess personality pathology is that it was developed as a measure of normal personality functioning. Specifically, research has demonstrated that it might lack fidelity for assessing the maladaptive ranges of high conscientiousness, high agreeableness, and high openness to experience (Haigler & Widiger, 2001; see also Chapter 19, this volume). Haigler and Widiger (2001) examined the content of the 240 items on the NEO PI-R in terms of whether they assessed adaptive or maladaptive functioning. They reported that only 12% of the items keyed for high openness, 17% of the items keyed for high agreeableness, and 10% of the items keyed for high conscientiousness described maladaptive, undesirable behavior. For example, although the NEO PI-R does contain a few items assessing maladaptive conscientiousness (e.g., "I'm something of a 'workaholic'"), 90% of the conscientiousness items are keyed in the direction of adaptive rather than maladaptive functioning. Thus, it might not be particularly surprising that the NEO PI-R has obtained relatively inconsistent relationships with measures of obsessive-compulsive (OCPD), dependent, and schizotypal PDs (e.g., Samuel & Widiger, 2008; Saulsman & Page, 2004) considering that they concern maladaptive aspects of high conscientiousness, agreeableness, and openness, respectively (Widiger et al., 2002).

Haigler and Widiger (2001) experimentally manipulated each NEO PI-R item from these domains by adding terms such as "excessively," "too much," or "preoccupied." It is important to note that they did not manipulate the NEO PI-R items to become indicators of PD constructs but rather more maladaptive versions of the same trait. For example, the item "I keep my belongings neat and clean" became "I keep my belongings excessively neat and clean." They found that although the original NEO PI-R conscientiousness domain obtained a median correlation of -.02 with OCPD scales, this increased to .69 for the experimentally manipulated Conscientiousness scale. Similar increases were also noted for agreeableness with dependent (.04 versus .57) and openness with schizotypal (-.11 vs. .28). These results have since been replicated for OCPD and conscientiousness (Samuel & Widiger, 2011) and suggest that although the NEO PI-R is a particu-

larly strong and robust measure of the FFM, it lacks fidelity for assessing the most maladaptive aspects of some traits. It is important to note, however, that the experimentally manipulated NEO PI-R items created by Haigler and Widiger do not represent a separate instrument and should not be considered as such. Instead, they merely suggest the need to develop measures that might better assess these aspects of personality.

### Scales Drawn From the International Personality Item Pool

The International Personality Item Pool (IPIP; Goldberg et al., 2006) is a collection of more than 2,000 personality items that are freely available within the public domain (<http://ipip.ori.org>) that has allowed researchers to create a variety of instruments that are relevant to the assessment of the FFM. Although this format has notable advantages, including free use for researchers and clinicians as well as the ability to modify items and scales to suit a given purpose, a significant limitation is that it leads to alternative versions of ostensibly the same measure. The result is that it can sometimes be difficult for readers to discern precisely which instrument, or items, was used in a specific study. For instance, the IPIP website provides both 50-item and 100-item versions of Goldberg's (1992) markers for the five broad domains. These are based on Goldberg's (1992) markers and Saucier's (1994) mini-markers for the big five, but over time the content has shifted and does not necessarily reflect the original measures (Johnson, 2005, as cited in Goldberg et al., 2006).

Both Goldberg's markers and Saucier's mini-markers have been used in at least one study (e.g., Blais, 1997; Soldz, Budman, Demby, & Merry, 1993) and have evinced correlations with PD measures that are reasonably consistent with theoretical expectations. However, the absence of any lower order facets may limit these instruments' utility for assessing the FFM of PD. Because the IPIP contains many items that have been administered to participants who also completed existing personality instruments, researchers have created "open-source" measures that approximate scores on existing instruments. For example, there is a set of 300 items

that approximates scores on the domains and facets of the NEO PI-R. Although there have not yet been studies investigating how well this IPIP-NEO is able to capture maladaptive ranges of the five domains, one might assume it would share limitations with the NEO PI-R. Another measure approximated within the IPIP is the 485-item Abridged Big Five-Dimensional Circumplex model (AB5C; Hofstee, de Raad, & Goldberg, 1992) that assesses the five domains as well as 45 lower order facets (nine per domain). The lower order facets, although greater in number than those from the NEO PI-R, still appear very much focused on the adaptive aspects of the domains, with a few important exceptions. For example, although the domain similar to conscientiousness includes scales labeled efficiency, organization, cautiousness, orderliness, and dutifulness, it also includes one labeled *perfectionism* that might more clearly tap the maladaptive variants of this domain.

Similarly, DeYoung, Quilty, and Peterson (2007) selected 100 items from the AB5C-IPIP (Goldberg, 1999) that assessed “aspects” of the FFM that occupy an intermediate space between the domains and the facets. The resulting Big Five Aspects Scale (BFAS) includes two aspects for each of the five domains. Neuroticism includes volatility and withdrawal, extraversion includes enthusiasm and assertiveness, agreeableness includes compassion and politeness, conscientiousness includes industriousness and orderliness, and the domain labeled openness/intellect simply includes the aspects of openness and intellect. It appears that most remain relatively focused on adaptive aspects of the FFM, but as mentioned above, the neuroticism aspect of volatility does more clearly bespeak emotional lability than do facets from other measures. Unfortunately, none of these IPIP measures have been correlated with any measures of personality pathology. It would be of interest to determine whether certain facets (e.g., Perfectionism from the AB5C) or aspects (e.g., Volatility from the BFAS) obtained stronger relationships with the DSM-IV PDs.

### **Interpersonal Adjective Scales—Revised: Big Five Version**

The Interpersonal Adjective Scales—Revised: Big Five Version (IASR-B5; Trapnell & Wiggins, 1990)

is a relatively brief instrument that includes 124 adjectives. The IASR-B5 represents an extension of the Revised Interpersonal Adjective Scales (IAS-R; Wiggins, Trapnell, & Phillips, 1988) to include an assessment of all five domains of the FFM. The respondent rates how accurately each adjective describes himself or herself on an 8-point Likert-type scale (e.g., 1 = *extremely inaccurate* to 8 = *extremely accurate*). Three of the IASR-B5 scales correspond directly to three of the five domains of the FFM (i.e., neuroticism, openness to experience, and conscientiousness). The IASR-B5 includes, in addition, eight scales to assess octants of the interpersonal circumplex. The gregarious-extraverted and warm-agreeable scales are the two octant scales that are aligned most closely with the respective extraversion and agreeableness domains of the FFM (Trapnell & Wiggins, 1990). This measure, in fact, was used in the first empirical study that examined the relationships between the FFM and PDs (Wiggins & Pincus, 1989) and continues to be used occasionally (e.g., Wright, Pincus, & Lenzenweger, 2010). Although the IASR-B5 has displayed reasonable convergence with other measures of the FFM and expected relationships with the PDs, its lack of explicit facet scales and confinement to normative functioning do not make it a particularly strong candidate for assessing the FFM of PD.

### **HEXACO Personality Inventory—Revised**

The HEXACO Personality Inventory—Revised (HEXACO PI-R; Ashton & Lee, 2008) is measure of general personality that contains 200 items rated on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). It assesses six broad domains of general personality functioning (each containing four facets) as well as a single “interstitial” facet. Although not technically a measure of the FFM, the HEXACO PI-R also stems from the lexical tradition, and the first five scales align closely (although not isomorphically) with the domains of the FFM. The primary difference between the HEXACO PI-R and FFM is that the former includes a sixth domain labeled honesty-humility, which they argue is separable from agreeableness. The HEXACO PI-R also includes facets that are notably different from the NEO PI-R, and in some cases they more clearly

bespeak the maladaptive aspects of the domain. For instance, within the domain of conscientiousness, the HEXACO PI-R includes the rather normative facets of organization, diligence, and prudence but also has another labeled *perfectionism*. This potential difference has been borne out in a recent empirical study, which was the first to investigate the relationship between the HEXACO PI-R and measures of OCPD. Samuel and Widiger (2011) found that although the three other HEXACO PI-R facets demonstrated a small median correlation across seven measures of OCPD, the facet of perfectionism evinced a moderate correlation ( $r = .37$ ), supporting the notion that this facet scale effectively captured the more maladaptive variance of conscientiousness.

There has not yet been a study that correlated the full HEXACO PI-R with a measure of the *DSM-IV* personality disorders, but it would be of interest for future research to compare the NEO PI-R and HEXACO-PI with respect to PD relationships. One might expect, for instance, that schizotypal PD measures would correlate with the HEXACO PI-R openness facet of unconventionalality (contrary to the NEO PI-R), supporting the position that this disorder represents a maladaptive variant of openness. Additionally, although the HEXACO PI-R actually includes a facet scale of dependency (i.e., explicitly including this PD construct as a maladaptive variant of a universal personality structure), it seems likely that comparable findings to the NEO PI-R are likely to be obtained for dependent PD as the facet is placed within emotional instability rather than agreeableness (or honest-humility).

**Minnesota Multiphasic Personality Inventory—Personality Psychopathology Five**  
 Although not a measure of the FFM per se, Harkness and McNulty (1994) developed a model for assessing psychopathology that corresponded with the Big Five personality traits and has been advanced as an alternative to the FFM for assessing psychopathology. Harkness and McNulty identified items from the Minnesota Multiphasic Personality Inventory—2 (MMPI-2) and the Personality Psychopathology Five (PSY-5) that matched their conceptual model and created five scales labeled Aggressiveness, Psychoticism, Disconstraint, Negative Emotionality/

Neuroticism, and Introversion/Low Positive Emotionality. The derivation from the MMPI-2's item pool created both advantages and limitations for the PSY-5 relative to the NEO PI-R. An advantage is that the pathological content included in the MMPI-2 items (particularly those assessing thought disorder symptoms) allows the PSY-5 Psychoticism scale to assess aspects of schizotypal PD more easily than does the NEO PI-R's openness to experience. Alternatively, however, the maladaptive focus of the MMPI-2 creates limitations in the PSY-5's ability to assess the breadth of general personality traits. In particular, the PSY-5 is limited in its coverage of conscientiousness, which is not well-represented in the MMPI-2's item pool (e.g., Trull, Useda, Costa, & McCrae, 1995). An additional limitation of the PSY-5 is that its assessment is confined to the broad domains described earlier, without any representation of the lower order facets that are necessary for adequate assessment and differentiation of personality pathology (Axelrod et al., 1997).

## ABBREVIATED MEASURES

Beyond the lengthier and more psychometrically robust instruments described in the previous section, there are also a number of abbreviated measures that can provide a relatively rapid assessment of the FFM. These abbreviated measures can be quite useful in circumstances in which efficiency is of the utmost importance, such as large-scale surveys that must assess a wide variety of other variables within a limited period of time, situations in which participants assess multiple targets, or when individuals are being prescreened before completing a larger assessment battery. Another situation in which abbreviated measures can be useful is for mental health professionals describing patients within their clinical practice. Whereas it is unlikely that a clinician would routinely describe their patients using a detailed measure such as the NEO PI-R, he or she might use a brief measure that could be completed quickly and provide valid information.

## Big Five Inventory

One abbreviated measure of the FFM that has been used frequently in the literature is the Big Five

Inventory (BFI; John, Donahue, & Kentle, 1991), which consists of 44 short phrases to which an individual rates their agreement on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. The BFI is commonly studied in basic personality research because it provides a brief, freely available, and psychometrically sound assessment of the five broad domains (John, Naumann, & Soto, 2008). However, its utility for assessing personality disorder has not often been tested. Because of the BFI's development as a measure of normal personality and the fact that it does not provide scores on lower-order facets, it is not well-suited for assessing the FFM of PD. Miller, Gaughan, Maples, and Price (2011), for example, indicated how the BFI's lack of coverage of the FFM traits of low straightforwardness and low modesty contribute to an inadequate assessment of narcissism and psychopathy.

### **Five-Factor Model Rating Form (FFMRF)**

The Five-Factor Model Rating Form (FFMRF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006) is a one-page rating form consisting of 30 items representing each of the 30 facets from the NEO PI-R. The 30 items are organized with respect to the five domains. Each item is rated on a 1 to 5 scale where 1 is *extremely low*, 2 is *low*, 3 is *neither high nor low*, 4 is *high*, and 5 is *extremely high*. An important property of the FFMRF, relative to the BFI and most other brief FFM measures (e.g., Gosling, Rentfrow, & Swann, 2003), is that it allows the scoring of individual facets. This allows for a more complete appraisal of the FFM, which is important for differentiation of existing PDs (Axelrod et al., 1997; Reynolds & Clark, 2001). The FFMRF has been administered along with PD measures in a number of self-report studies (e.g., Mullins-Sweatt et al., 2006). These findings were included in Samuel and Widiger's (2008) meta-analysis, which demonstrated that the FFMRF facets obtained relatively similar results to the lengthier NEO PI-R. The FFMRF has also been used in several studies to collect ratings provided by clinicians and has demonstrated strong inter-rater reliability and reasonable validity for assessing pathological aspects of the FFM (Lowe & Widiger, 2009; Mullins-Sweatt & Widiger, 2011; Samuel &

Widiger, 2004, 2006, 2010). In short, the FFM has proven to be a valid measure for collecting descriptions from the patient or the clinician.

### **Five-Factor Form (FFF) or Five-Factor Model Score Sheet (FFMSS)**

The Five-Factor Form (FFF) was developed to extend assessment even further into the maladaptive range. The FFF is also a one-page rating form that considers maladaptive variants of both poles (i.e., high and low) of all 30 facets proposed by McCrae and Costa (2008). To date, however, this measure has only been used in a single study (Mullins-Sweatt, Glover, Dereckno, Miller, & Widiger, 2010). However, a slight variation of the FFF, which has been referred to as the Five-Factor Model Score Sheet (FFMSS) has been used in two additional studies (Few et al., 2010; Spitzer, First, Shedler, Westen, & Skodol, 2008). The FFF and the FFMSS have a similar format to the FFMRF, but use a 1-to-7 scale, rather than 1-to-5 scale. This is potentially important because the additional rating points are specifically aimed at the maladaptive expressions of both the high and low pole of each facet. Few and colleagues (2010) have provided a particularly useful test of the FFMSS because they obtained ratings from two clinicians for more than 100 psychiatric outpatients. The FFMSS ratings obtained strong convergent validity with indicators of personality pathology generated by patient self-report as well as consensus ratings of personality disorder. In addition, the FFMSS ratings were significantly related with overall functional impairment derived using multiple sources of data. Although additional research is needed to further explore the properties of the FFMRF, FFF, and FFMSS, they appear to have validity and utility for assessing the maladaptive extremes of the FFM within a relatively brief and straightforward instrument.

### **SEMISTRUCTURED INTERVIEW**

The predominant method of assessment for general personality research is self-report, whereas the predominant method of assessment in personality disorder research is semistructured interview (McDermut & Zimmerman, 2005; Rogers, 2001).

A semistructured interview provides a systematic assessment by standardizing the questions used by the interviewer, the sequencing of these questions, and the scoring of the responses (Rogers, 2001) but also encourages follow-up queries at the interviewer's discretion. For example, an interviewer might exclude questions when they are unnecessary to provide a confident assessment or record the scoring of diagnostic criteria based on his or her clinical interpretations of verbal responses to queries or observation of the respondent's behavior. Semistructured interviews often include open-ended questions that allow idiosyncratic responses by the respondent that are complex in content.

Semistructured interviews have potential advantages relative to self-report inventories. Namely, they allow an interviewer to use his or her professional judgment when making a rating rather than relying solely on the opinions or beliefs of the target respondent. Self-report inventories can be susceptible to distortions in self-descriptions secondary to mood states (Piersma, 1989; Zimmerman, 1994; but see also Morey et al., 2010). Thus, rather than assuming that either method (self-report or semistructured interview) is providing the more valid results, a typical strategy recommended is to first administer a self-report instrument and then follow this with an interview (Lenzenweger, Loranger, Korfine, & Neff, 1997; Widiger & Samuel, 2005).

### **Semistructured Interview for the Assessment of the Five-Factor Model**

There is currently only one semistructured interview for the assessment of the FFM—the Structured Interview for the Five-Factor Model (SIFFM; Trull & Widiger, 1997, 2002). In fact, this is the only semistructured interview for any dimensional model of personality or personality disorder (the SIFFM is said to be semistructured because it allows for follow-up queries). The interview questions provided by the SIFFM assess for the five domains and 30 facets of the FFM as presented within the NEO PI-R (Costa & McCrae, 1992). However, a distinction of the SIFFM is that the questions systematically cover both normal and abnormal variants of each of the 60 poles of the 30 facets. For example, a normal variant of the achievement striving facet of conscientiousness is

being characteristically able to motivate one's self to complete tasks; the abnormal variant is being overly invested in career pursuits (e.g., workaholism). The normal variant of low achievement striving is being lackadaisical; the abnormal variant is being lazy or even unconcerned with achieving goals.

Studies that have used the SIFFM suggest that its development was reasonably successful in this regard because it is able to account for *DSM-IV-TR* PD symptomatology (e.g., Bagby et al., 2005; Miller, Bagby, & Pilkonis, 2005; Samuel & Widiger, 2010; Stepp, Trull, Burr, Wolfenstein, & Vieth, 2005; Trull, Widiger, & Burr, 2001; Trull et al., 1998, 2003). The meta-analysis by Samuel and Widiger (2008) provided separate results for the SIFFM based on this literature and suggested that it was better able to account for some aspects of PD pathology than was the NEO PI-R. Specifically, although a number of studies have supported the hypothesis that a maladaptive variant of openness to experience includes the cognitive and perceptual aberrations of schizotypal PD (e.g., Ross, Lutz, & Bailey, 2002; Trull et al., 2001; Wiggins & Pincus, 1989), this has not always been the predominant finding. However, results using the SIFFM evince significant correlations of schizotypal PD with FFM openness, particularly for the facets of openness to ideas and fantasy. This instrument instrument-specific finding is consistent with the fact that the SIFFM includes an explicit assessment of maladaptive variants of openness and perhaps provides a more sensitive assessment of these traits than is obtained by most other FFM measures. Nevertheless, although the SIFFM is successful at capturing more maladaptive aspects of openness, this does not appear to be the case for agreeableness and conscientiousness because the relationships with dependent PD and OCPD are not routinely supported.

### **FUTURE INSTRUMENTS**

Consistent with their development as measures of normal personality functioning, existing FFM instruments tend to focus their assessment bandwidth on the adaptive range of each trait. Although certain instruments appear to fare better than others for specific aspects (i.e., the SIFFM for high

openness or the HEXACO facet of perfectionism for high conscientiousness), some difficulty remains in fully assessing the maladaptive expressions of many FFM traits. As such, recent work has begun to address this limitation by developing new FFM measures (e.g., De Clercq, De Fruyt, Van Leeuwen, & Mervielde, 2006; Piedmont, Sherman, Sherman, Dy-Liacco, & Williams, 2009).

One such effort is the development of self-report inventory scales to assess maladaptive variants of facets of the FFM for each respective *DSM-IV-TR* PD (see Chapter 18, this volume). The development of these new FFM PD scales has followed a similar method. This effort entails first using the empirical and theoretical literature to determine which FFM facets are relevant to the description of each respective PD construct (e.g., for psychopathy, this included such facets as low anxiousness, high assertiveness, low straightforwardness, and low deliberation). Approximately 20 to 30 draft items were then written to assess the maladaptive variants of each respective facet (i.e., items to assess unconcern, dominance, manipulation, and rashness, respectively). These were carefully refined using an iterative process to arrive at measures of maladaptive variants of each FFM facet that were specific to a particular personality disorder yet remained consistent in content with existing NEO PI-R assessments and definitions. The first of these instruments are now available for the assessment of psychopathic (Lynam et al., 2011), schizotypal (Edmundson, Lynam, Miller, Gore, & Widiger, 2011), and histrionic (Tomiatti, Gore, Lynam, Miller, & Widiger, in press) personality traits. More will soon follow in a special section of the *Journal of Personality Assessment* (Widiger, Lynam, Miller, & Oltmanns, in press).

In addition, Simms et al. (2011) are currently developing a novel instrument to assess a trait model of personality pathology. Although the development of this measure, the Computerized Adaptive Test for Personality Disorder (CAT-PD), is ongoing and the structure has not yet been finalized, it reportedly will assess five broad traits along with a number of lower order facets. The five higher order domains are comparable to the FFM, with the exception that the CAT-PD authors draw a distinc-

tion between their fifth domain, titled Oddity, and Openness from the FFM (see Chapters 6 and 19, this volume, for further discussion). The CAT-PD is notable for its use of computerized adaptive testing that aims at providing an efficient and thorough assessment of personality and personality pathology. Following its ultimate development and release, it will be of interest to compare the CAT-PD to the FFM measures being developed by Lynam and colleagues (see Lynam, Chapter 18, this volume) in terms of their convergence and incremental predictive validity.

## CONCLUSION

Considering the variety of instruments that provide a measure of the FFM, which measure should one use to assess the pathological range of these traits? The answer to this question depends primarily on how much time and resources one is willing to devote to the assessment. Assuming an unlimited time with a pure focus on providing the most valid assessment, I would recommend first administering the NEO PI-R to the individual and following that with the SIFFM to clarify the self-report ratings. However, even this recommendation might be qualified by the fact that both of these measures appear to be limited in their ability to assess specific aspects of high conscientiousness (relevant to OCPD) and high agreeableness (relevant to dependent PD). In light of this, one might also consider further supplementing these assessments with a scale that more actively covers the maladaptive range of these traits, such as those newly developed FFM scales (e.g., Lynam et al., 2011).

Of course, in typical clinical practice, having unlimited time to devote to assessment is by far the exception rather than the rule (Butcher, 2006). In these instances, one might be well served to confine the assessment to one of the abbreviated rating forms such as the FFMS or the FFMRF. Although these one-page rating forms have clear trade-offs in terms of their ability to fully capture the nuances of each trait, they have notable strengths, including the explicit focus on the maladaptive range of all 30 facets specified by McCrae and Costa (2008). These brief rating forms would be particularly useful for clinicians who seek to record and document systematically their

own FFM descriptions of a patient. Nonetheless, abbreviated measures necessarily provide less information than their lengthier counterparts, and this cost should be carefully weighed against the gains in efficiency (Smith, McCarthy, & Anderson, 2000).

Finally, the set of new measures that are being developed to provide a more detailed, facet-level assessment of the PD constructs (see Chapter 18, this volume) appear to hold great promise for improving on the existing measures. Nonetheless, these instruments await further validation and study before being recommended for clinical practice.

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# INFORMANT REPORTS AND THE ASSESSMENT OF PERSONALITY DISORDERS USING THE FIVE-FACTOR MODEL

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During development of the five-factor model (FFM) of personality, considerable emphasis was placed on the collection and analysis of information from peers and other informants (e.g., McCrae, 1982; Norman, 1963; Tupes & Christal, 1961/1992). More recently, as the FFM has been applied to the study of personality disorders (PDs), investigators have focused almost exclusively on the use of self-report questionnaires and interviews (e.g., Stepp, Trull, Burr, Wolfenstein, & Vieth, 2005; Trull, Widiger, & Burr, 2001). This is somewhat surprising in light of the fact that many PDs involve distortions of self-perception and an inability to assess accurately one's effect on others (Oltmanns & Turkheimer, 2009). The past 10 years have seen a resurgence of interest in the consideration of peer and informant data in the investigation of personality. In this chapter, we review some of that evidence and the potential incremental value of informant reports in PD assessment.

Informant reports are typically neglected in personality assessment plans for several reasons. One consideration is the modest level of agreement between self and others regarding various features of PDs. In fact, this disagreement actually provides an important opportunity to understand personality pathology more completely (Achenbach, Kruskowski, Dumenci, & Ivanova, 2005; Connelly & Ones, 2010). Another potential reason for the neglect of informant reports is the fundamental assumption

that we know ourselves better than other people know us. According to this line of reasoning, we see ourselves in every situation, we remember our past behaviors, and we are exquisitely aware of our internal states, such as emotions, thoughts, and motives. Therefore, we must know more than others do about our own personalities. Self-knowledge is far from perfect, however, and there are some circumstances in which others know more about us than we do (Vazire, 2010; Vazire & Carlson, 2010). The goal of this chapter is to identify potential blind spots in self-perception and to highlight the advantages of incorporating others' perceptions, or informant reports, in assessing personality pathology.

In the following sections, we explore why the self might not always be the best source of information in personality assessment and identify which aspects of personality the self or others might report more accurately. We begin with a quick summary regarding levels of agreement between self- and informant-reports of personality pathology as reflected in FFM prototype scores. We then review evidence suggesting that both perspectives are unique and potentially valid. Finally, we present recent research that has examined the incremental validity of informant reports and, in some cases, directly compared the validity of self-reports to informant reports. Do informants provide information about personality pathology that the self can or will not report? Do

informants know more than the self? Finally, we make some recommendations for researchers who are interested in the assessment of PDs.

### SELF-INFORMANT AGREEMENT FOR FFM DOMAINS AND FACETS

Modest levels of agreement between personality descriptions based on self-report and informant-report measures have been documented extensively

(Connelly & Ones, 2010; Funder, 1995). Three typical sets of correlations between self-report and informant-report scores for the domains and facets of the FFM are presented in Table 16.1. The table suggests a modest level of agreement for informant and self-perceptions on these particular traits. The correlations are statistically significant, but they are also consistently modest. These correlations raise important questions about whether research based exclusively on self-report provides a complete perspective

TABLE 16.1

#### Self–Other Agreement of Revised NEO Personality Inventory Domains and Facets

Domains and facets	Lawton et al. (N = 500)	Spouse–self (N = 68)	Peer–self (N = 250)
Anxiety	.39	.66	.36
Angry hostility	.36	.61	.34
Depression	.46	.50	.34
Self-consciousness	.32	.32	.26
Impulsiveness	.37	.45	.26
Vulnerability	.37	.34	.25
Neuroticism (total)	.46	.60	.36
Warmth	.41	.58	.33
Gregariousness	.49	.67	.33
Assertiveness	.50	.57	.50
Activity	.48	.61	.47
Excitement seeking	.45	.49	.48
Positive emotions	.44	.58	.28
Extraversion (total)	.51	.73	.44
Fantasy	.30	.30	.43
Aesthetics	.57	.60	.52
Feelings	.36	.56	.37
Actions	.43	.56	.36
Ideas	.48	.53	.38
Values	.54	.74	.35
Openness (total)	.51	.65	.53
Trust	.35	.49	.16
Straightforwardness	.24	.58	.33
Altruism	.23	.57	.33
Compliance	.39	.59	.47
Modesty	.30	.38	.28
Tender-mindedness	.34	.54	.25
Agreeableness (total)	.35	.62	.41
Competence	.35	.28	.26
Order	.50	.48	.36
Dutifulness	.30	.23	.28
Achievement striving	.43	.44	.42
Self-discipline	.40	.23	.33
Deliberation	.27	.10	.35
Conscientiousness (total)	.42	.34	.40

Note. Shading indicates the domains. Compilation of data from Costa and McCrae (1992) and Lawton, Shields, and Oltmanns (in press). N varies from 491 to 502 across correlations because of sporadic missing data.

on the nature of PDs and pathological personality traits. In the following section, we review evidence suggesting that a person's own description of his or her personality problems may provide a rather limited view of personality characteristics.

### **WHAT CAN THE SELF AND OTHERS TELL US?**

Self-reports have traditionally served as the dominant currency of personality research, and by extension, they have also become the main source of information for the assessment of PDs. A substantial literature, based almost exclusively on self-report measures, indicates that personality variables are related in important ways to consequential outcomes in our lives (Ozer & Benet-Martínez, 2006; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). There is no doubt that self-report measures tell us important things about people and their lives. We and other researchers have argued that they will always be necessary (e.g., Oishi & Roth, 2009; Paunonen & O'Neill, 2010). However, self-report measures provide a one-dimensional perspective on personality, and assessments can benefit from additional data collected from informants. Informant reports complement self-reports to provide a more comprehensive view of personality and its disorders.

### **Potential Problems With Self-Reports**

Despite the privileged access we have to our internal thoughts and feelings as well as recollections of our past behaviors, we are not always the best source of information regarding our own personality traits. Several factors may be responsible for this lack of self-knowledge. Most involve informational and motivational processes. With regard to information, even though we have an abundant amount of information about ourselves (e.g., we have an opportunity to observe ourselves in every situation), we do not always have access to important aspects of our behavior, such as our facial expressions or gestures. For example, when a shy person first meets a group of people, he might avoid eye contact and his smile might appear forced or artificial, leading some people to conclude that he is cold and aloof. In this case, a misperception of the self can be traced

to a lack of information. Conversely, deficits in self-knowledge might also be the product of having too much information. For instance, we sometimes become so accustomed to our own typical patterns of behavior that we fail to realize when they are extreme relative to the behavior of others. This phenomenon has been called the "fish in water effect" (Leising, Erbs, & Fritz, 2010). Of course, we might fail to integrate appropriately all of the information we have about our personality (Vazire & Carlson, 2010). For example, we might misremember (i.e., underestimate) instances of common behaviors or instances of rare behaviors (i.e., overestimate).

Several motivational explanations also help to explain gaps in self-knowledge. On one hand, we are often motivated to distort information to see ourselves in a more favorable light. Such distortions are especially common for evaluative traits, including personality pathology (John & Robins, 1993). We might misremember instances of our argumentative behavior, or we might attribute our behaviors to situational factors. Self-deception of this sort may serve a protective function by buffering the self from negative feedback. On the other hand, some people are also motivated to engage in self-denigration, especially people who are low in self-esteem or depressed.

In sum, the self is not always able or willing to provide accurate descriptions of the self. Although most research on self-knowledge of personality has focused on normal populations, lack of self-knowledge is a well-recognized hallmark of personality pathology. If people who suffer from personality pathology are more likely than other people to hold distorted views of themselves, clinicians and investigators should be particularly skeptical when self-reports measures are used as the sole basis for an assessment of PDs.

### **Potential Benefits and Limitations of Informant Reports**

Other people are often in a better position than the self to observe normal and abnormal personality characteristics. Informants frequently have access to information that the self lacks, including a better visual perspective on behavior (i.e., others can observe facial expressions and gestures). Perhaps

more important, others are not as motivated to distort information in self-serving ways. They are less likely to misperceive evaluative traits, especially those associated with PDs. Many of the features of PDs hinge largely on the impact that a person's behavior has on other people as well as the ability of the person to understand and consider the needs of others. For example, lack of empathy is an important criterion for narcissistic PD. It seems likely that informants are often in a stronger position than the self to make an accurate judgment about whether the person in question responds sympathetically to the distress of others. Many other PD criteria depend on being able to identify interactions with others that are inappropriate. Again, the other person may be in a stronger position to evaluate these behaviors. Does the person experience characteristically unstable and intense interpersonal relationships? Is the person's behavior inappropriately seductive? Does the person exploit other people or act as though he or she is entitled to special privileges? Finally, some important PD criteria depend on being able to read and evaluate the person's emotional responses, such as repeated expressions of inappropriate, intense anger. Informants might be in an especially strong position to make these judgments. For all of these reasons, people who know the target person well and who have had an opportunity to observe his or her behavior in a wide variety of situations may be able to provide valuable information about these personality characteristics.

Do informants consistently detect personality pathology? Do they agree with each other? Many experts have argued that consensus is the most important criterion for accuracy in person perception (Hofstee, 1994; Kenny & Albright, 1987). Studies of person perception report acceptable levels of consensus among laypeople when making judgments of normal personality traits, especially when ratings are aggregated across a large number of judges (Funder, 1995; John & Robins, 1993; Vazire, 2006). Data from the Peer Nomination Study (Oltmanns & Turkheimer, 2006) also indicate modest consensus among peers for personality pathology. Reliability for composite peer-based scores—averaged across a number of judges—ranged between .21 and .30 (Clifton, Turkheimer,

& Oltmanns, 2004; Thomas, Turkheimer, & Oltmanns, 2003).

Of course, the fact that others can detect personality pathology does not mean that they will report it. Informant reports are almost always provided by close others who are chosen by the person of interest. Recent work suggests that close others—specifically, parents, friends, and romantic partners—do report negative and pathological characteristics (Carlson, Vazire, & Oltmanns, 2012; Furr, Dougherty, Marsh, & Mathias, 2007; Gauthier, Furr, Mathias, Marsh-Richard, & Dougherty, 2009). However, in comparison to more neutral peers, informants selected by a target person show a significant bias with regard to certain kinds of personality items. These informants are presumably selected because the target person assumes that they will provide a favorable description, much in the same way that job applicants solicit letters of recommendation from people who will favor their candidacy (Klonsky & Oltmanns, 2002). In fact, more often than not, self-selected informants do provide descriptions that are discrepant from personality portraits drawn by informants who do not like the target person (Leising et al., 2010).

Evidence on informant bias was examined in the Peer Nomination Study, which focused on the comparison of self-report and informant reports regarding personality characteristics in groups of military recruits in basic training (Oltmanns & Turkheimer, 2006). Everyone in the group provided self-report data and also nominated others in the group who exhibited features of personality pathology. Before the nominations were collected, each target person was asked to indicate the name of one other person in the group who would be the best source of information regarding his or her personality. Nominations from these "hypothetical informants" could then be compared with those provided by the rest of the group. Informants selected by a target person were significantly more likely than other members of the group to use positive personality characteristics in their descriptions (e.g., "good sense of humor," "trustworthy and reliable," "cheerful optimistic outlook on life"). With regard to features of personality pathology, informants selected by the target person were less likely than

the other recruits to describe the person in certain kinds of negative ways, particularly those pertaining to friendship and sociability. In other words, the target person's best friend is unlikely to nominate him or her as someone who doesn't have any friends. Informant reports from friends do reflect a bias toward increased use of positive descriptors and minimized use of certain negative characteristics that would indicate social isolation.

Data from the Peer Nomination Study provided a different picture with regard to personality problems associated with Cluster C PDs (avoidant, dependent, and obsessive-compulsive PD, where anxiety plays a more prominent role). Hypothetical informants provided the target people with higher scores on items related to avoidant and obsessive-compulsive PD. These results suggest that the value of informant data varies as a function of the type of problem being assessed as well as the type of informant. Some Cluster A and Cluster B disorders will be underreported by informants who are selected by the target person. However, informant data may be better than data from unselected peers with regard to the assessment of internalizing disorders, such as avoidant and obsessive-compulsive PD.

Informants are often in a better position than the self to observe and evaluative pathological personality traits. Moreover, others agree about personality pathology and are willing to report their perceptions to researchers. In the next section, we explore how informant reports can improve personality assessment. Specifically, we demonstrate the incremental validity of informant reports in assessing PDs and then explore which types of "others" are best when the goal is to assess personality pathology.

### THE HIDDEN BENEFITS OF SELF–OTHER DISAGREEMENT

Self–other agreement refers to the correspondence between a person's self-perception and someone else's perception of that person. Modest self–other agreement correlations suggest that people do not see themselves as others see them with regard to pathological traits. Some investigators interpret low self–other agreement to mean that the informants' perceptions are necessarily invalid, whereas other

investigators argue that low self–other agreement reflects the inherently biased nature of self-report data. In fact, low self–other agreement does not indicate which person is right or wrong but merely that the self and others perceive different things. The following sections highlight the opportunities self–other disagreement provides in the assessment of personality pathology.

### Why Is Self–Other Agreement Low?

In general, levels of self–other agreement tend to be lower for ratings of symptoms of PDs than for ratings of normal personality traits (Oltmanns & Turkheimer, 2009). Self–other agreement for domains of the FFM is usually reported in terms of correlations that fall in the range between .40 and .60 (see Table 16.1 and also Bagby et al., 1998; Connelly & Ones, 2010; Ready & Clark, 2002; Vazire & Carlson, 2010; Watson, Hubbard, & Wiese, 2000). Self–other correlations for ratings of PDs tend to run in the range between .15 and .30 (e.g., Klonsky & Oltmanns, 2002; Miller, Pilkonis, & Clifton, 2005; Riso, Klein, Anderson, Ouimette, & Lizardi, 1994). Many factors have been shown to influence the amount of agreement between self-report and informant reports of personality. These include the quality of the relationship between the person and his or her informant and the length of time that they have been acquainted. Another is the nature of the personality items that are being rated. Correlations tend to be higher for positive and more observable characteristics and lower for characteristics that are less observable and more negative (Oltmanns & Turkheimer, 2006; Ready, Clark, Watson, & Westerhouse, 2000). This consideration may help to explain why levels of self–other agreement are higher for FFM traits than for more obviously negative personality descriptors that are used to describe PDs. Finally, certain characteristics of the target person are also related to self–other agreement. For example, people whose behavior is more stable over time are likely to show higher levels of agreement when their self-report scores are compared against those provided by informants (Biesanz & West, 2000).

The discrepancy between self- and informant reports clearly reflects important differences between the perspectives of self and informant.

However, these differences are not always polar opposites. Many times, self and informant descriptions complement each other, with both sources providing their own unique, but meaningful, perspective. This issue was examined using data from the Peer Nomination Study (Oltmanns & Turkheimer, 2006). Self-report data were compared with peer nominations in an effort to find systematic connections between the two sources. In other words, if peers had described the person as being paranoid, and if the person did not endorse the same view, how did he describe himself? Similarly, if an individual endorsed certain personality characteristics using a self-report procedure, but his peers did not agree, how did the peers perceive that person? By studying the similarities and differences in perception between self and peers, we tried to identify discrepancies that are predictable (Clifton et al., 2004). These analyses identified three kinds of supplemental items. Some were items similar in content to the corresponding PD scale but were not included in the original scale. For example, peer supplemental items for schizoid PD consist of negatively correlated histrionic and narcissism items. A second type of supplemental item was based on a systematic difference between self and other in the perception of a trait. For example, the peer subtle items for paranoid PD indicate that a person who describes himself or herself as paranoid is actually viewed by others as being cold and unfeeling. Working in the other direction (from peers to self), people who are described by their peers as being paranoid tend to describe themselves as being angry (but not suspicious or hypervigilant). A third type of supplemental item includes self-reported items that are less obvious, nonpejorative examples of PD traits. For example, people who were described by peers as being narcissistic tended to describe themselves as being extremely outgoing, gregarious, and likeable. In other words, the participants put a positive spin on their own extremely positive view of themselves. In so doing, they may have displayed—in a more subtle or flattering way—the same narcissism that their peers had tried to describe.

Another recent series of studies has also demonstrated the utility of self- and informant reports in

the context of personality pathology (Carlson et al., 2012). Previous research has demonstrated that narcissists make positive first impressions (Back, Schmukle, & Egloff, 2010), but these impressions become more negative as the people become better acquainted over time (Paulhus, 1998). This phenomenon reflects the fact that narcissists can be charming at first, but their interpersonal problems tend to become disruptive in longer term relationships. Carlson et al. (2012) examined self-perceptions and informant perceptions of narcissists across several social contexts, and they found that narcissists created varying impressions in different situations. For example, in an initial encounter, narcissists are seen as attractive and funny, but people who know narcissists well see them as particularly unattractive and do not think they are funny. Unfortunately, narcissists do not seem to be aware of the fact that the impressions they make become more negative over time. These negative interpersonal manifestations of narcissism would not be revealed by self-reports alone. Thus, informant reports for personality pathology can be useful in revealing some of the interpersonal manifestations of PDs, as well as the specific traits and features by which they are defined.

## COMPARING THE ACCURACY OF SELF AND INFORMANTS

The self and informants agree, to some extent, about what the self is like. Nonetheless, they often report unique information about the person's personality. How can we determine which person is more accurate? The answer to this question depends on several factors that involve characteristics of both the target person and the informant, as well as the nature of their relationship. It also hinges, in large part, on the selection of a criterion for accuracy. What are we trying to predict? Which aspects of a person's life are most likely to be affected by personality traits and various forms of PD? Investigators who plan to explore these issues need to identify the best criterion for accuracy and then compare self- and other-perceptions in relation to that criterion. The most important questions are, which source of data is most useful and for what purpose?

## Predicting Social Functioning and Health

One important study regarding the relative merits of self- and informant reports was concerned with the link between PDs and social adjustment in a follow-up study with patients being treated for depression (Klein, 2003). Both self-report and informant reports regarding PDs were associated with a worse outcome in terms of depressed symptoms and global functioning. However, informants' reports on personality pathology were the most useful predictor of future social impairment. This evidence supports the conclusion that informant reports of personality characteristics may be particularly important with regard to social functioning.

Similar results have been found in the Peer Nomination Study with regard to adjustment to military life (Fiedler, Oltmanns, & Turkheimer, 2004). All of the recruits had enlisted to serve for a period of 4 years. At the time of follow-up (which was, on average, 3 years after enlistment), they were divided into two groups: (a) those still engaged in active duty employment and (b) those given an early discharge from the military. Early discharge is typically granted by a superior officer on an involuntary basis and is most often justified by repeated disciplinary problems, serious interpersonal difficulties, or a poor performance record. A survival analysis of "time to failure" was conducted using personality scores collected at the end of training to predict how much time it took recruits to be discharged early. For all PDs except obsessive-compulsive PD, higher scores were associated with greater risk of early discharge. In general, peer reports of PDs were better predictors than self-report. When we combined the self-report and peer-based information, using them together to identify recruits who were discharged early, the best predictor variables were peer scores for antisocial and borderline PDs. Both self-report and peer nominations were able to identify meaningful connections between personality problems and adjustment to military life. Self-report measures emphasized features that might be described as internalizing problems (subjective distress and self-harm), whereas the peer-report data emphasized externalizing problems (antisocial traits). Considered together, the peer nomination scores were more effective than the self-report scales in predicting occupational outcome.

Similar findings have emerged for predicting personality pathology and interpersonal functioning. Miller, Pilkonis, and Morse (2004) found that informant perceptions of personality predicted impaired functioning and interpersonal relationships above and beyond self-perceptions. In fact, Miller et al. (2004) concluded that "to learn about impairments in interpersonal relatedness and functioning using the FFM prototype method, it may be more important to ask informants than patients themselves" (p. 135). Thus, the self and other make independent contributions in predicting important life events and behaviors, and in some cases, others provide more information.

Health and mortality are also important criterion variables that can be used to compare the relative accuracy of self- and informant reports. Personality predicts many of these life outcomes (Smith & Mackenzie, 2006; Terracciano, Löckenhoff, Zonderman, Ferrucci, & Costa, 2008). An extensive body of evidence has documented the link between cardiovascular disease and personality traits (Lee et al., 2010; Moran et al., 2007). Most of this evidence is based on the use of interviews and self-report questionnaires to measure personality, but several studies have also shown that informant reports can be a particularly useful source of information in this context (Kneip et al., 1993). For example, Smith et al. (2008) arranged for couples in their 60s to complete the NEO Personality Inventory (NEO PI; Costa & McCrae, 1992); each partner completed the self-report version to describe himself or herself and the informant version to describe his or her spouse. All participants also completed a laboratory assessment focused on coronary artery disease. Spouses' reports of negative emotionality (anxiety and anger) and interpersonal style (high dominance and low affiliation) were significantly related to coronary artery calcification, but self-report was not. The investigators concluded that self-report measures may underestimate the strength of the relationship between personality and health.

## Predicting Interviewers' Ratings of Personality Pathology

The FFM has proven to be a powerful tool in conceptualizing PDs, as demonstrated by other chapters and authors in the current text. The movement

toward conceptualizing personality pathology as extreme deviations on normal personality traits has inspired a number of studies that reported significant correlations between self-report NEO PI scores and PD ratings based on semistructured diagnostic interviews. This evidence can be enriched by additional consideration of the relative strengths and weaknesses of the self and informants as sources of information.

In what specific ways might informants be most helpful in this regard? The self–other asymmetry model (SOKA) predicts that the self is a more accurate source of information for unobservable, internal personality traits, such as neuroticism (Vazire, 2010). In contrast, SOKA predicts that informants will be more accurate in describing evaluative traits or traits that are more observable. In a preliminary test of her model, Vazire found that, indeed, the self is a more accurate source of information regarding neuroticism, whereas informants are more accurate sources of information regarding intelligence (an evaluative trait). Thus, in terms of personality pathology, one might expect that the self would be a better source of information for PDs that are associated with high levels of neuroticism, such as borderline, avoidant, and dependent PDs. Informants might provide especially useful information when it comes to the assessment of PDs that are characterized by facets of Extraversion, which are generally considered to be more observable. These disorders include antisocial, histrionic, and narcissistic PDs. Low levels of agreeableness are also associated with many forms of PD (Lynam & Widiger, 2001). It seems reasonable to expect that being disagreeable is a characteristic that is best observed by others rather than the self. To whatever extent that is true, then paranoid, antisocial, and narcissistic PDs would also be best described by informants.

The incremental validity of self- and other-perceptions of Big Five traits in predicting PD diagnoses has been considered in three studies that used Lynam and Widiger's (2001) expert-generated FFM profiles. Miller et al. (2004) applied the profile matching technique to "other" reports in a sample of psychiatric patients. Specifically, the target person described himself or herself using the Big Five, and a close other (e.g., romantic partner, family, friend)

also described the target person using the Big Five. Their ratings were compared to each of the 10 prototypes for PDs, which provided 10 indices of PD perceptions for both the self and informant. Next, the authors examined whether informant perceptions predicted PD diagnosis above and beyond self-perceptions of personality. Informant reports provided incremental validity above and beyond self-reports for paranoid, antisocial, borderline, histrionic, and avoidant PDs. Thus, informants provide unique data that are consistent with judgments about PDs that are formed by clinicians after conducting diagnostic interviews.

Miller, Pilkonis, and Clifton (2005) also examined whether significant others' perceptions of a psychiatric patient's personality on the FFM provided incremental validity in predicting the patient's PD diagnosis. Self-report scores on the Big Five explained 19% of the variance in PD diagnosis. When a significant other's perception was included in the model, the informants' scores explained an additional 13% (i.e., median) of the variance above and beyond self-perceptions. Specifically, informant reports made a significant contribution above and beyond self-perceptions for paranoid, antisocial, borderline, histrionic, and obsessive-compulsive disorder diagnosis. Thus, in a psychiatric sample, others' perceptions regarding FFM traits provide useful, supplementary information when these traits are being used to predict interviewers' ratings of *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision [DSM-IV-TR]; American Psychiatric Association, 2000) PDs.

Do informants' ratings possess incremental validity over the self in predicting clinical judgments regarding features of DSM-IV-TR PDs in a community sample of middle-aged adults? Lawton, Shields, and Oltmanns (in press) examined the incremental validity of informant reports in a community sample, called the St. Louis Personality and Aging Network study (SPAN). Participants were recruiting using a rigorous sampling procedure that produced a representative sample of St. Louis residents (see Oltmanns & Gleason, 2010, for more details). Approximately 9% of participants qualified for the diagnosis of at least one PD, and another 9% fell one criterion short of diagnosis. This prevalence rate

is comparable to previous estimates of 6% to 13% for community samples (e.g., Huang et al., 2009; Lenzenweger, Lane, Loranger, & Kessler, 2007).

Participants in the SPAN study were asked to come to the lab to complete several self-report measures, including the NEO PI—Revised (NEO PI-R), as well as the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997), which served as the criterion measure of PDs. Participants were also asked to bring an informant with them, preferably a significant other, who completed the informant version of the NEO PI-R, describing the participant's personality. At the time of the analyses, self- and informant reports had been collected from 760 participants and their informants. Approximately 50% of informants were romantic partners, 25% were friends, and 25% were family members.

Lawton et al. (2011) computed PD count scores for each of the 10 PDs by summing prototypically high or low (after reverse scoring) FFM facet scores reported by Lynam and Widiger (2001). Next, the authors examined the incremental validity of informant reports by predicting SIDP scores from informant reports after controlling for self-perceptions. Results revealed that informant reports added significant predictive validity for schizoid, antisocial, borderline, histrionic, and narcissistic PDs. That is, above and beyond what the self can report on the NEO PI-R, close others provide additional useful information for at least half of the PDs.

The construct validity of self- and informant-reported PD prototype scores based on the NEO PI can be examined in greater detail using a multitrait–multimethod matrix. Table 16.2 presents correlations between interview-based ratings of PD features and PD prototype count scores based on self- and informant reports. All of the values appearing in the validity diagonal are statistically significant for both self- and informant report, with the exception of obsessive-compulsive PD. Five of the 10 self-report PD prototypes demonstrated good convergent validity. The schizoid, borderline, histrionic, narcissistic, and avoidant prototypes each show their highest correlation with their corresponding SIDP PD ratings. Of the five prototypes showing convergent validity, four demonstrate a particularly strong pat-

tern of discriminant validity (borderline, histrionic, narcissistic, and avoidant). Furthermore, expected relationships among the PDs emerged across measurement type. The multitrait–multimethod matrix for informant-report tended to reveal somewhat lower correlations, but the patterns of convergent and discriminant validity were similar to those observed for self-report scores. The schizoid, borderline, histrionic, narcissistic, and avoidant PD prototypes demonstrated good convergent and discriminant validity.

### **Further Analyses of SPAN Data Regarding Self and Informant Scores**

The SPAN study is an ongoing, longitudinal investigation. In the next few paragraphs, we report new analyses conducted after the Lawton et al. article was accepted for publication. More than 1,000 participants and their informants were included in these analyses (i.e., data from 300 additional self- and informant reports collected during baseline assessments for the study). We analyzed the new data using the profile matching technique instead of the PD count method (Miller, Bagby, et al., 2005). With the profile matching approach, perceptions of pathology reflect the degree to which self-perceptions or informant perceptions on the Big Five reflect personality structures similar to someone with a personality disorder. For example, if a person thinks he or she is relatively much higher on extraversion and openness than on neuroticism and much lower on agreeableness, his or her profile will resemble closely a profile that reflects narcissistic PD (i.e., very extraverted but also highly disagreeable).

For the purpose of these new analyses, we also took a different approach with respect to the criterion measure of personality pathology (compared with results reported by Lawton et al., 2011). Most of the literature on personality disorders recognizes semistructured diagnostic interviews as the gold standard for their assessment. These scores reflect a clinician's judgment regarding the presence of personality pathology, but they are largely driven by self-reports (Oltmanns & Turkheimer, 2006). Higher ratings depend, to a large extent, on the interviewee explicitly endorsing the presence of specific features and providing tangible descriptions of

TABLE 16.2

Bivariate Correlations Among Self- and Informant-Reported NEO Personality Disorder (PD) Prototypes and Structured Interview for DSM-IV Personality (SIDP) Ratings

SIDP ratings	PRD	SZD	SZTL	ASPD	BDL	HSTR	NARC	AVD	DEP	OCPD
<b>Self-reported NEO PD prototypes (<i>N</i> = 898)</b>										
PND	.33†	.12†	.22†	.17†	.24†	-.14†	.22†	.16†	.23†	.02
SZD	.34†	.39†	.34†	-.02	.08*	-.33†	.11†	.32†	.16†	.07*
SZTL	.26†	.17†	.22†	.09†	.13†	-.16†	.17†	.14†	.15†	.03
ASPD	.20†	.00	.07*	.26†	.20†	.06	.22†	-.01	.15†	-.15†
BDL	.29†	.08*	.25†	.25†	.47†	.02	.19†	.17†	.39†	-.18†
HSTR	-.01	-.29†	-.11†	.26†	.22†	.29†	.12†	-.22†	.07	-.20†
NARC	.17†	-.14†	.04	.34†	.13†	.14†	.34†	-.18†	-.02	-.07*
AVD	.27†	.38†	.45†	-.16†	.31†	-.29†	-.11†	.50†	.49†	.02
DEP	.13†	.15†	.21†	-.05	.27†	-.05	-.09†	.28†	.38†	-.09*
OCPD	.22†	.11†	.22†	.05	.19†	-.09†	.06	.18†	.21†	.02
<b>Informant-reported NEO PD prototypes (<i>N</i> = 734)</b>										
PND	.20†	.08†	.13†	.15†	.18†	-.04	.16†	.07	.17†	-.06
SZD	.23†	.25†	.25†	.05	.10†	-.20†	.11†	.20†	.15†	.01
SZTL	.18†	.09*	.14†	.14†	.13†	-.06	.15†	.07	.15†	-.08*
ASPD	.22†	.05	.10†	.24†	.19†	.04	.22†	.02	.16†	-.15†
BDL	.25†	.10†	.23†	.24†	.39†	.05	.18†	.13†	.36†	-.20†
HSTR	.03	-.17†	-.05	.19†	.18†	.21†	.12†	-.13†	.09*	-.16†
NARC	.18†	-.04	-.08*	.29†	.12†	.08*	.29†	-.13†	.02	-.09*
AVD	.15†	.24†	.25†	-.06	.18†	-.18†	-.03	.33†	.27†	.03
DEP	.03	.05	.11†	-.02	.19†	.02	-.06	.16†	.23†	-.06
OCPD	.14†	.14†	.18†	.04	.07	-.11†	.06	.14†	.11†	.00

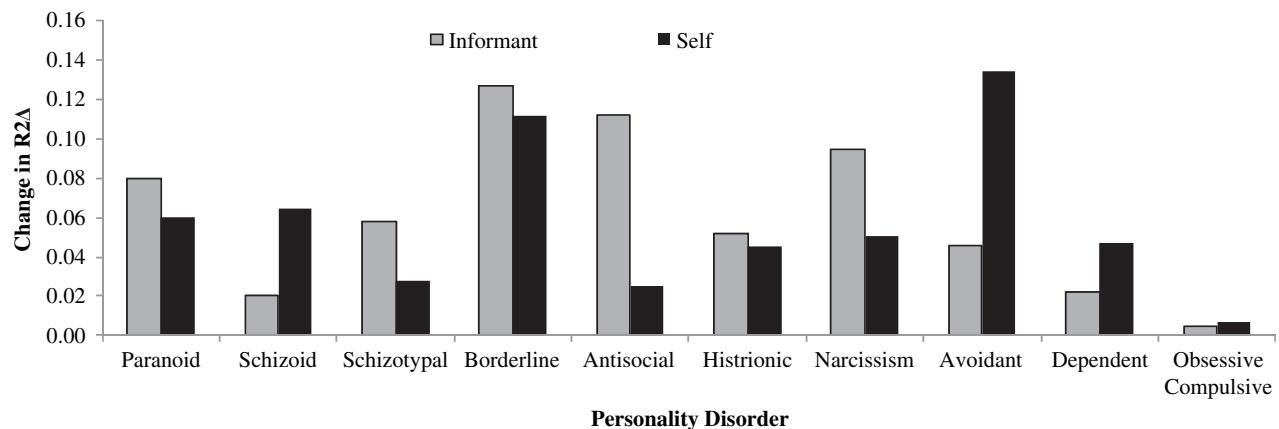
Note. From "Five-Factor Model Personality Disorder Prototypes in a Community Sample: Self- and Informant-Reports Predicting Interview-Based DSM-IV Diagnoses," by E. M. Lawton, A. J. Shields, and T. F. Oltmanns, 2011, *Personality Disorders: Theory, Research, and Treatment*, 2, p. 287. Copyright 2011 by the American Psychological Association. PND = paranoid; SZD = schizoid; SZTL = schizotypal; ASPD = antisocial personality; BDL = borderline; HSTR = histrionic; NARC = narcissistic; AVD = avoidant; DEP = dependent; OCPD = obsessive-compulsive personality disorder.

†  $p = .01$ . \* $p = .05$ .

incidents that illustrate the experiences in question. Not surprisingly, self-report scores tend to be more highly correlated than informant report scores with judgments based on diagnostic interviews. To create a more balanced measure of personality pathology, we combined interviewers' ratings from the SIDP-IV with self- and informant scores on the Multisource Assessment of Personality Pathology, a questionnaire that produces ratings on each of the features of DSM-IV-TR PDs (Okada & Oltmanns, 2009). For each specific DSM-IV-TR PD feature, the person's total score represents a combination of ratings from three sources: the self, the informant, and the inter-

viewer. This composite score was used as the criterion against which self and informant FFM-based PD prototype scores were compared.

Self-generated PD prototype count scores from the NEO PI explained, on average, 18% of the variance in our composite DSM-IV-TR PD scores. Informant reports from the NEO PI PD prototype count scores explained 19% of the variance. This result is fairly impressive given that the composite DSM-IV-TR PD score was based largely on ratings made by the self and the interviewer. Figure 16.1 illustrates the incremental validity for informant reports (i.e., the additional variance explained after controlling for



**Figure 16.1.** Using the composite score based on adding together the Structured Interview for DSM-IV Personality interview, self-Multisource Assessment of Personality Pathology (MAPP), and informant MAPP as criterion for accuracy; incremental validity of informant report (controlling for self) and self-report (controlling for informant).

self-perceptions) as well as the incremental validity of self-perceptions (i.e., the additional variance explained after controlling for other-perceptions). The figure reveals that both the self and other provide unique information. Perhaps more important, the often overlooked informant report explains an impressive amount variance above and beyond self-perceptions. This is especially true for Cluster B PDs, which are defined in large part by interpersonal conflict.

### WHICH INFORMANT IS MOST USEFUL (AND FOR WHAT PURPOSE)?

Clearly, informant reports based on the NEO PI provide unique and valid information about personality pathology, but are some informants better than others? Does the best type of informant depend on the type of personality disorder in question? We also explored this question using data from the SPAN Study. Specifically, we examined the incremental validity of informant reports, or additional variance explained, for the three main types of informants in the sample: romantic partners, family members, and friends. Each target provided one informant; thus, these analyses reflect differences across targets and not differences of informants for the same person. Remember also that the people in this study are all between the ages of 55 and 64. We might expect that the close friends of an adolescent or young adult might differ from family members and romantic partners in ways that are different from what we find in this sample of adults who are in the later half

of middle age. Figure 16.2 shows the incremental validity, or  $R^2$  change, for each type of informant report, controlling for self-report, for each of the 10 disorders. These results point to several interesting conclusions. One is that all three types of informants provide information about borderline PD that is roughly comparable in terms of its ability to predict interviewers' ratings. Romantic partners are relatively useful sources of information regarding borderline, antisocial, and narcissistic PDs, but they do not outperform other family members. Other family members provide useful information for all of the PDs in Cluster B. None of the three types of informant are particularly useful in predicting interviewers' ratings of OCPD. Friends seem to provide the most useful information regarding features paranoid and avoidant PD, but we must bear in mind that people who exhibit more features of paranoid and avoidant PD are also less likely to provide a romantic partner as their informant (because they are less likely to be involved in an intimate relationship).

### FUTURE DIRECTIONS

Various lines of research suggest that informant reports often have incremental validity above and beyond self-perceptions; that is, others know things that the self does not know or will not reveal. Recognition of this relatively simple (and perhaps somewhat obvious) phenomenon suggests exciting and important future directions in personality

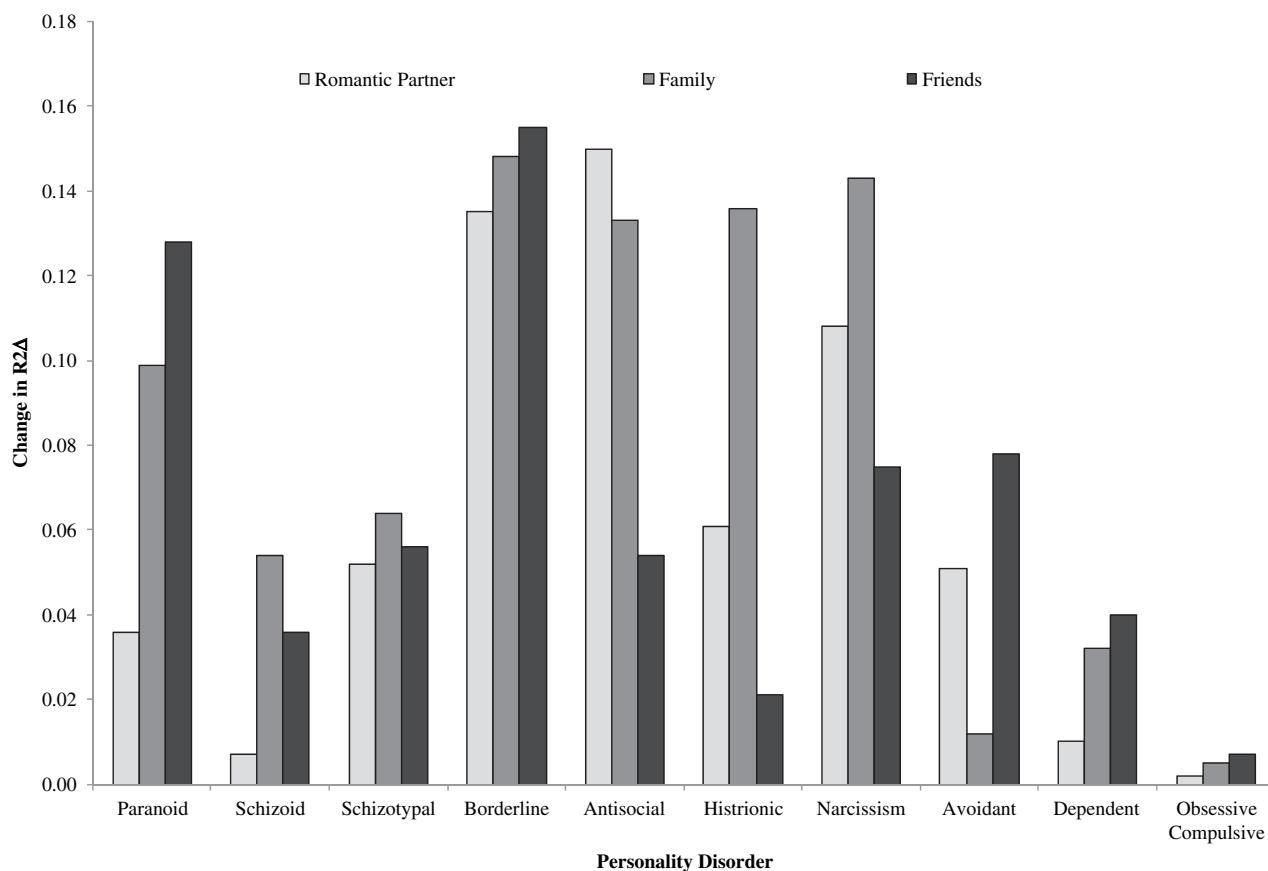


Figure 16.2. Incremental validity of different types of informants (using composite *Diagnostic and Statistical Manual of Mental Disorder* [4th ed.] personality disorder scores from the Structured Interview for DSM-IV Personality interview, self-Multisource Assessment of Personality Pathology [MAPP], and informant MAPP as criteria).

pathology assessment. Investigators have only begun to scratch the surface of this important dimension of research.

Up to the present time, many studies have compared the utility of self- and informant-report measures in predicting interviewers' ratings of *DSM-IV-TR* personality disorders. This approach obviously allows the current diagnostic manual to play a central role in the process of exploring best ways to define and measure personality pathology. A distinguished panel of experts is currently working on a major revision of the *DSM* definition of personality disorders, and it is clear that significant change is on the horizon. We believe that in the process of evaluation of alternative approaches to the definition of personality pathology, the authors of the fifth edition of the *DSM* would be well advised to include serious consideration of assessment data collected from informants rather than relying exclusively on

the analysis of self-report questionnaires and diagnostic interviews.

The process of evaluating alternative definitions of personality pathology—such as comparing FFM PD prototypes with *DSM-IV-TR* disorders—must also be reexamined. This is an exercise in construct validation. Personality disorders are presumably important to the extent that they lead to social impairment. Discrepancies between self- and other reports must be evaluated in light of their connections to other observable referents that are associated with the constructs of personality disorders (not just clinical ratings of the disorders themselves). Considerable evidence suggests that self-report measures of various personality disorders are, in fact, associated with a variety of interpersonal difficulties. More information is needed regarding the incremental validity of informant reports for predicting these negative outcomes.

When investigators select assessment tools for measuring these negative outcomes, the value of informant reports again becomes evident. For example, many forms of personality pathology presumably lead to social impairment. Research studies aimed at identifying connections between PDs and social impairment rely heavily on self-report measures of these outcomes (Ro & Clark, 2009). For example, social adjustment scales tend to include items that ask the person whether he or she is upset about the quantity or quality of interactions with other people. Analyses that hinge primarily on linking self-report personality measures with self-report social adjustment measures run the risk of capitalizing on method variance. There is a serious need for measures of social impairment that incorporate the perspective of other people who have an opportunity to observe the person's social behavior in a variety of settings.

One additional, closely related topic involves the importance of meta-perception for personality characteristics. Do we know what other people think of us? If informant reports cannot be collected in a particular setting, an option would be to ask people about the impressions that other people have formed of them. Meta-perceptions for the Big Five are closer to others' actual perceptions than are their self-perceptions. That is, meta-perceptions are different from self-perceptions and reflect how others actually view people (Carlson & Furr, 2009). The same thing seems to be true for features of personality pathology (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005). Many semistructured diagnostic interviews for PDs include questions that tap meta-perception. For example, the SIDP-IV asks, "Have other people said that you have an attitude problem?" "Would other people describe you as being stubborn or set in your ways?" "Do other people say that you are not very sympathetic to their problems?" Unfortunately, the value of adopting the others' perspective has not been explored systematically. Future studies should compare the relative merits of asking people to answer questions about what they think of themselves and asking them questions about what other people seem to think of them.

## CONCLUSION

Informant reports provide useful information. Some clinicians and investigators realize the benefits of informant reports but assume that they are difficult to obtain. In fact, informant reports can be an inexpensive and efficient way to learn more about what a person is like (Vazire, 2006), but it does require effort. We believe that the investment of time and energy will be generously repaid when informant reports are used to complement self-report measures. The following points summarize research findings reviewed in this chapter.

- Self-reports regarding personality traits and features of personality disorders are frequently different from descriptions obtained from informants who know the person well.
- Systematic patterns connect discrepant self- and peer reports (e.g., people who are viewed as being paranoid describe themselves as being angry).
- Informants provide useful information, but those who are selected by the target person may have some blind spots.
- Informant reports are particularly useful with regard to personality disorders that fall into Cluster B (i.e., antisocial, borderline, histrionic, and narcissistic PDs).
- People do have some awareness of the ways that they are viewed by others, but they may not tell the clinician if asked for their own description of themselves.

The recent literature on self-other agreement highlights the potential incremental value of obtaining information from sources that complement traditional self-report measures. With regard to the use of informants, we recommend two things. First, it is helpful to obtain information from more than one other person, in large part because data from multiple sources will be more reliable. Second, the clinician or investigator should keep in mind the biases that may influence ratings provided by informants who are selected by the target person. Self-selected informants will probably be a better source of information about internalizing disorders than about externalizing disorders.

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# PROTOTYPE MATCHING AND THE FIVE-FACTOR MODEL: CAPTURING THE DSM-IV PERSONALITY DISORDERS

*Joshua D. Miller*

The use of a prototype matching technique to score personality disorders (PDs) with five-factor model (FFM) data began with the study of psychopathy (Miller, Lynam, Widiger, & Leukefeld, 2001) and quickly spread to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994; DSM-IV) PDs (Miller, Reynolds, & Pilkonis, 2004; Trull, Widiger, Lynam, & Costa, 2003).<sup>1</sup> In this chapter, I review (a) how the FFM PD prototypes have been developed, (b) alternative scoring methodologies based on the FFM PD prototypes, and (c) the results from several empirical studies testing the validity of such approaches. Finally, I compare the FFM PD prototype matching with prototype matching systems from a variety of alternative perspectives, including the DSM and the Shedler-Westen Assessment Procedure (SWAP; Westen & Shedler, 1999a).

## DEVELOPMENT OF FFM PD PROTOTYPES

In this section, I review the aims and development of FFM PD prototypes from a variety of perspectives. These prototypes were developed by translating PD symptoms in the third revised edition of the DSM (DSM-III-R; American Psychiatric Association, 1987) and the DSM-IV into the language of the FFM facets (Widiger, Trull, Clarkin, Sanderson, & Costa, 1994) as well as having academicians (Lynam & Widiger, 2001) and clinicians (Samuel & Widiger,

2004) rate the prototypical person with a given PD on the 30 facets of the FFM. Each of these strategies is described in detail in the sections that follow.

## DSM Translations

Although not typically used for formal prototype matching, the first attempt at developing prototypical FFM trait profiles of the DSM-IV PDs (American Psychiatric Association, 1994) can be traced to the work of Widiger et al. (1994) in which they translated each of DSM-III-R and DSM-IV PDs into the language of the FFM. Each of the 30 facets of the FFM were rated as being high or low for each PD on the basis of the relevant DSM symptoms and text, as well as the “clinical literature concerning each disorder” (Widiger, Trull, Clarkin, Sanderson, & Costa, 2002, p. 89). For example, using the aforementioned criteria, Widiger and colleagues rated the following FFM facets as being particularly representative of antisocial PD: angry hostility (high), excitement seeking (high), straightforwardness (low), altruism (low), compliance (low), tender-mindedness (low), dutifulness (low), self-discipline (low), and deliberation (low). These FFM-based descriptions of the various DSM PD constructs represented the first comprehensive theoretical attempt to map the PDs on to the FFM.

## FFM PD Prototypes—Expert Ratings

Miller et al. (2001; psychopathy) and Lynam and Widiger (2001; all 10 DSM-IV PDs) took this

<sup>1</sup>The research on psychopathy from an FFM prototype matching approach is covered in Chapter 7 of this volume.

approach a step further by having expert raters describe a prototypical individual with a given PD using the 30 facets of the FFM. To be considered an expert rater, an individual had to have published at least one article on the specific PD he or she was asked to rate; the number of raters for each PD ranged from 10 (paranoid) to 24 (borderline) with a mean of 17. Lynam and Widiger asked the expert raters to do the following:

Describe the prototypic case for one personality disorder on a 1 to 5 point scale, where 1 indicates that the prototypic person would be extremely low on the trait (i.e., lower than the average person), 2 indicates that the prototypic person would be low, 3 indicates that the person would be neither high nor low (i.e., does not differ from the average individual), 4 indicates that the prototypic person would be high on the trait, and 5 indicates that the prototypic person would be extremely high on that trait. (p. 403)

The ratings from each expert were then averaged to create an FFM prototype for each PD.

Overall, the experts evinced reasonably high agreement across their ratings and across the PDs. Agreement was lowest for the Cluster A PDs (i.e., paranoid, schizoid, schizotypal) and highest for obsessive-compulsive (OCPD), antisocial, and avoidant PDs. For the most part, the FFM PD prototypes were significantly correlated with the aforementioned *DSM-IV* FFM PD translations by Widiger et al. (1994; i.e., mean  $r = .71$ ). There were some differences between the facets included in Lynam and Widiger (2001) FFM PD versus those developed by Widiger et al. (1994); these differences typically involved the inclusion of additional FFM facets rated as being important in the Lynam and Widiger ratings because these raters did not restrict themselves as tightly to the *DSM* PD constructs as did Widiger and colleagues. More recently, Vachon Sellbom, Ryder, Miller, and Bagby (2009) developed an FFM PD prototype for depressive PD using the same procedure followed by Lynam and Widiger. Table 17.1 provides the FFM prototypes for each PD.

## **FFM PD Prototypes—Clinician Ratings**

A second set of FFM PD prototypes were developed by Samuel and Widiger (2004) using an identical methodology to the Lynam and Widiger (2001) prototypes with the exception that practicing clinicians were used as raters. Each PD was rated by between 22 (narcissistic PD) and 39 (dependent PD) raters with a mean of 31. As with the Lynam and Widiger ratings, there was good interrater agreement across the PDs. Of note, the Samuel and Widiger FFM PD prototypes, again created by computing the average of the rating for each PD, were extremely highly correlated with the Lynam and Widiger ratings (mean  $r = .94$ ). Although all of the subsequent empirical tests of the FFM PD prototype matching technique have used the Lynam and Widiger ratings as a starting point (e.g., Miller, Bagby, & Pilkonis, 2005; Miller, Reynolds, & Pilkonis, 2004; Miller, Lynam, Rolland, et al., 2008; Trull et al., 2003), it is relatively safe to assume that similar results would be found using the clinician-rated FFM PD prototypes instead. This second set of FFM PD prototypes can also be found in Table 17.1.

## **SCORING TECHNIQUES USED FOR THE FFM PROTOTYPES**

### **Prototype Matching via Similarity Analyses**

Following the development of the FFM PD prototypes, several authors tested whether these FFM PD prototypes were actually assessing the *DSM-IV* PD in question. To do so, an individual's facet-level scores on the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992) were compared with one or more of the FFM PD prototypes with a double entry Q intraclass correlation ( $ICC_{DE}$ ). The  $ICC_{DE}$  assesses the similarity of the two set of ratings (e.g., individual A's scores on the 30 NEO PI-R facets vs. the FFM PD rating for all 30 FFM facets), which takes into account the absolute similarity of the profiles with regard to shape and elevation (vs. a Pearson correlation, which would consider the similarity in shape only). Although SPSS syntax has been created to calculate the FFM PD similarity scores (which is available from the author of this chapter),

TABLE 17.1  
Five-Factor Model Personality Disorder Prototypes From Lyman and Widiger (2001), Samuel and Widiger (2004), and Vachon et al. (2009)

<b>Factor</b>	<b>Paranoid</b>				<b>Schizoid</b>				<b>Schizotyp</b>				<b>Antisocial</b>				<b>Borderline</b>				<b>Histrionic</b>				<b>Narcissistic</b>				<b>Avoidant</b>				<b>Dependent</b>				<b>OC</b>				<b>Dep</b>			
	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>								
Neuroticism																																												
Anxiety	3.60	<b>4.25</b>	2.23	3.06	<b>4.25</b>	3.85	1.82	2.00	<b>4.04</b>	<b>4.25</b>	3.42	<b>4.07</b>	2.33	2.71	<b>4.76</b>	<b>4.34</b>	4.32	<b>4.46</b>	<b>4.00</b>	<b>4.49</b>	<b>4.00</b>																							
Angry hostility	<b>4.00</b>	<b>4.39</b>	2.54	2.84	3.08	3.42	<b>4.14</b>	3.93	<b>4.75</b>	<b>4.56</b>	3.42	3.55	<b>4.08</b>	3.90	2.81	2.90	2.42	2.95	3.00	3.24	3.54																							
Depression	3.30	3.64	3.15	3.42	3.58	3.62	2.45	2.70	<b>4.17</b>	<b>4.03</b>	2.68	3.27	2.42	2.75	3.95	3.72	3.63	<b>4.03</b>	3.18	3.76	<b>4.92</b>																							
Self-consciousness	3.30	2.94	3.31	3.37	<b>4.00</b>	3.69	<u>1.36</u>	<u>1.63</u>	3.17	2.94	<u>2.00</u>	2.45	<u>1.50</u>	<u>1.67</u>	<b>4.67</b>	<b>4.45</b>	<b>4.16</b>	<b>4.42</b>	3.29	3.86	3.92																							
Impulsiveness	2.90	3.17	2.08	2.03	3.17	3.16	<b>4.73</b>	<b>4.22</b>	<b>4.79</b>	<b>4.38</b>	<b>4.32</b>	<b>4.16</b>	3.17	3.57	<u>1.62</u>	2.14	2.32	2.49	<u>1.53</u>	2.18	2.12																							
Vulnerability	3.60	3.36	3.31	2.97	3.75	3.96	2.27	2.07	<b>4.17</b>	<b>4.03</b>	3.95	3.90	2.92	2.76	<b>4.52</b>	3.90	<b>4.32</b>	<b>4.64</b>	3.12	3.49	<b>4.28</b>																							
Extraversion																																												
Warmth	1.30	<b>1.61</b>	1.08	1.19	<b>1.58</b>	1.58	2.14	2.00	3.21	2.69	3.89	3.50	<b>1.42</b>	2.05	2.33	2.45	3.84	3.49	2.06	2.24	2.52																							
Gregariousness	1.70	<b>1.89</b>	1.00	1.06	<b>1.58</b>	1.62	3.32	3.48	2.92	3.28	<b>4.74</b>	<b>4.32</b>	3.83	3.95	1.29	1.45	3.26	2.54	2.18	2.40	2.16																							
Assertiveness	2.90	3.25	1.54	1.90	2.17	2.04	<b>4.23</b>	<b>4.07</b>	3.17	3.69	3.84	3.39	<b>4.67</b>	<b>4.00</b>	1.19	1.52	1.32	1.46	3.00	3.03	2.08																							
Activity	2.90	3.19	1.92	2.00	2.25	2.23	<b>4.00</b>	<b>4.00</b>	3.29	3.56	<b>4.16</b>	3.94	3.67	<b>4.14</b>	2.05	2.07	2.26	<b>2.00</b>	3.35	3.31	<b>1.80</b>																							
Excitement seeking	2.20	2.42	1.38	1.71	2.17	2.13	<b>4.64</b>	<b>4.30</b>	3.88	<b>4.06</b>	<b>4.47</b>	<b>4.13</b>	<b>4.17</b>	<b>4.10</b>	<b>1.24</b>	<b>1.55</b>	<b>2.26</b>	<b>1.69</b>	<b>1.59</b>	<b>1.88</b>	<b>1.88</b>																							
Positive emotions	2.20	2.08	1.23	1.55	1.92	1.65	2.86	3.52	2.63	3.16	<b>4.16</b>	3.80	3.33	3.52	1.67	1.79	2.53	2.03	2.41	2.29	1.56																							
Openness																																												
Fantasy	2.90	3.14	3.23	2.81	3.83	<b>4.00</b>	2.82	3.48	3.29	<b>4.00</b>	<b>4.37</b>	<b>4.13</b>	3.75	3.82	3.14	3.07	3.05	2.95	2.06	2.52	2.79																							
Aesthetics	2.20	2.54	2.77	2.42	3.17	3.31	2.36	2.78	2.96	3.19	3.53	3.60	3.25	3.32	3.05	2.69	2.89	2.58	2.56	2.64																								
Feelings	2.40	2.46	1.31	1.52	2.17	2.31	2.27	2.41	<b>4.00</b>	3.84	<b>4.16</b>	<b>4.13</b>	1.92	2.68	3.43	3.07	3.74	3.45	1.82	2.22	2.96																							
Actions	<u>2.00</u>	2.37	<u>1.62</u>	2.13	2.42	2.81	<b>4.23</b>	<b>4.07</b>	<b>4.00</b>	3.78	<b>4.21</b>	3.70	<b>4.08</b>	3.36	<u>2.00</u>	<u>1.83</u>	2.21	<u>1.79</u>	<u>1.53</u>	<u>1.76</u>	<u>2.54</u>																							
Ideas	3.50	3.29	3.38	3.45	<b>4.33</b>	<b>4.38</b>	2.91	3.26	3.21	3.69	3.11	3.30	2.92	3.19	2.69	2.34	2.84	2.26	<u>1.76</u>	<u>2.48</u>	<u>2.76</u>																							
Values	1.90	<u>1.69</u>	2.31	2.42	2.42	2.81	3.00	3.48	2.88	3.00	3.63	3.50	2.67	2.68	2.57	2.34	2.89	2.05	<u>1.76</u>	<u>1.82</u>	<u>2.88</u>																							

(continued)

TABLE 17.1 (*continued*)

<b>Factor</b>	<b>Paranoid</b>		<b>Schizoid</b>		<b>Schizotyp</b>		<b>Antisocial</b>		<b>Borderline</b>		<b>Histrionic</b>		<b>Narcissistic</b>		<b>Avoidant</b>		<b>Dependent</b>		<b>OC</b>		<b>Depr</b>	
	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>LW</b>	<b>SW</b>	<b>V</b>	
Agreeableness																						
Trust	1.00	<u>1.19</u>	2.38	<u>1.68</u>	2.08	2.04	1.45	<u>1.70</u>	2.21	<u>1.69</u>	<b>4.00</b>	3.39	1.42	1.86	2.24	2.39	<b>4.26</b>	3.95	2.65	2.20	2.24	
Straightforwardness	2.00	<u>1.89</u>	2.77	2.42	3.00	2.46	<u>1.41</u>	2.08	<u>1.94</u>	2.32	2.29	1.83	<u>1.91</u>	2.90	2.82	3.11	2.90	3.47	3.06	3.04		
Altruism	1.90	<u>1.86</u>	2.38	2.29	2.75	2.50	<u>1.41</u>	2.46	<u>1.41</u>	2.31	2.21	2.52	1.00	<u>1.73</u>	2.90	2.93	3.95	3.85	2.76	2.63	3.00	
Compliance	1.40	<u>1.92</u>	3.00	2.77	2.50	2.65	<u>1.77</u>	<u>1.81</u>	<u>2.00</u>	<u>1.81</u>	2.53	2.90	1.58	<u>1.77</u>	3.52	3.21	<b>4.68</b>	<b>4.50</b>	3.18	2.82	3.00	
Modesty	2.40	2.53	3.31	3.48	3.08	3.27	1.68	<u>1.70</u>	2.83	2.56	2.32	2.20	1.08	<u>1.23</u>	<b>4.33</b>	3.68	<b>4.26</b>	<b>4.23</b>	3.06	3.17	<b>4.00</b>	
Tender-mindedness	1.80	2.14	2.38	2.58	3.00	2.88	1.27	<u>1.52</u>	2.79	2.47	3.05	3.00	<u>1.50</u>	<u>1.77</u>	3.43	3.43	3.89	3.79	2.82	2.76	3.20	
Conscientiousness																						
Competence	3.30	3.53	2.85	3.00	2.33	2.85	2.09	2.52	2.71	2.78	2.37	2.68	3.25	3.00	3.05	3.45	3.28	<b>4.53</b>	<b>4.41</b>	3.28		
Order	3.70	3.56	3.08	3.19	<u>2.00</u>	2.58	2.41	2.74	2.38	2.31	2.10	2.30	2.92	3.00	3.43	3.48	2.89	3.21	<b>4.76</b>	<b>4.59</b>	3.44	
Dutifulness	3.40	3.39	3.00	3.16	2.50	2.77	<u>1.41</u>	<u>1.52</u>	2.29	2.22	2.10	2.32	2.42	2.50	3.29	3.45	3.79	3.79	<b>4.76</b>	<b>4.20</b>	3.64	
Achievement striving	3.00	3.08	2.38	2.68	2.25	2.35	2.09	2.33	2.50	2.72	2.68	2.60	3.92	3.18	2.67	2.90	2.47	2.97	<b>4.29</b>	<b>4.03</b>	2.96	
Self-discipline	3.50	3.19	3.15	3.10	2.67	2.77	<u>1.81</u>	<u>1.85</u>	2.33	2.34	<u>1.79</u>	2.13	2.08	2.23	3.05	3.07	2.84	3.31	<b>4.53</b>	<b>4.06</b>	3.28	
Deliberation	3.80	3.56	3.23	3.71	2.67	3.73	<u>1.64</u>	<u>1.96</u>	<u>1.88</u>	2.09	<u>1.74</u>	<u>1.94</u>	2.25	2.45	3.43	3.62	3.00	3.36	<b>4.59</b>	<b>4.37</b>	3.76	

Note. Items rated 2 or lower are underlined; items rated 4 or higher are bolded. Compilation of data from Lynn and Widiger (2001), Samuel and Widiger (2004), and Vachon et al. (2009). Table reprinted from "Five-Factor Model Personality Disorder Prototypes: A Review of Their Development, Validity, and Comparison to Alternative Approaches," by J. D. Miller, *Journal of Personality*, in press. Copyright 2012 with permission from Blackwell-Wiley. Depr = depressive; LW = Lynn and Widiger (2001) five-factor model personality disorder academician-rated prototypes; Schizotyp = schizotypal; SW = Samuel and Widiger (2004) five-factor model personality disorder clinician-rated prototypes; V = Vachon et al. (2008) expert rated five-factor model Depressive PD prototype.

it might be helpful to explain how it can be done “by hand.” To examine the similarity of Person A’s NEO PI-R profile with the FFM borderline PD prototype using the  $ICC_{DE}$ , the following steps would be taken (see Table 17.2). First, in SPSS, Excel, or a similar program, one would list Person

A’s scores on the 30 FFM facets in column 1. Second, in column 2 the prototypical ratings for the 30 FFM facets in regard to borderline PD would be listed. Third, Person A’s 30 NEO PI-R facet scores would be copied and pasted in rows 31 through 60 of column 2. Fourth, the FFM borderline PD prototype

**TABLE 17.2**  
Example of Double Entry Q Correlation for FFM PD Prototype Matching

<b>Facet</b>	<b>Person A's FFM</b>		<b>FFM BPD</b>	
	<b>Step 1</b>	<b>Step 2</b>	<b>Person A's FFM</b>	<b>FFM BPD</b>
Anxiety	<b>4.12</b>	<b>4.04</b>	4.12	4.04
Angry hostility	<b>4.20</b>	<b>4.75</b>	4.20	4.75
Depression	<b>3.95</b>	<b>4.17</b>	3.95	4.17
Self-consciousness	<b>3.50</b>	<b>3.17</b>	3.50	3.17
Impulsiveness	<b>4.22</b>	<b>4.79</b>	4.22	4.79
Vulnerability	<b>3.40</b>	<b>4.17</b>	3.40	4.17
Warmth	<b>2.55</b>	<b>3.21</b>	2.55	3.21
Gregariousness	<b>3.32</b>	<b>2.92</b>	3.32	2.92
Assertiveness	<b>3.00</b>	<b>3.17</b>	3.00	3.17
Activity	<b>2.50</b>	<b>3.29</b>	2.50	3.29
Excitement seeking	<b>2.12</b>	<b>3.88</b>	2.12	3.88
Positive emotions	<b>2.35</b>	<b>2.63</b>	2.35	2.63
Fantasy	<b>2.50</b>	<b>3.29</b>	2.50	3.29
Aesthetics	<b>2.50</b>	<b>2.96</b>	2.50	2.96
Feelings	<b>3.69</b>	<b>4.00</b>	3.69	4.00
Actions	<b>3.25</b>	<b>4.00</b>	3.25	4.00
Ideas	<b>3.78</b>	<b>3.21</b>	3.78	3.21
Values	<b>2.40</b>	<b>2.88</b>	2.40	2.88
Trust	<b>1.50</b>	<b>2.21</b>	1.50	2.21
Straightforwardness	<b>3.00</b>	<b>2.08</b>	3.00	2.08
Altruism	<b>3.55</b>	<b>2.46</b>	3.55	2.46
Compliance	<b>1.75</b>	<b>2.00</b>	1.75	2.00
Modesty	<b>3.00</b>	<b>2.83</b>	3.00	2.83
Tender-mindedness	<b>3.90</b>	<b>2.79</b>	3.90	2.79
Competence	<b>1.95</b>	<b>2.71</b>	1.95	2.71
Order	<b>3.05</b>	<b>2.38</b>	3.05	2.38
Dutifulness	<b>2.85</b>	<b>2.29</b>	2.85	2.29
Achievement striving	<b>2.55</b>	<b>2.50</b>	2.55	2.50
Self-discipline	<b>2.00</b>	<b>2.33</b>	2.00	2.33
Deliberation	<b>2.20</b>	<b>1.88</b>	2.20	1.88
Anxiety			<b>4.04</b>	4.12
Angry Hostility			<b>4.75</b>	4.20
Depression			<b>4.17</b>	3.95
Self-consciousness			<b>3.17</b>	3.50
Impulsiveness			<b>4.79</b>	4.22
Vulnerability			<b>4.17</b>	3.40
Warmth			<b>3.21</b>	2.55
Gregariousness			<b>2.92</b>	3.32
Assertiveness			<b>3.17</b>	3.00

(continued)

TABLE 17.2 (*continued*)

<b>Facet</b>	<b>Person A's FFM</b>	<b>FFM BPD</b>	<b>Person A's FFM</b>	<b>FFM BPD</b>
	<b>Step 1</b>		<b>Step 2</b>	
Activity		<b>3.29</b>		<u>2.50</u>
Excitement seeking		<b>3.88</b>		<u>2.12</u>
Positive emotions		<b>2.63</b>		<u>2.35</u>
Fantasy		<b>3.29</b>		<u>2.50</u>
Aesthetics		<b>2.96</b>		<u>2.50</u>
Feelings		<b>4.00</b>		<u>3.69</u>
Actions		<b>4.00</b>		<u>3.25</u>
Ideas		<b>3.21</b>		<u>3.78</u>
Values		<b>2.88</b>		<u>2.40</u>
Trust		<b>2.21</b>		<u>1.50</u>
Straightforwardness		<b>2.08</b>		<u>3.00</u>
Altruism		<b>2.46</b>		<u>3.55</u>
Compliance		<b>2.00</b>		<u>1.75</u>
Modesty		<b>2.83</b>		<u>3.00</u>
Tender-mindedness		<b>2.79</b>		<u>3.90</u>
Competence		<b>2.71</b>		<u>1.95</u>
Order		<b>2.38</b>		<u>3.05</u>
Dutifulness		<b>2.29</b>		<u>2.85</u>
Achievement striving		<b>2.50</b>		<u>2.55</u>
Self-discipline		<b>2.33</b>		<u>2.00</u>
Deliberation		<b>1.88</b>		<u>2.20</u>
<i>ICC<sub>DE</sub></i>		.63		

Note. To calculate the double entry Q intraclass correlation ( $ICC_{DE}$ ), the first two columns of data need to first be copied and pasted into the alternative column (column 1 [rows 1 through 30] are copied and pasted into column 2 [rows 31 through 60]; column 2 [rows 1 through 30] are copied and pasted into column 1 [rows 31 through 60]). Once completed, the columns should look like columns 3 and 4; the bolded data in column 1 were included in column 4, and the underlined data from column 2 were included in column 3. To calculate the  $ICC_{DE}$ , one then correlates columns 3 and 4. BPD = borderline personality disorder prototype; FFM PD = five-factor model personality disorder.

ratings would be copied and pasted into rows 31 through 60 in column 1. Fifth, and finally, a bivariate correlation would be run between these two columns, resulting in the  $ICC_{DE}$  (with an  $N$  of 60) representing the degree of match between the given PD prototype and Person A's NEO PI-R facet profile; these resultant correlations have been termed *similarity scores*. The FFM PD prototype and the individual's NEO PI-R scores must be on the same metric (e.g., 1–5) for the  $ICC_{DE}$  to work. In addition, to avoid the use of redundant data, only the 30 FFM facets are usually included in the  $ICC_{DE}$  (i.e., the domains are not included).

A review of various profile matching techniques suggests that the  $ICC_{DE}$  works particularly well for

the purpose of assessing profile agreement (McCrae, 2008). Given that these are more conservative or strict assessments of agreement (vs. a Pearson correlation), strong correlations are not typically found for the FFM PDs. The FFM PD similarity scores can be generated for any individual with FFM data, and these scores can then serve as an indicator of an individual's standing on a given PD.

### Prototype Matching via Additive Count Technique

An alternative scoring strategy was created that also uses the FFM PD prototypes in the form of simple additive counts (Miller, Bagby, Pilkonis, Reynolds,

TABLE 17.3

## Five-Factor Model Personality Disorder (PD) Counts

Cluster	Counts
<b>DSM-IV personality disorders based on Lynam and Widiger (2001)</b>	
Cluster A	
Paranoid PD	$n2 + e1r + e2r + o4r + o6r + a1r + a2r + a3r + a4r + a6r$
Schizoid PD	$e1r + e2r + e3r + e4r + e5r + e6r + o3r + o4r$
Schizotypal PD	$n1 + n4 + e1r + e2r + e6r + o5 + c2r$
Cluster B	
Antisocial PD	$n1r + n2 + n4r + n5 + e3 + e4 + e5 + o4 + a1r + a2r + a3r + a4r + a5r + a6r + c3r + c5r + c6r$
Borderline PD	$n1 + n2 + n3 + n5 + n6 + o3 + o4 + a4r + c6r$
Histrionic PD	$n4r + n5 + e2 + e4 + e5 + e6 + o1 + o3 + o4 + a1 + c5r + c6r$
Narcissistic PD	$n2 + n4r + e1r + e3 + e5 + o3r + o4 + a1r + a2r + a3r + a4r + a5r + a6r$
Cluster C	
Avoidant PD	$n1 + n4 + n5r + n6 + e2r + e3r + e5r + e6r + o4r + a5$
Dependent PD	$n1 + n4 + n6 + e3r + a1 + a4 + a5$
OCPD	$n1 + n5r + e5r + o3r + o4r + o5r + o6r + c1 + c2 + c3 + c4 + c5 + c6$
<b>Psychopathy based on Miller, Lynam, Widiger, and Leukefeld (2001)</b>	
Psychopathy	$n1r + n3r + n4r + n5 + n6r + e1r + e3 + e5 + o3r + o4 + a1r + a2r + a3r + a4r + a5r + a6r + c1 + c3r + c5r + c6r$
<b>Dependent PD, empirical revision, based on Miller and Lynam (2008)</b>	
Dependent PD	$n1 + n3 + n4 + n6 + c1r + c5r$
<b>Depressive PD based on Vachon et al. (2008)</b>	
Depressive PD	$n1 + n3 + n6 + e4r + e5r + e6r + a5$

Note.  $r$  = indicates that this facet should be reversed scored before summing it into the count. For example, a Trust score (a1) of “31” for Antisocial APD would be scored a “1” for the count. The FFM PD counts are usually scored using the Revised NEO Personality Inventory data in its original form (i.e., ranging from 0 to 32 for each facet). Adapted from “Five-Factor Model Personality Disorder Prototypes: A Review of Their Development, Validity, and Comparison to Alternative Approaches,” by J. D. Miller. *Journal of Personality*, in press. Copyright 2012 with permission from Blackwell-Wiley. DSM-IV = Diagnostic and Statistical Manual of Mental Disorders (4th ed.).

& Lynam, 2005). The FFM PD counts are scored by summing scores on the FFM facets considered particularly relevant (low and high) to each PD (see Table 17.3). Recall that the Lynam and Widiger (2001) FFM PD prototypes were scored on a 1 to 5 scale. For the FFM PD counts, facets that were rated as a 4 or higher (prototypic person with that PD would be high on this trait) or 2 or lower (prototypic person with that PD would be low on this trait) were included (with facets rated as being prototypically low being reverse scored before being summed). For example, to score the FFM avoidant

PD count, one would sum the scores from the following facets (facets with a “\_r” require reverse scoring before summation): anxiety, self-consciousness, impulsiveness\_r, vulnerability, gregariousness\_r, assertiveness\_r, excitement seeking\_r, positive emotions\_r, openness to actions\_r, modesty.

Overall, the two FFM PD scoring techniques described here—FFM PD similarity scores and FFM PD counts—work very similarly. Miller, Bagby, Pilkonis, et al. (2005) reported that the median correlations between the 10 DSM-IV FFM PD similarity scores and the 10 DSM-IV FFM PD

count scores were .91 in two independent clinical samples. Given that both techniques work the same way, it may be preferable to use the FFM PD counts simply because of their ease of calculation—that is, no statistical software is needed to compute the score. The complexity of the scoring required for the FFM PD similarity scores makes use of this technique in clinical settings less likely. Results from several studies suggest that self-reports (e.g., Miller, Reynolds, & Pilkonis, 2004; Samuel, Edmundson, & Widiger, 2011), informant reports (Miller, Pilkonis, & Morse, 2004; Samuel, Edmundson, & Widiger, 2011), interviews (i.e., Miller, Bagby, & Pilkonis, 2005; Samuel, Edmundson, & Widiger, 2011), and clinician ratings (Miller, Maples, et al., 2010; Samuel, Edmundson, & Widiger, 2011) can be used to generate FFM data that can then be used to score an individual on the *DSM-IV* PDs via the FFM PD similarity scores or count techniques.

The FFM PD prototype matching and FFM PD counts share the problem of interpretation. That is, what scores indicate the presence of PD pathology? For example, how does one interpret an FFM avoidant PD count of 182? To address this problem, Miller, Lynam, Rolland, et al. (2008) identified normative databases for the United States, France, and Belgium that can be used to identify the statistical deviance of individuals' FFM PD count scores. These databases allow an individual to calculate a *T* score for each of the FFM PDs. A statistically deviant score could then be used as an indicator that further assessment is needed (i.e., an assessment of whether the individual is manifesting distress or functional impairment because of this trait profile).

### **VALIDITY OF THE FFM PD PROTOTYPES AND COUNTS**

In the following section, I review the existing data on the convergent, discriminant, and construct validity of the FFM PD scores. As a part of this review, I explore possible explanations for why certain FFM PD prototypes and counts have worked more poorly than others (e.g., dependent, OCPD). I also discuss the clinical utility of the FFM PD prototypes and counts by reviewing the relations between these scores and measures of dysfunction and other clinically relevant outcomes.

### **Convergent Validity Correlations With *DSM-IV* PDs**

Several studies have examined the correlations between the FFM PD similarity scores or counts and *DSM-IV* PD symptom counts (Miller, in press). Table 17.4 provides a meta-analytic review of the convergent validity correlations from these studies. The number of studies included ranged from three (depressive; meta-analytically derived FFM-dependent PD) to 16 (borderline) with total *N*s ranging from 412 (depressive) to 3,724 (borderline). The studies used in this meta-analysis include those in which the FFM was scored via self-reported data from the NEO PI-R, interview data from the Structured Interview for the Five-Factor Model (SIFFM; Trull & Widiger, 1997), clinician ratings from the Five-Factor Model Scoring Sheet (FFMSS; Few et al., 2010), and PD symptoms

**TABLE 17.4**

#### **Meta-Analytic Review of Convergent Validity Correlations**

<b>FFM PDs</b>	<b>Weighted ES</b>	<b>95% CI</b>	<b>N</b>
Paranoid	.41	[.37, .44]	2,558
Schizoid	.43	[.40, .46]	2,558
Schizotypal	.32	[.28, .35]	2,558
Antisocial	.40	[.37, .43]	3,087
Borderline	.54	[.51, .56]	3,724
Histrionic	.33	[.30, .37]	2,606
Narcissistic	.44	[.41, .47]	3,088
Avoidant	.54	[.52, .57]	2,606
Dependent	.33	[.30, .36]	2,877
Dependent MA	.59	[.53, .64]	501
OCPD	.16	[.12, .20]	2,606
Depressive	.61	[.54, .66]	412

*Note.* The weighted ES values were derived from information included within Lynam and Widiger (2001) and, for the Dependent MA, from Miller and Lynam (2008). The table is adapted from "Five-Factor Model Personality Disorder Prototypes: A Review of Their Development, Validity, and Comparison to Alternative Approaches," by J. D. Miller. *Journal of Personality*, in press. Copyright 2012 with permission from Blackwell-Wiley. Dependent MA = meta-analytically derived FFM dependent personality disorder prototype; ES = effect size; FFM = five-factor model; OCPD = obsessive-compulsive personality disorder; PD = personality disorder.

scored via interview ratings, expert consensus ratings, and self-report measures. The weighted mean convergent correlations ranged from .16 (OCPD) to .61 (depressive PD) with a median of .42. These convergent validity correlations are comparable to those found using explicit measures of the *DSM* PDs (see Widiger & Boyd, 2009, for a review). The largest convergent validity correlations were for depressive, the revised dependent prototype (Miller & Lynam, 2008), avoidant, and borderline PDs. Conversely, the smallest convergent validity effect sizes were found for OCPD, dependent (based on the 2001 expert ratings), histrionic, and schizotypal PD. In general, the convergent validity correlations are impressive when considering (a) the mean convergent validity correlations manifested by explicit measures of *DSM-IV* PDs (see Widiger & Boyd, 2009, for a review), (b) that these data used a number of methodologies to assess both the FFM and *DSM-IV* PD scores, and (c) that the vast majority of effect sizes came from studies using an instrument (the NEO PI-R) that was not written to assess pathological personality traits. It is highly likely that measures of these PDs that are based on the FFM but designed to capture the maladaptive poles of the FFM traits will prove even more successful if used in such a manner. It is noteworthy that several of these FFM-based instruments have been published (e.g., schizotypal: Edmundson, Lynam, Miller, Gore, & Widiger, 2011; psychopathy: Lynam et al., 2011), with several more on the horizon. For instance, Edmundson and colleagues developed an FFM-based measure of schizotypal PD that includes nine subscales derived from FFM traits (e.g., NEO PI-R anxiousness = Five-Factor Schizotypal Inventory social anxiousness); a schizotypal PD score in which the scores on these nine traits were simply summed resulted in convergent correlations ranging from .43 to .77 (median  $r = .62$ ) with other self-report measures of this PD.

It is also important to address why certain *DSM-IV* PDs manifested weaker convergent correlations with explicit *DSM-IV*-based measures. One possible explanation is that the main measure of the FFM, the NEO PI-R, does not contain an adequate number of items that reference maladaptively high levels of openness, agreeableness, and conscientiousness—

traits that are thought to be central to capturing certain *DSM-IV* PDs (including those manifesting lower convergent validity with *DSM* PDs). Haigler and Widiger (2001) manipulated the NEO PI-R items to create maladaptively high variants of these three domains. When these three FFM domains were scored using these experimentally manipulated items, the resultant correlations between the FFM domains and PDs hypothesized to be related to these domains were substantially higher than the correlations found when using the regularly scored FFM domains. Similarly, Lowe, Edmundson, and Widiger (2009) found a pattern of significant correlations between dependent PD and the same experimentally altered agreeableness items, as hypothesized by the expert raters (i.e., Lynam & Widiger, 2001; Samuel & Widiger, 2004), a pattern that is not found when using the NEO PI-R or SIFFM (Miller & Lynam, 2008). The use of newly developed FFM-based measures of these pathological traits, described earlier, will likely address this problem.

The case of dependent PD and its lack of convergence with *DSM-IV* dependent PD symptom counts is particularly complex. The FFM dependent PD prototype emphasizes a mixture of high neuroticism and high agreeableness, which is inconsistent with meta-analytic reviews of the relations between dependent PD and measures of the FFM (i.e., Miller & Lynam, 2008; Samuel & Widiger, 2008). More specifically, these reviews do not support the existence of a significant positive relation between dependent PD and agreeableness. Both Haigler and Widiger (2001) and Lowe et al. (2009) found this hypothesized relation when using altered NEO PI-R items that emphasized maladaptively high levels of trait agreeableness. Interestingly, this correlation has not been found when using the SIFFM (Bagby, Costa, Widiger, Ryder, & Marshall, 2005) or the FFMSS clinician-rating sheet (Few et al., 2010), both of which purport to assess maladaptivity at both the high and low ends of all of the FFM traits. As a result of their meta-analysis, Miller and Lynam (2008) suggested that the expert FFM dependent PD prototype should be altered to remove the emphasis on high agreeableness and replaced with an emphasis on low conscientiousness. The revised FFM dependent PD prototype (created on the basis of the

Miller & Lynam, 2008, meta-analysis) has been compared to the Lynam and Widiger prototype in three independent samples. In each of these samples, the correlations between the FFM dependent PD score and *DSM-IV* dependent score were larger when using the revised Miller and Lynam prototype that de-emphasized agreeableness (Miller & Lynam, 2008: original FFM dependent:  $r = .40$ ; revised FFM dependent:  $r = .60$ ; Miller, Lynam, Pham-Scottez, et al., 2008—sample 1: original FFM dependent:  $r = .53$ ; revised FFM dependent:  $r = .57$ ; Miller, Lynam, Rolland, et al., 2008—sample 2: original FFM dependent:  $r = .42$ ; revised FFM dependent:  $r = .58$ ). Ultimately, it may be that a combination of the aforementioned issues is at play: Dependent PD is related to both high agreeableness (if measured in a manner that emphasizes maladaptive variants of high agreeableness; e.g., see Lowe et al., 2009) and low conscientiousness.

Another issue that may attenuate the relations between certain *DSM-IV* PDs and the FFM is that certain *DSM-IV* PDs do not generate reliable FFM trait profiles. Results from Samuel and Widiger's (2008) meta-analytic review of the relations between the *DSM-IV* PDs and the 30 facets of the FFM, suggests that this is the case for OCPD and histrionic PD, which are two of the PDs for which the FFM PD prototypes demonstrate the lowest convergent correlations. These findings suggest that certain *DSM-IV* PDs may be (a) assessed in an unreliable manner that results in patterns of trait correlations that differ substantially from sample to sample and (b) problematically heterogeneous (i.e., Chmielewski & Watson, 2008); both of these issues would set a limit on the strength of the validity coefficients found for these FFM PD prototype and count scores. It is interesting to note that explicit measures of OCPD demonstrate poor convergence (median correlation among self-report measures =  $-.07$ ; median correlation between self-report and semistructured interview =  $.26$ ; Widiger & Boyd, 2009), suggesting that the problem is not limited to the FFM description of OCPD.

### **Discriminant Validity**

In addition to examining the convergent validity correlations, several studies have examined the

discriminant validity of the FFM PD prototypes. In 37 of 62 cases (from Miller, Bagby, & Pilkonis, 2005; Miller, Lynam, Rolland, et al., 2008; Miller, Reynolds, & Pilkonis, 2004), the FFM PD prototype scores manifested their strongest correlations with the convergent *DSM-IV* PD (e.g., FFM avoidant and *DSM-IV* avoidant). Of the 25 cases in which this was not the case, 10 were cases in which the FFM PD score manifested the strongest correlation with a *DSM-IV* PD from the same cluster (e.g., FFM avoidant and *DSM-IV* dependent PD). The remaining cases were pairings (e.g., paranoid and borderline) that are found fairly commonly when examining patterns of comorbidity among *DSM-IV* PDs (e.g., Zimmerman, Rothschild, & Chelminski, 2005).

The discriminant validity of the FFM PDs is constrained by the limited discriminant validity of the *DSM-IV* PDs from which they are modeled. Lynam and Widiger (2001) reported that their expert generated FFM PD prototypes manifested correlations among themselves that ranged from  $-.81$  (narcissistic and dependent) to  $.80$  (antisocial and narcissistic). These authors demonstrated that the pattern of interrelations among these FFM PD prototypes was congruent with the pattern of comorbidity found among *DSM* PDs, suggesting that certain PDs co-occur (e.g., antisocial and narcissistic) in expected ways because of the presence of overlapping personality traits (in the case of narcissistic PD: low agreeableness, high agentic aspects of extraversion, high angry hostility).

### **Similarity of Nomological Networks**

A number of studies have tested whether the FFM PD scores recreate the nomological networks associated with specific *DSM-IV* PDs. To do this, one can compare the similarity of the sets of correlations generated by two scores (e.g., an FFM PD score vs. an explicit *DSM-IV* PD measure). Two studies have compared the trait profiles generated by the FFM PD similarity scores with interview or expert rated *DSM-IV* PD scores (Miller, Maples, et al., 2010; Miller, Reynolds, & Pilkonis, 2004). In both of these studies the two sets of PD scores were compared with regard to their correlations with the 15 traits from Clark's (1993) Schedule for Nonadaptive and Adaptive Personality (SNAP) measure. Across these

two studies, the average  $ICC_{DE}$  for the SNAP trait profiles was .72.<sup>2</sup>

The similarity of the nomological networks has also been examined using alternative criterion variables. For instance, Trull et al. (2003) examined the nomological network of the FFM borderline PD similarity score by testing its relations with relevant constructs such as a history of childhood sexual and physical abuse, evidence of parental psychopathology (e.g., substance use disorders, mood disorders), and impairment (global, interpersonal). The FFM borderline PD similarity score, as scored by the NEO PI-R, demonstrated significant correlations with most of these constructs (e.g., childhood abuse, dysfunction). In fact, a quantitative comparison of the set of correlates generated by the FFM borderline PD similarity score with those generated by the borderline PD scores from a semistructured interview (Structured Interview for DSM-IV Personality; SIDP-IV; Pfohl, Blum, & Zimmerman, 1997) and a popular self-report inventory (Personality Assessment Inventory; PAI; Morey, 1991) revealed nearly perfect agreement. The FFM borderline PD correlates were almost perfectly correlated with the correlates generated by the SIDP-IV ( $ICC_{DE} = .96$ ) and the PAI borderline scales ( $ICC_{DE} = .97$ ). In sum, the FFM borderline PD similarity scores manifested a pattern of correlations with important constructs that was basically identical to the pattern of correlations manifested by measures that were explicitly designed to capture the *DSM-IV* borderline PD symptoms. Similar results have been found when comparing the pattern of correlations for FFM antisocial PD similarity scores with a semistructured interview of anti-social PD (Gudonis, Miller, Miller, & Lynam, 2008).

The similarity between the FFM PD prototype scores and more explicit markers of these PDs is remarkable given that the FFM PD prototypes are scored on the basis of instruments that do not explicitly reference any of the diagnostic symptoms of the PDs. For instance, there is no reference to nonsuicidal self-harm in the FFM borderline PD score nor

is there reference to seriously antisocial behavior in the FFM antisocial PD score. Nonetheless, these FFM PD scores correlate substantially with these related behaviors (e.g., FFM borderline PD and self-harm:  $r = .63$ ; Trull et al., 2001; FFM antisocial PD and delinquency:  $r = .48$ ; Gudonis et al., 2008).

### Clinical Utility

In this chapter, *clinical utility* refers to whether a measure or construct provides important, clinically relevant information, not whether clinicians rate a certain measure or model more or less useful (e.g., Lowe & Widiger, 2009; Spitzer, First, Shedler, Westen, & Skodol, 2008). For example, Miller, Maples, et al. (2010) examined the relations between the FFM PD prototypes, as measured by a brief clinician rating form (i.e., FFMSS), and several indices of impairment. In general the FFM PD counts were significantly related to overall impairment, occupational impairment, social impairment, and distress caused to others (i.e., 25 of 40 significant  $rs$ ; mean  $r = .27$ ). Even more impressive, the FFM PD counts consistently accounted for greater unique variance in the impairment scores than did expert ratings of the actual *DSM-IV* PD symptoms.

The FFM PD scores have also demonstrated clinical utility in the form of predictive validity. Stepp and Trull (2007) examined the predictive validity of the FFM antisocial and borderline PDs in a large community sample. Across a period of time varying from approximately 1 to 6 years, the two FFM PD scores were significant predictors of risky health practices, substance use, and gambling.

Finally, Warner et al. (2004) used the FFM PD prototypes in a different manner to examine the longitudinal relations between the FFM traits thought to make up the PDs (on the basis of Lynam and Widiger's 2001 FFM PD prototypes) and four *DSM-IV* PDs (i.e., schizotypal, borderline, anti-social, OCPD) using data from the Collaborative Longitudinal Study of Personality Disorders.<sup>3</sup> For

<sup>2</sup>This technique has also been used in a specific examination of the Vachon et al. (2009) FFM depressive PD. Miller, Tant, and Bagby (2010) compared the similarity of the trait profiles of the FFM depressive PD with the 18 traits from the Dimensional Assessment of Personality Pathology (Livesley, 1990) to that generated by two self-report measures of depressive PD. The FFM depressive PD score manifested highly similar trait profiles with both measures ( $ICC_{DE} = .84$  and .85).

<sup>3</sup>Warner et al. (2004) made some modifications to the Lynam and Widiger (2001) FFM PD prototypes to improve fit of their measurement models. For instance, they removed the facet of openness to actions from three of the four latent FFM PD scores to improve fit.

schizotypal, borderline, and avoidant PDs, Warner et al. (2004) found that changes in the FFM traits hypothesized to underlie these *DSM-IV* PDs resulted in changes in the respective *DSM-IV* PDs. The opposite was not the case: Changes in the *DSM-IV* PDs did not result in subsequent changes to the underlying FFM traits. These authors concluded that these results confirmed the need to address the underlying personality traits if one hopes to make substantial gains in the treatment of PDs. These results make it clear that the basic traits involved in PDs should be considered in the treatment context if one hopes to make lasting, stable changes.

### **Diagnostic Efficiency Statistics**

As noted earlier, although the FFM PD similarity scores and FFM PD counts are substantially correlated (i.e., median  $r = .91$ ), the FFM PD counts are easier to score. Nonetheless, neither scoring method provides obviously intuitive scores. Miller, Lynam, Rolland, et al. (2008) tested three extant normative databases for the NEO PI-R (i.e., North American, French, Dutch-Flemish) to see whether they could be used as normative databases for the FFM PD counts as well. These authors published the FFM PD scores that correspond to T scores of 65, 70, and 75 in each of these three samples and then tested the diagnostic efficiencies of T scores of 65 in “predicting” a *DSM-IV* PD diagnosis. For example, a FFM borderline PD count score of 163 corresponded to a T score of 65 in the North American database and resulted in the following statistics: sensitivity = .82, specificity = .56, positive predictive power = .36, and negative predictive power = .91. Interestingly, the FFM PD scores associated with a T score of 65 were, for the most part, quite close to the FFM PD scores generated by receiver operator characteristic analyses in a separate study (Miller, Bagby, Pilkonis, et al., 2005). Overall, these data suggest that the FFM PDs worked relatively well in predicting a dichotomous *DSM-IV* PD score (at least as screening instruments, given their poor positive predictive power); the authors acknowledged, however, that “there is limited utility in predicting a dichotomously scored PD outcome given the inherent unreliability and

instability of these diagnoses” (p. 444). This work can be used, however, as an example of how cutoffs could be empirically derived that would indicate problematically elevated levels of FFM PD scores with regard to important outcomes such as functional impairment.

In sum, the FFM PD similarity scores and counts, for the most part, display evidence of construct validity (Miller, in press). They manifest reasonable convergent and discriminant validity, result in patterns of relations consistent with their nomological networks, and show evidence of clinical utility. The problems that exist may be due to a mixture of issues related to the measurement of the FFM (e.g., inclusion of maladaptivity at the high and low ends of all FFM trait poles) and the *DSM-IV* PDs on which they are based (e.g., OCPD and histrionic PD manifest poor reliability; schizotypal PD is problematically heterogeneous).

### **CRITICS OF FFM PD PROTOTYPE MATCHING**

Despite the evidence of their validity, it is important to note that the FFM PD prototype matching techniques (i.e., FFM PD similarity scores and counts) have been critically reviewed. For example, Clark (2007) summarized the extant FFM PD prototype research and concluded that

it is critically important to emphasize that diagnosis by prototype is not itself an end—the DSM diagnoses are much too flawed to warrant emulation, especially only moderate convergent emulation. The FFM has great value in PD assessment, but it lies in the dimensions themselves and their potential for deepening our understanding of the PD traits, not in their ability to approximate demonstrably inadequate categories. The field will be little advanced by additional studies using this approach, its purpose already having been fulfilled. (p. 232)<sup>4</sup>

<sup>4</sup>Despite these criticisms, Clark, a member of the *DSM-5* PD Work Group, seems to have changed her position on the value of this type of approach because it is a fundamental part of how PD diagnoses are made in the current *DSM-5* PD proposal.

As an author of much of the FFM PD prototype matching literature, I wish to be clear that I do not suggest that the FFM PDs simply be used in place of the existing *DSM*-based PDs. Instead, I agree with Widiger, Costa, and McCrae's (2002) suggestion that the FFM PD prototype matching technique be used as one aspect of a broader approach to using trait data for the diagnosis of PD pathology. In this system, a four-step approach is used. In Step 1, an individual is described using the five domains and 30 facets of the FFM. In Steps 2 and 3, "problems, difficulties, and impairments that are secondary to each trait" are identified, and a decision is made about whether these problems and impairments are clinically significant (Widiger, Costa, et al., 2002, p. 431). In Step 4, which Widiger and colleagues viewed as optional, an individual's FFM trait profile can be matched to the FFM PD prototypes. I agree that Steps 1 through 3 are the most important and hope to see an eventual move to the use of a dimensional trait model to understand personality pathology, in which the individual traits, not trait reconfigurations of *DSM* PDs, are used entirely or predominantly (Miller, Maples, et al., 2010). That said, I believe that the FFM PD prototype matching can serve an important function in helping clinicians and researchers segue from the traditional *DSM* PD constructs that have dominated the field for the past 30 or more years to a dimensional trait understanding of personality pathology. I have argued previously that even if a trait approach was included in *DSM-5* (which appears to be the case; see <http://www.dsm5.org>), "it is likely that clinicians and academicians would take some time before committing fully to this approach" (Miller et al., 2008, p. 445). In addition, I believe that the use of the FFM PD prototypes might "provide a bridge over troubled water" in the following manner:

The transition to a dimensional trait model for the assessment/conceptualization of PD in the *DSM* may be difficult for individuals steeped in the extant *DSM* PD constructs. The FFM PD counts allow and encourage clinicians to use personality data in both ways to best understand their clients'

difficulties. In addition, because the process of scoring the FFM PD counts is so transparent, clinicians may develop a better understanding of the latent traits thought to give rise to these multidimensional PD constructs. Thus the FFM PD counts may be helpful in serving as a bridge between historical PD constructs and the richer but more complex use of trait models of personality pathology. (p. 446)

## ALTERNATIVE PD PROTOTYPE MATCHING SYSTEMS

### *DSM-II, DSM-5, and SWAP Prototype Matching*

In second edition of the *DSM* (*DSM-II*; American Psychiatric Association, 1968), the PDs were diagnosed via a prototype matching system. Rather than listing explicit diagnostic symptoms, each PD was described with a brief paragraph. For example, paranoid personality was listed with the following description:

This behavioral pattern is characterized by hypersensitivity, rigidity, unwarranted suspicion, jealousy, envy, excessive self-importance, and a tendency to blame others and ascribe evil motives to them. These characteristics often interfere with the patient's ability to maintain satisfactory interpersonal relations. Of course, the presence of suspicion of itself does not justify this diagnosis, since the suspicion may be warranted in some instances. (p. 42)

Despite the ease of such an approach, most experts view the change to explicit diagnostic criterion sets in *DSM-III* and *DSM-III-R* as a tremendous improvement, particularly with regard to the reliability of the resultant diagnoses. These changes may be less popular with clinicians, however, because of the more onerous nature of these types of diagnostic system.

The diagnostic system used in *DSM-III* (partially), *DSM-III-R*, and *DSM-IV* include aspects of

prototype matching in that individuals' symptoms were or are compared with a prototypic case for that disorder, and a certain degree of "match" is required for a diagnosis. Prototype matching approaches of this sort are quite different from that used in *DSM-II* or the system initially proposed for *DSM-5* as the prototype matching in the former is supposed to be based on a thorough assessment of each explicit symptom and provides clinicians with an explicit threshold for diagnosis. As discussed subsequently, the initial *DSM-5* PD proposal called for a return to the use of prototype matching for the diagnosis of PDs using detailed narratives for the five PD "types" that were originally not set for deletion (i.e., schizotypal, antisocial, borderline, avoidant, and OCPD). It is important to note that, as of this writing, the current revised *DSM-5* PD proposal no longer calls for a prototype matching system of this type; instead a different variant may be used that is similar to the FFM PD count described earlier. Both types of prototype matching are reviewed here because each has been given substantial consideration for use in the *DSM-5*.

Westen and colleagues (e.g., Westen & Shedler, 1999b, 2000; Westen et al., 2006) have argued for the use of a prototype matching approach in the diagnosis of PD in a form similar to the first *DSM-5* PD proposal (i.e., use of detailed narratives describing each PD). These authors called for the use of PD prototypes derived from their assessment instrument, the SWAP-200, which is a 200-item clinician-rated measure used to assess personality pathology (Westen & Shedler, 1999a). The items included in the SWAP are derived from a variety of perspectives including the theoretical and research literature on PDs, *DSM* PD criteria, clinician input, and research on trait models of personality. Clinicians describe patients on the SWAP items by sorting the 200 items into categories based on the degree to which an item is thought to be more or less descriptive of the patient (Westen & Shedler, 2000). Q-factor analysis was then used to create empirical PD prototypes based on data from a large sample of 500 clinicians, each of whom described one patient they were treating who was thought to meet criteria for a *DSM-IV* PD. Eleven PD factors were extracted from this analysis: dysphoric (which was divided further:

avoidant, high functioning, emotionally dysregulated, dependent, hostile-externalizing), antisocial-psychopathic, histrionic, narcissistic, paranoid, obsessional, and schizoid. Similar to the FFM PD similarity scores, an individual's SWAP ratings can be correlated with these 11 factors to generate scores that provide information describing the degree of match to each PD factor.

The authors of the SWAP prefer the use of a more efficient approach in which the 11 PD factors would be used as the basis for the creation of "diagnostic templates" (Westen & Shedler, 2000, p. 123). Using these templates, clinicians would "rate the overall similarity or 'match' between a patient and the diagnostic template (i.e., prototype) using a 5-point rating scale, considering the template as a whole, rather than counting individual symptoms" (Westen et al., 2006, p. 847). As of yet, there are only a small number of published studies on the reliability and validity of this form of prototype matching using SWAP-derived PD prototypes (cf. Westen, DeFife, Bradley, & Hilsenroth, 2010; Westen et al., 2006). For instance, Westen et al. (2006) reported that Cluster B PD scores derived from the SWAP prototypes manifested evidence of construct validity, although the reported correlations may have been inflated by common method variance. As first noted by Mullins-Sweatt and Widiger (2009), the treatment providers in this study reported on patients with whom they had extensive contact, and thus it is difficult to know whether these results would generalize to treatment settings in which diagnoses are often made after a much briefer period of time. It is clear that further work on the reliability and validity of this form of prototype matching is needed before any firm conclusions can be drawn about this specific approach.

As noted earlier, the first *DSM-5* proposal for the PDs included the use of a prototype matching system for the 5 *DSM-IV* PDs that were not set for deletion. These five PDs were to be rated on a 5-point scale: 1 = no match, description does not apply; 2 = slight match, patient has minor features of this type; 3 = moderate match, patient has prominent features of this type; 4 = good match, patient significantly resembles this type; and 5 = very good match, patient exemplifies this type. The proposed change from the use of

explicit criterion sets to prototype matching for the assessment of PDs in the *DSM-5* was enormous, with potentially serious ramifications. A number of prominent PD theorists quickly and strongly noted these ramifications in the literature. For instance, Pilkonis, Hallquist, Morse, and Stepp (2011) stated that

under the new proposal, diagnosticians are given carte blanche to interpret each prototype narrative in potentially different ways, opening the door to a host of known problems with cognitive heuristics, such as salience and availability biases (Kahneman, Slovic, & Tversky, 1982). It is difficult to conceive of how such an unsystematic approach will enhance the construct validity of PDs. (p. 73)

Similarly, Widiger (2011) suggested that

such a change should be supported by a considerable body of consistent and compelling research to offset the many prior studies that have raised significant concerns regarding prototype matching (e.g., Spitzer et al., 1975; Spitzer & Fleiss, 1974; Spitzer et al., 1980). (p. 58)

Unfortunately, no such a body of research exists (see Zimmerman, 2011). Perhaps as a result of such vociferous objections by leading scholars, this initial proposal for the diagnosis of PDs in the *DSM-5* was rejected and replaced with an entirely different proposal (discussed in the next section).

### **DSM-5 PD Count Approach**

The current *DSM-5* proposal for diagnosing personality pathology is also intimately linked to prototype matching but from an empirical approach in which dimensional traits are the core “ingredients” that comprise the PDs (Miller, in press). The current proposal for the *DSM-5* PDs is, in fact, very similar to the FFM model of PD in general (e.g., Costa & Widiger, 1994, 2002) and to the FFM PD count more specifically (i.e., Miller, Bagby, Pilkonis, et al., 2005). In this second *DSM-5* PD proposal, the six PDs chosen for retention—schizotypal, antisocial, borderline, narcissistic, avoidant, obsessive-compulsive—will be

diagnosed if individuals manifest evidence of certain forms of impairment in self and interpersonal functioning as well as elevations on certain traits (25 traits are articulated, reduced from 37 in the first *DSM-5* proposal) thought to exist in the prototypical individual with a given PD. For instance, with regard to antisocial PD, individuals would have to manifest impairments in self (i.e., identity, self-direction) and interpersonal functioning (i.e., empathy, intimacy), as well as elevations on traits from the domain of antagonism (i.e., manipulativeness, deceitfulness, callousness, hostility) and disinhibition (i.e., irresponsibility, impulsivity, risk taking). At this time, it appears that all criteria would have to be met to receive a diagnosis of antisocial personality disorder. The trait portion of this proposal is very much aligned with ideas first discussed as part of a proposal for using FFM PD counts (Miller, Bagby, Pilkonis, et al., 2005) and subsequently by Krueger, Skodol, Livesley, Shrout, and Huang (2007).

One potential problem with the *DSM-5* approach, at least in comparison to the FFM PD approach, is that it is not clear how the *DSM-5* PD Work Group determined which traits should be included for each PD. For example, how did the Work Group determine that the seven traits mentioned earlier are the ones most critical to the diagnosis of antisocial PD? In the FFM PD count procedure, expert ratings (e.g., Lynam & Widiger, 2001; Samuel & Widiger, 2004) can be used to guide these decisions. It is also possible to use empirical studies or meta-analyses (Samuel & Widiger, 2008) to make informed decisions. Expert ratings using the newly proposed *DSM-5* trait model are now available, and these rating could be used to help guide the decision-making process as to which traits should be included for each PD (Samuel, Lynam, Widiger, & Ball, in press). Use of a broader set of expert ratings might ensure or improve the content validity of the current traits used for each *DSM-5* PD. For instance, in the case of narcissistic personality disorder, only two traits—grandiosity and attention seeking—are proposed for its diagnosis in the *DSM-5*. This is problematic because expert ratings suggest that several other facets of the *DSM-5* domain of antagonism should be included

(i.e., callousness, manipulativeness, deceitfulness, hostility).

Finally, the *DSM-5* trait model has been created for use in the *DSM-5*, and it may not be broad enough to capture all traits relevant to the conceptualization and assessment of personality pathology. For example, the trait model used in *DSM-5* is largely unipolar in nature such that it captures only problematically high levels of most of the domains (i.e., negative emotionality, introversion, antagonism, peculiarity). The *DSM-5* trait model does not include traits that exist at the opposite poles for these domains, which is problematic for certain personality disorders such as narcissistic PD (at least grandiose narcissism; e.g., Miller & Campbell, 2008), which is characterized by both antagonism and high levels of traits from the positive pole of Extraversion (e.g., domineering; reward seeking; Lynam & Widiger, 2001; Samuel & Widiger, 2004). The unipolarity of this model may prove to be an issue for the valid assessment of other personality disorders as well; Widiger (2011) noted that the model will be unable to capture the traits of low anxiety, which may be important to the assessment of psychopathy, and of high agreeableness for the assessment of dependency.

## CONCLUSION

A reasonably large and growing body of research suggests that the FFM PD similarity scores and counts demonstrate construct validity. The FFM PD prototype matching techniques are substantially different, however, from the prototype matching technique originally proposed for use in the *DSM-5* (and SWAP). The latter technique is thought to be popular with clinicians because it emphasizes efficiency but at the cost of decreased reliability. The FFM PD prototype matching approach is vastly different from this other approach because it does not rely on clinical judgment to indicate the degree of match between a patient's personality and a prototype. The FFM PD prototype matching technique instead relies on objective quantifications of similarity. The FFM approaches have the added benefit of having been tested in a number of studies, which demonstrate that trait data from a number of sources (e.g.,

self, informant, clinician ratings) can be used successfully to derive FFM PD scores.

The development of these FFM PD scores further enhances the substantial flexibility of the FFM in capturing personality pathology. The FFM facets and domains can be used in isolation (e.g., patient evinces problematically high levels of antagonism), in combination (e.g., patient evinces problematically high levels of introversion and antagonism), or reconfigured in the form of established PD constructs (e.g., patient fits the FFM antisocial PD prototype) to capture pathological personality traits and disorders. The breadth of coverage provided by the FFM model of PD would represent a significant advance over *DSM-IV* system (PD not otherwise specified; Trull, 2005; Verheul & Widiger, 2004).

Research on the development and validation of the FFM PD prototypes and counts is incredibly relevant for the new Personality and Personality Disorder section of *DSM-5* because the *DSM-5* PD proposal is closely aligned with this approach. The new trait-based diagnostic system proposed for the diagnosis of personality disorders in *DSM-5* may prove to be a substantial improvement in the conceptualization and diagnosis of personality disorders. Nonetheless, it is likely that additional modification of the *DSM-5* PD trait model itself and the specific trait assignments to the various PDs "types" will be necessary. These modifications can be minimized, however, if the existing body of work on the FFM model of PD, including the work described in this chapter, is used as a guide.

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# USING THE FIVE-FACTOR MODEL TO ASSESS DISORDERED PERSONALITY

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Much recent research has shown that personality disorders (PDs) show consistent profiles in relation to general models of personality functioning, in particular, the five-factor model of personality (FFM; McCrae & Costa, 2003). That is, whether one asks expert researchers (Lynam & Widiger, 2001; Miller, Lynam, Widiger, & Leukefeld, 2001) or clinicians (Samuel & Widiger, 2004) to describe prototypic cases of a given PD, translate PD criteria into the language of the FFM (Widiger & Lynam, 1998; Widiger, Trull, Clarkin, Sanderson, & Costa, 2002), or examine correlations between measures of the PDs and the FFM (Decuyper, De Pauw, De Fruyt, De Bolle, & De Clercq, 2009; Samuel & Widiger, 2008), consistent profiles emerge for each PD. There are a number of implications of such consistent findings across methods. The first is that the PDs may well be understood as pathological variants of normal personality dimensions. This issue is explored in other chapters of this volume. The second implication is that normal dimensions of personality might be used to assess the pathological variants that are the PDs.

It is the latter implication that I examine in this chapter. In the pages that follow, I review previous research using the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992) to assess disordered personality and discuss some shortcomings of this approach. Next, I describe several studies that use what is known about the relations between the FFM and disordered personality to construct new assessments that are grounded in the

basic science of personality but designed to assess the more pathological aspects. Finally, I close with a discussion of the advantages of this newer approach.

## USING THE FFM TO ASSESS PERSONALITY PATHOLOGY: PSYCHOPATHY

One of the most widely studied personality disorders, although it does not appear in the current *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; DSM-IV-TR; American Psychiatric Association, 2000) is psychopathy. As a PD, psychopathy is characterized by traits such as egocentricity, callousness, manipulativeness, and impulsivity. Psychopathy is an excellent PD with which to begin because its FFM profile has been developed in a variety of ways. At first, Widiger and Lynam (1998) began with descriptions of the traits assessed by the Hare Psychopathy Checklist—Revised (PCL-R; Hare, 2003) and translated these traits into the language of the FFM (i.e., PCL-R pathological lying—FFM low straightforwardness). Next, Miller, Lynam, Widiger, and Leukefeld (2001) asked psychopathy researchers to rate the prototypical psychopath on the 30 facets of the FFM; by averaging across the raters, an FFM profile of prototypic psychopathy was generated. Finally, a number of studies have reported the correlations between the NEO PI-R and various indices of psychopathy (Derefinko & Lynam, 2006; Gaughan, Miller, Pryor, & Lynam, 2009; Hicklin & Widiger, 2005; Lynam,

Derefinko, Caspi, Loeber, & Stouthamer-Loeber, 2007; Skeem, Miller, Mulvey, Tiemann & Monahan, 2005); again, averaging across such studies provides an empirical FFM profile of psychopathy (for a recent meta-analysis, see Decuyper et al., 2009). As noted by Lynam and Widiger (2007), there is strong consensus, across these different methods, about which traits are most relevant to psychopathy.

With such profiles in hand, it is possible to score psychopathy on the basis of how closely an individual's FFM profile matches the profile of the prototypic psychopath. Individuals with more similar profiles can be said to be more psychopathic. Two scoring approaches have been used (see Chapter 17, this volume, for a full discussion). The first approach involves assessing profile similarity by generating a double-entry correlation between an individual's profile and the prototypic profile. This double-entry approach considers all 30 facets of the FFM, takes into account both similarity in shape and magnitude, and is conceptually compelling as an index of similarity. This approach is cumbersome, however, requiring that the data be transformed (facets must be changed from a 0–32 scale to a 1–5 scale) and then compared with the expert prototypes via some form of statistical software (e.g., SPSS, Excel) to compute a double-entry Q correlation. For these reasons, Miller Bagby, Pilkonis, Reynolds, and Lynam (2005) presented a “count” technique in which only the most salient facets from the expert-generated prototypes are used to score the FFM PDs. These FFM PD counts were significantly correlated with the original FFM PD prototype scores (e.g., median  $r_s$  between FFM PD prototypes and FFM PD counts, in two samples, were .91 and .91), correlated equally well with PD symptom counts and were substantially easier to score.

Another advantage of the count technique is that it allows relatively easy computation of normative data. Miller et al. (2008) presented data from three large normative samples that can be used as norms for the FFM PD counts in the respective countries: United States ( $N = 1,000$ ), France ( $N = 801$ ), and Belgium–Netherlands ( $N = 549$ ). The study also examined the diagnostic efficiency of statistically defined cutoffs at 1.5 standard deviations above the mean ( $T \geq 65$ ) compared with previously identified cutoffs using receiver-operator characteristics

(ROC) analyses. These cutoffs were tested in three clinical samples—one from each of the aforementioned countries. In general, the  $T$  greater than or equal to 65 cutoffs performed similarly to those identified using ROC analyses and manifested properties relevant to a screening instrument. Normative data such as these allow FFM data to be used in a flexible and comprehensive manner, which can include scoring this type of personality data to screen for DSM-IV PD constructs.

## EXAMPLES

There are multiple studies supporting the use of the NEO PI-R to score the PDs. Some studies have focused on specific PDs, whereas others have examined all PDs simultaneously. All have provided general support for the idea. Several studies have specifically focused on psychopathy. Multiple studies (Derefinko & Lynam, 2006; Miller et al., 2001; Ross, Benning, Patrick, Thompson, & Thurston, 2009) show high convergence between FFM-assessed psychopathy and explicit indices of psychopathy including the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), the Self-Report Psychopathy scale: Version III (SRP-III; Williams, Paulhus, & Hare, 2007), and the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005). Across samples of undergraduates (Miller et al., 2001; Miller & Lynam, 2003) and drug abusers (Derefinko & Lynam, 2007), relations of FFM psychopathy scores to external criteria (e.g., antisocial behavior, aggression, substance use and misuse, and other forms of psychopathology) have been shown to mirror those seen when using explicit psychopathy assessments.

Borderline and antisocial personality disorders have also been examined. Gudonis, Miller, Miller, and Lynam (2008) compared FFM antisocial personality disorder (APD) assessed via the count procedure to APD assessed via the Diagnostic Interview Schedule (DIS; Robins, 1988) in a community sample of 481 young adults. FFM APD was positively correlated with a variety of externalizing behaviors including early conduct problems, self-reported delinquency, aggression, number of arrests, psychopathy, risky sexual behavior, and early and problematic levels of sub-

stance use. FFM APD was unrelated to internalizing problems. Additionally, FFM APD was related to poor family relations and poor school performance in early adolescence, and to lower educational attainment and worse occupational functioning in young adulthood. Moreover, these relations were quite similar in absolute size to those obtained when DIS-assessed APD was examined; in fact, the similarity in correlational profiles for the two APD assessments was .85.

Trull, Widiger, Lynam, and Costa (2003) examined how well FFM BPD assessed via similarity score converged with extant measures of BPD and how well it could recreate the nomological network surrounding the extant measures. Across three samples, FFM BPD similarity scores correlated as highly with extant BPD measures as the extant measures did among themselves. In terms of the nomological network, FFM BPD bore the expected relation to BPD-related constructs such as a history of childhood sexual and physical abuse, evidence of parental psychopathology (e.g., substance use disorders, mood disorders), and impairment (global, interpersonal). A quantitative comparison by Miller (Chapter 17, this volume) of the set of correlates generated by the FFM borderline PD similarity score with those generated by the borderline PD scores from a semistructured interview (Structured Interview for DSM-IV Personality [SIDP-IV]; Pfohl, Blum, & Zimmerman, 1997) and a popular self-report inventory (Personality Assessment Inventory; PAI; Morey, 1991) revealed nearly perfect agreement. Miller reports that the FFM borderline PD relations were almost perfectly correlated with the relations generated by the SIDP-IV ( $ICC_{DE} = .96$ ) and the PAI Borderline scales ( $ICC_{DE} = .97$ ). In sum, the FFM BPD and FFM APD similarity scores manifested patterns of correlations with important constructs that was basically identical to the pattern of correlations manifested by measures that were explicitly designed to capture the DSM-IV borderline PD symptoms. The similarity is remarkable given that the FFM PD scores are based on an instrument, the NEO PI-R, that does not explicitly reference any of the diagnostic symptoms of the PDs.

Additional studies have examined all 10 DSM-IV PDs simultaneously primarily in terms of convergent and divergent relations with other assessments. Miller and colleagues have reported four such studies that differ in settings, FFM assessments, and PD

assessments. Results are remarkably consistent across these variants. Miller, Reynolds, and Pilkonis (2004) reported convergent correlations of between FFM PD prototype scores and interview ratings of PD symptoms ranging from .13 for obsessive-compulsive PD (OCPD) to .67 for avoidant PD with a mean of .46; similarly, the convergent correlations between FFM PD scores and self-report ratings of PD symptoms ranged from .24 for OCPD to .79 for avoidant with an average of .62. Miller, Bagby, and Pilkonis (2005) examined the convergence between consensus ratings of the PDs and the FFM PDs assessed both via self-report and interview; these authors reported average convergences of .38 and .39 for self-report and interview ratings of the FFM PDs, respectively. In the course of providing normative FFM PD data for the United States, France, and Belgium, Miller et al. (2008) reported on the convergence between FFM PD assessments and explicit PD assessments. These authors report convergences, in the French and Belgian samples, ranging from .17 for OCPD to .65 for avoidant with a mean of .43. Most recently, Miller et al. (2010) reported on the convergence between PDs assessed using a 30-item FFM facet rating form and consensus diagnostic counts. Convergent correlations ranged from .23 for schizotypal PD to .74 for AVD with a mean of .52. Moreover, the FFM PD scores were better predictors of impairment than were the consensus diagnostic counts.

## CONCERN AND CRITICISMS

Despite the research discussed in the previous section supporting the use of the FFM to assess the PDs, some concerns have been raised. The first concern is a philosophical one; some have questioned the utility of re-creating what they believe to be flawed diagnostic categories. Clark (2007) wrote:

diagnosis by prototype is not itself an end—the DSM diagnoses are much too flawed to warrant emulation. . . . The FFM has great value in PD assessment, but it lies in the dimensions themselves and their potential for deepening our understanding of the PD traits, not in their ability to approximate demonstrably inadequate categories. (p. 232)

Although the concern is philosophical, I believe the answers to it are practical. First, these diagnostic categories exist in the present diagnostic system (American Psychiatric Association, 2000) and, based on initial proposals by the *DSM-5* Personality and Personality Disorders Work Group (2011), at least six of the 10 (schizotypal, antisocial, borderline, narcissistic, avoidant, and obsessive-compulsive) will continue to exist in the next iteration of the diagnostic system. Second, for *DSM-5*, Clark and Krueger (2011) have proposed using traits per se as the diagnostic criteria, discussing explicitly the use of trait profiles. Third, I do not believe that all PDs are “demonstrably inadequate”; antisocial, borderline, narcissistic, and schizotypal PD all have large empirical literatures surrounding them and supporting their importance for a variety of life outcomes. The fact that the *DSM-5* work group is proposing to retain half of the PDs from the *DSM-IV* also argues against Clark’s contention. Fourth, working with prototypes does not preclude working with dimensions. In fact, much of my work in psychopathy has been aimed at demonstrating that various aspects of the overall profile contribute to different psychopathy-related processes and outcomes. Fifth and finally, I find it telling that according to PD researchers (Lynam & Widiger, 2001) none of the 10 current PDs map onto single domains within the FFM; rather, each PD is characterized by facets from multiple domains. Two of the 10 PDs, antisocial and histrionic, are characterized by facets taken from each of the five FFM domains. Six PDs—paranoid, schizotypal, borderline, narcissistic, avoidant, and obsessive-compulsive—include facets from four domains in their descriptions. Of the remaining two PDs, dependent requires three domains and schizoid two domains for its description. Working from a clinical version of the “lexical hypothesis,” these results suggest to me that single dimensions are less apt to cause clinical problems than are combinations of multiple dimensions. The FFM PD prototypes provide shorthand descriptions of these important combinations.

The second concern is less philosophical and has to do with whether instruments developed in the general population to assess personality in that population are the optimal instruments for assessing

pathological personality traits. This concern has been raised by both critics and proponents of the FFM-based approach. For example, the consistently low convergent correlations obtained for OCPD may be due to inadequate coverage of the pathological end of conscientiousness within many measures of the FFM, including the NEO PI-R. Haigler and Widiger (2001) demonstrated that the correlation of NEO PI-R Conscientiousness with OCPD increased substantially when items were revised to assess maladaptive variants of conscientiousness. More recently, using item-response theory, Samuel, Simms, Clark, Livesley, and Widiger (2010) showed that relative to assessments explicitly designed to capture pathological personality, the NEO PI-R carries more information at the lower (normal) range of the traits. Although there was considerable overlap in coverage, the results provide some support for the concern. My response to the concern is quite simple: Use the basic structure of the FFM to build new scales that remain tied to basic personality science yet better assess the more pathological ends of the basic traits.

## BUILDING NEW SCALES

A number of scales have been or are currently being developed along these lines by Lynam, Miller, Widiger, and their colleagues (Lynam, in press). Beginning with robust FFM profiles, these authors have sought to create new facet-level scales that will better capture the extreme and maladaptive levels of the trait that characterize disordered personality. Because the extreme manifestations of a given trait may differ as a function of the specific disorder, scale development has proceeded on a PD by PD basis. Lynam et al. (2011) recently developed a new self-report assessment of the basic traits of psychopathy using the FFM trait model as a framework. Lynam et al. began with a consensus profile of psychopathy provided by Lynam and Widiger (2007) that identified 18 traits that reliably emerged across different methods. For descriptive purposes Lynam et al. rationally grouped these traits into five clusters: *interpersonal antagonism* (trust, straightforwardness, altruism, compliance, modesty, tender-mindedness, warmth), *pan-impulsivity* (impulsiveness, excitement seeking, self-discipline, deliberation), *interpersonal*

*dominance* (assertiveness), *lack of self-directed negative affect* (anxiety, depression, self-consciousness, vulnerability), and *negative other directed affect* (anger). The authors then wrote items for new scales that began with the original facet descriptions but described more maladaptive, extreme, or psychopathy-specific manifestations (e.g., “I have more important things to worry about than other people’s feelings” for self-centeredness and “My stubbornness has frequently gotten me into trouble” for opposition). They also reversed the polarity of some scales so that higher scores on each scale were indicative of psychopathy and included two sets of items that were written as validity checks within the instrument. The initial 299-item pool was administered to more than 900 participants. Through standard item selection procedure, nine-item scales were generated for each of the 18 elements of psychopathy with the two eight-item scales (Infrequency and Too Good to Be True) serving as validity checks.

Table 18.1 provides the Elemental Psychopathy Assessment (EPA) scale names, sample items from

the final scale, and the original FFM facets from which they were derived. Analyses indicated that the scales were psychometrically sound. All scales were reliable and homogeneous; alphas ranged from .74 to .88, whereas average interitem correlations ranged from .24 to .48—well within the recommended guidelines of .15 to .50 (Clark & Watson, 1995). The scales were also unidimensional with a single factor accounting for the majority (more than 66% in most cases) of the common variance across items in each scale; except for Arrogance, the average factor loading for each scale was .50 or above. The EPA scales remained true to their FFM origins with convergent correlations as evident in the high average convergent correlation of .66 and the recovery of the original five-factor structure in a joint factor analysis with the NEO PI-R.

Lynam et al. (2011) also reported initial validations studies of the EPA in both the derivation sample and a smaller sample of incarcerated men. Within the derivation sample, they examined the convergent relations with three explicit psychopathy measures—

TABLE 18.1

### Subscales and Sample Items From the Elemental Psychopathy (EPA) Assessment

EPA scale	Example EPA item	Original FFM facet
Unconcern	I have fewer fears than most people I know.	N1: Anxiety
Anger/hostility	People who know me know not to make me angry.	N2: Angry Hostility
Self-contentment	I have very few regrets about my past behavior.	N3: Depression
Self-assurance	I’m a pretty smooth talker.	N4: Self-Consciousness
Urgency	I often let my feelings get me into trouble.	N5: Impulsivity
Invulnerability	I can remain calm in situations in which other people might panic.	N6: Vulnerability
Coldness	I don’t feel a strong need to get close to people.	E1: Warmth
Dominance	It is important to me to be the “top dog” in a group.	E3: Assertiveness
Thrill-seeking	I’ve gotten in trouble because of some of the risks I’ve taken.	E5: Excitement Seeking
Distrust	When someone does something nice for me, I wonder what they want from me.	A1: Trust
Manipulation	My tendency to be sneaky or deceptive has gotten me into trouble before.	A2: Straightforwardness
Self-centeredness	I don’t care if my actions have a negative impact on others.	A3: Altruism
Opposition	I do what I want, not what others tell me to do.	A4: Compliance
Arrogance	I do not believe it is bragging if you are telling the truth.	A5: Modesty
Callousness	The suffering of others is not my problem.	A6: Tender-mindedness
Disobliged	I have gotten in trouble for failing to meet my obligations to others.	C3: Dutifulness
Impersistence	When something becomes boring or difficult, I move on to something else.	C5: Self-discipline
Rashness	I often find myself in trouble because I did not think far enough ahead.	C6: Deliberation
Infrequency	I try to eat something almost every day (reverse coded).	
Too Good to be true	I have never in my life been angry at another person.	

Note. Items from the Elemental Psychopathy Assessment, an unpublished test. Copyright 2009 by D. R. Lynam, E. T. Gaughan, J. D. Miller, D. J. Miller, S. Mullins-Sweatt, & T. A. Widiger. Used with permission of the authors. FFM = five-factor model.

Levenson's Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995), the Self-Report Psychopathy scale—Version III (SRP-III; Williams et al., 2007), and the Psychopathic Personality Inventory—Revised (PPI-R; Lilienfeld & Widows, 2005). The total score of the EPA was strongly correlated with the total and subscale scores of each psychopathy inventory; convergent *r*s ranged from .50 for PPI Factor 1 to .83 for PPI Total with an average across the 11 psychopathy scale of .68. In tests of incremental predictive utility, the EPA scales outpredicted the original NEO PI-R facet scales in analyses involving the three psychopathy measures. The EPA scales bore statistically stronger relations than their general trait counterparts in 41 of 54 instances (i.e., correlations of the 18 scales with each of the three total psychopathy scores for the SRP-III, LSRP, and PPI-R). In simultaneous regressions, the EPA scales consistently outperformed the NEO PI-R facet scales, accounting for, on average, an additional 13% of the variance in total psychopathy scores; the corresponding average for facets relative to EPA scales was 1.8%. Incremental validity for the EPA scores relative to the scores from a model of general personality was also seen when total psychopathy scores were computed using the EPA scales and the relevant facets. Across 11 total psychopathy and psychopathy subscale scores, the EPA total psychopathy score was more strongly related than NEO PI-R psychopathy in nine instances. The difference in strength of relations was even more apparent in the simultaneous analyses in which the EPA total psychopathy score uniquely contributed, on average, an additional 17% of the variance compared with 1% uniquely provided by the sum of the respective NEO PI-R facets. Finally, the relations between the EPA scales and SRP psychopathy were replicated in the prison sample. Additionally, EPA total scores were moderately significantly positively correlated with lifetime counts of alcohol use, antisocial behavior, and disciplinary infractions within the prison sample.

Two other recent articles have explored the construct validity of the EPA. Wilson, Miller, Zeichner, Lynam, and Widiger (2011) examined the relations among the EPA, three validated self-report psychopathy instruments, aggression, substance use, and anti-social behavior. As in the derivation sample, the EPA total score showed high convergence with the total

and subscale scores of the three extant psychopathy inventories; convergent *r*s ranged from .37 for LSRP Factor 1 to .78 with the PPI total score with a mean of .60. Additionally, the EPA total score was positively correlated reactive and proactive aggression, lifetime antisocial behavior, alcohol use, and other substance use; these correlations ranged from .26 (substance use) to .45 (proactive aggression) with a mean of .35.

Miller et al. (2011) examined the construct validity of the EPA by correlating it with self and stranger ratings on the FFM, as well as self-reported ratings of personality disorders, social cognition, and love styles. The EPA total and subscale scores manifested expected correlations with both self and stranger ratings of the FFM; for example, the EPA total score was significantly negatively correlated with Agreeableness (self: *r* = -.73; stranger: *r* = -.27) and Conscientiousness (self: *r* = -.26; stranger: *r* = -.32). Furthermore, the EPA subscales were related as expected to various forms of personality pathology; for example, the EPA total score manifested significant positive correlations with all four Cluster B PDs, with the highest correlations observed for narcissistic PD (*r* = .46) and antisocial PD (*r* = .42). Within a social cognition paradigm, EPA total scores were significantly positively correlated with all variables including experiencing anger, expressing anger, and endorsing a greater likelihood of trying to resolve interpersonal situations with verbal insults, threats, or physical violence. Finally, the EPA psychopathy scores were correlated with romantic love styles indicative of game playing and infidelity.

Scales have been developed using similar methods to assess other PDs. Specifically, FFM-based inventories have been constructed to assess schizotypal (Edmundson et al., 2011), borderline (Mullins-Sweatt et al., in press), narcissistic (Glover, Miller, Lynam, Crego, & Widiger, et al., in press), histrionic (Tomiatti, Gore, Lynam, Miller, & Widiger, in press), dependent (Gore, Presnall, Lynam, Miller, & Widiger, in press), avoidant (Lynam, Loehr, Miller, & Widiger, in press), and obsessive-compulsive (Samuel, Riddell, Lynam, Miller, & Widiger, in press) PDs. Elemental trait scales are under construction for the remaining PDs—schizoid and paranoid. Table 18.2 reports the traits assessed within each of the new PD assessments organized within the

TABLE 18.2  
Listing of the New Five-Factor Model (FFM)-Based Personality Disorder Scales

<b>FFM facet</b>	<b>Psychopathy</b>	<b>Schizotypal</b>	<b>Borderline</b>	<b>Narcissistic</b>	<b>Histrionic</b>	<b>Dependent</b>	<b>Avoidant</b>	<b>OC</b>
N1: anxiety	Unconcern (-)	Social anxiousness	Anxious uncertainty			Relationship anxiety	Evaluation apprehension	Excessive worry
N2: angry hostility	Anger		Dysregulated anger	Reactive anger				
N3: depression	Self-content (-)		Despondence			Hopelessness	Despair	
N4: self-consciousness	Self-assurance (-)	Social discomfort	Self-disturbance	Shame and Indifference (-)		Shamefulness	Mortified	
N5: impulsiveness	Urgency		Behavioral dysregulation					
N6: vulnerability	Invulnerability (-)		Affective dysregulation and Fragility	Need for admiration	Need for attention and Rapidly shifting emotions	Helplessness	Overcome	
E1: warmth	Coldness (-)	Social anhedonia (-)		Intimacy seeking	Intimacy needs			
E2: gregariousness		Social isolation (-)	Exhibitionism			Social dread (-)		
E3: assertiveness	Dominance		Authoritative			Shrinking (-)	Risk-averse (-)	
E5: excitement seeking	Thrill seeking			Flirtatious and social butterfly				
E6: positive emotions		Physical anhedonia (-)						
O1: fantasy		Aberrant perceptions	Dissociative tendencies		Romantic fantasies Touchy-feely			
O3: feelings						Dispassionate (-)		
O4: actions						Routinized (-)		
							Rigidity (-)	(continued)

TABLE 18.2 (*continued*)

<b>FFM facet</b>	<b>Psychopathy</b>	<b>Schizotypal</b>	<b>Borderline</b>	<b>Narcissistic</b>	<b>Histrionic</b>	<b>Dependent</b>	<b>Avoidant</b>	<b>OC</b>
05: ideas 06: values		Aberrant ideas						Dogmatism (-)
A1: trust	Cynicism (-)	Interpersonal suspicion (-)	Distrustful (-)		Suggestibility			
A2: straightforward	Manipulation (-)		Manipulative (-)	Manipulation (-)	Melodramatic (-)			
A3: altruism	Self-centered (-)				Exploitation(-) entitlement (-)			Selflessness
A4: compliance A5: modesty	Opposition (-) Arrogance (-)		Opposition (-)	Arrogance (-) and Grandiose fantasies (-)	Vanity (-)	Docility Self-effacing	Timidous	
A6: tender-minded	Callous (-)			Lack empathy (-)		Ineffective (-)		
C1: competence C2: order					Disorderliness (-)			Perfectionism Methodical orderliness Punctilious Workaholism
C3: dutifulness C4: achievement striving C5: self-discipline	Disobliged (-)			Acclaim seeking				
C6: deliberation	Impersistence (-)	Rashness (-)	Rashness (-)	Impersistence (-)	Impressionistic (-)			Single- minded Ruminative

Note. Minus signs indicate that the new scale runs in the direction opposite to the original NEO facet scale in the first column. Reprinted from "Assessment of Maladaptive Variants of Five-Factor Model Traits," by D. R. Lynam, in press, *Journal of Personality*. Copyright 2012 by Wiley-Blackwell. Reprinted with permission from Wiley-Blackwell. OC = obsessive-compulsive.

structure of the FFM (the names for some scales that are currently in development may change).

The approach to scale construction followed the procedures used to construct the EPA: FFM facets central to the disorder were identified, items reflecting more pathological or PD-specific variants were written, scales were finalized empirically, and initial validity tests were performed. For example, Mullins-Sweatt et al. (in press) created 12 elemental borderline scales to assess 11 facets identified as central to borderline PD. Seven scales were written to assess the six neuroticism facets: anxious uncertainty (e.g., "I worry a lot about people leaving me"), dysregulated anger (e.g., "My anger often feels out of control"), despondence (e.g., "I often get really pessimistic about the future"), identity disturbance (e.g., "My sense of who I am often changes"), behavioral dysregulation (e.g., "When I am upset, I often do things that later cause me problems"), affective instability (e.g., "I don't seem to have much control over how I feel"), and fragility (e.g., "Harming myself is one of the few ways I can tolerate my emotions"). One subscale assessed openness to fantasy, dissociative tendencies (e.g., "I sometimes feel like I am not real"). Three subscales assessed facets of antagonism: distrustful (e.g., "I feel like my so called friends talk about me behind my back"), manipulativeness (e.g., "Other people have called me manipulative"), and oppositional (e.g., "I often get into arguments with people who are close to me"). Finally, one scale, Rashness, was created for the deliberation facet of conscientiousness (e.g., "I tend to act quickly without thinking things through"). After selecting 10 items for each scale, Mullins-Sweatt et al. (in press) examined the construct validity of the Five-Factor Borderline Inventory (FFBI) in a sample of undergraduates and a clinical sample of female residents at a substance abuse treatment facility. In the first sample, the convergent validity of the total score and the 12 subscales was examined in relation to six established measures of BPD. Each FFBI subscale was strongly correlated with total scores from each of the six BPD assessments; the average convergent correlation across instruments ranged from .45 for anxious uncertainty to .71 for affective instability with a mean of .62. Similarly, the FFBI total score showed high convergence with the other inventories with

correlations ranging from .7 to .84. Additionally, the incremental predictive utility of the FFBI subscales over the NEO PI-R facets was also explored. Each FFBI subscale provided an increment in prediction over its facet counterpart; in six of the 12 analyses, the inclusion of the FFBI subscale reduced the contribution of the facet to nonsignificance. In a fairly strong test, Mullins-Sweatt et al. (in press) demonstrated that the FFBI total score provided incremental predictive utility above and beyond the extant BPD measures. Finally, the results were replicated in a clinical sample. The FFBI scales showed excellent convergence with extant BPD measures. The FFBI subscales and total score demonstrated incremental predictive utility over their respective facets over and other measures of BPD respectively.

## ADVANTAGES TO THIS APPROACH

There are a number of advantages to using the FFM, in its basic or enhanced form, over extant, global PD assessments and alternative trait descriptions. First, the FFM enjoys considerable empirical support compiled over decades. The FFM was originally derived from the natural language ensuring that important aspects of personality are represented (John & Srivastava, 1999). The model enjoys empirical support in the form of convergent and discriminant validation across self, peer, and spouse ratings (Costa & McCrae, 1988), temporal stability across the life span (Roberts & DelVecchio, 2000), etic and emic cross-cultural support (Ashton & Lee, 2001; McCrae, Terracciano, et al., 2005), behavioral genetic support for its structure (Yamagata et al., 2006), and relations to important outcomes (Ozer & Benet-Martínez, 2006), including academic achievement (Digman & Takemoto-Chock, 1981), antisocial behavior (Miller, Lynam, & Leukefeld, 2003), substance use and abuse (Flory, Lynam, Milich, Leukefeld, & Clayton, 2002), and risky sexual behavior (Miller, Lynam, et al., 2004). As noted throughout this chapter and this volume, the relations between the FFM and PD symptoms have been well mapped. Finally, the FFM offers a bridge to the basic research in personality that can help inform etiology, development, and treatment of disordered personality.

These advantages are not obviously present for the trait model proposed for *DSM-5*, which comprises 25 maladaptive personality traits that are said to fall within six higher order domains of negative emotionality, introversion, antagonism, disinhibition, compulsivity, and schizotypy. The traits are unipolar, ranging from normal to high, and focus only on maladaptive functioning, as opposed bipolar models, ranging from low to high, that attempt to capture maladaptivity at both poles and include the normal range of personality in between. Table 18.3 provides the current list of trait terms and their hypothesized mapping to five PDs. This model was not created by reference to basic research in personality, and its traits have little currency in that field. Its structure and performance have not been tested across years. Additionally, the anticipated mappings are not based on a large body of empirical research. In fact, a recent study by Samuel, Lynam, Widiger, and Ball (2012) calls these mappings into question. These authors contacted more than 250 researchers with expertise on specific PDs. The experts were asked to provide descriptions of the five PDs slated for inclusion in *DSM-5* using this trait model. Agreement between assignments based on expert ratings and assignments made by the Work Group were moderate with kappas ranging from .24 for avoidant to 1.00 for antisocial and a mean kappa of only .56.

The FFM approach also enjoys advantages over extant PD assessments. The FFM approach allows calculation of both total scores and individual trait scores. In addition to connecting to basic research in personality, described earlier, these trait terms exist at a more elemental level than most of the subscales found within extant assessments. That is, although many explicit PD assessments include subscales to allow more articulation, these subscales often represent agglomerations of basic traits from different domains or specific behaviors that are multiply determined. Lynam and Widiger (2007) have made this point explicitly in relation to scales designed to assess psychopathy, arguing that items, not to mention subscales, in psychopathy assessments are themselves complex mixtures of different personality traits, or compounds.

Working with these basic traits at the more elemental level provides a number of advantages. First, these elemental traits can be used to assay extant instruments to make apparent the elements that are common and divergent across conceptualizations of a given PD and its attendant assessment instruments. Using the EPA, Lynam et al. (2010) reported that the three psychopathy assessments they used all strongly represent interpersonal antagonism (i.e., EPA distrust, manipulation, self-centeredness, opposition, arrogance, and the closely related coldness from extraversion) and poor impulse control (i.e., EPA urgency, thrill seeking, and rashness), but differ in their representations of unconcern, self-contentment, self-assurance, invulnerability, and dominance. Similarly, such an assay may help to clarify the various factor structures found in factor analyses of the more compound trait, and to explain findings regarding the relations among different assessments.

By working at this more elemental level, researchers and theorists can build the personality disorders from the bottom up. One can examine which elements are most central, which are peripheral, and which are unnecessary to a given PD. One can ask which elements are important for which particular outcomes. One can also study the possibility of combinatorial effects; that is, one can search for synergistic effects in which specific combinations of elements give rise to emergent properties.

## CONCLUSION

In this chapter I have discussed the use of the FFM to assess disordered personality. I have reviewed research, primarily from the psychopathy literature, demonstrating the robustness of FFM PD profiles and the use of these profiles in the assessment of these PDs. I have discussed concerns with this approach and provided what I believe to be an important solution—the development of new scales based on the science and structure of the FFM that are designed to assess more pathological and more PD-specific variants of the traits. Initial efforts at developing such scales were described with more attention paid to the assessment of psychopathy. Finally, I have described what I believe to be the advantages to this approach.

TABLE 18.3

## Proposed Diagnostic and Statistical Model, Fifth Edition, Trait Model and Mappings

Trait	Schizotypal	Antisocial	Borderline	Avoidant	OC
Negative emotionality					
Emotional lability			H		
Anxiousness	H		H	H	H
Submissiveness					
Separation insecurity			H	H	
Pessimism				H	H
Low self-esteem			H	H	
Guilt/shame				H	H
Self-harm			H		
Depressivity			H		
Suspiciousness	H				
Detachment					
Social withdrawal	H			H	
Social detachment				H	
Intimacy avoidance	H			H	
Restricted affectivity	H			H	H
Anhedonia				H	
Antagonism					
Callousness		H			
Manipulativeness		H			
Narcissism		H			
Histrionism					
Hostility		H	H		
Aggression		H	H		
Oppositionality					H
Deceitfulness		H			
Disinhibition					
Impulsivity		H	H		
Distractibility					
Recklessness		H			
Irresponsibility		H			
Compulsivity					
Perfectionism					H
Perseveration					H
Rigidity					H
Orderliness					H
Risk aversion					H
Schizotypy					
Unusual perceptions	H				
Unusual beliefs	H				
Eccentricity	H				
Cognitive dysregulation	H				
Dissociation proneness			H		

Note. Compilation of data from the American Psychiatric Association DSM-5 Development website (<http://www.dsm5.org>). H = high; OC = obsessive-compulsive.

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PART IV

## CLINICAL APPLICATION



# DIAGNOSIS OF PERSONALITY DISORDER USING THE FIVE-FACTOR MODEL AND THE PROPOSED DSM-5

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Chapter 6 of this text provides a description of how the personality disorders presented within the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000) can be understood from the perspective of the five-factor model (FFM). This translation is helpful to those who are familiar with the *DSM-IV-TR* constructs and wish to understand how a person with one or more of these diagnoses would be described in terms of the FFM. However, the ultimate purpose of an FFM personality disorder diagnosis (FFM PDD) is not simply to provide another means of obtaining a *DSM-IV-TR* (or *DSM-5*) personality disorder diagnosis. Instead, it is to provide an alternative, independent means with which to diagnose personality pathology, and one that is consistent with the dimensional model of general personality structure. The goal of this chapter is to indicate how this might be done (including an optional fourth step to provide a *DSM-IV-TR* or proposed *DSM-5* syndromal description).

Our process for the diagnosis of a personality disorder includes four cumulative steps: (a) Provide a description of the person's personality traits with respect to the five domains and specific facets of the FFM; (b) identify the problems, impairments, and maladaptive variants of each elevated normal personality trait; (c) determine whether the impairments result in a clinically significant level of

impairment; and (d) determine whether the constellation of FFM traits matches sufficiently the profile for a particular personality disorder syndrome (Widiger, Costa, & McCrae, 2002). The first step is necessary for all subsequent steps, but as we will indicate, each subsequent step is optional, depending on the interests and needs of the clinician or researcher. We begin with a brief description of how personality disorders might be diagnosed in *DSM-5*. We then provide a more detailed discussion of how they could be diagnosed with the FFM.

## DSM-5 PERSONALITY DISORDER DIAGNOSIS

It is difficult to anticipate how (or even perhaps whether) personality disorders will be diagnosed in *DSM-5* because the initial proposals, which were themselves significant departures from the method used for *DSM-IV-TR* (American Psychiatric Association, 2000), have since undergone substantial revision. The proposals and subsequent shifts, however, are clearly away from traditional categorical diagnosis and toward the FFM PDD. As currently proposed (and the proposal may indeed change), there will be three fundamental components of a *DSM-5* personality disorder diagnosis: (a) level of personality functioning, (b) maladaptive personality traits, and (c) personality disorder types (American Psychiatric Association, 2011). The diagnostic criteria

for the personality disorder types is to be based on a combination of the level of personality functioning and the maladaptive traits.

### Level of Personality Functioning

The clinician first determines whether there is impairment in self and interpersonal functioning and, if so, to what degree. Level of self includes a consideration of identity integration, integrity of self-concept, and self-directedness; level of interpersonal functioning includes degree of empathy, intimacy and cooperativeness, and complexity and integration of representation of others (American Psychiatric Association, 2011; Skodol, in press).

These self and interpersonal impairments are believed to refer to underlying, organic pathologies that are unique to personality disorders. They constitute a fundamental component of the new definition of personality disorder in *DSM-5* (American Psychiatric Association, 2011). It is further hypothesized that they cannot be adequately understood simply in trait terms (Skodol et al., 2011), hence their inclusion within the diagnostic criterion sets along with maladaptive personality traits.

Nevertheless, it is possible that many, if not all, of these self and interpersonal impairments can in fact be understood as behavioral manifestations of maladaptive personality traits. One infers the presence of maladaptive personality traits largely on the basis of impairments and evident dysfunction, and these impairments can in turn be well understood as behavioral expressions of the respective personality trait (Mullins-Sweatt & Widiger, 2010). For example, proposed impairments for narcissistic personality disorder include an “impaired ability to recognize or identify with the feelings and needs of others” and an “excessive reference to others for self-definition and self-esteem regula-

tion” (American Psychiatric Association, 2011). These two impairments could represent pathologies that are distinct from maladaptive personality traits, as suggested for *DSM-5* (Skodol et al., 2011). Alternatively, they might simply be understood as behavioral manifestations of maladaptive personality traits (i.e., low tender-mindedness and high self-consciousness, respectively). It will be of interest for future research to determine whether the self and interpersonal impairments are indeed simply manifestations of maladaptive personality traits or a form of psychological pathology that is qualitatively distinct from personality.

### Maladaptive Personality Traits

As proposed for *DSM-5*, the clinician will also describe the patient in terms of 25 maladaptive personality traits, organized within five broad domains (American Psychiatric Association, 2011; Krueger, Eaton, Derringer, et al., 2011). These five domains of personality align closely with the FFM (Krueger, 2011; Trull, in press; Widiger, 2011a): Negative Affectivity (i.e., FFM neuroticism), Detachment (i.e., FFM introversion), Antagonism (i.e., FFM antagonism), Disinhibition (i.e., FFM low conscientiousness), and Psychoticism or Peculiarity (i.e., FFM openness; see Chapter 6 of this volume for additional discussion of this alignment). Beneath these five broad domains are 25 relatively more specific traits. For example, within the domain of negative affectivity would be emotional lability, anxiousness, separation anxiety, hostility, and depressivity. Figure 19.1 provides the 25 *DSM-5* traits and how they are located within the *DSM-5* dimensional model.<sup>1</sup> Note that some of these traits are in boldface or are underlined because their locations are different from their placement within the FFM (an issue to be discussed later in this chapter).

<sup>1</sup>The placement of the 25 *DSM-5* traits within the respective domains as indicated in Figure 19.1 was based on the assignments provided by Krueger, Eaton, Derringer, et al. (2011). These assignments are not consistent with those provided on the *DSM-5* website by American Psychiatric Association (2011). For example, on the *DSM-5* website, some of the traits are actually located in more than one domain. An example is suspiciousness, which is included within the domains of negative affectivity and detachment (yet probably belongs within antagonism; Costa & McCrae, 1992; Samuel & Widiger, 2008); hostility is within the domains of negative affectivity and antagonism; depressivity is within the domains of neuroticism and detachment; and restricted affectivity is within the domains of (lack of) negative affectivity and detachment. In addition, submissiveness is not included at all (leaving only 24 traits). Furthermore, this version of the trait assignments is different from the version that is included within the *DSM-5* Clinician Rating Form, also posted on the website. In the Clinician Rating Form, submissiveness is included (yielding a total of 25 traits). The Clinician Rating Form is relatively more congruent with Krueger, Eaton, Derringer, et al.; however, in this rating form depressivity and suspiciousness are included within neuroticism, whereas in Krueger et al. depressivity and suspiciousness are within detachment. We opted to confine our discussion to the description of the model provided by Krueger et al. because this version is the published version that received peer review and will still be readily available when this chapter is published.

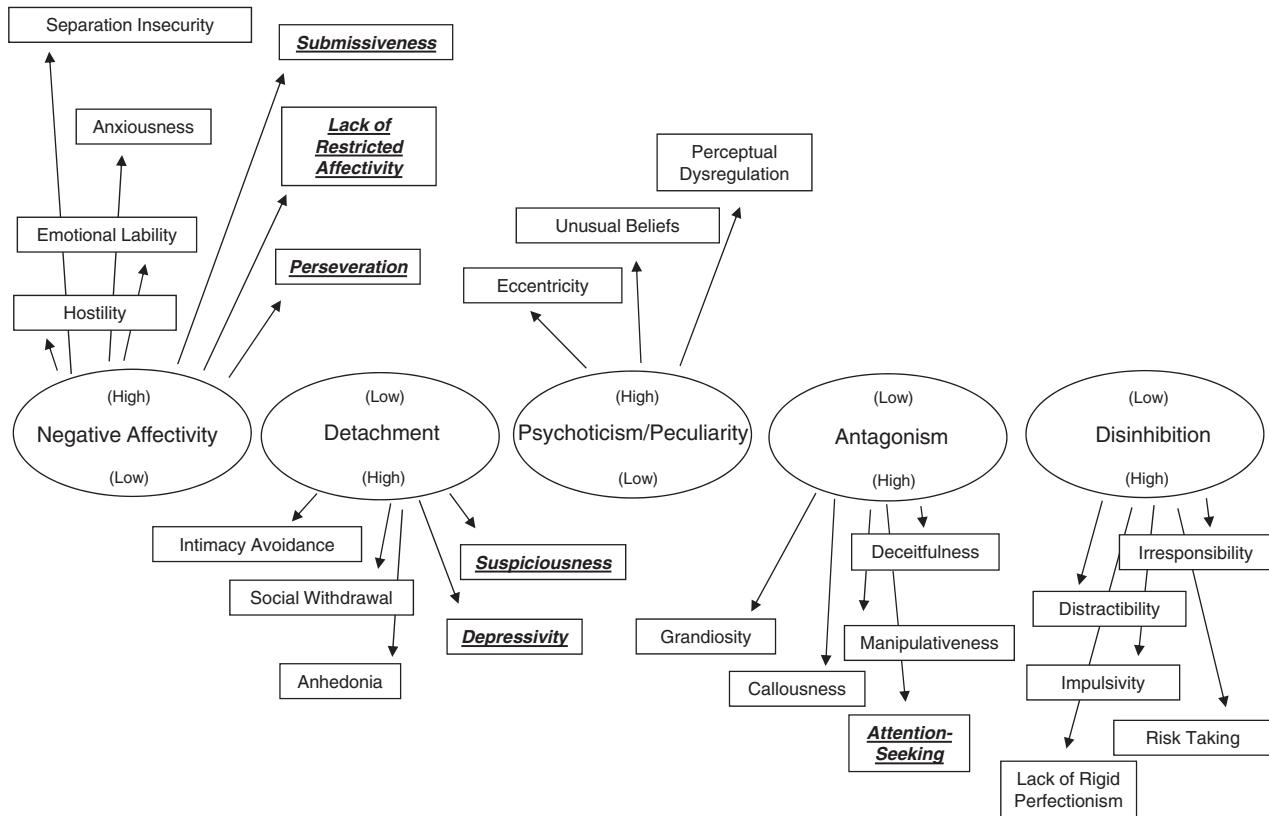


FIGURE 19.1. DSM-5 maladaptive traits dimensional model. Based on data from Krueger, Eaton, Derringer, et al. (2011).

Two of the traits, lack of rigid perfectionism within disinhibition and lack of restricted affectivity within neuroticism, are actually traits that are being keyed negatively in the current proposal to avoid a bipolarity of the personality structure (Widiger, 2011a). It is unclear how these would actually be used in clinical practice, wherein one would want to be assessing (for instance) rigid perfectionism rather than a lack of rigid perfectionism. This anomaly will likely be corrected in the final version of the DSM-5 dimensional trait model.

### Personality Disorder Types

The authors of *DSM-5* currently propose the inclusion of six personality disorder types: avoidant, obsessive-compulsive, borderline, narcissistic, schizotypal, and antisocial (psychopathic). Deleted will likely be the dependent, histrionic, schizoid, and paranoid. In fact, the *DSM-5* Personality and Personality Disorders Work Group had originally proposed deleting narcissistic as well (Skodol,

2010), but in response to considerable criticism (Miller, Widiger, & Campbell, 2010; Ronningstam, 2011; Widiger, 2011b), this proposal was withdrawn (American Psychiatric Association, 2011).

One of the criticisms of the *DSM-IV-TR* nomenclature was lack of coverage (Verheul & Widiger, 2004; Westen & Arkowitz-Westen, 1998). This problem will be magnified substantially in *DSM-5*, much to the objection of many personality disorder researchers and clinicians (e.g., Bornstein, 2011; Mullins-Sweatt, Bernstein, & Widiger, in press; Pilkonis, Hallquist, Morse, & Stepp, 2011; Pincus, 2011; Shedler et al., 2010). It is important to note that the decision to delete these diagnoses was not intended to imply that the maladaptive personality traits included within each respective disorder (e.g., anhedonia within schizoid, attention-seeking within histrionic, and submissiveness within dependent) do not exist or are not important to assess. On the contrary, these traits are still being included within the dimensional model (see Figure 19.1), making

the dimensional trait model all the more important because it will be the only source for their recognition.

It should also be noted that the schizotypal diagnosis is still proposed for inclusion within *DSM-5* but no longer as a personality disorder (Skodol, in press). It is currently proposed that it be shifted out of the personality disorders section into a new section concerning schizophrenia spectrum disorders, with the personality disorder classification as a secondary coding (American Psychiatric Association, 2011). It is also worth noting that even though schizotypal personality disorder is being shifted out of the personality disorders section, the schizotypal traits of eccentricity, unusual beliefs, and perceptual dysregulation would still be included with the personality disorders' dimensional trait model (Skodol, in press), providing particular importance to the dimensional trait model for the recognition of schizotypal personality traits.

The proposal to shift schizotypal out of the personality disorder section is consistent with a broader proposal, still under consideration, to delete entirely the personality disorders section, reformulating each respective *DSM-IV-TR* personality disorder as an early-onset chronic variant of an existing Axis I disorder (i.e., Krueger, 2005; Krueger, Eaton, Derringer, et al., 2011). For example, also under consideration for *DSM-5* would be a reformulation of antisocial personality disorder as an adult variant of conduct disorder, avoidant personality disorder would become generalized social phobia, borderline personality disorder would become an early-onset and chronic mood dysregulation disorder, and obsessive-compulsive personality disorder would become an early-onset and chronic variant of obsessive-compulsive anxiety disorder (see Krueger, Eaton, Derringer, et al., 2011, for a more detailed articulation of their proposal). The only personality disorder currently proposed for *DSM-5* that could not be shifted in this manner is perhaps the narcissistic.

A radical proposal for *DSM-5* was the abandonment of diagnostic criterion sets for narrative prototype matching, in which one would match one's perception of a patient with a 10- to 17-sentence paragraph description of a prototypic case (Skodol, 2010) modeled after the method developed by Westen,

Shedler, and Bradley (2006). Narrative prototype matching was essentially a return to the method used for the second edition of the *DSM* (*DSM-II*; American Psychiatric Association, 1968), which consistently yielded unreliable and invalid diagnoses (Spitzer, Williams, & Skodol, 1980). In response to a series of critical reviews (Pilkonis et al., 2011; Widiger, 2011b; Zimmerman, 2011), the proposal was eventually rejected by the chair of the *DSM-5* Task Force in favor of new diagnostic criterion sets that place considerable emphasis on maladaptive personality traits (American Psychiatric Association, 2011; Krueger, 2011; Siever, 2011). The basis for the selection of the traits to be used for each personality disorder diagnosis is not really clear (Samuel et al., in press), but it is clear that the inclusion of the traits as part of the diagnostic criterion sets is modeled closely on the simplified version of FFM prototype matching developed by Miller, Bagby, Pilkonis, Reynolds, and Lynam (2005) in which one counts the number of relevant traits that are present. For example, the proposed *DSM-5* diagnostic criteria for BPD would require impairment in the following: identity (e.g., feelings of emptiness or dissociative states), self-direction (e.g., instability in goals or career plans), empathy (e.g., compromised ability to recognize the feelings of others), and intimacy (e.g., unstable and intense relationships), along with the FFM traits of emotional lability, anxiousness, separation insecurity, depressivity, impulsivity, risk taking, and hostility. Miller (Chapter 17, this volume) provides a description of the FFM prototype (profile) matching and indicates its parallels to the *DSM-5* proposal.

## FFM PERSONALITY DISORDER DIAGNOSIS

The process we recommended in the prior edition of this book for the provision of a personality disorder diagnosis from the perspective of the FFM consisted of four steps: (a) provide a description of the person's personality traits with respect to the five domains and 30 facets of the FFM; (b) identify the problems, impairments, and maladaptive variants of each elevated normal personality trait; (c) determine whether the impairments are sufficiently significant to warrant a diagnosis; and (d) determine whether the constellation of FFM traits matches the profile for a

particular personality disorder pattern (Widiger et al., 2002). As we noted earlier, one does not need to complete all of the steps to obtain clinically useful information. We indicate here how the *DSM-5* proposal now parallels closely the FFM PDD, albeit there are also a few important differences. The parallels and differences are discussed as we describe each step in turn.

### **FFM Personality Trait Description**

The first step is to obtain a description of the person in terms of the five domains and the specific facets of the FFM. One of the advantages of the FFM relative to other dimensional models of personality (and personality disorder) is that there are a wide variety of potential instruments to help with this assessment, including self-report inventories, observer rating scales, and semistructured interviews (De Raad & Perugini, 2002). No single instrument should be understood as providing an operational definition of the FFM domains and facets (Cronbach & Meehl, 1955). Clearly some instruments will have greater reliability and validity than others, and each particular instrument will have potential advantages and disadvantages (see Samuel, Chapter 15, this volume, for a review of potential instruments).

The predominantly used measure of the FFM is the self-report inventory, NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992). The NEO PI-R is a widely validated measure. A considerable bulk of the validation of the FFM has been based on NEO PI-R research, including but certainly not limited to convergent and discriminant validation across self- and peer ratings (McCrae & Costa, 2003), cross-cultural validation (McCrae, 2002, 2009; McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005), temporal stability (Costa & McCrae, 1992), and multivariate behavior genetics (e.g., Yamagata et al., 2006). Clinical researchers generally prefer a semistructured interview over a self-report inventory (Widiger & Samuel, 2005; Zimmerman 2003), for which there is the Structured Interview for the Five-Factor Model (SIFFM; Trull et al., 1998), the only semistructured interview yet developed for a dimensional model of personality or personality disorder. There are also a

number of abbreviated measures of the FFM; one that is modeled explicitly after the NEO PI-R and includes an assessment at the facet level is the Five-Factor Model Rating Form (Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006; see Exhibit 19.1).

Although some FFM measures assess only the five broad factors, clinicians normally need more detailed information on specific traits. A client who is high in extraversion might be very high in warmth, but merely average in excitement seeking; his or her problems and response to therapy are likely to be different from those of an extravert who is average in warmth but very high in excitement seeking. Many specific traits are associated with each of the five factors, and at present there is no consensus on which facets should be assessed (see McCrae & Costa, Chapter 2, this volume). The 30 facets of the NEO Inventories have proven useful and are at present the most widely used. In the remainder of this chapter, we assume these are the facets assessed in FFM PDD, although the arguments would apply equally to any other well-chosen set of facets.

Quite a bit of useful information will be available to a clinician who stops at this initial step of the four-step procedure because much has been learned about the etiology, course, and correlates of the FFM domains and facets (see Chapter 2, this volume). As acknowledged by the chair of the *DSM-5* Personality Disorders Work Group, “similar construct validity has been more elusive to attain with the current *DSM-IV* personality disorder categories” (Skodol et al., 2005, p. 1923). This potential information includes (but is hardly limited to) childhood antecedents (Caspi, Roberts, & Shiner, 2005; Mervielde, De Clercq, De Fruyt, and Van Leeuwen, 2005; see also Chapter 4, this volume), temporal stability across the life span (Roberts & DelVecchio, 2000; Soto, John, Gosling, & Potter, 2011), physical health consequences (Lahey, 2009), and a wide array of other important life outcomes, both positive and negative, such as subjective well-being, social acceptance, relationship conflict, marital status, academic success, criminality, unemployment, and job satisfaction (John, Naumann, & Soto, 2008; Lahey, 2009; Ozer & Benet-Martínez, 2006)—even mortality years into the future (Deary, Weiss, & Batty, 2010; Weiss & Costa, 2005).

**EXHIBIT 19.1****Five-Factor Model Rating Form**

<b>5 = Extremely high</b>	<b>4 = High</b>	<b>3 = Neither high nor low</b>	<b>2 = Low</b>	<b>1 = Extremely Low</b>
<b>Neuroticism versus emotional stability:</b>				
<b>1. Anxiousness</b> (fearful, apprehensive)	5	4	3	2
<b>2. Angry hostility</b> (angry, bitter)	5	4	3	2
<b>3. Depressiveness</b> (pessimistic, glum)	5	4	3	2
<b>4. Self-consciousness</b> (timid, embarrassed)	5	4	3	2
<b>5. Impulsivity</b> (tempted, urgency)	5	4	3	2
<b>6. Vulnerability</b> (helpless, fragile)	5	4	3	2
<b>Extraversion versus introversion:</b>				
<b>7. Warmth</b> (cordial, affectionate, attached)	5	4	3	2
<b>8. Gregariousness</b> (sociable, outgoing)	5	4	3	2
<b>9. Assertiveness</b> (dominant, forceful)	5	4	3	2
<b>10. Activity</b> (vigorous, energetic, active)	5	4	3	2
<b>11. Excitement seeking</b> (reckless, daring)	5	4	3	2
<b>12. Positive emotions</b> (high-spirited)	5	4	3	2
<b>Openness versus closedness to one's own experience:</b>				
<b>13. Fantasy</b> (dreamer, unrealistic, imaginative)	5	4	3	2
<b>14. Aesthetics</b> (aberrant interests, aesthetic)	5	4	3	2
<b>15. Feelings</b> (self-aware)	5	4	3	2
<b>16. Actions</b> (unconventional, eccentric)	5	4	3	2
<b>17. Ideas</b> (strange, odd, peculiar, creative)	5	4	3	2
<b>18. Values</b> (permissive, broad-minded)	5	4	3	2
<b>Agreeableness versus antagonism:</b>				
<b>19. Trust</b> (gullible, naive, trusting)	5	4	3	2
<b>20. Straightforwardness</b> (confiding, honest)	5	4	3	2
<b>21. Altruism</b> (sacrificial, giving)	5	4	3	2
<b>22. Compliance</b> (docile, cooperative)	5	4	3	2
<b>23. Modesty</b> (meek, self-effacing, humble)	5	4	3	2
<b>24. Tender-mindedness</b> (soft, empathetic)	5	4	3	2
<b>Conscientiousness versus undependability:</b>				
<b>25. Competence</b> (perfectionistic, efficient)	5	4	3	2
<b>26. Order</b> (ordered, methodical, organized)	5	4	3	2
<b>27. Dutifulness</b> (rigid, reliable, dependable)	5	4	3	2
<b>28. Achievement</b> (workaholic, ambitious)	5	4	3	2
<b>29. Self-discipline</b> (dogged, devoted)	5	4	3	2
<b>30. Deliberation</b> (cautious, ruminative, reflective)	5	4	3	2

Note. From Five-Factor Rating Form, an unpublished test. Copyright 2004 with permission from T. A. Widiger.

A distinct advantage of the FFM PDD relative to the *DSM-IV-TR* personality disorders, the *DSM-5* personality disorders, and the *DSM-5* dimensional trait model, is the inclusion of normal personality traits. Krueger and Eaton (2010) and Widiger and Trull (2007) extolled the virtues of having a truly integrative model of normal and abnormal personality:

Some of these [personality] strengths may . . . be quite relevant to treatment, such as openness to experience indicating an interest in exploratory psychotherapy, agreeableness indicating an engagement in group therapy, and conscientiousness indicating a willingness and ability to adhere to

the demands and rigor of dialectical behavior therapy. (Widiger & Mullins-Sweatt, 2009, p. 203)

Krueger and Eaton (2010), mirroring these recommendations, described a person with borderline personality disorder whose high openness and extraversion had important treatment implications. “The high openness might also suggest that this person would be open to a therapeutic approach where depth and underlying motives for behavior are explored” (Krueger & Eaton, 2010, p. 102). These expectations were confirmed in a study by Miller, Pilkonis, and Mulvey (2006) because openness to experience and conscientiousness predicted treatment utilization, consistent with findings also reported in general medical care (Rhodes, Courneya, & Bobick, 2001).

Personality disorders are among the more stigmatizing within the *DSM*. Personality disorders are relatively unique in concerning ego-syntonic aspects of the self, or one’s characteristic manner of thinking, feeling, behaving, and relating to others almost every day throughout one’s adult life. An Axis I mental disorder is something that happens to the person, whereas a personality disorder is who that person is (Millon, 2011). A personality disorder diagnosis suggests that who you are and always have been is itself a mental disorder. The FFM PDD, in contrast, provides a more complete description of each person’s self that recognizes and appreciates that the person is more than just the personality disorder and that there are aspects to the self that can be adaptive, even commendable, despite the presence of the personality disorder. In addition, no longer would a personality disorder be conceptualized as something that is qualitatively distinct from normal personality. A personality disorder represents simply the presence of maladaptive variants of personality traits that are evident within all persons.

Normal personality traits were considered for inclusion within *DSM-5*, consistent with the original name of the work group as the Personality and Personality Disorders Work Group (Skodol, 2009). However, it eventually became apparent that no such traits would be included. All 25 of the *DSM-5* traits refer to abnormal personality, as do the five

domains. Each *DSM-5* domain is scored on a 4-point scale, where 3 = *extremely descriptive*, 2 = *moderately descriptive*, 1 = *mildly descriptive*, and 0 = *very little or not at all*. Having very little antagonism does not imply being agreeable. It just means being only a little bit antagonistic. “Both Average Joe and St. Francis of Assisi would likely score ‘0’ on ratings of [DSM-5] Antagonism” (Costa & McCrae, 2010, p. 128). There is no ability with the proposed *DSM-5* dimensional trait model (American Psychiatric Association, 2011) to assess the adaptive variants of conscientiousness, agreeableness, openness, or extraversion, missing an opportunity to develop a truly integrative model of normal and abnormal personality functioning.

### **Identify Personality-Related Problems**

The second step of the FFM PDD four-step procedure is to identify impairments associated with the person’s elevation on facets of the FFM. From the perspective of the FFM PDD, there are both adaptive and maladaptive variants of all 10 poles of the FFM domains (Widiger & Costa, 1994). The adaptivity of agreeableness and the maladaptivity of antagonism are perhaps self-evident. However, there can also be adaptive benefits in being antagonistic (e.g., self-promotional and selfish behavior contributing to higher income) as well as maladaptive liabilities in being agreeable (e.g., selfless self-sacrifice contributing to being exploited or abused; Judge, Livingston, & Hurst, in press; Widiger & Presnall, in press). An FFM trait elevation by itself does not necessarily imply the presence of a personality disorder, however, nor does the degree of elevation within any one particular domain of the FFM (e.g., neuroticism) have the same implications for maladaptivity as the same degree of elevation within another domain (e.g., agreeableness; Widiger & Costa, 1994).

The object of the second step is to specify which (if any) of the maladaptive manifestations of FFM traits a client has. There are two slightly different ways to conceptualize these maladaptive features. McCrae, Löckenhoff, and Costa (2005) viewed them as characteristic maladaptations: chronic problems in living (such as being exploited by others or financial difficulties) that result from the interaction of FFM traits with life circumstances. Widiger and colleagues (e.g., Widiger & Mullins-Sweatt, 2009)

prefer to think of them as maladaptive traits (or variants), such as *subservient* and *irresponsible*, that summarize patterns of problematic behaviors. In that view, specific problems are presented as criteria for identifying the maladaptive variant. In both views, the ultimate focus is on the concrete impairments, symptoms, and maladaptive behaviors that are associated with specific FFM traits.

The English language is not itself proportional in the extent to which there are adaptive and maladaptive trait terms within each of the 10 poles of the FFM. For example, there are more ways to be maladaptively antagonistic than maladaptively agreeable. This was demonstrated empirically by Coker, Samuel, and Widiger (2002). Sankis, Corbitt, and Widiger (1999) had persons rate each of the 1,710 trait terms within the English language (Goldberg, 1993) with respect to its desirability. The terms were then organized by Coker et al. with respect to its location within the FFM previously identified by Goldberg. They reported the existence of undesirable trait terms for each pole of each of the five domains, and the distribution of desirability was not equal. There were substantially more undesirable (and fewer desirable) trait terms for high neuroticism, introversion, closedness to experience, antagonism, and low conscientiousness than for low neuroticism, high extraversion, openness to experience, agreeableness, and conscientiousness. Nevertheless, it is important to recognize that there were still undesirable ways in which one could be extraverted (e.g., some of these terms were flaunt, showy, and long-winded), agreeable (e.g., ingratiating and dependent), conscientious (e.g., leisureless and stringent), open (e.g., unconventional), and even emotionally stable (e.g., emotionless).

Items within the NEO PI-R closely parallel the uneven distribution of maladaptivity within the language. There are relatively more NEO PI-R items keyed in the direction of neuroticism, introversion, closedness to experience, antagonism, and low conscientiousness that assess maladaptive behavior than there are items keyed in the direction of low neuroticism, high extraversion, openness, agreeableness, and conscientiousness (Haigler & Widiger, 2001). This does not mean though that there are no NEO PI-R items that assess (for instance) maladap-

tively high conscientiousness. The NEO PI-R does contain a few such items (e.g., “I’m something of a ‘workaholic’”; Costa & McCrae, 1992, p. 73), but approximately 90% of the conscientiousness items are keyed in the direction of adaptive rather than maladaptive functioning (Haigler & Widiger, 2001). This is one reason that one should not rely solely on scale elevation to diagnose a person with a personality disorder from the perspective of the FFM. Scale elevation alone is insufficient.

Widiger, Costa, and McCrae (2002) listed typical impairments associated with each of the 60 poles of the 30 facets of the FFM (see Table 19.1). McCrae, Löckenhoff, and Costa (2005) provided a further extension of this list, and McCrae and Costa (2010) offered a Problems in Living Checklist that clinicians could use in conjunction with the NEO PI-R. Abbreviated versions (for ease of usage) are provided in such measures as the Five-Factor Form (see Exhibit 19.2) and the Five-Factor Model Score Sheet (Few et al., 2010). An assessment of some of the maladaptive variants of both poles of the 30 facets is included explicitly within the administration of the SIFFM (Trull et al., 1998).

Figures 19.2 through 19.6 provide a graphic illustration of maladaptive variants of each of the 10 poles of the five domains of the FFM, along with diagnostic criteria for each respective maladaptive variant. It is evident that the DSM-5 dimensional trait model closely parallels this second step of the FFM four-step procedure (e.g., compare Figure 19.1 with Figures 19.2 through 19.6). Stopping at this step would be consistent with describing a patient in terms of the DSM-5 dimensional trait model (albeit, as discussed later, the FFM provides substantially broader coverage of maladaptive personality traits). The criterion sets for the maladaptive variants of the FFM contained in Figures 19.2 through 19.6 are provided for clinicians and researchers who wish to approach the assessment and diagnosis of FFM personality disorder using a method comparable to that developed for DSM-IV-TR (Lynam, Chapter 18, this volume, discusses the development of self-report inventories to assess these constructs). The criterion sets are also helpful in providing a clearer illustration and more specific meaning for each respective maladaptive trait. For example, in Figure 19.5, there

**TABLE 19.1****Potential Problems Associated With Domains and Facets of the Five-Factor Model**

<b>Facet</b>	<b>High</b>	<b>Low</b>
<b>Domain: Neuroticism</b>		
Anxiousness	Chronic negative affects, including anxiety, fearfulness, tension, irritability, anger, dejection, hopelessness, guilt, shame; difficulty in inhibiting impulses; unwarranted pessimism; unfounded somatic complaints; helplessness	Lack of appropriate concern for potential problems in health or social adjustment; emotional blandness
Angry hostility	Extremely nervous, anxious, tense, or jittery; excessively apprehensive, prone to worry, inhibited, and uncertain	Lacks significant or appropriate feelings of anxiety or apprehension; fails to expect, anticipate, or appreciate normal, obvious, or readily apparent dangers, risks, threats, or consequences
Depressiveness	Episodes of intense and dyscontrolled rage and fury; hypersensitive and touchy, easily reacting with anger and hostility toward annoyances, rebukes, criticisms, rejections, frustrations, or other minor events; hostility may provoke arguments, disputes, and conflicts	Suppresses appropriate feelings of anger or hostility; does not become annoyed or angry when confronted with substantial provocation, exploitation, abuse, harm, or victimization
Self-consciousness	Continually depressed, gloomy, hopeless, and pessimistic; feels worthless, helpless, and excessively guilty; may at times be suicidal	Fails to appreciate actual costs and consequences of losses, setbacks, and failures; has difficulty soliciting or maintaining support and sympathy from others after sustaining a loss
Impulsiveness	Intense feelings of chagrin and embarrassment; feels mortified, humiliated, ashamed, or disgraced in the presence of others	Indifferent to opinions or reactions of others; often commits social blunders, insults, and indiscretions; lacks feelings of shame, even for socially egregious acts; appears to be glib and superficial.
Vulnerability	Eats or drinks to excess or is troubled by debts secondary to overspending; susceptible to cons, tricks, and poor business decisions; impulsively engages in a variety of harmful acts, including binge eating, excessive use of drugs and alcohol, excessive gambling, suicidality or self-mutilation	Excessively restrained or restricted; life is dull or uninteresting; lacks spontaneity
<b>Domain: Extraversion</b>		
Warmth	Easily overwhelmed by minor stress; responds with panic, helplessness, and dismay to even minor stressors; prone to dissociative, psychotic, anxiety, or mood disorder symptomatology when experiencing stress	Feels unrealistically invulnerable or invincible to danger; fails to recognize own limitations; fails to take appropriate precautions or obtain necessary support or assistance; fails to recognize or appreciate signs of illness, failure, or loss
		Social isolation, interpersonal detachment, and lack of support networks; flattened affect; lack of joy and zest for life; reluctance to assert self or assume leadership roles, even when qualified; social inhibition and shyness
		Difficulty developing or sustaining personal, intimate relationships

*(continued)*

**TABLE 19.1 (continued)****Potential Problems Associated With Domains and Facets of the Five-Factor Model**

<b>Facet</b>	<b>High</b>	<b>Low</b>
Gregariousness	Unable to tolerate being alone; excessive need for the presence of others; may place more emphasis on the quantity of relationships (or developing new relationships) than the depth and quality of existing relationships	Socially isolated; no apparent social support network due to social withdrawal
Assertiveness	Domineering, pushy, bossy, dictatorial, or authoritarian	Resigned and ineffectual; little influence or authority at work and for decisions that affect his or her own personal life
Activity	Driven, often overextended, frenzied, frantic, distractible, and at times burned out; feels driven to keep busy, filling spare time with numerous and at times trivial or pointless activities and rarely taking time off to relax and do nothing; annoying, frustrating, or exhausting to friends and colleagues	Inactive, idle, sedentary, and passive; appears apathetic, inert, and lethargic
Excitement seeking	Engages in a variety of reckless and even highly dangerous activities. Behavior is rash, foolhardy, and careless.	Activities and apparent pleasures are habitual, mechanical, and routine; life is experienced as dull, monotonous, and in a rut
Positive emotions	Overemotional and overreactive to minor events; loses control of emotions during major events; tends to be giddy and may appear to others as euphoric or manic	Severe, austere, solemn, or stern; appears unable to enjoy himself or herself at gay, happy events; remains grim and humorless
<b>Domain: Openness to Experience</b>		
Fantasy	Preoccupation with fantasy and daydreaming; lack of practicality; eccentric thinking (e.g., belief in ghosts, reincarnation, UFOs); diffuse identity and changing goals: for example, joining religious cult; susceptibility to nightmares and states of altered consciousness; social rebelliousness and nonconformity that can interfere with social or vocational advancement	Difficulty adapting to social or personal change; low tolerance or understanding of different points of view or lifestyles; emotional blandness and inability to understand and verbalize own feelings; alexithymia; constricted range of interests; insensitivity to art and beauty; excessive conformity to authority
Aesthetics	Often distracted by or preoccupied with fantasies; may often confuse reality and fantasy; appears to be living in a dream world; may have dissociative or hallucinatory experiences.	Lacks any interest in fantasy or daydreams. Imagination tends to be sterile. Fails to enjoy activities that involve fantasy or imagination.
Feelings	Preoccupied with aesthetic interests or activities to the detriment of social and occupational functioning; "Driven" or "obsessed" with some form of unusual, peculiar, or aberrant aesthetic activity	Has no appreciation of aesthetic or cultural pursuits; unable to communicate with or relate to others due to absence of appreciation for cultural or aesthetic interests (e.g., artwork "just looks like a bunch of colors to me")
Actions	Excessively governed by or preoccupied with his or her emotionality; may experience self as continuously within an exaggerated mood state, and may be excessively sensitive or responsive to transient mood states	Oblivious to the feelings within themselves and within other persons; may seldom experience substantial or significant feelings; will appear highly constricted
	Unpredictable in his or her plans and interests; may switch careers and jobs numerous times	Avoids any change to his or her daily routine; establishes a set routine in his or her daily activities, and keeps to this routine in a repetitive, habitual manner

**TABLE 19.1 (continued)****Potential Problems Associated With Domains and Facets of the Five-Factor Model**

<b>Facet</b>	<b>High</b>	<b>Low</b>
Ideas	Preoccupied with unusual, aberrant, or strange ideas; reality testing can be tenuous	Fails to appreciate or recognize new solutions; rejects new, creative, or innovative ideas as too strange or “crazy”; repeatedly applies old, failed solutions to new problems; does better with straightforward problems and concrete solutions; rigidly traditional, old-fashioned, and resistant to new, alternative perspectives or cultures
Values	Continually questions and rejects alternative value systems; lacks any clear or coherent guiding belief system or convictions; adrift and lost when faced with moral, ethical, or other significant life decisions; can be excessively unconventional and permissive	Dogmatic and closed-minded with respect to his or her moral, ethical, or other belief system; rejecting and intolerant of alternative belief systems; may be prejudiced and bigoted
<b>Domain: Agreeableness</b>		
Gullibility	Gullibility; indiscriminate trust of others; excessive candor and generosity, to detriment of self-interest; inability to stand up to other and fight back; easily taken advantage of	Cynicism and paranoid thinking; inability to trust even friends or family; quarrelsome; too ready to pick fights; exploitative and manipulative; lying; rude and inconsiderate manner alienates friends, limits social support; lack of respect for social conventions can lead to troubles with the law; inflated and grandiose sense of self; arrogance
Trust	Tendency to be gullible, “green,” “dewy-eyed,” or naive; fails to recognize that some persons should not be trusted; fails to take realistic or practical cautions with respect to property, savings, and other things of value.	Paranoid and suspicious of most persons; readily perceives malevolent intentions within benign, innocent remarks or behaviors; often involved in an acrimonious argument with friend, colleague, associate, or neighbor because of unfounded belief or expectation that they are being mistreated, used, exploited, or victimized
Straightforwardness	Naively and indiscriminately reveals personal secrets, insecurities, and vulnerabilities to others, thereby exposing himself or herself to unnecessary exploitation, loss, or victimization; unable to be clever, secretive, cunning, or shrewd	Continually deceptive, dishonest, and manipulative; cons or deceives others for personal profit, gain, or advantage; other persons may quickly or eventually recognize that they cannot be trusted; may also engage in pathological lying
Altruism	Excessively selfless and sacrificial; often exploited, abused, or victimized because of a failure to consider or be concerned with his or her own needs or rights	Little to no regard for the rights of others; greedy and stingy; exploitative or abusive
Compliance	Acquiescent, yielding, docile, and submissive; often exploited, abused, or victimized as a result of a failure to protect or defend oneself	Argumentative, defiant, resistant to authority, contentious, contemptuous, belligerent, combative, obstructive; may also be bullying, intimidating, and even physically aggressive
Modesty	Meek and self-denigrating; fails to appreciate or is unable to acknowledge his or her talents, abilities, attractiveness, or other positive attributes	Conceited, arrogant, boastful, pretentious, pompous; feels entitled to special considerations, treatment, or recognition that are unlikely to be provided
Tender-mindedness	Soft-hearted, mawkish, or maudlin. Becomes excessively depressed, tearful, and overwhelmed in the face of pain and suffering of others. Feelings of pity and concern exploited by others.	Calloous and coldhearted, and at times even merciless and ruthless toward others. Experiences no concern, interest, or feelings for the pain and suffering of others.

*(continued)*

TABLE 19.1 (*continued*)

## Potential Problems Associated With Domains and Facets of the Five-Factor Model

<b>Facet</b>	<b>High</b>	<b>Low</b>
	<b>Domain: Conscientiousness</b>	
Competence	Overachievement—workaholic absorption in job or cause to the exclusion of family, social, and personal interests; compulsiveness, including excessive cleanliness, tidiness, and attention to detail; rigid self-discipline and an inability to set tasks aside and relax; lack of spontaneity; overscrupulousness in moral behavior.	Underachievement—not fulfilling intellectual or artistic potential; poor academic performance relative to ability; disregard of rules and responsibilities can lead to trouble with the law; unable to discipline self (e.g., stick to diet, exercise plan) even when required for medical reasons; personal and occupational aimlessness
Order	Perfectionism, emphasizing or valuing competence to the detriment of most other activities and interests; failures to be successful or even adequate in tasks, assignments, and responsibilities due to the excessive perfectionism	Lax, disinclined, incapable, and unskilled, despite a potential to be highly or at least adequately skilled
Dutifulness	Preoccupied with order, rules, schedules, and organization; undermines leisure activities; tasks remain uncompleted due to a rigid emphasis on proper order and organization; friends and colleagues frustrated by this preoccupation	Disorganized, sloppy, haphazard, and slipshod
Achievement striving	Rigid adherence to rules and standards, failing to appreciate or acknowledge ethical and moral dilemmas; places duty above all other moral or ethical principles	Undependable, unreliable, and at times immoral and unethical
Self-discipline	Excessively devoted to career, work, or productivity to the detriment of other important areas of life; workaholic, sacrificing friends, family, and other relationships for achievement or success	Aimless, shiftless, and directionless; has no clear goals, plans, or direction in life; drifts from one job, aspiration, or place to another
Deliberation	Single-minded doggedness for trivial, inconsequential, impossible, or even harmful tasks or goals	Employment is unstable and marginal; negligent at work; excessively hedonistic and self-indulgent
	Ruminations, excessive pondering of all possible consequences to the point that decisions fail to be made on time, effectively, or at all	Hasty and careless decision making that has harmful to dire consequences; failures to consider consequences and costs, even for important life decisions

are five maladaptive variants of agreeableness (i.e., subservient, meek, selfless, self-denigrating, and gullible) and six maladaptive variants of antagonism (i.e., aggressive, callous, suspicious, arrogant, manipulative, and self-centered). In Figure 19.4 there are five maladaptive variants of openness (i.e., odd and eccentric, aberrant perceptions, aberrant ideas, dissociative tendencies, and romanticizes) and three maladaptive variants of low openness (i.e., alexithymic, closed-minded, and inflexible).

Note that the lists in each figure are not complete because of space limitations within each figure. There are a considerable number of maladaptive

variants of neuroticism and not all of them could possibly be included in Figure 19.2. Missing from antagonism in Figure 19.5 are such traits as vanity, distrustfulness, entitlement, oppositional, melodramatic emotionality, and exploitative. Table 19.1 provides a relatively more complete list.

It is evident from Table 19.1 and Exhibit 19.2 and Figures 19.2 through 19.6 that the FFM PDD provides considerably more coverage of maladaptive personality traits than will likely be provided by the DSM-5 dimensional trait model (see Figure 19.1). The original proposal for DSM-5 was limited to just 37 traits (Clark & Krueger, 2010; Krueger, Eaton,

## EXHIBIT 19.2

## Five-Factor Form

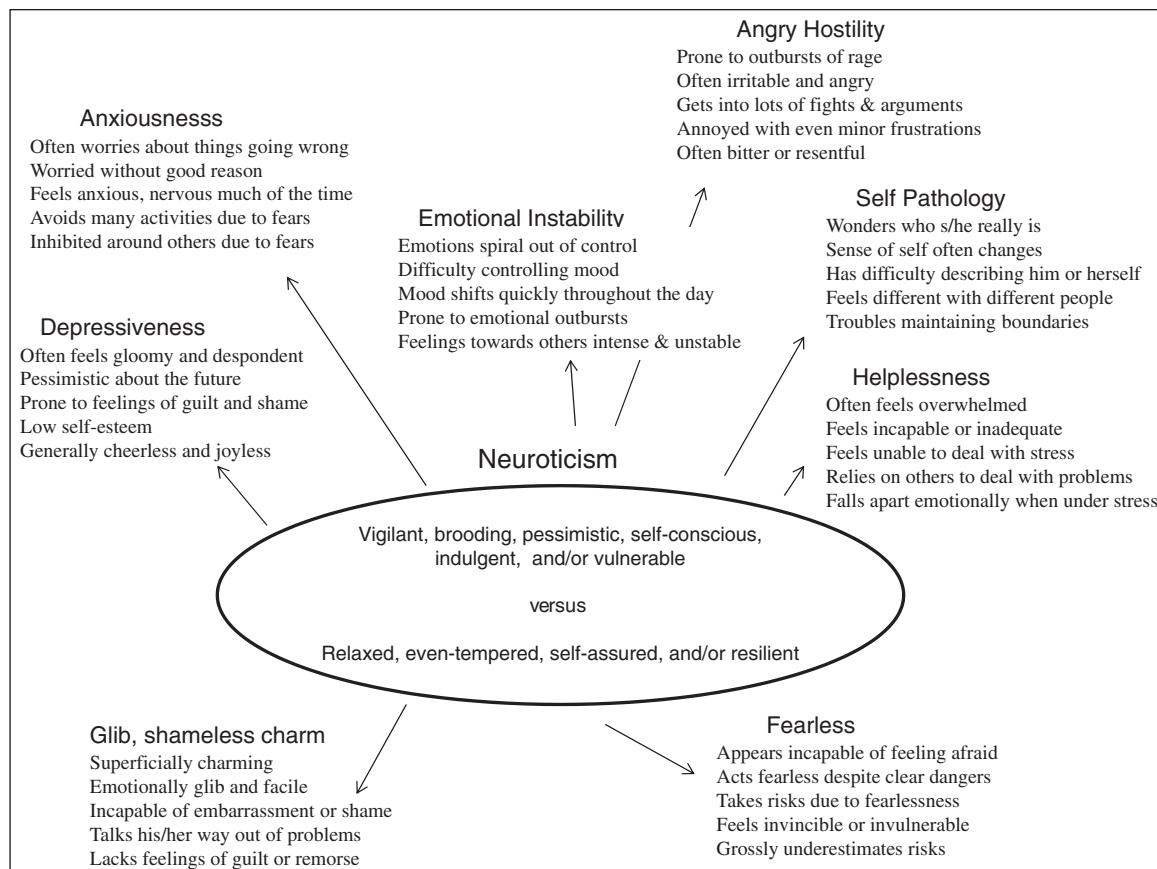
<b>Please write rating in blank on left below ↓</b>	<b>Maladaptive high (5)</b>	<b>Normal high (4)</b>	<b>Neutral (3)</b>	<b>Normal low (2)</b>	<b>Maladaptive low (1)</b>
<b>Neuroticism</b>					
<b>Anxiousness</b>	Fearful, Anxious	Vigilant, worrisome, wary		Relaxed, calm	Oblivious to signs of threat
<b>Angry hostility</b>	Rageful	Brooding, resentful, defiant		Even-tempered	Won't even protest exploitation
<b>Depressiveness</b>	Depressed, suicidal	Pessimistic, discouraged		Not easily discouraged	Unrealistic, overly optimistic
<b>Self-consciousness</b>	Uncertain of self, ashamed	Self-conscious, embarrassed		Self-assured, charming	Glib, shameless
<b>Impulsivity</b>	Unable to resist impulses	Self-indulgent		Restrained	Overly restrained
<b>Vulnerability</b>	Helpless, overwhelmed	Vulnerable		Resilient	Fearless, feels invincible
<b>Extraversion</b>					
<b>Warmth</b>	Intense attachments	Affectionate, warm		Formal, reserved	Cold, distant
<b>Gregariousness</b>	Attention seeking	Sociable, outgoing, personable		Independent	Socially withdrawn, isolated
<b>Assertiveness</b>	Dominant, pushy	Assertive, forceful		Passive	Resigned, uninfluential
<b>Activity</b>	Frantic	Energetic		Slow-paced	Lethargic, sedentary
<b>Excitement Seeking</b>	Reckless, foolhardy	Adventurous		Cautious	Dull, listless
<b>Positive Emotions</b>	Melodramatic, manic	High-spirited, cheerful, joyful		Placid, sober, serious	Grim, anhedonic
<b>Openness</b>					
<b>Fantasy</b>	Unrealistic, lives in fantasy	Imaginative		Practical, realistic	Concrete
<b>Aesthetics</b>	Bizarre interests	Aesthetic interests		Minimal aesthetic interests	Disinterested
<b>Feelings</b>	Intense, in turmoil	Self-aware, expressive		Constricted, blunted	Alexithymic
<b>Actions</b>	Eccentric	Unconventional		Predictable	Mechanized, stuck in routine
<b>Ideas</b>	Peculiar, weird	Creative, curious		Pragmatic	Closed-minded
<b>Values</b>	Radical	Open, flexible		Traditional	Dogmatic, moralistically intolerant
<b>Agreeableness</b>					
<b>Trust</b>	Gullible	Trusting		Cautious, skeptical	Cynical, suspicious
<b>Straightforwardness</b>	Guileless	Honest, forthright		Savvy, cunning, shrewd	Deceptive, dishonest, manipulative
<b>Altruism</b>	Self-sacrificial, selfless	Giving, generous		Frugal, withholding	Greedy, self-centered, exploitative
<b>Compliance</b>	Yielding, subservient, meek	Cooperative, obedient, deferential		Critical, contrary	Combative, aggressive

(continued)

**EXHIBIT 19.2 (continued)**

<b>Please write rating in blank on left below ↓</b>	<b>Maladaptive high (5)</b>	<b>Normal high (4)</b>	<b>Neutral (3)</b>	<b>Normal low (2)</b>	<b>Maladaptive low (1)</b>
<b>Modesty</b>	Self-effacing, self-denigrating	Humble, modest, unassuming		Confident, self-assured	Boastful, vain, pretentious, arrogant
<b>Tender-Mindedness</b>	Overly soft-hearted	Empathic, sympathetic, gentle		Strong, tough	Callous, merciless, ruthless
<b>Conscientiousness</b>					
<b>Competence</b>	Perfectionistic	Efficient, resourceful		Casual	Disinclined, lax
<b>Order</b>	Preoccupied w/ organization	Organized, methodical		Disorganized	Careless, sloppy, haphazard
<b>Dutifulness</b>	Rigidly principled	Dependable, reliable, responsible		Easygoing, capricious	Irresponsible, undependable, immoral
<b>Achievement</b>	Workaholic, acclaim-seeking	Purposeful, diligent, ambitious		Carefree, content	Aimless, shiftless, desultory
<b>Self-Discipline</b>	Single-minded doggedness	Self-disciplined, willpower		Leisurely	Negligent, hedonistic
<b>Deliberation</b>	Ruminative, indecisive	Thoughtful, reflective, circumspect		Quick to make decisions	Hasty, rash

Note. From Five-Factor Rating Form, an unpublished test. Copyright 2009 with permission from T. A. Widiger.



**FIGURE 19.2. Maladaptive traits for high and low neuroticism.**

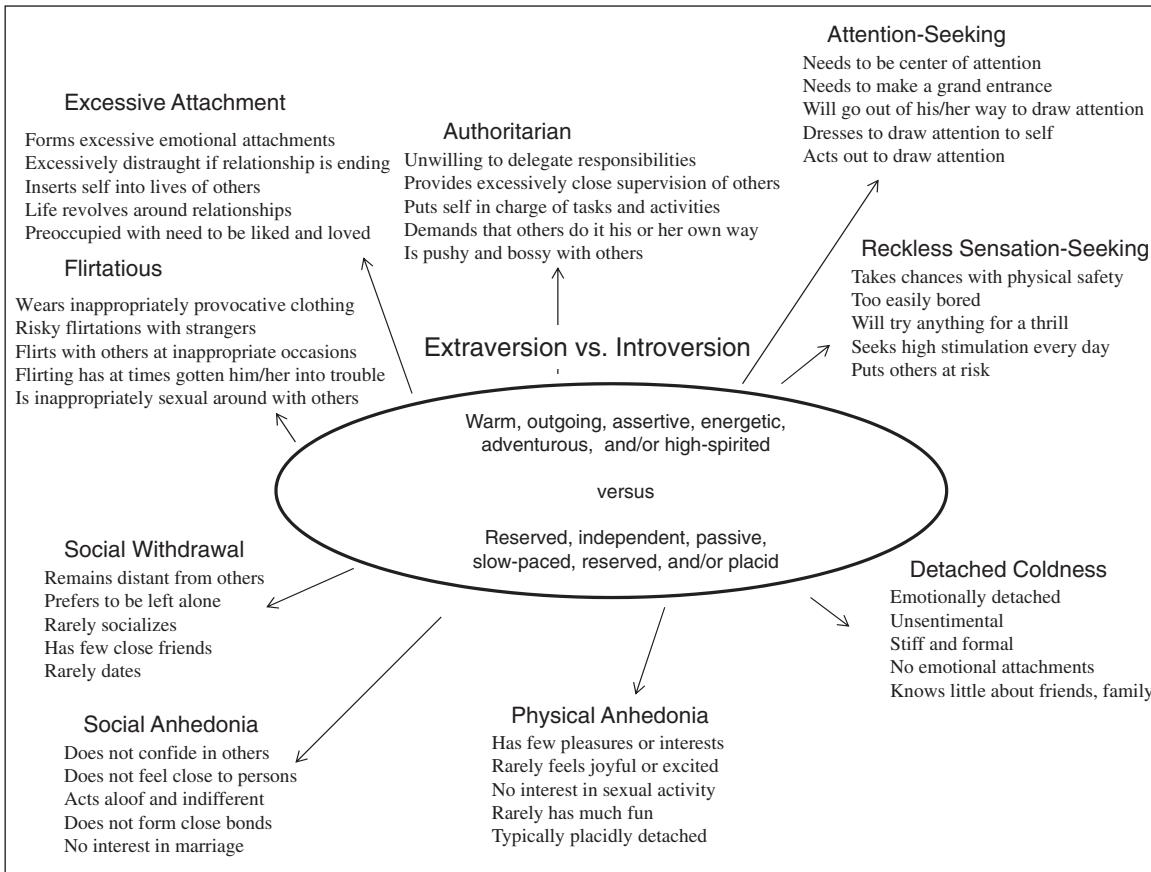


FIGURE 19.3. Maladaptive traits for high and low extraversion.

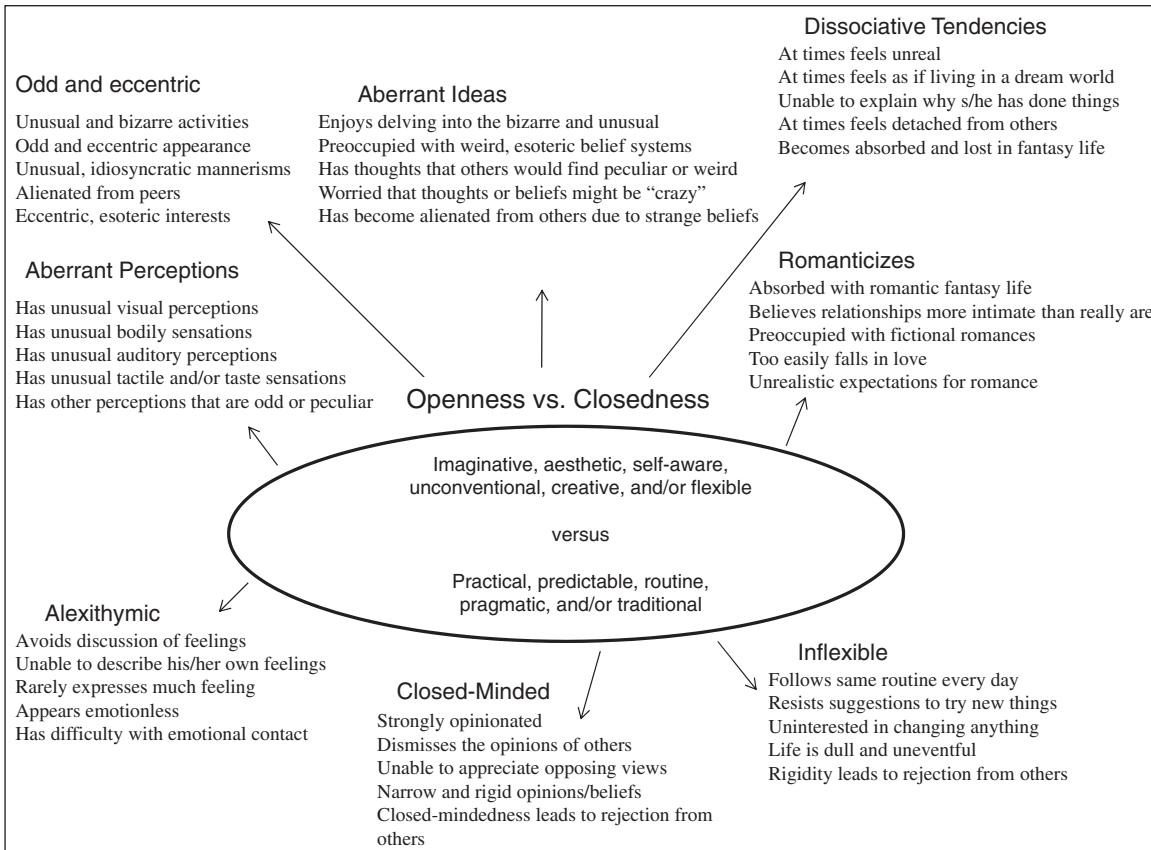


FIGURE 19.4. Maladaptive traits for high and low openness.

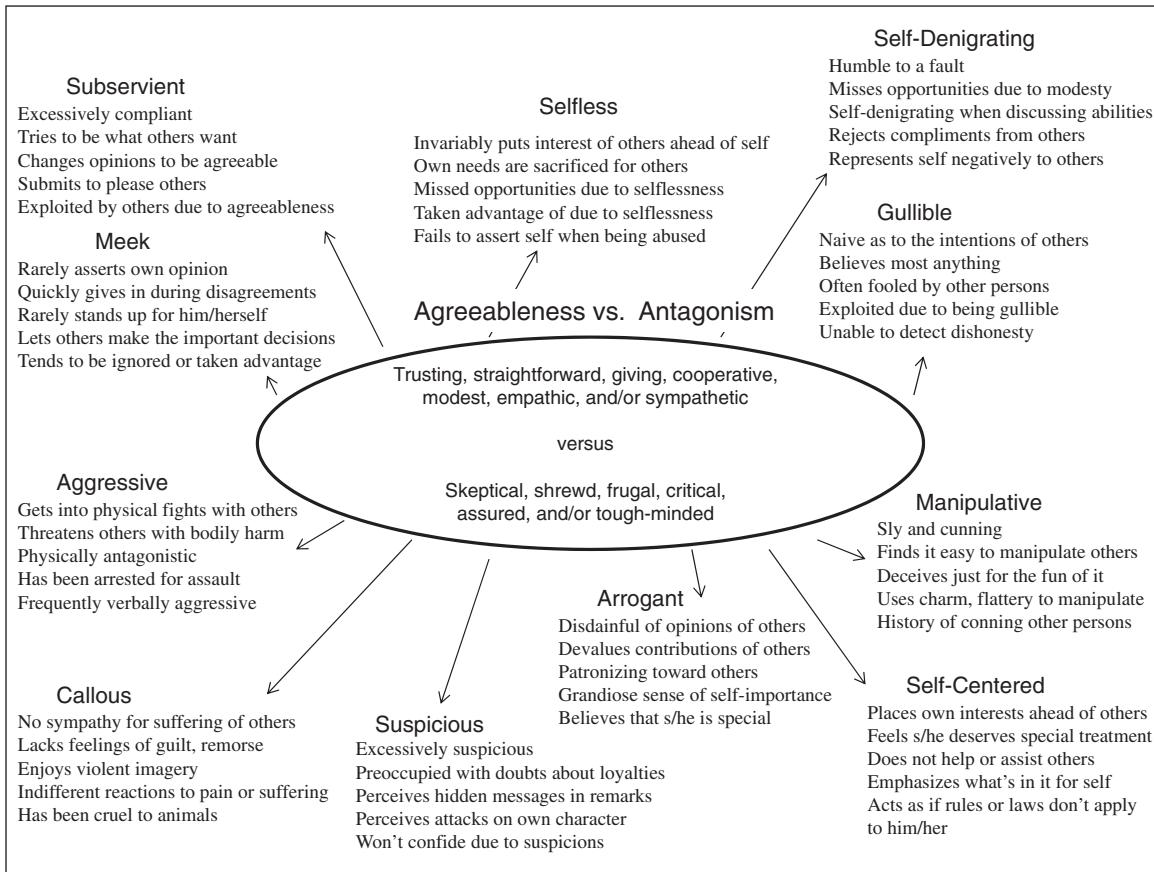


FIGURE 19.5. Maladaptive traits for high and low agreeableness.

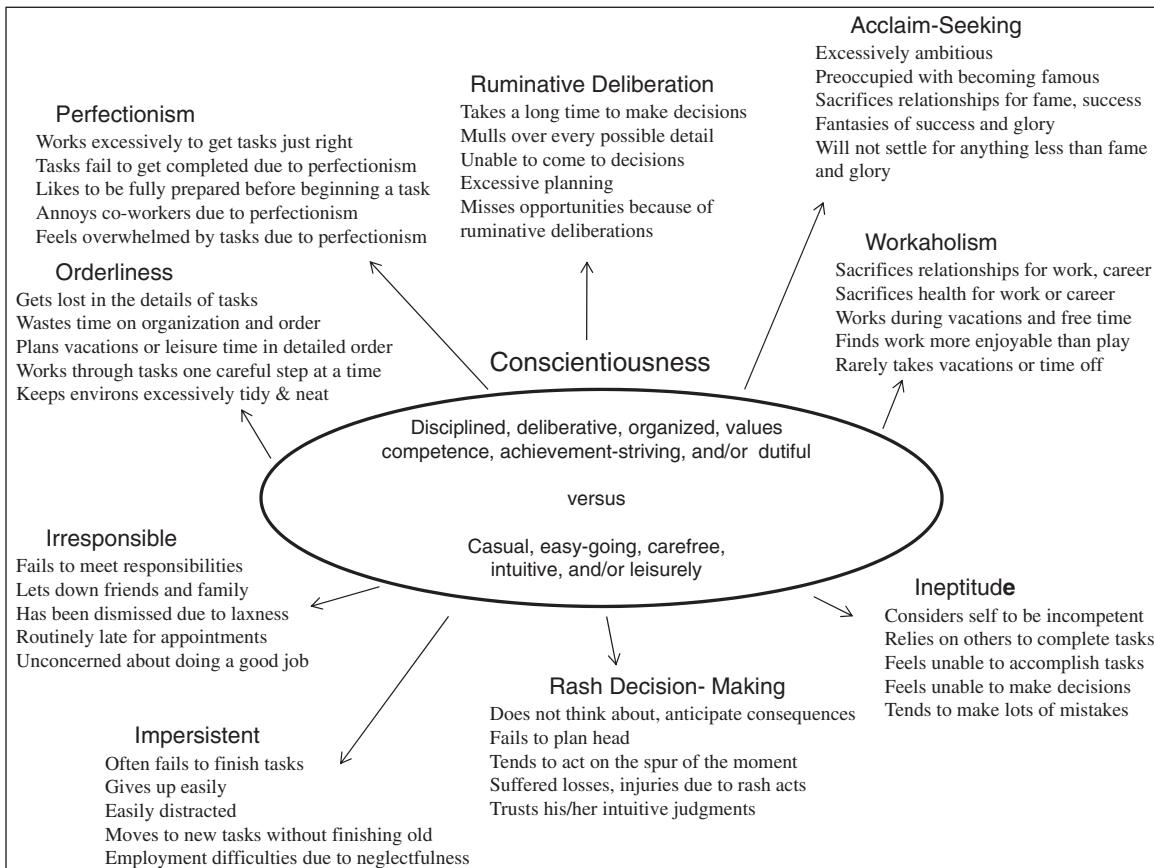


FIGURE 19.6. Maladaptive traits for high and low conscientiousness.

Clark, et al., 2011), and subsequently reduced even further on the basis of a factor analysis to only 25 (American Psychiatric Association, 2011; Krueger, Eaton, Derringer, et al., 2011). Even the 37-trait version failed to include quite a few clinically relevant traits (Simms, Goldberg, Watson, Roberts, & Welte, 2011). For example, missing from the model were glib charm and fearlessness from low neuroticism (Lynam & Widiger, 2007); attention-seeking, melodramatic positive emotionality, and sensation-seeking from extraversion (Gore, Tomiatti, & Widiger, 2011); gullibility, self-denigration, soft-heartedness, and self-sacrifice from agreeableness (Lowe, Edmondson, & Widiger, 2009); and alexithymia and closed-minded dogmatism from low openness (Piedmont, Sherman, & Sherman, in press; Piedmont, Sherman, Sherman, Dy-Liacco, & Williams, 2009). The description of narcissism is reduced to simply the presence of grandiosity and attention seeking; obsessive-compulsive to just rigid perfectionism and perseveration (American Psychiatric Association, 2011).

The proposed dimensional model for *DSM-5* is unable to include these traits in part because it largely fails to recognize the bipolarity of personality structure (Widiger, 2011a). The FFM PDD recognizes the existence of maladaptive variants of all 10 poles of all five domains (Coker, Samuel, & Widiger, 2002; McCrae, 1994; Widiger et al., 2002). For example, for FFM agreeableness versus antagonism there is a maladaptively high agreeableness at one pole (e.g., excessively compliant, gullible, meek, or self-denigrating) and a maladaptively high antagonism at the other (e.g., excessively oppositional, aggressive, suspicious, or arrogant). For FFM conscientiousness, there is perfectionism, perseveration, rigidity, and fastidiousness at the high end (i.e., compulsivity), with distractibility, recklessness, and irresponsibility at the low end (i.e., disinhibition).

In the original 37-trait *DSM-5* model, there was no bipolarity (Clark & Krueger, 2010; Krueger, Eaton, Clark, et al., 2011). For example, compulsivity and disinhibition were treated as independent dimensions, despite the consistent evidence to indicate that these two domains of personality are opposite poles of the same dimension (e.g., Clark, Livesley, Schroeder, & Irish, 1996; Clark, Vorhies,

& McEwen, 2002; Markon, Krueger, & Watson, 2005; Watson, Clark, & Chmielewski, 2008). In response to critiques of this model (e.g., Samuel, 2011; Widiger, 2011a) or a subsequent factor analysis (Krueger, Eaton, Derringer, et al., 2011), the domain of compulsivity and disinhibition were collapsed into opposite poles of one dimension. However, only one facet of compulsivity is included within this domain (i.e., rigid perfectionism), and it is described as “lack of rigid perfectionism” for it to be keyed in the same direction as the traits of disinhibition (see Figure 19.1). Similarly, restricted affectivity is described as “lack of restricted affectivity” so that it can also be keyed in the same direction as the other traits within the same domain. Rigid perfectionism and restricted affectivity are the only two traits that represent poles opposite to the five *DSM-5* personality trait domains of negative affectivity, detachment, peculiarity, antagonism, and disinhibition.

The lack of bipolarity results not only in a provision of inadequate coverage, it also contributes to some potential trait misplacements (noted by underlining in Figure 19.1). For example, the *DSM-5* dimensional trait model does not include extraversion and therefore places the histrionic trait of attention-seeking as a facet of antagonism. Histrionic traits do suggest in part the self-centeredness and manipulativeness of antagonism, but the traits of histrionic personality disorder, including attention-seeking, have been consistently classified as maladaptive variants of extraversion (Gore et al., 2011; O'Connor, 2005; Samuel & Widiger, 2008; Saulsman & Page, 2004). Similarly, submissiveness is clearly a manner of interpersonal relatedness that is associated with agreeableness (Lowe et al., 2009), but in the absence of acknowledging any maladaptive agreeableness it was placed within negative affectivity (see also Chapter 11, this volume, by Gore & Pincus). With the elimination of the domain of compulsivity from the *DSM-5* dimensional trait model, perseveration is now misplaced within emotional dysregulation (Krueger, Eaton, Derringer, et al., 2011).

Some of the potential misplacements do not, however, reflect the lack of bipolarity within the *DSM-5* model. They may simply reflect the vagaries

of a particular factor analysis. The location of some of the traits appears to be inconsistent with FFM research, including the placement of restricted affectivity within low neuroticism, depressivity within introversion, and suspiciousness within introversion (see Figure 19.1). These placements appear to be due largely to the results of one particular factor analysis (Krueger, Eaton, Derringer, et al., 2011), rather than being informed by a large body of prior research. Figure 19.7 provides an illustration of how the 25 DSM–5 traits would be classified within the FFM. Depressivity is within neuroticism, restricted affectivity is within introversion, attention-seeking is within extraversion (opposite to introversion), suspiciousness is within antagonism, submissiveness is within agreeableness (opposite to antagonism), and perseveration is within conscientiousness (opposite to disinhibition). It is possible that the location of these traits will be shifted for the final version of the dimensional trait model.

Figures 19.2 through 19.6 and even Figure 19.7 may appear inordinately dense and complex. The

10 diagnoses of DSM–IV–TR were difficult enough for clinicians to assess. Now they must assess 25 maladaptive traits in each patient, resulting in a very lengthy and complex personality profiles that will be difficult for a clinician to absorb and communicate. This is in part an inevitable result of providing a more complete and individualized personality trait profile description rather than lumping persons into multiple diagnostic categories that still fail to identify all of a respective patient's maladaptive personality traits (Westen & Arkowitz-Westen, 1998; Widiger & Trull, 2007), let alone their normal, adaptive personality traits.

How complex is diagnosis using the FFM PDD system? It depends in part on the level of diagnostic precision needed. It would be wise to distinguish between global PD diagnosis and comprehensive PD diagnosis. For many purposes, it suffices to indicate that an individual has severe personality-related problems. That might be the initial diagnosis, perhaps codified in some future DSM system and used for insurance purposes and medical records. For

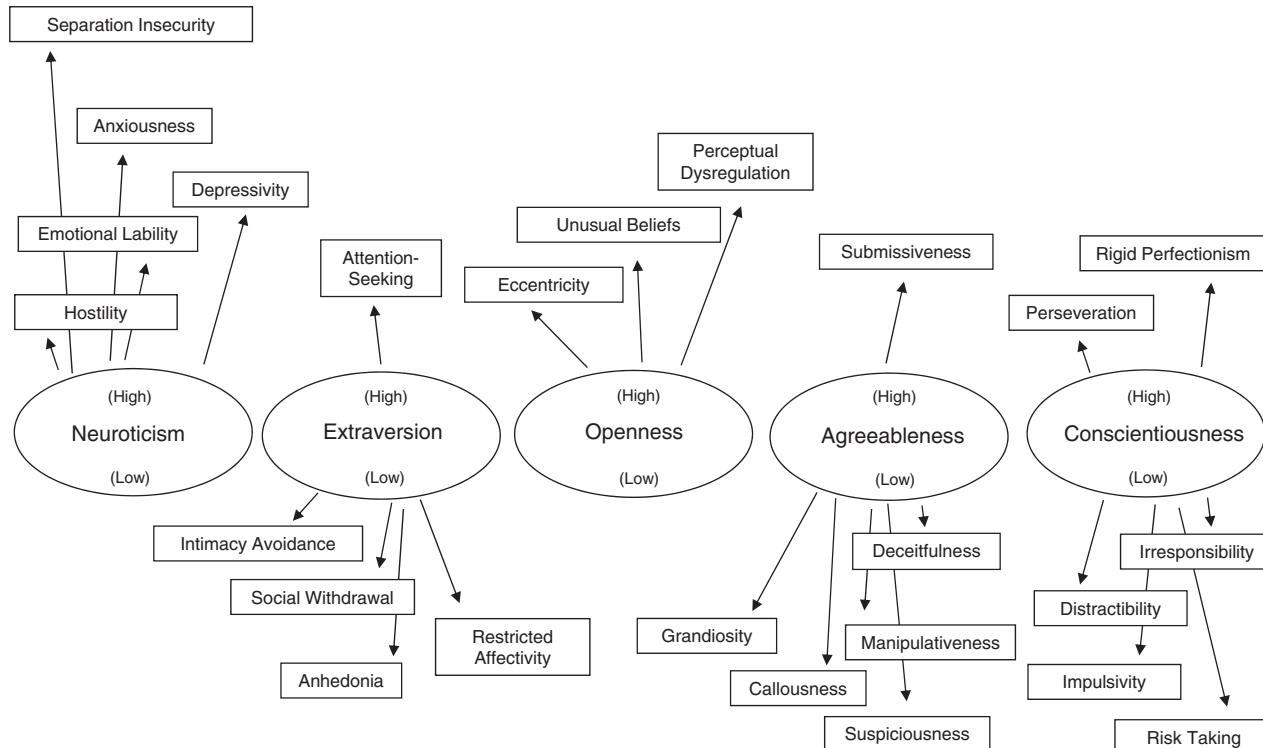


FIGURE 19.7. DSM–5 maladaptive traits within the five-factor model. Based on data from Krueger, Eaton, Derringer, et al. (2011).

such a global diagnosis, the clinician need only assess the five global factors and, at Steps 2 and 3, determine whether the client has clinically significant problems related to high or low scores on each factor (see the descriptions for each factor in Table 19.1). Note that for global diagnostic purposes, problem sets relevant to a particular factor can be ignored if the client scores in the average range on that factor.

At the simplest level, clients could be described with respect to five personality disorder domains—although most would need fewer, either because they scored in the average range on a factor or because they did not have significant problems associated with high or low scores. These global diagnoses might be identified by the factor (broad domain) and pole (e.g., A+PD for a disorder associated with high agreeableness). Personality disorder—not otherwise specified (PDNOS) would be used when, for example, an individual has a high score on a single facet that causes significant problems. This is a simple diagnostic system, easily learned by clinicians, but one that conveys a great deal of useful information.

The clinician who is treating a client, however, often requires a far more detailed map of traits and problems that might be called a comprehensive PD diagnosis. Here FFM PDD requires that the patient is first assessed with respect to all six facets of each broad domain using (for instance) a one-page rating form (Widiger & Mullins-Sweatt, 2009). High and low scores on each facet would identify sets of potentially relevant problems (see Table 19.1), and clinical interviews might then be used to ascertain whether they were in fact problematic for the client. The end result would be a systematic survey of all relevant problems that could form the basis for treatment planning.

In addition, even with this more comprehensive and specific assessment, the FFM approach can prove to be simpler and more straightforward than the DSM-5 25-trait model assessment. An assessment of the normal range of personality can serve as a screening device for the abnormal range (e.g., if a person is high in all facets of agreeableness, then none of the maladaptive traits of antagonism would need to be assessed; Widiger, 2011a). In contrast, in the DSM-5 dimensional trait model, all 25 maladap-

tive traits would always need to be assessed for every single patient.

### Clinically Significant Level of Impairment

The third step is to determine whether the dysfunction and distress reach a clinically significant level of impairment that would warrant a diagnosis of personality disorder. The thresholds for a *DSM-IV-TR* personality disorder categorical diagnosis did not have any consistent or explicit reference to a level of impairment that might warrant a diagnosis or have a meaningful implication for any particular social or clinical decision (e.g., hospitalization, disability, insurance coverage). The procedure used for an FFM PDD diagnosis is modeled instead after the method used for the diagnosis of mental retardation (or intellectual disability), a current brethren on Axis II of *DSM-IV-TR*. The rationale is to diagnose the presence of a disorder when there is a clinically significant level of social or occupational impairment.

We use as our guide for this decision the Global Assessment of Functioning (GAF) scale provided on Axis V of *DSM-IV-TR* (American Psychiatric Association, 2000) and used in a number of clinical studies (Hilsenroth et al., 2000; Regier & Narrow, 2002). A score of 71 or higher on the GAF indicates a normal range of functioning (e.g., problems are transient and expectable reactions to stressors); a score of 60 or below represents a clinically significant level of impairment (moderate difficulty in social or occupational functioning, such as having few friends or significant conflicts with coworkers; American Psychiatric Association, 2000). Further explication of this scale is provided by the Global Assessment of Relational Functioning (GARF) and the Social and Occupational Functioning scales (SOF; American Psychiatric Association, 2000; Hilsenroth et al., 2000).

### Profile Matching for Personality Disorder Patterns

One of the purported advantages of a categorical model is the ability to summarize a particular constellation of maladaptive personality traits with a single diagnostic label. “There is an economy of communication and vividness of description in a categorical name that may be lost in a dimensional

profile" (Frances, 1993, p. 110). The fourth step of the FFM four-step procedure, statistically based prototype (or profile) matching (McCrae, 2008), is an optional step for those who still wish to provide single diagnostic terms (e.g., "borderline") to describe a particular patient's personality profile. In this step, one obtains a profile matching index of the patient's actual FFM profile with the FFM profile description of a prototypic case (see Chapter 6, this volume, by Widiger, Costa, Gore, & Crego for the FFM profile of the prototypic case of each *DSM-IV-TR* personality disorder).

In their editorial opposition to including personality trait approach to diagnosis in *DSM-5*, Shedler et al. (2010) argued that "mental health professionals think in terms of syndromes or patterns . . . not in terms of deconstructed subcomponents or in terms of 30-plus separate trait dimensions" (p. 1026). The syndromal perspective is well represented by this fourth step, matching a patient's particular constellation of maladaptive personality traits to the FFM description of a prototypic case. The only significant difference between this approach and the prototype matching of Shedler et al. and Westen et al. (2006) is that FFM prototype matching uses a more reliable and objective statistical method to obtain the match rather than relying simply on a subjective impression of the match of a patient to a narrative gestalt.

In fact, as noted earlier, the proposed criterion sets for *DSM-5* (American Psychiatric Association, 2011) parallel closely a simplified version of the fourth step of the FFM PPD four-step procedure. Miller, Bagby, Pilkonis, Reynolds, and Lynam (2005) indicated that simply summing up the number of key FFM traits that are present serves as an effective proxy for the profile matching. For example, the key traits for FFM PDD diagnosis of borderline personality disorder are anxious uncertainty (the borderline personality disorder maladaptive variant of FFM anxiousness), dysregulated anger (the borderline personality disorder variant of FFM angry hostility), despondence (FFM depressive ness), self-disturbance (FFM self-consciousness), behavioral dysregulation (FFM impulsivity), affective dysregulation (FFM vulnerability), fragility (an additional BPD variant of FFM vulnerability), dissociative tendencies (FFM openness to fantasy),

distrustfulness (low FFM trust), manipulativeness (low FFM straightforwardness), oppositional (low FFM compliance), and rashness (low FFM deliberation; Mullins-Sweatt et al., 2011; see Figures 19.2 through 19.6). These align closely with the seven *DSM-5* maladaptive traits of anxiousness, separation insecurity, hostility, depressivity, impulsivity, emotional lability, and risk taking (American Psychiatric Association, 2011). Miller (Chapter 17, this volume) provides a thorough discussion of the FFM method of profile (prototype) matching and contrasts it with other methods of prototype matching.

It should be emphasized, however, that we do feel the most informative description of any particular individual patient will be in terms of the domains and facets of the FFM rather than through prototype matching. As expressed in the first paragraph of this chapter, the purpose of the FFM is not simply to provide another means of returning to the problematic syndromal categories of *DSM-IV-TR* or *DSM-5*. Description, treatment, and research of personality disorder will be most informed in terms of the more specific domains and facets of the FFM rather than in terms of heterogeneous syndromes that routinely apply imprecisely, if not marginally, to any particular client and remain ambiguous as to explanatory power (see Chapter 3, this volume, by Zapolski, Guller, & Smith).

Nevertheless, FFM prototype matching does have a number of potential benefits and uses. The prototype indices can serve as a useful bridge or translation between the language of *DSM-IV-TR* and the FFM. Clinicians and researchers who wish to continue to use the *DSM-IV-TR* (or *DSM-5*) categorical constructs are provided a means to do so in terms of the FFM, allowing them to continue to experience the use, benefits, and advantages they found with the *DSM-IV-TR* diagnostic constructs as the field shifts toward a dimensional trait model. In addition, there may be particular constellations of personality traits that are worth identifying with a single diagnostic term, such as the borderline FFM profile (Trull et al., 2003) or the psychopathic FFM profile (Lynam & Widiger, 2007). There are constellations of personality traits that have particular theoretical significance, clinical interest, or social implications. For example, if one asked members

of the population to describe the most dangerous or harmful constellation of personality traits, they would probably provide the FFM profile for psychopathy (Widiger & Lynam, 1998).

It is not surprising that the constellation of psychopathic personality traits has been of tremendous interest and concern to society for many years (Hare & Neumann, 2008). Identifying this constellation with a particular descriptive label, such as psychopathy, does have value, utility, and meaning for the many scientific, social, governmental, and clinical professions that are concerned with the havoc, destruction, exploitation, and harm committed by persons with constellations of traits that resemble closely the FFM prototypic profile for psychopathy. Rather than summarize all of the scale elevations or trait terms that are included within this constellation, one can communicate the entire array by simply providing a single diagnostic label: psychopathy (see Chapter 7, this volume, for a further discussion of FFM psychopathy).

The borderline diagnosis has a similar utility. Persons who are at the highest elevations of anxiety, depressiveness, vulnerability, impulsivity, and angry hostility of neuroticism, coupled with the antagonism of high deceptive manipulativeness and low compliance, along with a highly assertive, emotional, and intensely involved extraversion, will clearly be among the most difficult patients to treat. They will be the most in need of treatment as they will be the most vulnerable, anxious, and depressed; they will be among the most intensely involved with other persons and with their therapists; but they will also be among the most difficult to sustain a working, therapeutic alliance because of their intense angry hostility, impulsivity, deception, and manipulation (see in this volume Chapter 8 by Trull & Brown; Chapter 21 by Sanderson & Clarkin; Chapter 24 by Stepp, Whalen, & Smith). The borderline FFM profile is indeed a particularly volatile collection of traits. It is not surprising then that clinicians have identified this constellation with a diagnostic label, borderline, that conveys nicely the instability and fragility of the personality structure.

An advantage of the FFM PDD, relative to the American Psychiatric Association categorical and dimensional trait models, is the ability to go beyond

just the 10 diagnoses of *DSM-IV-TR* or the four to six to be included in *DSM-5* (depending on which survive), to recognize and assess additional personality disorder constructs not currently recognized within the *DSM-IV-TR* or *DSM-5*. The FFM provides a reasonably comprehensive coverage of all personality traits, whether adaptive or maladaptive, and thus has the capacity to assess personality trait profiles that go beyond the American Psychiatric Association nomenclature that might be of interest to a particular clinician or researcher (Piedmont et al., 2009). As noted earlier, the *DSM-5* dimensional trait model will not be able to recognize the presence of glib charm or fearlessness within the profile for psychopathy (low neuroticism) or meekness and gullibility within the profile for dependency (high agreeableness), nor can it represent other personality trait profiles that involve maladaptive low neuroticism, high extraversion, low openness, or high agreeableness (it does include some components of high conscientiousness but places them within other FFM domains). Because the FFM PDD is considerably more comprehensive in its coverage, it can describe personality disorder syndromes not recognized within *DSM-IV-TR* or *DSM-5*, such as successful psychopathy (Mullins-Sweatt et al., 2010), vulnerable narcissism (Glover, Miller, Lynam, Crego, & Widiger, 2011), depressive (see Chapter 12, this volume, by Bagby, Watson, & Ryder), and alexithymia (see Chapter 13, this volume, by Taylor & Bagby).

## CONCLUSION

We have described in some detail within this chapter a four-step procedure for the FFM PDD:

- (a) provide a description of the person's personality traits with respect to the five domains and 30 facets of the FFM;
- (b) identify the problems, impairments, and maladaptive variants of each elevated normal personality trait;
- (c) determine whether the impairments are clinically significant; and
- (d) determine whether the constellation of FFM traits matches sufficiently the profile for a particular personality disorder syndrome (Widiger et al., 2002); a procedure that is now closely paralleled in *DSM-5* (assuming no further significant revision).

However, it is again important to note that one need not proceed through all four steps. For example, one might be interested only in the FFM trait profile of a person. Many clinical applications of the FFM currently stop at this point because simply the description of the personality structure with respect to the FFM provides a substantial amount of useful information for treatment planning. Alternatively, one might also wish to identify the impairments or maladaptive variants that are associated with any particular trait elevation. One can stop at this point if one does not need or desire a personality disorder diagnosis. This would be equivalent to a DSM-5 dimensional trait profile (Krueger, 2011), albeit with the potential for considerably more coverage. A diagnosis of personality disorder can also be provided if there is a clinically significant level of impairment secondary to the maladaptive personality traits (Step 3). Finally, through a statistically based prototype matching or through a more simplified sum of the maladaptive personality traits identified in Step 2 (consistent with proposed diagnostic criterion sets for DSM-5), one can determine whether the constellation or collection of FFM personality traits is sufficiently close to the profile of one (or more) prototypic cases to warrant a particular syndromal label. We expect that most clinicians and researchers, however, will prefer the more specific and precise description provided by the FFM constellation of adaptive and maladaptive personality traits rather than the extent to which the person is close to a hypothetical collection of traits.

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# CONCEPTUAL AND EMPIRICAL SUPPORT FOR THE CLINICAL UTILITY OF FIVE-FACTOR MODEL PERSONALITY DISORDER DIAGNOSIS

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The five-factor model (FFM) of personality disorder (PD) has been shown empirically to provide a valid model for describing personality pathology (Widiger & Mullins-Sweatt, 2009). Saulsman and Page (2004) concluded on the basis of a meta-analysis of FFM PD research that “each of the personality disorders shows associations with the five-factor model that are meaningful and predictable given their diagnostic criteria” (p. 1075). This meta-analysis was replicated and extended to the facets of the FFM by Samuel and Widiger (2008). On the basis of his review of the FFM PD research, Livesley (2001) concluded that “multiple studies provide convincing evidence that the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) PDs diagnoses show a systematic relationship to the five-factors and that all categorical diagnoses of DSM can be accommodated within the five-factor framework” (p. 24). As expressed by Clark (2007), “The five-factor model of personality is widely accepted as representing the higher order structure of both normal and abnormal personality traits” (p. 246).

A significant strength of the FFM, relative to all other alternative dimensional models of personality and PD, is the presence of a considerable body of basic scientific research to support its validity as a classification of personality, including childhood antecedents, temporal stability across the life span, multivariate behavior genetic support for the

personality structure, molecular genetic support for neuroticism, and both emic and etic cross-cultural support (Mullins-Sweatt & Widiger, 2006; Widiger & Trull, 2007; see also Chapter 2, this volume). As acknowledged by the chair of the fifth edition of the DSM (DSM-5) Personality and Personality Disorders Work Group, “similar construct validity has been more elusive to attain with the current DSM-IV-TR [DSM 4th ed., text revision] personality disorder categories” (Skodol et al., 2005, p. 1923).

DSM-5 indeed appears to be shifting considerably closer to the FFM by including a five-domain dimensional model of maladaptive personality traits that is closely aligned with the FFM and revising the diagnostic criterion sets so that they rely heavily on these maladaptive personality traits (Skodol, in press; see also Chapter 19, this volume). The major innovation of DSM-5 is the shift toward dimensional models of classification (Regier, 2008). However, DSM-5 likely will fall short of fully embracing the FFM by not including normal personality traits within the dimensional trait model and by still relying primarily on categorical diagnoses for official medical records. Clinicians do not technically record the name of the patient’s disorder (e.g., borderline PD) within a medical record. They record instead the World Health Organization’s numeric code number for the respective disorder (e.g., the code number for borderline PD is 301.83).

At this time, it remains unclear whether the DSM-5 dimensional trait model will receive official numeric coding. If it does not, then clinicians will have to continue to rely on the diagnostic categories (although they will use the dimensional trait model to obtain these diagnoses).

It would be a fundamental shift to the existing nomenclature to fully integrate the psychiatric classification of PD with the FFM (Widiger & Trull, 2007). Perhaps the most significant barrier to any such transformation, however, is not the validity of the FFM of PD but concerns regarding clinical utility (Shedler et al., 2010). In his commentary within a special section of the *Journal of Abnormal Psychology* devoted to shifting the DSM to a dimensional model of classification, First (2005) argued that clinical utility was “the most important obstacle standing in the way” (p. 561) of a dimensional model of personality replacing the diagnostic categories within the next *DSM*.

This argument is somewhat ironic because the PDs section of the diagnostic manual is fundamentally problematic primarily with respect to its clinical utility (Livesley, 2001). Verheul (2005) systematically reviewed various components of clinical utility for both the categorical and dimensional models for the diagnosis of PD and concluded, “overall, the categorical system has the least evidence for clinical utility, especially with respect to coverage, reliability, subtlety, and clinical decision-making” (p. 295). The heterogeneity of diagnostic membership, the lack of precision in description, the excessive diagnostic co-occurrence, the failure to lead to a specific diagnosis, the reliance on the “not otherwise specified” wastebasket diagnosis, and the unstable and arbitrary diagnostic boundaries of the *DSM-IV-TR* diagnostic categories hinder substantially the ability of clinicians to use the diagnoses in a meaningful or useful manner (Smith & Combs, 2010; Widiger & Mullins-Sweatt, 2010). It is not surprising that the PDs are among the diagnostic categories with which clinicians have been least satisfied for many years (Maser, Kaelber, & Weise, 1991). The purpose of this chapter is to discuss the concerns and issues with respect to the clinical utility of the FFM of PD.

## CLINICAL UTILITY

The central and fundamental importance of clinical utility in the construction of a diagnostic manual was expressed explicitly by the chief architects of the fourth edition of the *DSM* (*DSM-IV*; American Psychiatric Association, 1994): “There is unanimous agreement, even among those engaged in research, that the primary purpose of *DSM-IV* is to facilitate clinical practice and communication” (Frances et al., 1991, p. 410). This emphasis is again stated in the first paragraph of the introduction to the *DSM-IV-TR*: “Our highest priority has been to provide a helpful guide to clinical practice” (American Psychiatric Association, 2000, p. xxiii). Clinical utility was noted as a significant priority for the *DSM-5* Task Force, noting that “the *DSM* is above all a manual to be used by clinicians, and changes made for *DSM-V* must be implementable in routine specialty practices” (Kendler, Kupfer, Narrow, Phillips, & Fawcett, 2009, p. 1).

First et al. (2004) provided a useful definition of clinical utility, suggesting “clinical utility is the extent to which *DSM* assists clinical decision makers in fulfilling the various clinical functions of a psychiatric classification” (p. 947). Mullins-Sweatt and Widiger (2009) suggested further that there are three primary components of clinical utility: ease of use, communication, and treatment planning. These are discussed here as they pertain to the FFM dimensional classification of PD (Mullins-Sweatt & Lengel, in press).

### Ease of Use

An often-expressed concern for dimensional models of PD is that clinicians might find them too complex and cumbersome to use (First, 2005). First et al. (2004) suggested that one aspect of the “user friendliness” of a diagnostic system includes the “length of time it takes to assess a particular criteria set” (p. 949). Concerns regarding ease of use are certainly understandable. Any classification of PD that yields more information will require more time, and it is apparent that a dimensional classification of PD will provide a fuller, richer, and more precise

description of each patient's unique personality profile (Widiger & Mullins-Sweatt, 2009; Widiger & Trull, 2007).

Concerns have been raised with respect to the *DSM-5* dimensional model of PD, consisting of 25 traits (Clarkin & Huprich, 2011; Widiger, 2011). Whereas clinicians only needed to assess for the presence of 10 PDs with *DSM-IV-TR* (American Psychiatric Association, 2000), they must now assess for the presence of 25 maladaptive traits. Furthermore, the FFM of PD includes considerably more than just 25 maladaptive traits.

However, it is important to appreciate that each *DSM-IV-TR* personality is a complex constellation of a variety of maladaptive personality traits. An assessment of the *DSM-5* maladaptive traits is essentially just assessing for the presence of the components of the *DSM-IV-TR* syndromes. These traits would presumably have to have been assessed to determine whether the syndrome is present.

In addition, the syndromes are considerably more complex to assess than a single clear, distinct trait. Patients vary tremendously in the extent to which they fit the description of a prototypic case, different patients will have different constellations of traits, and it will often be unclear whether a patient is truly close enough to the prototype to warrant a diagnosis. There is also the added problem for *DSM-IV-TR* of needing to provide a differential diagnosis of overlapping diagnostic constructs, whereas in the dimensional model, one simply lists all traits that are present. In fact, it takes approximately half the amount of time to administer the Structured Interview for the FFM (SIFFM; Trull & Widiger, 1997), which assesses both normal and abnormal variants of the 60 poles of the 30 facets of the FFM, than it takes to administer a semistructured interview that assesses the *DSM-IV-TR* PD diagnostic criterion sets. This is in large part because much of the time during a *DSM-IV-TR* PD interview is spent assessing large numbers of overlapping diagnostic criteria that are not present. The *DSM-IV-TR* criterion sets are notoriously cumbersome and difficult to use, requiring clinicians to make differential diagnoses among categories that are not in fact distinct and to identify which PD optimally characterizes a patient's maladaptive personality functioning

when in fact many to most patients do not fit any one of the options well.

The FFM of PD may also save time relative to the *DSM-5* dimensional trait model. In the *DSM-5* trait model, one must assess all 25 traits for each patient. This is not necessarily the case for the FFM. In the FFM of PD, people are first assessed with respect to the five broad normal domains. If the person is high on agreeableness (for instance), then the clinician may not wish to assess for the many maladaptive variants of antagonism. If the person were high within the domain of extraversion, then the clinician would not need to assess for the many maladaptive variants of introversion. There will be some exceptions to this simplification (e.g., persons with complex facet profiles such as being high in warmth but low in assertiveness) but in most cases, the inclusion of the normal domains of personality not only provides a more complete and richer description of each individual, they also serve as screening measures for the multitude of maladaptive variants that are included within the dimensional model proposed for *DSM-5*.

It is the case that the use of the FFM would require a clinician to learn a new classification model. However, the FFM structure should not be difficult to learn and, as noted, is quite similar to what is currently proposed for *DSM-5*. The FFM reproduces the naturally occurring structure within one's language (Ashton & Lee, 2001). It is the structure within which one already conceptualizes and thinks about personality traits. Nevertheless, this is not to say that the FFM fails to accommodate sophisticated clinical constructs. Research has indicated that constructs within the California Q-set (McCrae, Costa, & Busch, 1986), the Shedler and Westen Assessment Procedure—200 (Mullins-Sweatt & Widiger, 2007), and the *DSM-IV-TR* PD criterion sets (Samuel & Widiger, 2008; Saulsman & Page, 2004) are all well understood and articulated in terms of the FFM.

## Communication

The primary purpose of an official diagnostic nomenclature is to provide a common language of communication (Kendell, 1975). The impetus for the development of the first edition of the *DSM* was

the crippling confusion generated by the absence of an authoritative, common language (Mullins-Sweatt & Widiger, 2009). Medical centers, clinics, and clinicians were not using the same diagnoses, thereby hindering substantially meaningful communication and consistency in care (Widiger, 2008). "For a long time confusion reigned. Every self-respecting alienist, and certainly every professor, had his own classification" (Kendell, 1975, p. 87).

One of the recurring arguments against shifting the American Psychiatric Association diagnostic manual to a dimensional classification is the ease of communication for diagnostic categories (First, 2005). A diagnostic system should be useful for "communicating clinical information to practitioners, patients and their families, and health care system administrators" (First et al., 2004, p. 947). As expressed by the chair of *DSM-IV*, "There is an economy of communication and vividness of description in a categorical name that may be lost in a dimensional profile" (Frances, 1993, p. 110).

It indeed would be clumsy and unmanageable for clinicians to have to list 20 to 50 traits each time they wanted to describe a patient to a colleague. However, in practice, only a few key traits would need to be identified to convey the central or primary concerns with respect to any particular clinical decision, and if more trait terms are necessary to provide an accurate description, then the complexity will clearly be offset by the accuracy and precision in diagnosis that the FFM will provide. Clinicians will likely find it to be much more useful to provide a more specific and accurate description of a patient than to refer to a syndrome with which the patient only partially resembles.

It is not the case, as many clinicians well know, that a *DSM-IV-TR* mental disorder diagnosis provides sufficient information for many social and clinical decisions. Patients sharing the same diagnostic category can vary substantially in which features of that respective disorder they have (Clark, 2007; Trull & Durrett, 2005; Widiger & Trull, 2007). For example, there are 256 combinations of criteria from which it is possible to receive the same diagnosis of borderline PD (Ellis, Abrams, & Abrams, 2009), and it is even possible for two individuals to meet the *DSM-IV-TR* criteria for

borderline PD yet have only one diagnostic feature in common.

Kraemer, Noda, and O'Hara (2004) argued that in the mental health profession, "a categorical diagnosis is necessary" (p. 21) and that "clinicians who must decide whether to treat or not treat a patient, to hospitalize or not, to treat a patient with a drug or with psychotherapy, or what type, must inevitably use a categorical approach to diagnosis" (p. 12). Although seemingly compelling, this is not an accurate characterization of actual clinical practice. In many common clinical situations, the decision is not in fact categorical in nature. Typically, there is a decision concerning a degree of medication dosage, frequency of therapy sessions, or even degree of hospitalization (e.g., day hospital, partial hospitalization, residential program, and traditional hospitalization).

The simplicity of being able to use the same diagnostic category for all social and clinical decisions is also offset by the inconsistency in the needs and concerns of these various decisions. It is evident that the many clinical decisions are not well informed by a uniform diagnostic threshold. Medication, psychotherapy, disability, insurance coverage, and hospitalization are clinical options that can imply very different levels of impairment. The current diagnostic thresholds were not set to be optimal for any particular social or clinical decision, and yet they are used to inform most if not all of them (Regier & Narrow, 2002). A dimensional system has the flexibility to provide different thresholds for different social and clinical decisions and would then be considerably more useful for clinicians and credible for social agencies than the current categorical system. A flexible (dimensional) classification could be preferable to governmental, social, and professional agencies because it would provide more reliable, valid, and explicitly defined bases for making important social and clinical decisions. It is in part for this reason that the authors of *DSM-5* are considering the provision within the diagnostic manual of a variety of supplementary dimensional scales of functioning to facilitate clinical decisions, including for the PDs (Clark & Krueger, 2010).

The American Psychiatric Association diagnostic manual is also used to communicate information

to the general public concerning psychopathology. A recurring issue has been the stigmatization of a mental disorder diagnosis. As expressed by Hinshaw and Stier (2008), “Despite clear gains in public knowledge related to mental illness over the past half-century, levels of stigmatization as appraised by attitude surveys appear to have increased rather than decreased in the United States” (p. 368). Stigma contributes to lower rates of research funding, lower employment, poor housing, family burden, and personal shame. The PDs have been among the most stigmatizing diagnoses (Aviram, Brodsky, & Stanley, 2006). Personality disorders are relatively unique in concerning ego-syntonic aspects of the self, or one’s characteristic manner of thinking, feeling, behaving, and relating to others throughout one’s adult life (Millon, 2011). In this regard, a PD diagnosis can be stigmatizing, such that one’s views of the world, behaviors, and interpersonal relationships are a mental disorder.

An integration of a classification of PD with FFM general personality structure might help offset some of the stigmatization because PDs would no longer be conceptualized as something that is qualitatively distinct from normal personality functioning. Personality disorders would represent simply maladaptive variants of common personality traits that are evident within all persons. The FFM of PD provides a more complete description of each person’s self that recognizes and appreciates that the person is more than just the PD, that there are aspects to the self that can be adaptive, even commendable, despite the presence of the maladaptive personality traits. Some of these strengths may also be quite relevant to treatment, such as openness to experience indicating an interest in exploratory psychotherapy, agreeableness indicating an engagement in group therapy, and conscientiousness indicating a willingness and ability to adhere to the demands and rigor of dialectical behavior therapy (Krueger & Eaton, 2010; Widiger & Mullins-Sweatt, 2009).

## Treatment

“The ‘holy grail’ of clinical utility is the positive effect of a change in the diagnostic system on [treatment] outcome” (First et al., 2004, p. 951). As noted previously, the central and fundamental importance

of treatment planning for the diagnostic manual is noted quite explicitly in the first paragraph of the introduction to *DSM-IV-TR*: “Our highest priority has been to provide a helpful guide to clinical practice” (American Psychiatric Association, 2000, p. xxiii). In his argument against converting the diagnostic manual to a dimensional system, First (2005) suggested that the existing diagnostic categories have clear and compelling implications for treatment decisions. As he indicated more recently, “given that most treatment research is keyed to the *DSM* diagnostic categories, determination of a *DSM-IV* diagnosis for a particular patient facilitates the selection of evidence-based treatments” (First, 2010, p. 471).

Elsewhere, however, it has been suggested that the issue of treatment planning may be where *DSM-IV-TR* is most problematic. As suggested by the chair and vice chair of *DSM-5*, in their evaluation of the current success of the diagnostic manual, “With regard to treatment, lack of treatment specificity is the rule rather than the exception” (Kupfer, First, & Regier, 2002, p. xviii). It seems apparent that a diagnostic manual without clear or specific treatment implications is fundamentally flawed with respect to its purported highest priority.

There are texts based on clinical experience and theoretical perspectives that are helpful in providing suggestions for the treatment of individual PDs (Millon, 2011). An understandable concern with respect to a shift to the FFM or any dimensional trait model is that much of this literature based on theory and clinical experience might no longer be relevant (Shedler et al., 2010). However, clinicians can recover the *DSM-IV-TR* (and *DSM-5*) PDs in the fourth step of the FFM four-step procedure for PD diagnosis (see Chapters 17 and 19, this volume). The FFM, dimensional trait approach is not incompatible with syndromal diagnosis, if that is still desired. In fact, it is quite possible that the diagnosis of the personality types in *DSM-5* will be based largely on FFM maladaptive traits (Skodol, in press).

It also should be recognized that there has in fact been little development of empirically validated therapies for the *DSM-IV-TR* PDs. It has been more than 10 years since the American Psychiatric Association began publishing practice guidelines for

the diagnostic categories of *DSM-IV-TR*, and, as yet, guidelines have been developed for only one of the 10 PDs (American Psychiatric Association, 2001). Matusiewicz, Hopwood, Banducci, and Lejuez (2010) identified 45 publications that evaluated the outcome of cognitive behavioral interventions for PDs. They suggested that only borderline and avoidant PDs have treatments with empirical support, whereas evidence for therapy for other PDs is limited to a small number of open-label trials and case studies. The reason for the remarkable dearth of treatment research may be straightforward: the *DSM-IV-TR* PD diagnoses are not well suited for specific and explicit treatment manuals, as each disorder involves a complex constellation of an array of maladaptive personality traits. Persons meeting the diagnostic criteria for the same PD may not even share many of the same traits. It would be difficult to develop a consistent, coherent, and uniform treatment program for such cases.

In an article discussing the status of empirically supported therapies in general, Westen, Novotny, and Thomas-Brenner (2004) suggested it would be useful to move beyond solely developing treatments for *DSM*-defined disorders to investigate treatments that explicitly target personality processes. In a special issue of *Psychological Assessment* devoted to the relationship between personality and psychopathology, Harkness and Lilienfeld (1997) stated, "If treatment planning is to meet or surpass the standards mandated by the field, then the fundamental rule of treatment planning applies: The plan should be based on the best science available" (p. 349). Emphasized in particular was that personality traits should be assessed when constructing and implementing a treatment plan, given the considerable scientific support for the reliability and validity of personality traits in predicting and accounting for a wide variety of important life outcomes.

In the latest edition of Lambert, Bergin, and Garfield's (2004) text on treatment research, *Bergin and Garfield's Handbook of Psychotherapy and Behavior Change*, Clarkin and Levy (2004) likewise argued compellingly that

no two clients begin psychotherapy in the same condition . . . many character-

istics of the client may potentially influence the therapeutic venture . . . the study of client variables may have much to offer for our understanding of psychotherapy's effectiveness. Identification of premorbid clinical and personality characteristics predictive of outcome might help clinician's guide treatment choices and revise treatment methods based on the needs of different types of clients. (pp. 194–195)

Additionally, they concluded that "client characteristics make a sizeable difference with respect to outcomes, and diagnosis per se may not be the key variable in understanding treatment response" (p. 813).

The FFM provides a conceptually and empirically coherent and homogeneous structure beyond that of the syndromal constellations of traits provided by the diagnostic categories of *DSM-IV-TR* (Lynam & Widiger, 2001). "The fact is, one cannot characterize the personality . . . with just a few terms lifted from the sparse shelf of descriptors in the category-based *DSM-IV*" (Stone, Chapter 22, this volume, p. 349). Several clinical papers based on anecdotal experience have addressed the FFM's potential ability to assist in treatment decisions (Chard & Widiger, 2005; Harkness & McNulty, 2002; MacKenzie, 2002; Miller, 1991; Sanderson & Clarkin, Chapter 21, this volume; Stone, Chapter 22, this volume; Widiger, 1997). For example, Stone (Chapter 22, this volume) suggests that he used domains and facets of the FFM to guide treatment decisions for patients with borderline PD; for instance,

Neuroticism and agreeableness scales picked up on the pathological aspects of the borderline patients (as did the *DSM* items) but the extraversion, conscientiousness, and openness scales yielded important information about . . . issues of perseverance at work, social abilities, and openness to new ideas. (p. 356)

As Stone (Chapter 22, this volume) suggests, "these qualities, or their comparative deficiencies, play a

vital role in determining amenability to therapy" (p. 356).

Nevertheless, it is indeed true that there has been relatively little written on the treatment of (for instance) FFM antagonism or agreeableness (albeit see Chapters 21–25 of this volume), and considerably less than has been written on the treatment of the *DSM-IV-TR* PDs (Millon, 2011). This is understandably of considerable concern to the PD clinician (Shedler et al., 2010). However, it would be much easier to develop treatment manuals for the FFM than it has been for the *DSM-IV-TR* personality syndromes. Specific implications for treatment are readily evident at the level of the five broad domains of extraversion, agreeableness, neuroticism, conscientiousness, and openness. Extraversion and agreeableness are the domains of interpersonal relatedness (Costa & McCrae, 1992; Mullins-Sweatt & Widiger, 2006). Extraversion and agreeableness are confined specifically to social and interpersonal relationships within and outside the therapy office. Interpersonal models of therapy, marital-family therapy, and group therapy would be particularly relevant to these two domains. In contrast, neuroticism provides information with respect to mood, anxiety, and emotional dyscontrol, often targets for pharmacological interventions and/or individual psychotherapy. Maladaptively high openness implies cognitive-perceptual aberrations, and may have therapeutic implications that are quite different from those of neuroticism. The domain of conscientiousness is of most specific relevance to occupational dysfunction or impairments concerning work and career. Maladaptively high levels involve workaholism, perfectionism, and compulsivity whereas low levels involve laxness, negligence, and irresponsibility. An individual's level of conscientiousness might have clear implications for the types of treatment that would be most efficacious or obstacles that could get in the way of therapeutic progress. The more distinct and coherent structure of the FFM has considerably greater potential to yield more specific treatment implications than the existing diagnostic categories. In addition, the FFM also provides the means with which to recognize the presence of normal, adaptive personality traits that will help with treatment planning (e.g., high consci-

entiousness that will suggest receptivity to rigorous cognitive-behavioral treatments).

Treatment implications become even more specific at the level of the lower order facets. What is evident from the PD literature is that treatment does not address or focus on the entire personality structure (Paris, 2006). Clinicians treat, for instance, the affective instability, the behavioral dyscontrol, or the nonsuicidal self-injury of persons diagnosed with borderline PD, which are specific facets of the FFM of PD (Widiger & Mullins-Sweatt, 2009). Effective change occurs with respect to these components rather than the entire, global construct. It is difficult to imagine clinicians not finding useful a classification system that concerns specifically and explicitly their focus of clinical attention, such as cognitive-perceptual aberrations (from the domain of openness), anxiousness, depressiveness, and emotional dysregulation (from the domain of neuroticism), intense attachment (from the domain of extraversion), meekness (from the domain of agreeableness), or workaholism (from the domain of conscientiousness; Widiger & Mullins-Sweatt, 2009).

## RESEARCH

Changes in *DSM-IV* were made with the explicit goal of improving clinical utility. . . . [However,] no formal effort was made to empirically examine whether these changes actually improved clinical utility. Instead, the field trials and data reanalyses primarily evaluated proposed criteria sets in terms of reliability, validity (using clinical diagnoses as the standard), and the extent to which the proposed criteria set identified different individuals as having the disorder. Purported improvements in clinical utility were simply assumed to be the case. (First, et al., 2004, p. 947)

Authors of proposed revisions (or opponents to these revisions) at times attempt to speak for the field, as if they know personally what is the predominant opinion of practicing clinicians (Frances

& Widiger, in press). More informative are studies that actually survey clinical opinion to determine objectively whether a proposed revision is likely to be poorly or well received.

In an international survey of clinical psychologists and psychiatrists, Mullins-Sweatt, Smit, Verheul, Oldham, and Widiger (2009) examined the potential utility of traits found within various dimensional models of general personality. Their results suggested that while clinicians considered abnormal personality constructs to be relatively more useful for clinical treatment decisions than normal personality constructs, a substantial number of normal personality constructs were also identified that the psychologists and psychiatrists felt should be included in a diagnostic manual. This finding is consistent with a survey of the membership of the International Society for the Study of Personality Disorders and the Association for Research on Personality Disorders, which reported that 80% of the respondents felt that the *DSM-IV-TR* PDs are best understood as maladaptive variants of normal personality traits (Bernstein, Iscan, Maser, et al., 2007).

These findings are inconsistent with a commentary published in the *American Journal of Psychiatry* (Shedler et al., 2010), however, which argued that "clinicians find dimensional approaches significantly less relevant and useful, and consider them worse than the current *DSM-IV* system" (p. 1027). However, this commentary referenced only two (Rottman, Ahn, Sanislow, & Kim, 2009; Spitzer, First, Shedler, Westen, & Skodol, 2008) of a number of studies that have examined directly the opinions of clinicians with respect to the clinical utility of the FFM (Mullins-Sweatt & Lengel, in press).

The first study in which clinicians described patients in terms of the FFM was provided by Blais (1997), who obtained data from a nationwide survey of 100 clinicians. They were asked to describe one of their patients who carried a primary diagnosis of PD. The clinicians rated the patient with respect to each of the *DSM-IV* PDs as well as the FFM. As indicated by Blais (1997), "It has been argued that the language of the FFM fails to capture clinically important aspects of personality functioning and that clinicians will have difficulty applying this model to their patients" (p. 388). However, he

found that the clinicians had little difficulty with the FFM and considered the information to be clinically useful. Blais (1997) concluded that the "data suggest that clinicians can meaningfully apply the FFM to their patients and that the FFM of personality has utility for improving our understanding of the *DSM* personality disorders" (p. 392).

Srock (2002) sent licensed psychologists brief descriptions of prototypic and nonprototypic cases of three PDs and asked them to describe the case in terms of the 30 facets of the FFM. Their descriptions converged significantly with FFM descriptions of the PDs (Lynam & Widiger, 2001; Widiger, Trull, Clarkin, Sanderson, & Costa, 1994). Srock (2002) concluded that "practicing clinicians can directly apply the dimensions of the FFM to cases of disordered personality with a moderate level of reliability" (p. 417).

Srock (2003) was the first study to compare the potential clinical utility of the FFM with the *DSM*. She asked one group of psychologists to rate brief, fictitious case vignettes of prototypic and nonprototypic cases of three PDs with respect to the FFM (as well as other dimensional models of PD) to indicate the confidence of their rating and to estimate the potential usefulness of the descriptions for professional communication, case conceptualization, and treatment planning. Another group of psychologists provided the same ratings for the *DSM-IV* PD diagnostic categories. Diagnostic confidence was higher for the *DSM-IV* diagnostic categories, as were the ratings of utility for professional communication, case conceptualization, and treatment planning. However, Srock acknowledged that much of her results could simply reflect the fact that the clinicians had been trained and were much more familiar with the *DSM-IV* diagnostic categories. She suggested, "It may take a new cohort of clinicians, trained in a dimensional approach to diagnosis, to obviate the need to translate back to the categories" (Srock, 2003, p. 1010).

Srock's (2003) findings were addressed in a subsequent follow-up study by Samuel and Widiger (2006). They suggested that Srock's negative results were due in large part to providing fictitious case vignettes that were written in terms of the categorical diagnoses' criterion sets, including

even the nonprototypic cases. The case vignettes used in Srock were composed of sentences confined largely to behavioral descriptions or illustrations of DSM diagnostic criteria. It is perhaps not surprising for clinicians to indicate that the *DSM-IV* system is more useful for conceptualizing, describing, and understanding persons who are described explicitly in terms of the *DSM-IV* diagnostic criteria. Samuel and Widiger provided lengthier descriptions of actual cases that were written in a more neutral manner (i.e., using the same language to describe the cases as were provided in the source materials). They reported that the clinicians rated the FFM higher than the *DSM-IV* with respect to its ability to provide a global description of the individual's personality, to communicate information to clients, to encompass all of the individual's important personality difficulties, and, somewhat surprisingly, even to assist the clinician in formulating effective treatment plans.

Spitzer et al. (2008) examined the clinical utility of five dimensional diagnostic systems, including the FFM and the *DSM-IV*. A significant difference from the studies of Srock (2003) and Samuel and Widiger (2006) is that the alternative models were applied to actual patients currently being seen in clinical practice. Spitzer et al. reported higher utility ratings for a prototypal matching model based on current *DSM-IV* diagnostic criteria and the prototypal matching procedure of Shedler and Westen Assessment Procedure (SWAP-200; Shedler & Westen, 2004) than for the FFM profile description. However, this study confounded the dimensional models with the method of assessment. This was not by design because they used measures that were provided to them by respective authors of these instruments. Nevertheless, this procedure inadvertently resulted in using different methods for the assessment of each model that would likely have a differential impact on ratings of clinical utility. For example, the FFM assessment required the consideration and completion of five to six pages of material, whereas Westen et al. (2006) have suggested that with their prototypal matching "clinicians could make a complete Axis II diagnosis in 1 or 2 minutes" (p. 855). This is perhaps an exaggeration of how easy it is to conduct a prototypal matching, but it is evident that the prototypal matching procedure

required considerably less time and effort than completing the FFM rating form.

Lowe and Widiger (2009) also compared the clinical utility of the FFM, *DSM-IV*, and SWAP-200 personality dimensions with rating forms for each model that were comparable in length and time required for completion. They reported that the SWAP-200 and FFM dimensions obtained higher clinical utility ratings than the *DSM-IV* diagnostic constructs on five of six clinical utility questions, with no difference in the clinical utility ratings between the FFM and the SWAP-200.

Samuel and Widiger (2011) asked clinicians to describe their clients in terms of the *DSM-IV-TR* PDs as well as the FFM. The clinicians provided ratings of both models' clinical utility at the beginning of treatment and again after 6 months. They rated the FFM as more clinically useful across all domains, including ease of application, professional communication, client communication, and treatment planning, at baseline as well as after 6 months of treatment. The authors suggested the strength of these results might have been due in part to clients being less prototypic for the *DSM-IV-TR* categories.

Personality disorder not otherwise specified (PDNOS) is a diagnosis provided by clinicians when they believe that a person has a PD but the person is not well described by one of the existing diagnostic categories (e.g., antisocial or borderline). Surveys of clinicians, their clinical records, and structured interview studies have suggested that PDNOS can be the most common diagnosis in clinical practice and the most frequent diagnosis when it is considered in empirical studies (Verheul & Widiger, 2004). Mullins-Sweatt and Widiger (2011) asked practicing psychologists to describe one or two of their personality disordered clients in terms of the FFM and *DSM* models. In some instances, the client was someone who met the criteria for one of the 10 *DSM-IV* PDs; in others, the client was someone who received a diagnosis of PDNOS. Across both cases, the clinicians rated the FFM as significantly more useful with respect to its ability to provide a global description of the individual's personality, to communicate information to clients, to encompass all of the individual's important personality difficulties, and, perhaps surprisingly, to aid in treatment

planning. Notably, within the PDNOS case, clinicians also indicated the FFM to be significantly more useful in ease of application and professional communication (i.e., clinicians described the FFM as significantly more useful across all six clinical utility questions).

Rottman et al. (2009) asked clinicians to produce *DSM-IV* PD diagnoses on the basis of either an FFM profile for a prototypic case (obtained from Samuel & Widiger, 2004) or the presentation of the complete set of *DSM-IV* diagnostic criteria for the respective PD. They reported the accuracy with which the *DSM-IV* diagnoses were obtained and the participants' ratings of clinical utility for each method of obtaining a *DSM-IV* PD diagnosis. Although participants rated the FFM as more clinically useful than the *DSM-IV* in terms of communicating with clients, the *DSM-IV* criteria were rated as more clinically useful on three of six clinical utility questions (i.e., prognoses, treatment planning, and professional communication). The relevance of this study for an FFM diagnosis of PD, however, is not entirely clear. If the FFM were to replace the *DSM-IV* diagnostic categories, the task of the clinicians would not be to reproduce the *DSM-IV* PD diagnoses. Additionally, it is hardly surprising that clinicians find it much easier to produce a *DSM-IV* diagnosis when provided the respective *DSM-IV* diagnostic criteria than when provided an FFM normal personality trait profile. The authors stated, "The methods used in our studies are not based on the assumption that the FFM, if adopted, would be used without . . . diagnostic information" (p. 432). However, this was in fact precisely the methodology of the study because no FFM diagnostic information was provided (whereas the full set of diagnostic criteria was provided for the *DSM-IV* PDs). The FFM of PD consists of four steps (Widiger, Costa, & McCrae, 2002), the first being the obtainment of an FFM profile (which the clinicians were provided), the second being the identification of the problems in living associated with each elevation (which the clinicians were not provided). It would naturally be difficult to speculate as to which PD is present in the absence of knowing the maladaptive variants of the FFM trait elevations.

Glover, Crego, and Widiger (in press) replicated the methodology of Rottman et al. (2009) by asking clinicians to identify which *DSM-IV-TR* PD is pres-

ent when provided with the respective *DSM-IV-TR* diagnostic criterion sets. However, rather than provide them with an FFM profile of normal personality traits, they provided them with the maladaptive FFM personality traits that are associated with each PD (comparable to the maladaptive traits proposed for *DSM-5* to diagnose each respective PD). In Rottman et al., clinicians identified the correct PD diagnosis using the FFM only 47% of the time. However, in the study by Glover et al., their accuracy improved to 89%, which was comparable to the 91% accuracy using the *DSM-IV-TR* criterion sets. The clinicians in Rottman et al. (2009) rated the *DSM-IV-TR* diagnostic categories as more useful than the FFM with respect to making a prognosis, devising treatment plans, and communicating with mental health professionals. No significant difference was obtained between the *DSM-IV-TR* and FFM with respect to describing all the important personality problems or describing the individual's global personality. When provided with the maladaptive variants of the respective FFM traits, the *DSM-IV-TR* and FFM were rated equivalently with respect to communication with other professionals, description of all problems, formulation of intervention strategy, or description of global personality (Glover et al., in press). The *DSM-IV-TR* was still considered to be easier to use than the FFM, but this is to be expected given the task was to recover the *DSM-IV-TR* diagnostic categories. The FFM maladaptive traits were considered to be better for communicating with patients.

In sum, when direct comparisons of the FFM and the *DSM-IV-TR* have been tested empirically with respect to clinical utility, results have varied. What can be noted is that the FFM has fared best when using comparable methods of assessment (i.e., neutral case histories or presentation of diagnostic information and measures equivalent in terms of length and time for completion). In those studies, the results seem clear that the FFM has equivalent or better clinical utility than the current *DSM* categorical model. It would be useful for future research to go beyond clinical opinion studies to examine the utility of the FFM of PD in implementing diagnostic evaluations and treatment plans with actual patients and ease of usage in clinical settings (Mullins-Sweatt & Lengel, in press).

## CONCLUSION

Valid concerns have been raised with respect to the potential clinical utility of the FFM. The FFM is largely unknown to clinicians, it will include a substantial number of traits, and there is considerably less written on the treatment of maladaptive personality traits than on the treatment of the *DSM-IV-TR* PD syndromes. There have also been a few studies that have reported negative results with respect to its potential clinical utility, at least in comparison to other approaches to PD diagnosis.

It is hoped that this chapter has been successful in addressing and ameliorating many of these concerns. Anecdotal and empirical evidence for the clinical utility of the FFM suggests that the FFM of PD is better than the existing *DSM-IV* nomenclature in addressing nonprototypic cases of personality pathology and may also provide useful information for more prototypic cases in terms of facilitating communication and perhaps even planning more specific and distinct treatment decisions and interventions. An FFM of PD also would provide to a clinician a description of abnormal personality functioning within the same model and language used to describe general personality structure, thereby facilitating an integration and rapprochement of the predominant personality models within psychiatry and psychology. Evidence for the validity and clinical utility suggest that the FFM of PD would address clinicians' concerns with respect to the fundamental limitations of the categorical model (e.g., heterogeneity within diagnoses, inadequate coverage, lack of consistent diagnostic thresholds, and excessive diagnostic co-occurrence); would contain the means of providing more comprehensive and individually specific descriptions of each patient's normal and abnormal personality structure; would transfer to the clinical nomenclature a wealth of knowledge concerning the origins, childhood antecedents, stability, and universality of the dispositions that underlie PD; would provide a nomenclature that clinicians would find easier to use than the existing diagnostic nomenclature; would facilitate a more informative and meaningful communication across different mental health agencies; and would facilitate clinicians' effort to develop more specific and distinct treatment decisions and interventions.

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# FURTHER USE OF THE NEO PI-R PERSONALITY DIMENSIONS IN DIFFERENTIAL TREATMENT PLANNING

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In this chapter, we examine the potential contribution of a dimensional model of personality (i.e., the five-factor model; FFM) to the planning and application of psychological interventions. Contrary to popular perception, personality disorders are not untreatable. Treatment is unlikely to remove fully all vestiges of a personality disorder, but there is compelling empirical support to indicate that clinically meaningful responsivity to treatment will occur (Linehan, 1993; Linehan & Kehrer, 1993; Perry, Banon, & Ianni, 1999; Sanislow & McGlashan, 1998). Treatment of borderline personality disorder (BDL), for example, is unlikely to result in the development of a fully healthy or ideal personality (many significant aspects of the personality disorder often remain after effective treatment has occurred; Linehan, Tutek, Heard, & Armstrong, 1994), but treatment can result in the removal of the more harmful, damaging, or debilitating components of the disorder and may at times even result in enough change that the person no longer meets the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994) diagnostic criteria for BDL.

There also continues to be growing interest, both in clinical practice (American Psychiatric Association, 1989; Beutler & Clarkin, 1990; Frances, Clarkin, & Perry, 1984; Miller, 1991) and research

(Beutler & Clarkin, 1991; Harkness & Lilienfeld, 1997; Shoham-Salomon, 1991), to match patients with a treatment that is tailored to the specific needs of the individual. There is also a recognition that Axis II personality disorders modify treatment outcome of Axis I disorders (e.g., Reich & Vasile, 1993; Shea, Widiger, & Klein, 1992), but here we make a more general point. We suggest that broad personality dimensions, whether abnormal or not, contribute to and influence both the choice and process of treatment intervention (e.g., Blatt, Quinlan, Pilkonis, & Shea, 1995; Blatt, Zuroff, Quinlan, & Pilkonis, 1996). We also suggest that rather than of academic interest alone, the power of personality dimensions is substantial; therapy focus, alliance, and outcome all relate to personality dimensions.

A major stimulus for the examination of the contribution of the FFM to treatment planning and, in particular, the NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1992) is the incompleteness of the DSM-IV in reference to this clinical task. Of course, the DSM-IV system was not meant to be a treatment-planning document but simply an organizing schema for the acquisition for such a process (American Psychiatric Association, 1989). However, it is used for treatment planning, and its inadequacies for differential treatment planning are related to the following considerations.

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First, a total picture of personality strengths, excesses, deficits, and dysfunction is needed to plan treatment intervention for the individual patient, regardless of whether he or she complains of Axis I symptomatic syndromes or Axis II disturbed interpersonal relations. Although the Axis I disorders describe common symptomatic patterns, the treatment of these conditions is always modified by the personality characteristics of the individual, none of which are noted in the Axis I diagnostic criteria. Treatment efforts that focus only on strengths or, worse yet, on the deficits without attention to the assets of the individual's personality are shortsighted. The third edition of the *DSM* (*DSM-III*; American Psychiatric Association, 1980) suggests that one does not treat the person but rather the disorder that the person is manifesting. Although this statement may have some validity when dealing with syndromal symptom patterns on Axis I that have a clear onset and course, this is not so with the personality disorders on Axis II. The personality disorders concern traits that form the very fabric of the individual. When treating personality disorders, one is addressing the "whole" individual, and one must consider both the pathological and the nonpathological attributes.

Second, both medical and social treatments are focused on particular constellations of behavior, attitudes, moods, and traits, not on diagnostic categories. We argue in this chapter that psychosocial treatment is focused on the trait level. It is at the construct-trait level that one plans medical treatment. For example, in the medication treatment of BDL patients, the targets are impulsivity, mood dyscontrol, and thought disorder that are characteristic of long-term functioning (Cowdry, 1987; Sanislow & McGlashan, 1998; Soloff, 1987).

Third, the personality disorders as defined in the *DSM-IV* Axis II have problematic construct validity (Clark, Livesley, & Morey, 1997). Empirical data suggest that the internal consistency of the disorders is often poor (Morey, 1988), and many of the disorders include several constructs (Livesley, 1998). In addition, because the Axis II disorders are polythetic, the group of patients who meet the diagnosis are not homogeneous even in the defining characteristics (Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983;

Widiger et al., 1990). Furthermore, Axis II does not cover the total universe of personality problems (Westen, 1997; Widiger, 1993). It has been pointed out, for example, that only half of the interpersonal circle is covered by Axis II (Kiesler, 1986).

Fourth, the categorical nature of Axis I and Axis II is inadequate if not misleading in regard to treatment planning. In the clinical situation, many patients come for therapy who do not meet the criteria for the categorization of any one personality disorder but seek treatment for troubling and disruptive personality traits or patterns (Paris, 1998; Westen, 1997; Widiger, 1993). Diagnostically, these individuals may be accurately placed in the category of personality disorder not otherwise specified (PDNOS), the catch-all diagnosis for patients with a personality disorder who do not meet the criteria for any existing diagnostic category (American Psychiatric Association, 1994). In many settings, PDNOS is the most prevalent Axis II condition. Alternatively, many patients meet the criteria for more than one personality disorder, so that the clinician cannot plan treatment intervention around each disorder independently but rather must conceptualize the person and the multiple foci of intervention in an organized and hierarchical pattern tailored to the individual.

## DIFFERENTIAL TREATMENT DECISIONS

For each patient, many kinds of treatment decisions must be made. In this chapter, we present some important dimensions of treatment and suggest ways in which insights that are gained from a patient's NEO PI-R profile can help the therapist tailor the components of treatment to the individual's needs. First, we discuss four fundamental or macrotreatment decisions that are made at the initial evaluation stage (Frances et al., 1984). These are the selection of (a) treatment setting (i.e., inpatient, day hospital, outpatient), (b) treatment format (i.e., family, marital, group, individual), (c) strategies and techniques (i.e., psychodynamic, cognitive, behavioral), and (d) duration (i.e., brief or longer term treatments) and frequency of sessions. A fifth and equally important macrotreatment decision is the potential use of medications, but this is a topic

beyond the scope of this chapter. In the second half of the chapter, we discuss important microtreatment decisions that are relevant to the moment-to-moment in-session and between-session decisions, such as degree of therapist directiveness, depth of therapy experience, and breadth of treatment goals (Beutler & Clarkin, 1990). Several clinical vignettes illustrate our observations. Although there is much interdependence between the various dimensions of treatment planning, we have found it pedagogically helpful to separate them for illustrative purposes.

### **Macrotreatment Decisions**

**Setting.** The settings of treatment have remained somewhat constant in the past several decades: inpatient, day hospital, outpatient clinic, private office, treatment in the family home, and sessions at the site of the disorder (e.g., systematic desensitization *in vivo*). The accessibility of these treatment settings, however, has changed dramatically in the era of cost containment. Inpatient care has become much more restricted in terms of who obtains it (the most severely disturbed patients in acute distress) and for how long a period of time (the length of stay is becoming much shorter). This constriction of resources has forced clinicians to be more creative in using alternatives to hospitalization in crisis situations, such as day hospital settings and crisis intervention.

**Format.** The treatment format is the interpersonal context within which the intervention is conducted. The choice of a particular treatment format (i.e., individual, group, family-marital) is determined by the perspective from which a presenting problem is initially defined by the patient-family, the clinician, or both. For example, from the clinician's point of view, the treatment of the spouse with depression can vary depending on whether it is viewed as a current adaptation to a larger problem involving the family unit (suggesting a need for family intervention) or as the patient's personal symptomatic adaptation to a unique biological, social, and historical situation (in which case individual or group treatment is more likely to be indicated). The mediating and final goals of treatment vary accordingly.

The individual treatment format is one in which the patient and therapist meet privately, and the individual is seen as the focus of intervention. The relationship between the therapist and patient is fostered and used as the framework for the application of a multitude of therapeutic techniques to assist the individual in coping with symptoms and resolving interpersonal conflicts through their replay with the therapist. The individual format has advantages in addressing problems achieving intimacy; the striving for autonomy in adolescents and young adults; and issues that are of such a private or embarrassing nature, or both, that the confidentiality of the individual format is required at least for the beginning phase.

The group treatment format is one in which a small number of patients meet with one or several therapists on a regular basis with the goal of treating the disorders of the group members. The group treatment format provides an economic mode of treatment delivery, an effective means of reducing or circumventing resistances expressed in individual therapy, and adjunctive support or ancillary therapists in the form of other patients. Group therapy also creates a setting in which interactional forces can be manifested and examined. Group treatments can be classified as heterogeneous or homogeneous in membership. Although this distinction is not supported by controlled research, it has been used extensively in clinical practice.

In heterogeneous groups, individual patients differ widely in their problems, strengths, ages, socioeconomic backgrounds, and personality traits. Treatment in heterogeneous groups fosters self-revelation of one's inner world in an interpersonal setting where sharing and feedback are encouraged. The group provides a context in which interpersonal behavior patterns are reexperienced, discussed, and understood and in which patients experiment with new ways of relating. There are two general indications for heterogeneous group therapy. First, the patient's most pressing and salient problems occur in current interpersonal relationships. Second, prior individual therapy formats have failed for various reasons (e.g., the patient has a strong tendency to actualize interpersonal distortions in individual therapy formats, or the patient is excessively

intellectualized). The enabling factors for heterogeneous group therapy include a capacity to participate in the group treatment as evidenced by openness to influence from others, willingness to participate in the group process, and willingness and ability to protect group norms. The patient's motivation for group treatment must be sufficiently adequate to foster participation.

Homogeneous groups are self-help or professionally led groups in which all members share the same symptom or set of symptoms that are the primary if not sole focus of the intervention and change. The type of group is usually highly structured and provides a social network for the patient who previously may have felt alone and isolated with the target symptom. The sense of commonality in jointly combating a shared problem provides support and self-validation. Homogeneous groups tend to avoid techniques of psychological interpretations and use group inspiration, didactics, modeling, and advice because the goal is not insight but behavioral change.

The indication for homogeneous group treatment is that the patient's most salient problem or chief complaint involves a specific disorder for which a homogeneous group is available. These problems fall into four general categories: (a) specific impulse disorders, such as obesity, alcoholism, drug addiction, gambling, and violence; (b) problems adjusting to and coping with medical disorders, such as cardiac ailments, ileostomy, terminal illness, chronic pain, and others; (c) problems of a particular developmental phase, such as childhood, adolescence, child rearing, and aging; and (d) specific mental disorders or symptom constellations, such as agoraphobia, somatoform disorders, BDL, and schizophrenia.

The family treatment format is one in which various subgroups of a family (a nuclear family, a couple, or a couple with a family of origin) meet on a regular basis with a therapist. The family format was derived in large part from an emphasis on the contextual origins of the presenting problems. Recently, family and marital treatments have been applied more broadly, with greater emphasis on their practical utility rather than solely or primarily on the hypothesized role of the family dyad in the problem's generation, maintenance, or both. Hence, family- and marital-based treatments are used for

various medical (e.g., hypertension) and psychiatric disorders (e.g., agoraphobia, schizophrenia, BDL) in which the spouse or family member is enlisted to provide social support to the patient.

The mediating goals of family and marital treatments are to change the repetitive and often rigid interpersonal interchanges by family members that are in themselves the focus of complaint or are hypothesized to be related to the symptoms of one or more individuals. In addition to the use of the usual range of strategies and techniques, the use of the family format allows direct therapeutic assessment and impact on these behaviors because they operate in predictable sequences in the family setting. The relative indications for family-marital formats include (a) family-marital problems presented as such without any one family member designated as the identified patient; (b) a family presenting with current structured difficulties in intrafamilial relationships, with each person contributing collusively or openly to the reciprocal interaction problems, or symptomatic behaviors being experienced almost predominantly within the family-marital system; or (c) a family being unable to cope adequately with the behavior of a particular family member, such as adolescent acting-out behavior (promiscuity, drug abuse, delinquency, vandalism, violent behavior) or a chronic mental illness of one family member.

The NEO PI-R, in combination with a clinical interview, can be helpful in the choice of treatment format in two ways. First, the NEO PI-R helps describe the predominant interpersonal patterns of the patient and suggest areas of difficulty needing treatment, whether these interpersonal problem areas could be addressed in individual, family, or group formats. For example, although the NEO PI-R profile is not directly related to the choice of family-marital treatment format (because it is an instrument concerned with characteristics of the individual as a self-contained unit), it can suggest how that individual relates to others, including family members.

Second, the NEO PI-R can help individuals who could effectively use a particular treatment format. For example, the NEO PI-R could indicate which individuals could use a group format, those who would likely need the privacy of individual treatment,

or those who may have difficulty accepting group treatment. Those who are particularly antagonistic (e.g., suspicious, critical, unempathic) or introverted (low warmth, low gregariousness) may not be suitable for group therapy. The NEO PI-R can also be useful in anticipating conflicts and problems among the group members (e.g., antagonistic people may take advantage of the excessively trusting or passive patient).

**Strategies and techniques.** There seems to be a consensus in the clinical literature that the differences between treatments—differences seen as crucial for outcome—are captured at the level of treatment strategies and techniques. We would question this assumption as far from complete and suggest that psychotherapy has advanced in its specificity not through investigation of techniques but through research on the disorders themselves. As the disorders have become more clearly differentiated, the treatments have become more focused. For example, the family treatment of schizophrenia has flourished since the concept of expressed emotion (EE) and its influence on the course of the disorder was explicated. Treatments have been formulated with the explicit focus of reducing EE through the use of various strategies and techniques. The implication is that no treatment strategy or technique can be considered in isolation, but its value lies in its usefulness in achieving the mediating goals of treatment for the specific problem diagnosis.

Treatment manuals are now being written to guide research and training in the techniques of the various schools (dynamic, behavior, cognitive) for diverse patient populations—for example, anxiety (Beck & Emery, 1985), depression (Beck, Rush, Shaw, & Emery, 1979), schizophrenia (Falloon, Boyd, & McGill, 1984), interpersonal problems (Luborsky, 1984; Strupp & Binder, 1984), and BDL traits (Linehan, 1993). Clinical research indicates which strategies and techniques are effective with which specific patient problem areas.

Paradoxically, although treatment manuals that define treatment packages for all individuals with a common diagnosis or syndrome are growing in number, at the same time, there is a concerted effort to assign the individual patient to the most optimal

treatment. In this chapter, we suggest that the NEO PI-R has potential for utility at the very intersection of manuals for specific disorders as applied to the individual.

In addition to using the strategies and techniques common to the various schools of therapy, the clinician must consider the use of more specific approaches that might be appropriate for a particular case. In this process, one considers most carefully the mediating goals of treatment and those strategies and techniques that might be instrumental in reaching those goals. The selection of specific techniques is related to (a) the nature of the problem or disorder (e.g., etiology, causes, stressors), (b) the breadth of therapy goals, (c) the depth of therapy goals, and (d) the reactance level of the patient. In rare instances, specific strategies and techniques have shown superiority over competing ones in comparison studies. The clinician must determine individual mediating goals for each patient, given his or her unique diagnosis, social environmental situation, and personality assets and liabilities. For example, psychodynamic techniques have the mediating goal of insight and conflict resolution; behavioral techniques, the mediating goals of specific behavioral changes; cognitive techniques, the mediating goals of change in conscious thought processes; and experiential-humanistic techniques, the mediating goals of increased awareness that is more fully integrated into the patient's personality.

Although the NEO PI-R does not relate directly to the mediating goals of the treatment of the individual case, information from this instrument can be of assistance in choosing strategies and techniques for the treatment of the individual. This occurs mainly through the consideration of the patient's problem complexity, coping styles, and reactance level, which is considered in detail later in this chapter.

**Duration and frequency of treatment.** Treatment duration is multifaceted. The concept can refer to (a) the duration of a treatment episode, (b) the duration of a treatment element (e.g., hospitalization) within a single treatment episode, or (c) the succession of treatment episodes in a virtually lifetime treatment of a chronic disorder such as schizophrenia.

The major reference is to the duration of the treatment episode, that is, the time from evaluation to termination of a particular treatment period.

A number of factors make the relationship between duration of a treatment episode and outcome relatively unpredictable. The duration of the treatment episode and the frequency of sessions are related to the amount of effort and length of time needed to achieve the mediating and final goals of the intervention, which in turn are related to the nature of the disorder and symptoms under treatment. In general, the greater the breadth of goals and depth of experience of the treatment, the longer the treatment. Alternatively, when the goals of treatment are circumscribed, treatment can be brief. Setting the duration for a brief treatment can assist in ensuring that the goals will be reached more quickly than leaving the duration open-ended.

*Brief therapy.* Psychologists may be in an era in which brief psychotherapies are the predominant form of treatment for many patients. Whether it is planned in advance or not, most patients engage in psychotherapy for only a short period of time. Patients seeking clinical outpatient psychotherapy generally expect it to last no more than 3 months, and a high percentage of patients actually remain in treatment for fewer than 12 sessions. Most therapy has always been brief; what is new is the notion of time-limited therapy by design.

The first step in planning for treatment duration is to decide whether to recommend a brief or longer term outpatient intervention. Some clinicians offer brief therapy as the initial treatment for all patients, except those few who have already had an unsuccessful experience with it or those who present with clear motivation and indications for long-term treatment. Because it is difficult to predict from one or two interviews which patients require and can benefit from longer interventions, a trial of brief therapy is often useful as an extended evaluation or role induction.

Brief psychotherapies differ in goals, treatment techniques, strategies, format (group, family, or individual), setting (inpatient, day hospital, outpatient), and selection criteria. In fact, the different models of brief therapy are as diverse as those

applied in longer treatments. However, certain essential features characterize the brief therapies: establishing a time limit, achieving a focus with clear and limited goals, achieving a workable patient-therapist alliance rapidly, and having an active therapist.

The indications for brief therapy, of whatever model, include the following: (a) A definite focus, precipitating event, or target for intervention must be present; (b) the patient's overall motivation and goals may be limited but must be sufficient for cooperation with the brief treatment; (c) the patient must be judged to be capable of separation from treatment; (d) the patient's usual level of functioning is adequate and does not require the level of change usually brought about only by long-term or maintenance treatment; (e) limited financial or time resources on the part of the patient or the delivery system may incline toward brief treatment; and (f) brief treatment may be chosen in preference to longer treatment to avoid secondary gain, negative therapeutic reactions, unmanageable therapeutic attachments, or other iatrogenic effects.

An important consideration in making the decision for brief treatment is the potential usefulness of one of the brief therapies for a specific patient problem area. Difficulties brought by patients can be broadly conceptualized as either symptomatic or conflictual in nature (Beutler & Clarkin, 1990). Brief treatments have been articulated for symptoms (e.g., depression, anxiety), unrecognized feelings, behaviors (e.g., phobias), and interpersonal conflicts (Clarkin & Hull, 1991; Hollon & Beck, 1986; Koss & Butcher, 1986).

The NEO PI-R can help clinicians choose which brief-focused treatments might be the most beneficial in two ways: by indicating (a) the breadth of problem and (b) the interpersonal assets that would foster a rapid alliance with the therapist and the acceptance of the therapist's assistance. Thus, the ideal patient for planned brief treatment from the NEO PI-R would show isolated but significant elevations on neuroticism, high openness to activities and ideas, high warmth (for rapport), and high agreeableness.

*Long-term psychotherapy.* Regardless of technique, the rationale for treatment of long-term

duration is that some problems are so ingrained, complex, and extensive that an extended period of time is necessary for their dissection and resolution and for the patient to assimilate and apply new solutions to daily life. Because regularly scheduled long-term psychotherapy is expensive and is minimally supported by available research, the prescription of this duration requires the most thoughtful assessment of indications, contraindications, and enabling factors. A poor or insufficient response to brief treatment is an empirical demonstration of the need for further intervention. Whereas most psychotherapy research studies deal with brief therapy, these studies are impressive in the number of patients who do not respond to the brief intervention. The overuse and limitations of brief therapies have been described elsewhere (Clarkin & Hull, 1991). Patient factors that tend to lengthen the treatment include the diagnosis of chronic mental disorders (e.g., schizophrenia, bipolar disorder), multiple problem areas, poor patient enabling factors for treatment, and relatively poor premorbid functioning and adjustment.

**Prescription for no treatment.** Evaluation only, or the prescription of no treatment for the individual following evaluation, is the briefest intervention. Clinicians are not inclined to recommend no treatment and rarely do so for patients applying for help in a clinical setting (Frances & Clarkin, 1981). For treatment planning purposes, it is helpful to distinguish (a) patients likely to improve without treatment (spontaneous remission, i.e., healthy individuals in crisis), (b) patients who are likely not to respond (nonresponders, i.e., antisocial, malingering, or factitious illness, iatrogenically infantilized patients, or poorly motivated patients without incapacitating symptoms), (c) patients at risk for a negative response to treatment (i.e., severe masochistic, narcissistic, and oppositional patients; patients who enter treatment wanting to justify a legal claim or disability), and (d) patients for whom the recommendation of no treatment is an intervention in itself aimed at their resistance (i.e., oppositional patients refusing treatment; Frances et al., 1984).

Combined with a careful history, the NEO PI-R may be of assistance in isolating those patients for

whom treatment is contraindicated or for whom engagement, change, or both in treatment is unlikely. A conceptualization of this parameter early in the patient's assessment enables the clinician to save valuable time and effort from a foredoomed treatment or provides information to be used in confronting the patient with the potential roadblocks, hence resulting in effective treatment from the first evaluation.

**Spontaneous remission.** A relatively healthy individual caught in the throes of a crisis is a likely candidate for spontaneous remission. The NEO PI-R for such an individual would show strengths in terms of, at most, an isolated and only moderate elevation in neuroticism and good contact with others (i.e., agreeableness and extraversion). In particular, the profile would emphasize strengths in the area of conscientiousness. The individual might present with a profile that is not substantially problematic (e.g., moderate on neuroticism and at worst high or low on extraversion). The patient's problems may be situational and transient, and the patient may have the personality strengths to overcome these problems on his or her own (e.g., high in conscientiousness and openness to ideas and activity). The best approach might then be to recommend no treatment because the patients can call on their own resources.

**Clinical vignette of a likely case for spontaneous remission.** Christine was a 29-year-old single woman who presented to a hospital outpatient clinic complaining of problems in relationships with men. In this clinical setting, a screening battery was designed to provide suggestions for treatment planning, with information on functioning (Social Adjustment Schedule; SAS), symptom distress (Symptom Checklist 90; SCL-90; Beck Depression Inventory; BDI), and personality traits (NEO PI). The relative elevation of symptoms (SCL-90) to interpersonal difficulties (scales of the NEO PI) provided information on treatment focus.

Christine's SCL-90 was quite low, with scaled scores in the 20 to 30 range ( $M = 50$ ), indicating little symptom distress. Likewise, the BDI was below average. The SAS-SR indicated adaptive functioning in all areas, with some minor difficulties in finances and social functioning. Her NEO PI was average for neuroticism; very high in extraversion, openness,

and agreeableness; and high in conscientiousness. She appeared to be extraverted, open to experience, agreeable in her relationships, and conscientious in her behavior. Her distress level, on both the SCL-90 (more of a state measure) and NEO PI neuroticism (more of a trait measure), was not significantly elevated.

In the clinical setting, Christine was assigned to brief individual therapy. She, however, discontinued treatment after a few sessions in which she discussed some difficulties with a current boyfriend. In hindsight, this patient probably could have been assigned by the clinical team for evaluation only or at least scheduled from the beginning for a limited number of sessions. She was not substantially symptomatic and presented with many strengths, so the assessment could have been presented to her in an optimistic way. With the clinician relating to her many strengths, she could have been advised in a positive way that she did not need extensive or perhaps even any therapy.

**Nonresponders.** Some individuals are not likely to benefit from treatment. Two subgroups of nonresponders are important to note. One group is composed of individuals low in conscientiousness and very high on neuroticism. They are in tremendous pain, but they drop out of treatment quickly. An individual in this group may have a history of being in and out of psychotherapy. Regrettably (or understandably), extremely high scores on neuroticism coupled with low scores on conscientiousness are often seen in people with personality disorders, particularly BDL, antisocial, and passive-aggressive personality disorders. A second group is composed of individuals low in conscientiousness and very low in neuroticism. Individuals in this group may bother other people with their behavior but not particularly be bothered by their own behavior. Consequently, they have little motivation to change. These individuals may express mild interest but may find various reasons for why they cannot continue treatment.

**Patients at risk for a negative response to treatment.** We are also concerned here with individuals who get into a hostile, possibly psychotic transference. In psychodynamic terms, some of these patients manifest a negative therapeutic reac-

tion. Some people who meet the DSM-IV criteria for BDL would fit into this group.

On the NEO PI-R, these patients score very low on openness to actions. If the therapist tries to encourage them to do something, they may try to improve their life only slightly, they may not try at all, or they may do so only in a cursory manner. The therapist may assign them homework or practice, but somehow it never works out. These patients are also likely to be low on conscientiousness. They are not diligent or responsible in their efforts. People high on openness to fantasy are adaptively responsive to speculation and introspection, but people who are very high on openness to fantasy can be weak in their reality testing. Low scores on agreeableness suggest that a person is suspicious, oppositional, and resistant. Nothing that the therapist offers is considered useful or valuable. What the therapist suggests is either perceived as deficient or has been tried with no success. Such individuals are unlikely to work well in a team or a group, even though they may be very high on neuroticism. Low scores on agreeableness often (but not always) seen in people diagnosed with a personality disorder, particularly BDL and antisocial personality disorders.

**No treatment as an intervention for resistance.** Some patients who apply for treatment are, at the same time, motivated to escape treatment at any possible turn. For example, individuals sent to treatment by others (e.g., mates sent by spouses, adolescents and early adults sent to treatment by parents, employees sent by employers, or those sent by the courts) fall into this category. They may experience little dysphoria or distress (e.g., average score on neuroticism). If they are really in trouble (i.e., they are treatment resisters, yet they need treatment, which they then impulsively reject), one might expect high scores on impulsiveness and hostility. However, the particularly resistant people are low on openness and low on agreeableness. They resist anyone "telling them what to do" because they are not open to change and are antagonistic to the suggestions of others.

**Clinical vignette of the initial evaluation process.** The patient was a 25-year-old woman, Abigail, who was an executive within a major telecommunication

corporation. Never in psychotherapy before, she was evaluated and referred by a colleague at work because she had been engaged in promiscuous relationships. She presented with the complaint that she had few friends, despite appearing as an engaging and friendly person. On the NEO PI, Abigail came out as fairly well adjusted in most areas. She was average on extraversion, high on conscientiousness (a high-achieving woman), high on agreeableness, and high on openness. On neuroticism, Abigail was very high on the hostility facet scale.

Her difficulties were seen as conflict-focused rather than simple, habitual symptoms. Therefore, the treatment goals included conflict resolution, especially those conflicts that were expressed within her interpersonal relationships. Her coping style was somewhat repressive, although she still maintained an active internal life. In many ways, she had some qualities of internalization because she was open to ideas. She was very intellectual, thought about things, read, and was open to considering other people's points of view. By relating to her repressive and internalized coping style, the clinician was able to plan a therapy experience with depth that included exploration of thoughts, feelings, motives, and drives.

Her reactance potential was high, as manifested by her very high hostility score within the domain of neuroticism. However, she was also high on agreeableness and high on conscientiousness. High hostility on the NEO PI immediately suggests to the therapist to use a cautious approach. Because of the characteristic hostility, the therapist assumed that it would not be a good idea to confront her. Rather, the therapist would have to take a slower course, speculating with her why these events were taking place in her life and slowly introducing the idea that she had a part in it (i.e., appeal to her openness to ideas). Thus, a confrontational brief therapy was not deemed promising. The patient's level of conscientiousness, however, boded well for an ability to remain involved in a more long-term treatment.

Abigail was assigned to open-ended individual psychodynamic treatment. What emerged over the course of the psychotherapy, however, was that despite this woman's friendly, agreeable presentation, she had a troubling high degree of hostility.

She was oriented toward other people and was generally agreeable, but she had difficulties controlling her temper and anger. Invariably this anger led to a number of interpersonal conflicts. The NEO PI had uncovered this information immediately, whereas the interview did not. The initial interviewer was struck more by her strengths (i.e., her conscientiousness and agreeableness). Her difficulties with anger, temper, and hostility were hidden by her effort to be agreeable and conscientious.

When the therapist introduced an idea to Abigail about herself that might be a problem behavior (e.g., she pushes people away with her hostility), Abigail would react with impulsive anger. The main way her hostility was exhibited in the transference was that she would state how much she liked the therapist, that the therapist was wonderful, and that she was so lucky to have the therapist. However, if the therapist was late by a minute or if the therapist was momentarily unavailable (e.g., one time the therapist had to answer the phone during the session because someone was calling in crisis), she became extremely angry and at times even enraged. However, Abigail was conscientious and agreeable enough to keep the angry reaction to herself, at least until the next session when she would again attack the therapist. Over the course of time, however, Abigail was able to integrate these interventions. She would go home and think about the content of her therapy session (i.e., high openness), and she was able to make real gains, including the cessation of promiscuous relationships and the initial motivation for treatment. Subsequent to treatment, Abigail married and has since been successful in establishing several meaningful friendships.

### **Microtreatment Decisions**

In contrast to the macrotreatment decisions made at evaluation that set the course for the major parameters of treatment, numerous microtreatment decisions are made by the therapist throughout the course of treatment. Beutler and Clarkin (1991) postulated that key patient characteristics help the clinician decide about moment-to-moment decisions regarding breadth of treatment goals, depth of therapy experience, and degree of directiveness in the treatment assumed by the patient. We suggest

that decisions around these parameters of treatment should be based on patient characteristics of problem complexity, characteristic coping styles, and reactance level.

**Problem complexity and breadth of treatment goals.** It is therapeutically useful to distinguish between simple or habitual symptoms and complex symptom patterns. Habitual or simple symptoms are isolated, environmentally specific, currently supported by reinforcing environments, and bear a clearly discernible relationship to their original adaptive form and etiology (Beutler & Clarkin, 1990). In contrast, underlying conflicts can be inferred when the symptoms have departed from their original and adaptive form and are elicited in environments that bear little relationship to the originally evoking situations.

Matched with the patient's problem complexity is the breadth of treatment goals. We distinguish between conflict-focused goals and simple symptom-focused goals. Somatic treatments by definition are symptom focused; likewise, behavioral and cognitive psychotherapies are directed most specifically to altering simple symptom presentations. In contrast, interpersonal, experiential, and psychodynamic therapies are more broadly focused on symptomatic change as related to change in internal characteristics of the patient. Manuals for the cognitive treatment of anxiety (Beck & Emery, 1985) and depression (Beck et al., 1979; Klerman, Weissman, Rounsaville, & Chevron, 1984) are useful for guiding an individual's treatment focused on the cognitive and interpersonal underpinnings of both of these troubling affects. Manuals for conflict-focused psychotherapies are illustrated by defining a conflict-oriented therapeutic focus. Experiential (Daldrup, Beutler, Engle, & Greenberg, 1988), interpersonal (Klerman et al., 1984), psychodynamic (Strupp & Binder, 1984), and family (Minuchin & Fishman, 1981) all formulate treatment foci and mediating goals that are beyond the simple symptom focus itself.

The NEO PI-R measures neither the acuteness of symptoms nor direct conflicts. Rather, "trait" symptoms such as depression and anxiety are measured on the neuroticism scale. The NEO PI-R is useful in detecting the presence of single or multiple

symptom patterns (e.g., one facet elevated in neuroticism vs. many). The clinical interview is useful to ascertain whether the symptom is simple or complex and of conflict organization. The dimensions of neuroticism and extraversion (and their facets) provide indications of the spread of symptoms that the individual typically experiences. Conflicts might be indicated or have fertile ground in those individuals with high self-consciousness and high vulnerability facet scores in combination with signs of distress (e.g., high scores on hostility, depression, and anxiety).

The breadth of goals (e.g., behavioral and conflict-resolving change) may not always coincide with depth of therapy experience. For example, underlying conflicts do not have to be addressed directly in therapy to be resolved. Behavioral change may result in conflict change without directly addressing the conflicts in the treatment. This is especially true in patients with real strengths (Global Assessment of Functioning Scale score of 71–100; American Psychiatric Association, 1994).

Thus, the depth of therapy experience does not have a one-to-one relationship with breadth of therapy goals, at least from an outcome perspective. The depth of therapy experience is limited by (a) the coping styles of the patient (i.e., as defensiveness goes up, depth goes down) and (b) the capability of the patient to handle disturbing material (e.g., exploring conflicts with schizophrenia patients can be counterproductive).

#### Coping styles and depth of treatment

**experience.** The coping style of the patient, in addition to the focus of difficulty, is central to treatment planning. There is no definitive method of categorizing patient coping styles. Three fundamental coping styles are internalization, repression, and externalization (Beutler & Clarkin, 1990).

**Internalizing.** An internalized coping style involves preferential use of defenses such as undoing, self-punishment, intellectualization, isolation of affect, and emotional overcontrol and constriction. Individuals with this coping style often present with blunted or constricted affect (low positive emotions) and with constrained interpersonal relationships (low extraversion).

A patient who is using internalization as a coping style, however, probably has a very active inner life. This would appear on NEO PI-R openness, with openness to ideas and fantasy and possibly openness to aesthetics. The individual may be low on openness to feelings. This person often engages in excessive ideation to control conflicted or painful feelings. People using internalization present with symptoms; they are aware of an intrapsychic conflict, which causes anxiety and depression that they might intellectualize in therapy. Thus, some elevation on the neuroticism score is to be expected. However, the scores on openness, especially relatively high scores on openness to ideas combined with low scores on openness to feelings and low extraversion, might identify their propensity to internalization.

**Externalizing.** In contrast to internalizers, externalizers present with defensive acting out and projection. They limit and curtail anxiety by assigning responsibility for their behavior onto external sources and discharge anxiety by action rather than thought. Interpersonally, these individuals move against others and act against the environment. They keep intense feelings at a distance. Their symptoms are ego-syntonic.

Those who use externalization would be high on extraversion, low on neuroticism, and low on conscientiousness. These individuals do not internalize or experience much psychological discomfort. Hostility may be their one spike within the domain of neuroticism. They do not express much anxiety or depression. Impulsivity may be slightly elevated, indicating that they act rather than reflect (although this may also be evident by their low scores on conscientiousness). Again, as they externalize blame, they may indicate some elevations on hostility. It is unlikely that they would be high scorers on openness because they do not reflect much or consider widely diverse opinions. They may feel free to criticize others (low agreeableness), but as low scorers on neuroticism, they deny any pain of their own.

**Repressive.** Reliance on repression and denial, such as denial of negative feelings, reaction formation, repression of the content that arouses uncomfortable experiences, negation of the meaning of

negative social stimuli, and insensitivity to one's impact on others, are characteristic of a repressive coping style.

On the NEO PI-R, such people may report a degree of intrapsychic pain on neuroticism, but they would be particularly low on openness to ideas, emotion, and fantasy. This person does not want to think about things very much and may repress feelings and thoughts. Moreover, this person may also be very low on neuroticism because he or she does not want to admit that anything is wrong. In summary, if the individual is low on neuroticism and very low on openness (especially to ideas, fantasy, and feelings), the individual may not be interested in opening up or reflecting on any psychological issues.

The individual's scores on agreeableness could also be moderate to high. Individuals of this type go along with others' suggestions and directions, avoiding conflicts because they repress and deny uncomfortable feelings, including anger. Such an individual joins in, does what is expected, and does not address conflict. This makes treatment difficult because there is a willingness to agree and join with the therapist in confluence with a lack of openness to thinking about one's life or experience.

*Depth of experience addressed in the treatment.* The foci or targets for treatment intervention can be conceptualized as involving four areas of functioning on a dimension of levels of experience (Beutler & Clarkin, 1990): (a) behaviors of excess and insufficiency, (b) dysfunctional cognitive patterns, (c) unidentified feelings and sensory experiences, and (d) unconscious conflicts. There is a progression in this conceptualization from behaviors to cognitions to feelings and motivations, recognized and unrecognized. Whereas most treatments usually touch on all these areas either inadvertently or by design, emphasis on one or more areas of experience can vary considerably depending on the patient and his or her concerns and the therapist's orientation and focus of treatment intervention.

It is important to match the dominant coping style of the patient with the depth of experience addressed by the treatment procedures. Most specifically, patients who are prone to externalize their distress are probably best matched with behaviorally

oriented therapies targeted to external behavior rather than those that focus on unconscious processes. The externalizing patient resists nondirective, exploratory psychotherapy. If the externalizing individual comes for therapy, it may be because of some circumscribed complaint or because a significant other (spouse or boss) insists on behavioral change. Thus, in treatment, one would want to work with strict contingencies for changes in behavior. In extreme cases, where the patient is very low on neuroticism (lacking much internal motivation for change) but is high on extraversion and agreeableness, the therapist might work at a hierarchy of concrete rewards that have intrinsic meaning to the patient.

The externalizing patient's social acting out and avoidance of responsibility would be reflected in a low score on conscientiousness. The lower the patient's score on conscientiousness, the more difficult the therapist's task. This is especially true if the patient is relatively high on extraversion and average on agreeableness; the patient presents as a "hail fellow, well met" who may tend to give superficial and affable agreement in sessions, without having the slightest intention of following through in the treatment contract. Likewise, patients who internalize should be matched with therapies that address the level of their unrecognized-unconscious motives and fears.

**Reactance level and degree of therapy directiveness.** *Reactance* is defined as the individual's likelihood of resisting threatened loss of interpersonal control (Beutler & Clarkin, 1990). The high reactance person seeks direction from within rather than from outside resources for solutions or answers. High reactivity would be reflected on the NEO PI-R by moderate to high levels of openness to ideas and fantasy. It might also be reflected in average to high conscientiousness because the high reactance individual feels in control and takes responsibility for outcomes. The high reactance person is probably seen as moderate to low on agreeableness. These individuals would not want other people to make decisions for them. However, evidence of inner resources would be reflected in openness to ideas. One might think of the high reactance person as fairly introverted, scoring low on extraversion.

By contrast, the low reactance person accepts and possibly gravitates to direction from other people, as reflected in higher scores on agreeableness and extraversion, and viewed as real joiners who like to be a part of groups. He or she prefers to be a part of groups, a member of cooperative efforts. Consensus with others is valued. However, the individual who is low in reactance might not have a particular openness to ideas or be high in openness to fantasy life and one's internal world. There might be openness to action, such as one would undertake in a cognitive behavioral treatment (Linehan, 1989). In summary, high reactance can reflect a variety of personality profiles; one value of the FFM is providing a means through which to obtain a more specific and differentiated understanding of the patient than is provided by a simple reference to being high in reactance.

The individual high on extraversion, agreeableness, and openness to ideas probably would be an ideal candidate for both individual and group cognitive behavioral treatment (Miller, 1991). High reactance and low reactance have to do not only with the modality of the treatment but whether it is supportive or exploratory. The NEO PI-R might be used to make decisions about group versus individual psychotherapy. The high reactance person would be screened away from those treatments in which there is direct advice giving. The NEO PI-R would also be helpful in the selection of group members. It might be helpful in the matching together of group members in one particular way, so that there would be a balance of extraversion-introversion, agreeableness, and reactance levels. The more introverted (low extraversion) and the less agreeable (low agreeableness) the individual, the more the therapist would want to be extremely careful about forming a treatment alliance. Patients who are quite introverted may shy away if confronted with too much warmth or friendliness from the therapist.

**Clinical vignette of a high-reactance patient.** A 32-year-old single, male tax attorney, Tony, appeared for treatment complaining of anxiety. Constant irritability and hostility were manifested in interpersonal relations. In the initial evaluation, he reported just recently realizing he had many

psychological difficulties, as exemplified by his anger and explosive temper on the job, especially toward women. He was dating a young woman and felt anxious about how the relationship was proceeding. The woman, he feared, might be getting serious about him. The clinical diagnosis was depression in the context of PDNOS (features of paranoid and self-defeating personality disorder traits). He was given the NEO PI as part of an evaluation. He obtained clinically interpretable (above  $T = 65$ ) elevations on neuroticism (including the hostility and vulnerability facets) and a very low score on agreeableness. Extraversion was in the average range, and conscientiousness was in the high average range. At the macro level of treatment planning, it was decided to recommend individual therapy for the patient, with treatment duration undetermined at the initiation of treatment.

The patient's current difficulties stemmed from a long history of troubled relationships with a contradictory mother and a brutal stepfather. This man carried a history of conflict, with a marked tendency to see others as hostile, stupid, and difficult to deal with. Theoretically, this patient needed a treatment that had a breadth of treatment goals including conflict resolution.

This man's rigid defenses, including projection, rationalization, splitting, and devaluation, were aligned in such a way as to make treatment slow and to limit the depth of experience available to the treatment. Even though conflict stemming from the past seemed to control his present behavior, the patient was not inclined even to discuss the past. At times, he could relate his present fear of women to the hatred of his mother, but in general, he wanted to focus on his present behavior. He asked the therapist for key phrases he could use to control his impulsive, angry responses to clients. He talked of himself as "damaged," with little hope of change through therapy, but sought for a change in his environment. Clearly, the depth of experience and breadth of treatment goals were limited by the patient's coping style.

This patient was highly reactant, as evidenced by his high scores on the hostility and vulnerability facets of neuroticism, and his high conscientiousness and low agreeableness scores, as measured by the

NEO PI. Even though he recognized his need for help, he feared any loss of control and did not want to place himself in the hands of another. Aware of this dilemma, the therapist let the patient guide the discussion for the most part. Only tentatively did the therapist suggest connections (e.g., his intense reaction to a minor incident in the present as related to his past). Only when the patient directly asked for advice and suggestions did the therapist provide them.

Feedback concerning his NEO PI profile was introduced early in the treatment to focus the intervention, educate the patient about his difficulties, and anticipate possible treatment alliance snags (Harkness & Lilienfeld, 1997). The patient was convinced that he was "crazy," so this test with its norms was reassuring. The particular combination of high vulnerability and hostility was reviewed carefully with the patient, and a focus of treatment was on how his feelings of vulnerability (related to his past including harsh treatment by a stepfather and neglect from mother) in current interpersonal relations led repetitively to hostile attack on the patient's part.

The treatment provided to the patient was similar to interpersonal psychotherapy for depression. It focused on his symptoms of anger and depression and their relationship to interpersonal conflict at work and in his intimate relationships. There were several episodes of brief treatment because the patient saw the need for therapy only under acute distress.

## ASSESSMENT

A practical question concerns the choice of procedures to use in the initial assessment of patients to foster differential treatment plans. The clinical interview is the most direct method in assessing the chief complaint, diagnosis, information concerning explicit behavioral dysfunctions, and environmental stressors and supports. The NEO PI-R, inexpensive in clinician time, is useful in providing information on patient personality variables relevant to treatment selection as well as related diagnostic and problem area information. The NEO PI-R alone, however, cannot inform the clinician totally on the foci for intervention. Acute distress—both acute

symptomatic distress (Axis I disorders) and environmental stressors (marital disputes, loss of job, etc.)—is not assessed by the NEO PI-R. Rather, the NEO PI-R provides a background to the figure created by the current distress. This framework of the individual's more enduring orientation and proclivities informs the clinician to the focus of intervention but does not totally predict or pinpoint it.

We propose that the NEO PI-R, in combination with the standard clinical evaluation interview, can be of great assistance in making decisions in the therapeutic selection process. The NEO PI-R provides vital information on patient dimensions that are central for treatment planning. We also suggest that a small battery of screening tests, as used in one of the clinical cases described here (the case of Christine), might be of assistance in furthering the treatment assignment task. A screening battery that gathers data on current functioning (SAS-SR), symptom distress (SCL-90, BDI) and personality traits (NEO PI-R) provides a three-pronged approach for treatment planning. High functioning, moderate to low symptom distress, and interpersonal difficulties bodes well for brief individual therapy. Poor functioning, high symptom distress, and difficulties in relating indicate a more symptom-focused, supportive, longer term intervention.

It remains to be seen what will be the most frequent and characteristic profiles of individuals who apply for intervention. The manner in which the profiles relate to *DSM-IV* diagnoses provide the clinician with two coordinates in an attempt to locate the individual in treatment planning space. The NEO PI-R provides data on the typical personality traits, and the *DSM-IV* provides behavioral and symptomatic information in terms of the diagnostic categories.

## CLINICAL ILLUSTRATIONS

To amplify several major themes of this chapter, we use three clinical examples with background data on the NEO PI or the NEO PI-R. All three of our patients carried a primary diagnosis of BDL. The first patient was treated by a clinician with a predominately psychodynamic orientation (Kernberg, 1984; Waldinger, 1987), the latter two patients

were treated by clinicians using dialectical behavior therapy (DBT; Linehan, 1993). As with other Axis II disorders, BDL describes a group of patients who are often very heterogeneous, not only with respect to the particular diagnostic criteria that are prominent but also with respect to other important traits not included within the *DSM-IV* criteria set. Diagnosing each of these patients with BDL was not specific or individualized enough to adequately describe their personality strengths nor their personality deficits and liabilities. Although each of these three patients met the *DSM-III* (revised) and *DSM-IV* criteria for BDL, they differed in a number of clinically significant ways. We think that the heterogeneity of people with the broad diagnostic category of BDL are evaluated most effectively for treatment planning using the NEO PI-R.

We collected NEO PI data on carefully diagnosed female BDL patients with other comorbid Axis II conditions seen at Cornell University Medical Center (Ithaca, NY; Clarkin, Hull, Cantor, & Sanderson, 1993). These individuals presented with impulsive acting out, usually involving food, sex, drugs, and more direct suicidal behavior. The mean NEO PI profiles across these 64 female BDL patients is presented in Figure 21.1. In the spirit of this chapter, we are less interested in whether borderline patients have profiles that are distinct from other Axis II groups than in how the profiles, in conjunction with the Axis II diagnosis, can be helpful for treatment planning.

As expected (see also Chapter 6, this volume), BDL patients as a group are extremely high on neuroticism. All facets of neuroticism—anxiety, depression, vulnerability, self-consciousness, and impulsiveness, especially—are high in the BDL group. The BDL patients are also characterized by extremely low conscientiousness (aimless lack of goal direction, a lax and negligent orientation) and low agreeableness (cynical, suspicious, uncooperative, vengeful, irritable, manipulative). Major treatment foci would be the elevated levels of neuroticism and the uncooperative, manipulative interpersonal behavior. However, it is important to emphasize that there is substantial heterogeneity within the borderline diagnostic category with respect to personality traits that have an important

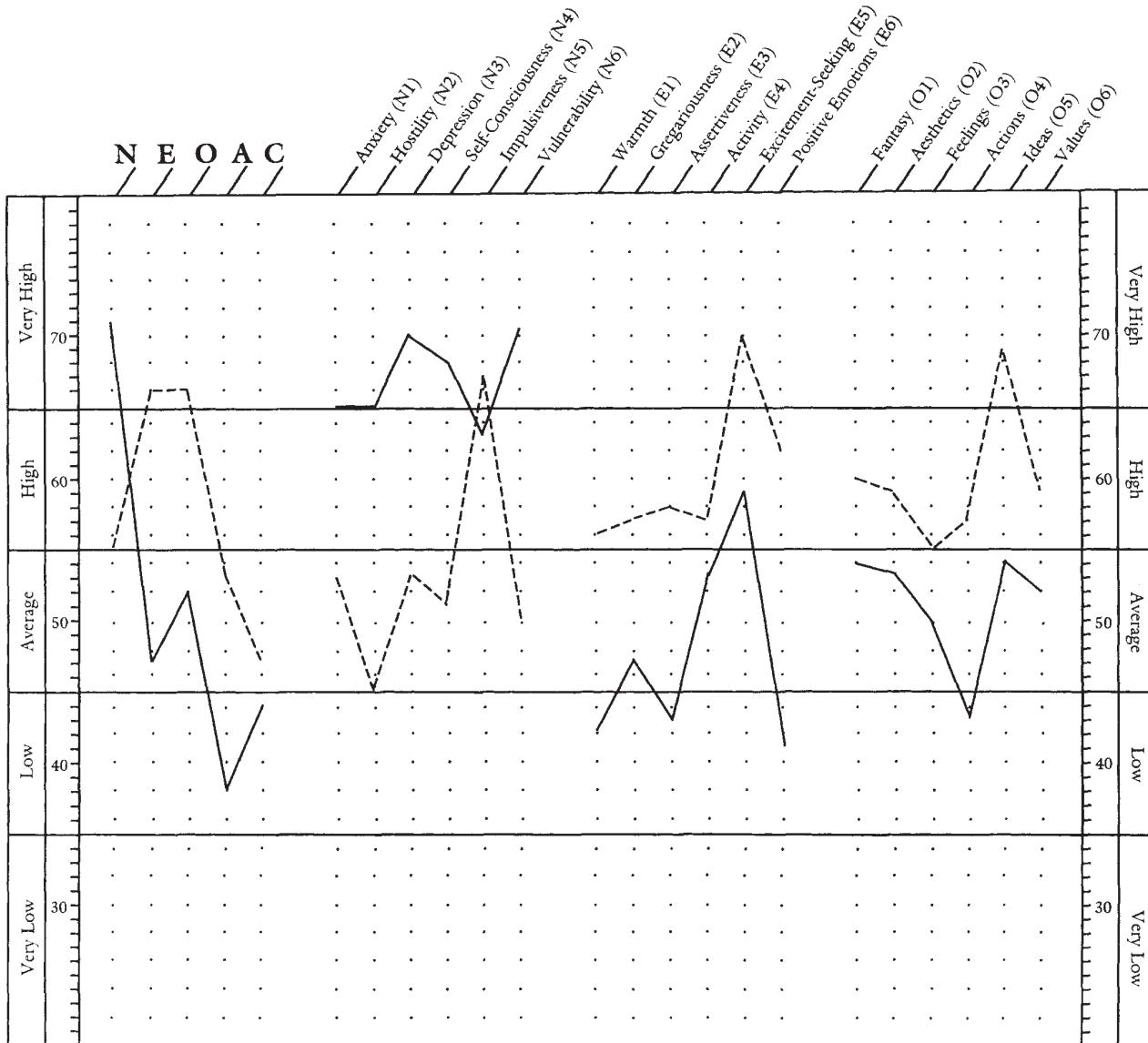


FIGURE 21.1. NEO Personality Inventory profiles of a group of female borderline personality disorder (BDL) patients (solid line;  $n = 64$ ) and Ruth, a 26-year-old female BDL patient (broken line). From the *NEO Personality Inventory*, by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1992 by PAR, Inc. Reproduced by special permission of the publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549. Further reproduction is prohibited without permission of PAR, Inc.

impact on treatment responsivity. Within these general parameters, the individual patient's treatment should be tailored according to specific dimensions and severity as indicated by his or her specific NEO PI-R profile.

### NEO PI for Ruth, a 26-Year-Old Borderline Patient

Consider, for example, treatment planning for a 26-year-old single woman, Ruth, who met criteria

for Axis II BDL. Ruth had had numerous hospitalizations for suicidal behavior, alcohol abuse, eating dyscontrol, and mood lability; several times she received the Axis I diagnosis of major depression. She was a social worker by training and had worked for periods between hospitalizations. However, in many respects, she was not a typical BDL patient; this became evident in her NEO PI profile.

During the course of outpatient individual treatment, Ruth completed the NEO PI (the broken

line on Figure 21.1). She was much lower on neuroticism than other BDL patients. In terms of facet scores of the neuroticism domain, she was impulsive but less anxious, hostile, depressed, and vulnerable, and she was not especially antagonistic (although we suspect that she might have obtained low scores on particular facets of agreeableness if the NEO PI-R had been available at that time). She did at times suffer from mood disorders, but she was not characteristically anxious or depressed. Her borderline pathology was confined largely to her impulse dyscontrol. She also showed relative strengths on the extraversion, openness, agreeableness, and conscientiousness scales. Using normative data from this test, these scaled scores would indicate that she would approach psychotherapy with enthusiasm and approach the therapist with openness and cooperation (Miller, 1991; Waldinger, 1987; Waldinger & Gunderson, 1987). She would be conscientious in carrying out the tasks of the treatment in a serious way. It is clinical wisdom that BDL patients with antisocial characteristics (low conscientiousness) have poor treatment prognosis (Kernberg, 1984; Kernberg, Selzer, Koenigsberg, Carr, & Applebaum, 1989; Robins, 1986). Ruth's relatively high levels of conscientiousness and agreeableness (average but high compared with the other BDL patients) boded well for a therapeutic involvement that was responsible and not corrupted by manipulation or deceit.

Ruth tended toward externalization and acting out. On the NEO PI, this was manifested on the extroversion domain scale and the excitement-seeking facet scale. However, this extraverted orientation was moderated by her openness. The reactance level of Ruth seemed relatively low, manifested on the NEO PI by high agreeableness and high warmth. It appeared that she might enter into a productive therapeutic relationship in which she could accept guidance from another. At first, she mistrusted the therapist but quickly overcame her doubts and uncertainty.

Across 1.5 years of individual psychodynamic psychotherapy, she responded remarkably well, and treatment was ended by mutual agreement. Of the 31 borderline patients that we have followed in outpatient psychodynamic treatment, she had shown one of the most successful responses

(Clarkin, Widiger, Frances, Hurt, & Gilmore, 1992). All of the behavioral impulsivity and self-destructive behavior that she had shown previously (eating binges, alcohol abuse, sexual promiscuity, and suicidal behavior) ceased for more than 1 year. She also became engaged in full-time productive work. Equally important, she had a new male friend who, contrary to former mates, was not abusive and destructive toward her. Her enthusiasm in treatment and her ability to work in and out of sessions all seem correlated with her NEO PI profile, which suggested substantially more optimism regarding her treatment success than had been suggested by her original BDL diagnosis. Her responsibility to treatment and her disposition to become successfully involved in a satisfying relationship and productively employed were not suggested by her BDL diagnosis but were suggested by her level of conscientiousness and agreeableness on her NEO PI profile.

### **NEO PI-R for Marta, a 37-Year-Old Borderline Patient**

Marta was a 37-year-old married, Hispanic woman with three children and a bachelor's degree in nursing. She had been on psychiatric disability from her job at an area hospital for the past 2 years. Raised in the Catholic church, Marta felt very guilty about her reliance on public benefits. Her husband was a moderately successful businessman in a family-owned company. He worked more than 70 hours a week, and his schedule, as well as his history of bipolar disorder Type II, was a significant source of anxiety and anger for Marta.

Marta had done very well in school, obtaining average to high grades in her classes, but she had often gotten into trouble for oppositional, rebellious, and defiant acts. She was at times a mystery to her teachers because she appeared to be a bright child who worked very hard on her assignments but would at times explode in a mean-spirited, hostile anger. She never received any major disciplinary sanctions at school, other than repeated scoldings, staying after school, letters home to the parents, and other relatively minor sanctions. However, her closest friends were children who did poorly in school and got into substantial disciplinary trouble. Marta

denied using drugs or engaging in risky sexual behaviors during adolescence but acknowledged “taking a few chances now and then.”

Marta was the second child and first daughter of a family with eight children in which there was severe corporal punishment for most misdeeds. Whenever her parents discovered that she had been disciplined at school, she was severely disciplined at home, which would at times reach the level of bruises, wounds, and scars, along with various atonements for the apparent shame that they felt she should feel in the eyes of her church. When she reached the age of 14, Marta was repeatedly sexually abused by a friend of the family—a fact rarely acknowledged by her mother and treated largely as a shameful secret by her father and her other siblings. Marta was in fact viewed as the troublemaker by her siblings and father, not for the accusations of sexual abuse but for other behaviors and problems that arose before and after the episodes of abuse. She was at times referred to as the “lost one” by her father, who apparently suggested to her younger siblings that they not follow Marta’s path. Marta felt that she was often singled out for blame and punishment primarily to warn or even to scare the younger children into submission. As the second-oldest child, she had substantial household responsibilities, including babysitting and child care that she took quite seriously. However, she acknowledged that she did often do things that warranted punishment or rebuke by her parents, particularly for staying out late, smoking, or having a “bad attitude.” She stated that she would often get into verbal arguments with her father, which were often resolved by her being slapped and sent to her room. She described having severely mixed feelings toward her mother. She felt very guilty for “letting her down” because she would at times find her mother crying or praying for her “lost soul.” However, she would also feel angry and bitter toward her mother for passively standing by whenever she was wrongfully or excessively punished by her father.

Marta did not receive any formal clinical treatment during her childhood but was often in treatment after she left home. She had been in psychotherapy and treated with various psychotropic medications since her early 20s. She had been hospitalized seven times

for suicide attempts and major depression before her admission into a DBT treatment program (Linehan, 1993). Her most serious attempt was at age 29, when she took a near-lethal overdose and was only discovered accidentally when her husband returned home uncharacteristically early from work. She stated that she often wanted to just die to end a constant pain, anger, fearfulness, and emptiness that pervaded her life. Marta had received a variety of diagnoses throughout her clinical history, primarily posttraumatic stress disorder (delayed onset), major depressive disorder (recurrent, severe without psychotic features), and generalized anxiety disorder, along with BDL. At times, she reported symptoms of obsessive-compulsive anxiety disorder, but it was unclear whether she ever met enough criteria for this diagnosis. She denied any history of clinically significant alcohol or substance abuse.

After entry to the hospital, Marta completed the NEO PI-R (see Figure 21.2). The profile was intriguing for a number of reasons. She revealed many of the traits often seen in patients with BDL. She obtained very high scores on all but one facet of neuroticism—namely, angry hostility, self-consciousness, depression, anxiety, and vulnerability (she was “only” high for level of impulsivity); these traits would often compel her to seek treatment but were rarely helped by the treatment. She also obtained average low scores on the two facets of agreeableness that are often seen in patients with BDL (compliance and straightforwardness), along with severe feelings of mistrust and suspicion (low trust). However, inconsistent with these expressions of antagonism were elevations on the agreeableness facets of modesty and altruism. Marta was often defiant, oppositional, and angry, particularly toward people in authority, but she was also very self-sacrificial, self-denying, and self-deprecating. She would often get into verbal fights and arguments, but these were also coupled with sincere feelings of warmth and concern toward others.

Equally informative were her elevations on the facets of conscientiousness. Marta was very high with respect to achievement striving. It could be said that she had achieved little in her life but, given her childhood experiences, upbringing,

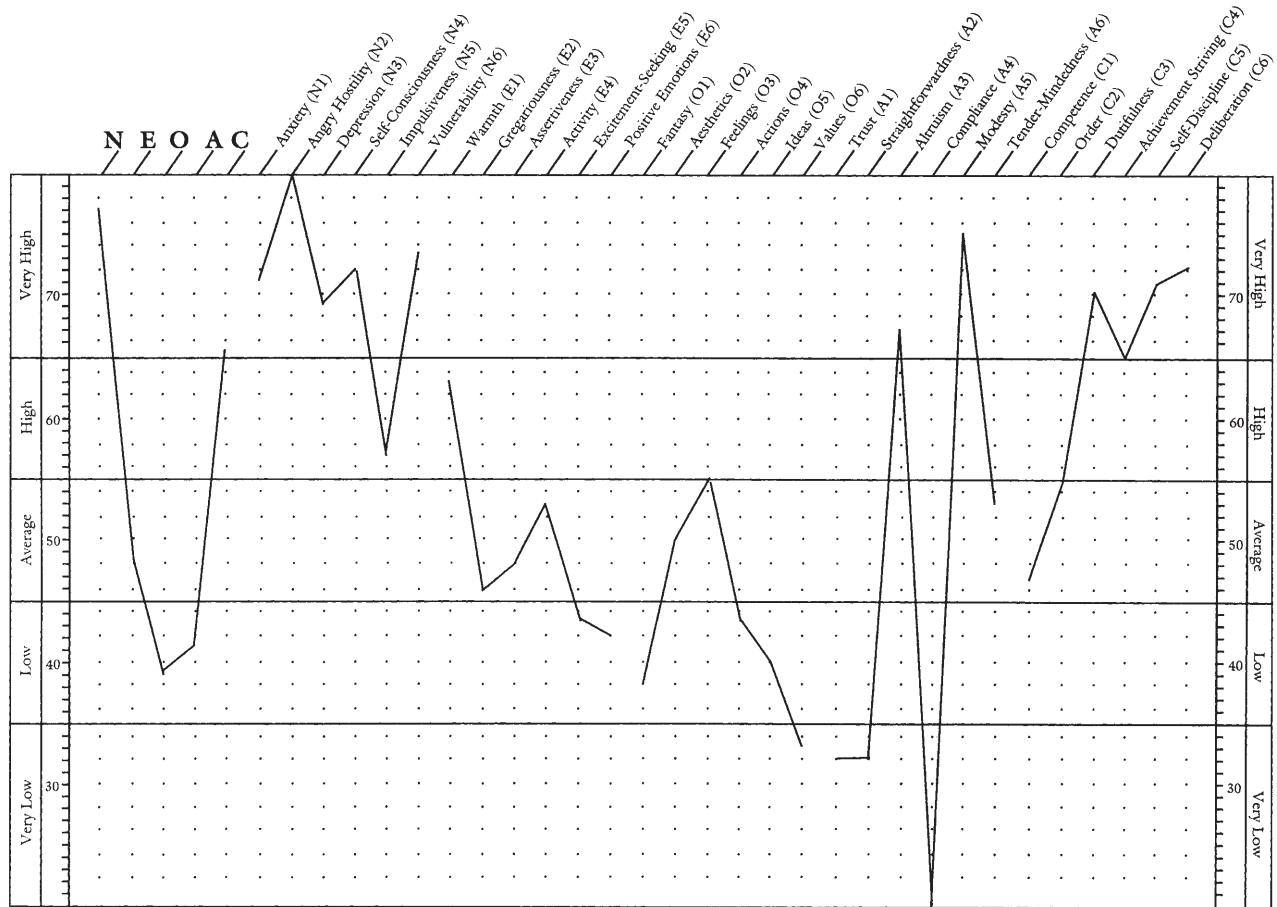


FIGURE 21.2. Revised NEO Personality Inventory profile of Marta, a 37-year-old borderline personality disorder patient. From the *NEO Personality Inventory*, by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1992 by PAR, Inc. Reproduced by special permission of the publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549. Further reproduction is prohibited without permission of PAR, Inc.

inadequate peer support, and many psychiatric problems, perhaps one should say that she had achieved a great deal (e.g., bachelor's degree, steady employment). In any case, she clearly did aspire to be successful and competent in all that she did. She described herself as being low on competence not because she did not value being competent but because she considered herself to be incompetent. She was also highly elevated on the facets of dutifulness, self-discipline, and deliberation. Marta took her responsibilities seriously, even sacrificing and denying pleasures to achieve her goals (perhaps at times primarily to please others). Elevations on facets of conscientiousness are not usually seen in patients with a BDL, but they bode well for a potential responsiveness to the rigors and demands of the DBT program.

Complicating treatment were her average to low scores on facets of openness. Marta had a strong, committed, and unwavering perspective on many matters of life, including herself. She was very self-critical in a self-deprecatory, depressive way but was nevertheless highly resistant to questioning this self-criticism. She had a strong sense of religion, values, and moral expectations. However, she was open and sensitive to how she felt about things and did recognize the harmful and problematic nature of her feelings of guilt, suffering, and depression. She was very open to questioning and addressing her feelings of anger; in time, she became more open to questioning her feelings of guilt and depression.

Marta was transferred from the inpatient hospital to the partial hospital because she continued to present with a high and chronic risk of suicide. On

the surface, she was easily engaged in the partial hospital DBT program. She attended all scheduled sessions, groups, and activities. Furthermore, Marta volunteered for extra responsibilities, such as being a member of the patient government. Unlike most of the other clients, she often stayed late to help clean the public areas used by staff and clients for breakfast and lunch. However, Marta strongly disliked a number of the other clients in the program, particularly those who had different cultural and religious backgrounds from her own, which is consistent with her low openness to values that predisposed her to being relatively intolerant of those who were different from her. Also she did not like aspects of the treatment that in any way challenged her rigidly held ideas about right and wrong. Marta's therapists liked working with Marta initially, but then they reported feeling increasingly frustrated over her defiance, objections, and apparent lack of change. Marta seemed unmovable in her conviction that she was "weak, bad, and a burden" and undeserving of the sympathy and efforts of the treatment team. She viewed her problems as moral in origin, despite the efforts of the team to educate her about the biological and social aspects of her problems.

Nevertheless, Marta took well to the social skills group, where she excelled in the completion of assignments and tasks that increased her ability to control her feelings of anger, to understand more accurately what others were really saying to her, and to no longer assume or expect that others were being critical of or abusive toward her. Marta's strengths were tapped by the group leader by giving her more assignments in which she could experience greater success and accomplishments. She eventually became almost a mentor to the younger patients and felt it was her responsibility to better herself if she was to be a successful "mentor" to them. She offered them rides home, lent them money, allowed them to "crash" at her house when they were in trouble, and defended them to the group leader when they had broken the rules. Her involvement in their problems was helpful to her, although it would at times become excessive. To help her rebalance her involvement with other patients, the group leader established specific limits and goals for each relationship.

Marta's individual therapist eventually abandoned her effort to confront or challenge Marta's strong moral attitudes, focusing instead on an effort to get Marta to forgive those who had abused, wronged, or mistreated her (Sanderson & Linehan, 1999). Marta found this approach to be more acceptable to her religious and spiritual values, and she worked hard at exploring the sources and roots for her feelings of anger and bitterness. Progress was slow, largely because of her continued rigidity in her view of others and herself, but enough progress did occur such that she established substantially better control of her feelings of anger and depression. She did not leave treatment feeling any peace of mind, but she did leave feeling more confident in her potential ability to eventually obtain it.

### **NEO PI-R for Dayna, a 20-Year-Old Borderline Patient**

Dayna was a 20-year-old White woman, born in Germany, who had been living with her father and three sisters in the United States since they had left her mother at age 13. According to Dayna, parental conflict and spousal abuse (on both parents' parts) led to the disintegration of the marriage. She had few distinct memories of the early fights but did recall witnessing screaming tirades, vicious accusations, and physical assaults. Both Dayna's parents completed university in Germany, but their careers were compromised by their mutually severe alcohol dependence. Her mother's alcohol dependence was a major reason that the children went with their father, although Dayna also wondered whether her father may have forced the decision of separation by the move to the United States. Dayna reported that she had always felt closer to her father than to her mother, in part because of her mother's unavailability and withdrawal, particularly when she was intoxicated. Nevertheless, Dayna said that she missed her mother "all the time" and always wanted "to get close to her again." Her mother, however, had rarely made any effort to contact Dayna or the other children and had shown no apparent interest in spending more time with them.

Dayna was remarkably fluent in both German and English, without a trace of an accent, and most of her friends were unaware that she had spent any

time, let alone grew up, in another country. Dayna identified herself as bisexual since puberty, with most of her sexual relationships having been with girls or women. Dayna was drinking alcohol before age 10 when still living in Germany and had used alcohol and marijuana heavily with her childhood and adolescent friends in the United States. She also described having intensive and rapid mood shifts and would at times superficially cut herself during periods of high stress. She stated that she often felt empty and dysphoric and would at times seriously ponder killing herself to "get out of all this pain." She stated that she was never upset about anything in particular but just felt that life itself was "an empty waste of time." She was not a severe problem at school, managing to maintain a B average. On her report cards, her teachers made comments such as "easy to have in class"; "not working up to her potential" "well liked"; and "at times rebellious, sarcastic, and angry." Dayna reported having a number of close friends who, like her, were seen as "strange," "freaks," or "outcasts" by the more socially mainstream and popular teenagers in her school. However, Dayna and her friends were active in a number of art and political clubs. Dayna was recognized in the school for her talent in photography and for a comic strip she drew for the school's alternative newspaper. In contrast to Marta, Dayna showed a high openness to values, which was expressed in terms of her artistic and unconventional behaviors (e.g., liberal political clubs).

Since age 16, Dayna had held a variety of minimum wage jobs, such as waiting tables or working as a clerk in a video rental store. She reported having few difficulties with these jobs and chose them largely because they demanded little so she could get away with doing even less. She continued to live with her father and two of her sisters in rural Connecticut after she graduated from high school and attended college part time. Dayna's two older sisters drank moderately as adolescents and adults but apparently not to the extent that it interfered with their functioning; both were married and steadily employed. Dayna's younger sister objected to and abstained entirely from alcohol use and was an active member of a conservative Christian church. Dayna stated that she got along well with

her older sisters but could not tolerate her younger sister's conservatism.

Dayna's college attendance was sporadic and largely unsuccessful, and she had made little progress toward obtaining a degree. She first attempted to attend a large university, having obtained good aptitude scores on the entrance examinations. However, she drank heavily, skipped classes, failed to complete most of her assignments, and left after the first semester. She was seen briefly by a counselor at the college who recommended psychotherapy and a trial of medication, but Dayna refused the recommendations, stating that she could solve her problems by herself. Dayna next attended a smaller college designed for students interested in liberal arts. She felt like she fit in better with these students but continued to feel depressed, abuse alcohol, and at times cut herself superficially "to relieve stress." After one particular drinking binge, she passed out in her dorm room, hit her head on her desk, and needed three stitches to close the gash in her forehead. At this point, a college counselor insisted that she see a psychologist in the community as a condition of remaining in school. Dayna was diagnosed by this counselor with alcohol abuse, major depression (recurrent, moderate, without psychotic features), and BDL. She attended only three sessions of treatment.

Dayna, however, was hospitalized the following year (at age 20) after an attempted overdose of over-the-counter medications, coupled with alcohol. She was treated for 6 days on a general, acute psychiatric inpatient unit and was referred for follow-up outpatient psychotherapy. Her father insisted she enter this treatment, and he threatened to cut off all financial support if she failed to comply. As part of the standard assessment battery provided at the out-patient clinic, Dayna completed the NEO PI-R. Dayna did meet the *DSM-IV* diagnostic criteria for BDL and evidenced most of the traits seen in patients with this disorder. Her NEO PI-R profile is provided in Figure 21.3.

Dayna obtained substantial elevations on all but one of the facets of neuroticism. She displayed the very high depression, anxiety, impulsivity, angry hostility, and vulnerability seen in patients with a BDL. However, she denied substantial feelings of

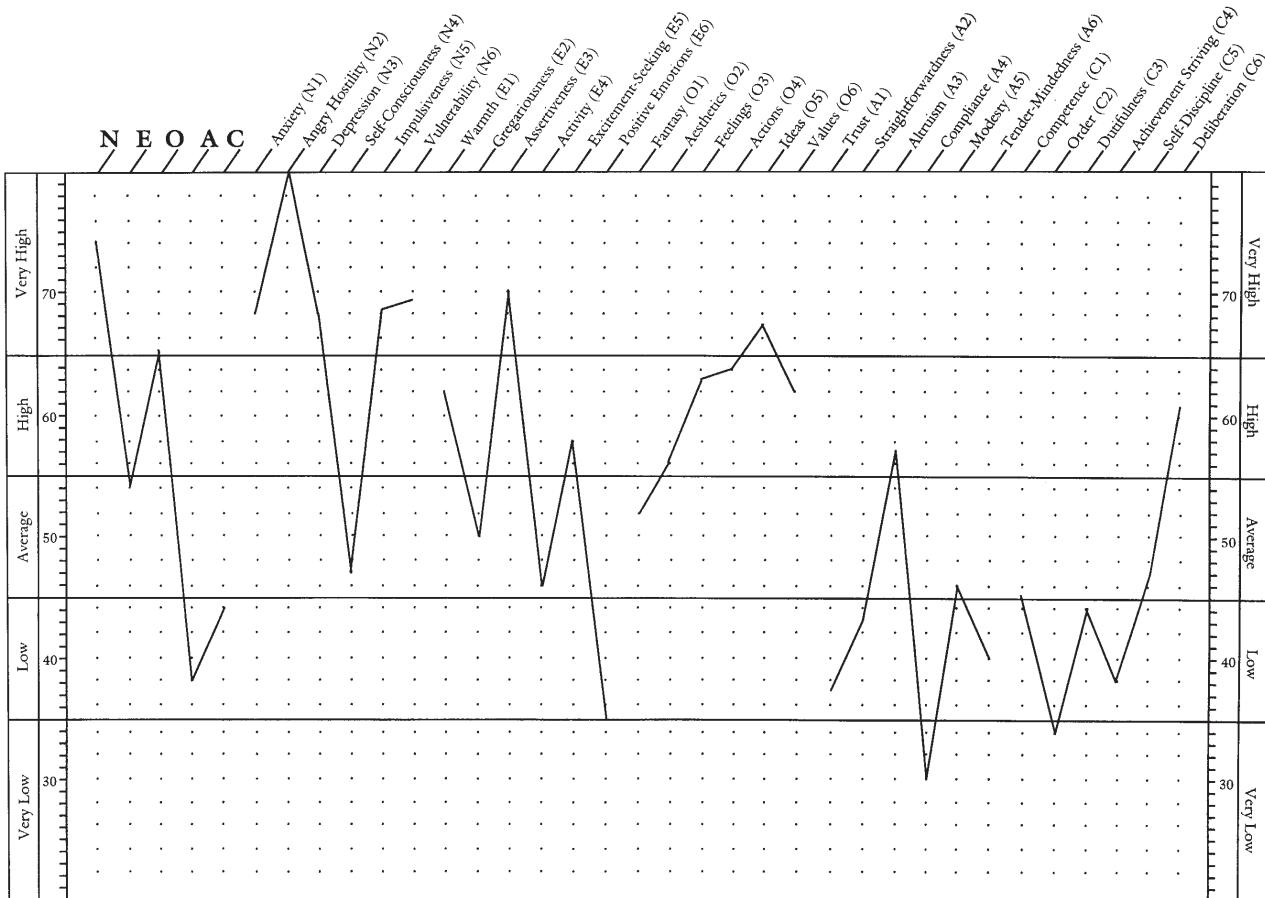


FIGURE 21.3. Revised NEO Personality Inventory profile of Dayna, a 20-year-old borderline personality disorder patient. From the *NEO Personality Inventory*, by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1992 by PAR, Inc. Reproduced by special permission of the publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549. Further reproduction is prohibited without permission of PAR, Inc.

self-consciousness (which may not in fact be a cardinal trait of this disorder). Dayna felt highly vulnerable, insecure, and unstable, not so much with respect to the perceptions or feelings of others. She indicated that she often cared little for how others felt about her and would at times show behavior that both evoked (evocative) and provoked (provocative) the perceiver. Dayna was not as gregarious or interpersonally involved as our other DBT patients, and we were concerned about her motivation (or ability) to make much use of the group therapy and social skills component of the DBT program. However, her high level on warmth did suggest potential for establishing a strong rapport with her individual DBT counselor.

Dayna also obtained low scores on most of the facets of conscientiousness. We are not surprised

by the low scores in some of the facets of conscientiousness for our BDL patients, particularly the facets of self-discipline and achievement striving. Dayna's scores, however, were so consistently low on most of them that we also expected an added difficulty in sticking with the demanding treatment regimen. On the more positive side were Dayna's elevations on facets of openness. Dayna enjoyed exploring alternative belief systems and would perhaps be motivated or at least willing to explore and question her past and current perceptions, beliefs, and behaviors. Her high openness scores led to good test scores despite her poor study habits and grades.

Dayna was placed by the clinic with a DBT psychologist experienced in treating depression and alcohol abuse in the context of BDL. The therapist recommended that Dayna attend Alcoholics

Anonymous (AA) meetings, individual psychotherapy once a week, and DBT skills training group once a week and start taking antidepressant medication. Dayna agreed to the latter three conditions of treatment but refused AA after twice attending a local chapter. She said that she "hated" the AA atmosphere and felt that she was "way too young" to be at the meetings. The therapist agreed to let Dayna avoid this component of her treatment, at least temporarily, given Dayna's propensity to want to control her treatment. Instead, she agreed that Dayna would monitor her use of alcohol on a daily diary card and commit to reducing and eliminating her use of alcohol during the 1st year of treatment. Dayna agreed that if she could not reduce her use of alcohol during the first 6 months of treatment or if she had another episode of passing out, she would attend AA. She also agreed not to drive while intoxicated.

During the first 2 months of treatment, Dayna's compliance was poor. She nearly quit several times, and she failed to take her medications as prescribed. When she attended groups, she sat on the periphery, refusing to join in. She stated that she did not trust the therapist but revealed within individual therapy that she was afraid she would get too close to the therapist and would eventually be abandoned, just as her mother had abandoned her. Dayna missed a number of the group sessions but found the explorations of her past and current problems within the individual therapy sessions to be very helpful. These sessions focused in particular on her feelings of mistrust and suspiciousness. When Dayna was gently confronted about her poor attendance and told she could not continue in the program unless it improved, she began to attend group regularly, and her use of alcohol also began to decline. She slowly developed stronger feelings of trust toward the other group members and to the group leader. She was particularly responsive to their indications that her rebelliousness and outcast demeanor were not being met with criticism or rejection, and she appreciated learning about their life histories and comparable struggles.

Treatment goals were eventually adjusted to include better performance at college, and she established herself as a solid student, although initially it required very close monitoring of her class attendance and homework assignments by the group

staff and other group members. The skills training sessions were instrumental in helping her approach others more effectively. She met more and more students like herself—individuals who had struggled with psychiatric problems but who now were sober and making good grades. After 14 months of therapy, Dayna began her second year of college with a B+ average, reduced her use of alcohol significantly, and joined a number of school organizations that fit her values and interests. She was not "mainstream" and appeared rebellious in her dress and jewelry, but she was functioning well and was committed to improving her life. She described her relationship with her treatment team as "the best thing that had ever happened to me."

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# TREATMENT OF PERSONALITY DISORDERS FROM THE PERSPECTIVE OF THE FIVE-FACTOR MODEL

*Michael H. Stone*

Few patients come to members of the mental health profession for help who do not manifest and experience difficulties in living from various peculiarities of personality. Often enough, these peculiarities are widespread and intense enough to amount, in the eyes of the clinician, to a “disorder” of personality. It is common to speak of such people as “suffering” from this or that personality disorder. In reality, and because personality is ego-syntonic (i.e., in harmony with each person’s self-conception and not a source of anguish), those with distinctly disordered personalities seldom suffer themselves; rather, they make others—coworkers, family members, acquaintances—suffer.

As a case in point, a famous art critic of 19th-century England, John Ruskin, was as cruel to his wife as he was keen as a connoisseur of the painted canvas. Compulsive, stuffy, prudish, he was unable to consummate their marriage and, apparently to externalize the problem on her, tormented her unceasingly with rebukes, humiliating remarks, and criticisms. With her he became a verbal bully, even as he was being lionized by genteel society. When after some years, she finally sued for annulment (and left him for his best friend, the painter-protégé Everett Millais), he seemed to have a moment of self-realization. What had all his life up to that point

been ego-syntonic became suddenly dystonic: He saw that he had been needlessly harsh and degrading toward her and had driven her away. Only then did Ruskin suffer from his—what would one call it now?—obsessive-compulsive-sadistic personality disorder. The one who suffered beforehand was Mrs. Ruskin (Kemp, 1983).

The fact is, one cannot characterize the personality of a complex man like Ruskin with just a few terms lifted from the sparse shelf of descriptors in the category-based fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994). One only has 10 choices (in the DSM of 1980, there were 11) to describe the personality disorders of a patient, which is itself the most serious problem one now confronts in the domain of abnormal personality and its treatment. One is asked, in effect, to sketch the 15% to 20% of humanity (now numbering 6 billion and belonging to numberless cultures and subcultures) who show markedly aberrant or irritating personalities with a palette of less than a dozen hues. This is analogous to insisting one rely on a vocabulary of red, yellow, blue, violet, orange, green, and purple to describe the myriad variations of color that actually exist in nature (Widiger, 1997).

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## CATEGORY VERSUS DIMENSION: TWO APPROACHES TO THE TAXONOMY OF PERSONALITY

Although descriptions of different “character types” go back to the time of Aristotle’s pupil Theophrastus and of temperament types to the still earlier time of Hippocrates, *personality* as a term is comparatively new, hardly being encountered until the end of the 19th century. In France, Theodule Ribot envisioned a continuum spanning the normal and pathological ranges in personality—the term he used in 1885. Influenced by Charles Darwin, he stressed the importance of heredity in shaping individual characteristics. Pierre Janet wrote a monograph on personality in 1929, although he did not give a systematic typology. In Germany, Kraepelin (1915) described both varieties of temperament (depressive, manic, irritable, and cyclothymic—all related to manic–depressive psychosis and its attenuated forms in close relatives) and varieties of personality. He used the term *psychopathische Personlichkeiten* (psychopathic personalities) to mean mentally ill (psycho + pathic) or abnormal. *Psychopathic* did not take on its current meaning (as an especially intense type of antisocial personality with glibness, deceitfulness, and callousness) until the mid-20th century when the label was redefined and popularized by Hervey Cleckley (1941). Yet for the most part, Kraepelin’s taxonomy emphasized the disagreeable and antisocial. He spoke mainly of such types as the *erregbar* (irritable), *haltlos* (unstable), *Triebmensch* (impulse-ridden person), *verschroben* (eccentric), *Gesellschaftsfeinde* (enemy of the people), and the *streitsuchtig* (combative). Kraepelin also added some “subtypes” within his categories: Among the antisocial *Gesellschaftsfeinde*, for example, one may encounter instances of *Zechprallerei* (skipping out of restaurants without paying the bill).

In keeping with the universal tendency in science to describe the extreme and the dramatic before turning attention to the subtle, categories of personality (and here I include the two main compartments: *temperament*, the inborn aspects, and *character*, the environmentally acquired aspects) appeared first in the literature. The contributors to this area were mostly psychiatrists who were

primarily interested in the illness or disease of personality and its treatment, hence resulting in the medical-based approach. This was true not only of Kraepelin and Janet but also of Freud, whose character types accorded with his theory of early development (e.g., oral–depressive, anal–obsessive–compulsive, phallic–narcissistic). Likewise, the typology of Kurt Schneider (1923/1950) was category based and included 10 types, only half of which map easily onto the current *DSM–IV Axis II* categories: *anankastic* = obsessive–compulsive; *fanatic* = paranoid; *attention seeking* = hysterical–histrionic; *affectionless* = antisocial; and *weak willed* = dependent.

The obvious advantages of a category-based taxonomy are ease of use (a palette with only a dozen colors or so) and utility when dealing with the more extreme aberrations—in which the medical bias of such a taxonomy seems more justifiable. The obvious disadvantages involve the incompleteness of such an approach, when one considers the totality of personality, normal and abnormal (which would require a palette of hundreds of colors, as it were: the mauves, the heliotropes, the beiges, and all the other subtle mixtures), and the rigidity of a narrow categorical system. Because real people are so different from the category “prototypes”—each person, especially each “disordered” person, being a *Gemisch* [mixture] of traits belonging to several categories and to qualities not even addressed in the categories—it became obvious that something different was needed if one were to make any sense of the true complexity of personality. This need gave rise—I think it is fair to say—to the lexical approach and to the related dimensional approaches.

These approaches were pursued and championed primarily by psychologists, in as much as their primary concern was not the medical study and treatment of diseases but the meticulous research into and rigorous description of all mental phenomena, normal and abnormal alike. Among the pioneers in these endeavors were Gordon Allport and Henry Odber (1936), from whose “psychological” study out of Harvard University’s Psychological Laboratory came a gigantic list of about 18,000 words, culled from an unabridged dictionary, that pertained to personality. Many of these words are,

to be sure, either quaint and archaic or slangy. Thus, one finds *fable monger*; *sciolous* (knowing only superficially); *lethiferous* (death dealing—not a bad word for Slobodan Milosevic, only no one knows it); *sulphitic* (acid natured?—it is not in my unabridged dictionary); and the slangy *fat-brained*, *geezer*, and *screwy*. One also finds pairs of words with precisely the same meaning: one in common use (*insubordinate*) and the other a “*hifalutin*” word (*contumacious*) used by those manifesting the traits of affectedness or preciosity (aspects of narcissism). The great achievement of Allport and Odbert consists in their complete vocabulary of personality, out of which everyone—from the normal to the grossly maladaptive or repugnant—could be adequately described.

The next step in the development of the lexical approach was to reduce this vast and unwieldy dictionary to something with more manageable proportions. Absent the archaic, the slangy, and the lengthy “five-dollar” words only pedants use, the trait dictionary can be boiled down to fewer than 1,000 words. Over the next 50 years, many psychologists, pursuing factor analytic approaches, created either briefer lexical lists (viz., those of Goldberg, 1982, and Gough & Heilbrun, 1983) or else factor sets comprising about 20 to 50 groupings of similar personality trait adjectives into which the lexical lists could conveniently and meaningfully be compartmentalized. I discussed a number of these in an earlier publication (Stone, 1993), including the 16 shadings of interpersonal behavior resulting from blends of the two dimensions extraversion and agreeableness in the circumplex model of Wiggins (1982), the 24 factors of Tyrer and Alexander (1988), and the 79 dimensions of Livesley (1987). Livesley, for example, united common descriptors of the schizoid personality disorder (SZD)—loner, detached, withdrawn, seclusive—into a dimension that he named “low affiliation.”

With respect to the newer and briefer lexical lists—some of which have been developed in other countries, reflecting other cultures (viz., Yang & Bond, 1990, for the Chinese language and culture)—vocabularies with from 300 terms (Gough & Heilbrun, 1983) to five to 600 terms (Goldberg, 1982; Stone, 1990b; Yang & Bond, 1990) are sufficient. My

revised list (Stone, 1993, pp. 100–103) contains 625 negative or unflattering traits and 101 positive traits. This lopsidedness does not represent pathological focus on the abnormal but instead the fact that in all the languages known to me, there are simply more negative than positive descriptors. I believe this is a reflection of the human tendency, now embedded in languages, to pay more attention to the ways in which certain people bother or endanger others than to the ways they may please them. Evolutionarily speaking, this has survival value. There are synonyms for *honest* (*fair*, *virtuous*, *just*, *respectable*) but not nearly as many as for *deceitful* (*treacherous*, *cunning*, *Machiavellian*, *devious*, *dishonest*, *sly*, *deceptive*, *false*, *tricky*, *cheating*, *slippery*, *untrustworthy*—one could go on). It is important to be able to convey specific warning signs regarding the threats to one’s welfare others may expose one to, hence the proliferation of trait words with negative valence.

Meanwhile, still other psychologists have carried on the search for larger hierarchies, embracing all the important factors (and thereby all the traits in everyday usage) that might constitute an irreducible set of personality-related umbrella concepts. Eysenck (1947) proposed a three-dimensional model in which extraversion, neuroticism, and psychoticism were the orthogonal (in a three-dimensional space) umbrella concepts. Earlier, McDougall (1932) suggested that personality may be analyzed into five separate factors—the first proposal of what has come to be recognized as the five-factor model (FFM). Tupes and Christal (1961/1992) developed the model further, with the ingredients consisting of surgency, emotional stability, agreeableness, dependability, and culture and their opposites. (Currently, it has become more common to speak of extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience and their opposites.) *Extraversion* versus *introversion*, terms derived from Jung’s 1921 monograph, depict schizoid (inwardly withdrawn) versus manic (outgoing) people. Neuroticism covers the range from comfortable normalcy to anxious, fearful people. Agreeableness, allied both to normalcy and (when excessive) to dependent people, has its opposite, antagonism, which takes in, at the extremes, sadistic and antisocial-psychopathic

people. Conscientiousness covers aspects of both normalcy and obsessive-compulsive people and its opposite, negligence, those who are careless, aimless, undependable, and so forth. Openness refers to being open to new ideas as opposed to people who are “closed” to new ideas, such as narrow-minded, biased, or rigid people.

In recent years, Cloninger and his colleagues (Cloninger, 1986; Cloninger & Svrakic, 1993; Cloninger, Svrakic, & Przybeck, 1993) have proposed a biopsychosocial model of personality, in which they strove to find correspondence among certain major dimensions and alterations in brain chemistry that may underlie these dimensions. In this model, the overarching concepts of novelty seeking, harm avoidance, and reward dependence are assumed to reflect individual differences in the activities of the neurotransmitters, dopamine, serotonin, and norepinephrine, respectively. Because people can vary from “high” to “low” along these three dimensions, eight personality configurations, answering to eight of the *DSM* personality types, can be described. Thus, someone who is antisocial is likely to be high in novelty seeking, low in harm avoidance, and low in reward dependence. Several new superfactors have been added by Cloninger’s group: persistence (deficiencies in this are found across the board in all people with a *DSM* Axis II disorder), self-directedness, cooperativeness, and self-transcendence. These new dimensions are not closely linked with various neurotransmitters. They can, however, be subsumed under several of the FFM components. Cooperativeness, for example, is an aspect of compliance, a facet of the FFM factor agreeableness.

### **ADVANTAGES OF THE DIMENSIONAL APPROACH IN THE THERAPY OF PERSONALITY PROBLEMS**

Unlike the category-based taxonomy of the *DSM* (or of the *International Classification of Diseases* in its various editions; World Health Organization, 1977) that constitute so many islands in a vaster sea of personality variation, the dimensional approach not only has (as was said of the Greek language) “a word for everything” but can deal easily with the

complexity of a personality. It does so by assigning different weights, usually in the form of numbers on a scale, to all aspects of a given personality that seem noteworthy from a clinical standpoint, both the negative and the positive. This capacity helps one to get around the problem of whether to classify a particular patient as having borderline personality disorder with narcissistic personality disorder comorbidity or narcissistic personality disorder with borderline comorbidity, if there are about equally prominent traits present from both these categories. In actual practice, dilemmas of this sort are resolved often enough by the personal predilections or bias of the investigator or therapist. Thus, Kernberg (1967), in that hypothetical 50/50 situation, because of his special expertise in borderline personality disorder might diagnose such patients as having borderline with narcissistic personality disorder comorbidity. Elsa Ronningstam (1997), with her special expertise in narcissistic personality disorder, might conclude narcissistic personality disorder with borderline comorbidity. However, a diagnosis should be free of observer bias of this sort. It would be more useful to be able to piece together a complete profile of the patient’s personality. In this way, a therapist could see the peaks and valleys along all relevant dimensions, the better to avoid leaving some important personality feature unattended and to give due therapeutic attention to the most prominent and worrisome aspects of the total personality.

Instruments that create a profile of personality have been available for many years: The most widely used is the Minnesota Multiphasic Personality Inventory—2 (MMPI-2; Greene, 1980), with its 10 major dimensions. But the dimensional systems of Tyrer and Alexander or Livesley also lend themselves to this purpose. The Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992) is organized around the FFM. For each of the five factors, six important subfactors of smaller breadth are also provided. Using this model, one can generate a personality profile based on FFM descriptors. Furthermore, the ratings for each person (or patient, if made within a clinical context) can be compared with the norms for the particular personality disorders (viewed categorically) that person is suspected of showing. This process is akin to the use of the

vertical 0 to 100 scale when scoring the MMPI-2: The pathological range extends from 70 and up. Several years ago, I proposed a similar schema (Stone, 1993, p. 96) using the Aristotelian concept of the “golden mean.” This schema consisted of five rows of personality traits, arranged with the normal or ideal traits in the middle. On either side were two rows of other trait adjectives representing mild-moderate and extreme exaggerations of the ideal traits in either direction to show too little or too much of the golden mean or ideal trait.

An example of this schema, showing only 15 ideal traits and their positive and negative exaggerated counterparts, is shown in Table 22.1. One could extend this process out to 30, 40, or more of such ideal traits to permit greater inclusiveness. In the analysis of a given subject, a marker can be placed somewhere in each row, designating the spot along the continuum (each row constituting a continuum from its middle ideal trait) that seems appropriate to the diagnostician. This yields a zig-zag vertical line similar to the zigzag horizontal line generated by the FFM facets of the NEO PI-R. The places where the markers deviate from the middle column in my schema represent those aspects of the personality that stand out: Some are acceptable or

laudable, not in need of therapeutic intervention; others represent maladaptive, unpleasant deviations or outright aberrations, thus those very much in need of therapeutic work.

These instruments—one a direct outgrowth of the FFM, the other derived from a large trait list and rearranged to show graded departures from a hypothetical ideal—are lexical in origin and dimensional in operation. Both aim at the assessment of all possible personality attributes: the adaptive, the somewhat exaggerated, and the clearly pathological. Many of the traits on the “plus” side of the golden mean, for example, although deviations or exaggerations of the ideal, do not lead to serious difficulties in living either for the person in question or for those whose lives are affected by that person. Someone who is prudish, self-effacing, and over-scrupulous may be noticeable in the eyes of acquaintances for specifically those qualities, but he or she is not likely to seek treatment or be admonished by others to do so because such quirks are not usually sufficiently bothersome. Quite different, the person who is vengeful, aggressive, and unscrupulous is also unlikely to seek treatment but is much more urgently in need of a drastic change in personality. A person with these characteristics, however, is not likely to benefit from therapy—these are some of

TABLE 22.1

## The Golden Mean Schema for Personality Traits

<b>Very low</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Very high</b>
Abrasive	Tactless	<b>Polite</b>	Courtly	Obsequious
Stingy	Tight	<b>Thrifty</b>	Generous	Prodigal
Unfeeling	Cold	<b>Sympathetic</b>	Oversensitive	Maudlin
Vampish	Seductive	<b>Receptive</b>	Coy	Prudish
Paranoid	Suspicious	<b>Trusting</b>	Naive	Gullible
Ruthless	Exploitative	<b>Fair</b>	Deferral	Meek
Chaotic	Sloppy	<b>Neat</b>	Meticulous	Fussbudget
Vengeful	Bitter	<b>Forgiving</b>	Philosophic	Altruistic
Aggressive	Hostile	<b>Agreeable</b>	Friendly	Ingratiating
Bigoted	Dogmatic	<b>Open</b>	Easily swayed	“As-if”
Extraverted	Outgoing	<b>At ease</b>	Shy	Reclusive
Unscrupulous	Devious	<b>Honest</b>	Scrupulous	Overscrupulous
Pretentious	Affected	<b>Modest</b>	Humble	Self-effacing
Obnoxious	Disagreeable	<b>Likeable</b>	Charming	Charismatic
Boorish	Philistine	<b>Cultured</b>	Mannered	Precious

Note. Words in boldface represent the ideal or norm.

the attributes of antisocial or psychopathic people, many of whom remain beyond the reach of currently available treatment methods.

## PERSONALITY ANALYSIS THROUGH A LEXICAL LIST

Related to the FFM facets approach and the golden mean schema is the use of a raw and complete lexical list, not as yet broken into trait groupings or factors. Therapists working with a patient after 1 or 2 months usually get to know the particularities of that patient's personality well enough to fill out such a checklist. Although I have subsequently reduced my original list of negative traits from 625 to 500 (and have kept the list of positive traits at 101), the more exhaustive list in my 1993 book can be used to get a rough idea of how "dense" the personality is with respect to either the maladaptive or adaptive traits. It is particularly instructive to carry out this exercise when dealing with borderline patients, who almost invariably manifest many traits that belong (in *DSM* category language) to other disorders plus many traits that lie outside the range of the *DSM* traits. The personality section of the current edition of the *DSM* actually uses only about 64 trait words, along with several "items" (e.g., ideas of reference, suicidal gestures, lack of close friends) that are not personality traits at all. The *DSM* descriptions of schizotypal, antisocial, and borderline personality disorders, in particular, are all conglomerations of a few true trait words, along with several symptom descriptors that belong more correctly in Axis I.

For didactic purposes, I filled out the longer checklist as it would apply to several of my borderline patients (all meeting *DSM-IV* criteria). The sheer number of pertinent items is itself instructive. A few examples are provided here.

One patient currently in treatment is a woman in her mid-40s with a history of depression; suicide gestures; bulimia; dissociative identity disorder; and, in her early years, an incestuous relationship with an older male relative. A talented artist, she is married and the mother of two children. At the beginning of treatment, she was remarkably moody and irritable

but also perseverant and highly motivated for treatment. From the checklist, 44 maladaptive traits and 20 positive traits are applicable.

Another patient, also currently in treatment, is a woman in her late 40s, married with two grown children, who made suicide gestures in connection with an unhappy marital situation. She had major depression but no other comorbid symptom disorders. During the early part of her adolescent years, she had endured an incestuous relationship with an older male relative. Much more calm and generally cheerful but often dodging discussion of the more painful aspects of her past, she had at the beginning been frequently tearful and depressed. She makes a great effort to appear poised and untroubled and is sociable with an excellent, if mordant, sense of humor. Only 10 of the maladaptive traits but 53 of the positive traits are applicable in her case.

A third patient, who abruptly quit therapy after 4 months, was a single woman in her mid-20s who made suicide threats (which were never carried out) when confronted by her parents after she had stolen their credit cards and run up many thousands of dollars' worth of clothing and jewelry to "keep up" with her much wealthier friends. Seductive and superficially charming at first acquaintance, she rapidly showed her dark side, bursting into abusive language and explosive tantrums when a meeting was arranged with her parents. When her parents made it clear that they were barring her from their home (where she had stolen many items to pawn, besides taking the credit cards) and would (on my recommendation) not "bail her out" the next time she were to run up unauthorized bills (she had also been running up monthly bills of a thousand dollars by speaking for hours at a time to a mystic "healer" from California), she flew into a rage, threatening to kill her parents and me if we did not "get off her back" and start sympathizing with her (stagey and ungenuine) depression. From a *DSM* standpoint, she met the criteria for all four Cluster B personality disorders: narcissistic, antisocial, borderline, and histrionic. She also met the criteria for Hare's Factor I psychopathic traits (Hare et al., 1990). As

for the lexical list, 98 maladaptive traits but only 3 of the positive traits were applicable.

Without even a list of all the particular traits that were applicable, it is clear that the first patient had a fair sprinkling of negative and positive traits. Average people usually have fewer than 20 of the negative traits and more than 20 of the positive ones. Borderline patients generally have about 40 to 70 of the negative traits. The second woman would have scored much higher on the FFM scale for agreeableness and was seldom angry once her depression had largely lifted; she continued to maintain her cheerful, almost breezy, facade. After 6 months of (analytically oriented and supportive) therapy, it would no longer have been possible to diagnose her as borderline by *DSM* standards. She had no more of the maladaptive traits than would be found in a well-functioning nonpatient in the community. Prognostically, this mixture of few negative and many positive traits augurs well for her long-term adjustment.

The third woman presents a combination of borderline and antisocial personality disorders. Although she was referred to me by a colleague as a borderline patient, she was more distinctly antisocial (six of the seven *DSM* items) than borderline (six of the nine items), not just through a raw count of the *DSM* items but because her life course from early adolescence was that of an antisocial person constantly in trouble with her parents and the authorities. Several months after she quit treatment, she was arrested for credit card fraud. The profusion of negative traits was in keeping with one's overall impression of her, namely, a person with a very high score on the FFM antagonism scale (i.e., the opposite of agreeableness). She was, for example, manipulative, deceptive, greedy, aggressive, arrogant, and callous. To make matters worse, she was not motivated for therapy in the sense of wanting to make changes for the better and to get her life in order; she was willing to come only insofar as she felt she could get me to "protect" her from her parents' limit setting and indignation at her for making their life miserable. When it became clear to her that I would not join forces with her in such an unjustified plan, she screamed at me, slammed the door, and left.

## THE USEFULNESS OF A COMBINED DIAGNOSTIC APPROACH WITH BORDERLINE PATIENTS

From the standpoint of personality diagnosis, one can view the categories of *DSM* as a "coarse lens," such as one uses in microscopy, to get a gross picture of the subject at hand. Such a picture tells little about the subject's prognosis. Some antisocial people, for example, get better as they get older, even without treatment; some dependent personality disordered people remain incapacitated all their lives. The polythetic system of personality disorder diagnosis allows for hundreds of combinations of item sets that trigger the same diagnosis. In the case of BDL, there are patients who are primarily moody, others primarily angry, still others mostly identity disordered, and so forth. The focus in their treatment should not all be the same. More than the other disorders, BDL is generally commingled with two or three "comorbid" personality disorders or even more (Oldham, Skodol, Kellman, Rosnick, & Davies, 1992; Stone, 1990a), sometimes as many as six or seven others. Certainly it is not unusual to encounter borderline patients whose personality profile meets the criteria for the other three Cluster B disorders, as was the case with the patient in the last example. The therapeutic approach and the prognosis depend to a considerable extent on which "secondary" diagnoses are applicable. This remains true if one widens the lens to include personality configurations not included in the *DSM*, such as depressive-masochistic, explosive-irritable, hypomanic, passive-aggressive, and sadistic. The combination of borderline and depressive-masochistic (the latter term used often in psychoanalytic circles) has generally a much better prognosis than does BDL and passive-aggressive, let alone borderline and antisocial personality disorder.

Given this state of affairs, there is much to gain by supplementing the coarse lens picture with a finer lens in the form of a dimensional system, such as the one used by Costa and Widiger (1994) and based directly on the FFM or the one I constructed reflecting the golden mean concept. The rating methods used in both are similar: The FFM personality description relies on scores from 0 to 100

(most occurring in the 30 to 70 range); the scores lower than 50 represent “too little” or “less than average” of an FFM descriptor, those above 50, “too much” or “more than average.” Thus, agreeableness can be average (50), somewhat less than average (40; i.e., mildly disagreeable), or distinctly less than average (30; i.e., aggressive, repugnant, obnoxious). Or a person can be a little or a great deal more than average, namely, generous or all the way to self-sacrificing and altruistic. Granted, one can assign intermediate numbers; in ordinary practice, the scale can be graded “30, 40, 50 (the mean), 60, 70,” resembling my 5-point golden mean scale, which is essentially a “−2, −1, 0 (the mean), +1, +2” system. These systems, in any event, force the diagnostician or the therapist evaluating a new patient to address several dozen personality variables that are not found in the *DSM*. Both systems draw attention to positive traits (agreeableness, conscientiousness, and their finer lexical branches), which must be added into the reckoning alongside the maladaptive ones, if one is to make a more accurate prognostic appraisal. I would go a step further and recommend one pay attention to each prospective patient’s salient, most prominent trait—namely, the defining feature that most people who know the patient immediately think of as that person’s “ID tag.” In addition, one should try to assess certain variables not ordinarily attended to in one’s task of personality evaluation. One such variable is what I called “spirituality” (akin to Cloninger’s self-transcendence), which I feel plays an important role in determining which patients, especially which patients with borderline personality disorder, will do well and which will not (Stone, 2000b).

The usefulness of a combined diagnostic approach for borderline patients has already been recommended by Clarkin, Hull, Cantor, and Sanderson (1993). In their study, clinically diagnosed inpatients with borderline personality disorder at New York Hospital—Westchester were evaluated by both the Structural Clinical Interview for *DSM-III-R* (Spitzer, Williams, Gibbon, & First, 1990) and by the FFM-based NEO PI. Clarkin et al. concluded, in regard to the NEO PI, that the neuroticism and agreeableness scales picked up the pathological aspects of the borderline patients (as

did the *DSM* items), but the extraversion, conscientiousness, and openness scales yielded important information about the constituent facets of those three scales, which addressed issues of perseverance at work, social abilities, and openness to new ideas (related probably to the self-reflective function; Fonagy et al., 1995). These qualities, or their comparative deficiencies, play a vital role in determining amenability to therapy, capacity for attachment to significant others (including the therapist), and the probability for a successful life course in the long run.

Whereas I recommend a combined categorical-dimensional approach to the assessment of patients in general who present with personality problems including well-functioning patients in psychoanalysis, this recommendation goes double for patients with borderline personality disorder. They constitute the largest group of patients with personality disorders at most clinics and hospitals, and they present with the most difficult challenge for therapists among patients who are still amenable to psychotherapy. Patients who are psychopathic are of course more “challenging” but are, as I discuss later in this chapter, usually outside the domain of treatability. At this point, I would like to show the usefulness of the NEO PI-R in relation to a number of borderline patients with whom I have worked.

### THE NEO PI-R AS A DIMENSIONAL SCALE APPLICABLE TO PATIENTS WITH BORDERLINE PERSONALITY DISORDER

The way in which the NEO PI-R may be used as a medium-fine lens in the inspection of borderline patients can be illustrated with a side-by-side comparison of ratings for several patients (see Table 22.2). I chose nine patients with whom I have worked using a largely analytically oriented psychotherapy (supplemented when necessary or practical with supportive interventions), rating each with a number from 0 to 100 for each of the 30 facets of the NEO PI-R (six facets for each of the five factors: neuroticism, extraversion, openness, agreeableness, and conscientiousness). In this scale, the relevant ratings are very high, high, average, low, and very

TABLE 22.2

## Revised NEO Personality Inventory (NEO PI-R) Facet Scale Ranges for Borderline Cases

NEO PI-R Facet	Patient								
	1	2	3	4	5	6	7	8	9
N1: Anxiety	Very high	Very high	Average	Average	Very high	Very high	Very high	Average	Average
N2: Angry-hostility	High	Average	Very high	High	Very high	Average	Very high	Very high	Very high
N3: Depression	Very high	Very high	Average	Very high	High	Very high	Very high	Very high	High
N4: Self-consciousness	Very high	Very high	Low	Average	High*	Average	High	Low	Very low
N5: Impulsiveness	Very high	Average	Low	Very high	Very high	Low	Very low*	Very high	Very high
N6: Vulnerability	High	Average	Average	High	Very high	Average	Very high	Average	High
E1: Warmth	Average	Very high	Average	Very high	Very high*	High	Low	Average*	Average*
E2: Gregariousness	Low	Average	Average	High	Very low	Average	Very low	Low	Very high
E3: Assertiveness	Low	Average	Average	High	High	Average	Average	High	High
E4: Activity	Average	Average	High	High	High	Average	Average	High	Average
E5: Excitement seeking	High	Average	High	High	Very high	Low	Very low	Average	Very high
E6: Positive emotions	Low	Average	Very high	High	High*	Average	Very low	Average	Very high
O1: Fantasy	Very high	Average	Low	Average	High	Low	Low	Average	Very high
O2: Aesthetics	Average	Average	Average	Average	Very high	Average	Average	Average	Average
O3: Feelings	High	High	Average	High	Very high	High	Very high	Average	Average
O4: Actions	High	Average	Average	High	Very high	Average	Very low	Average	Very high
O5: Ideas	Average	Average	Low	Average	Very high	Average	High	Very low	High
O6: Values	Very high	Very high	High	Very high	Average	Average	Average	Very low	Low
A1: Trust	Average	Average	Average	Low	Very low*	Low	Very low	Very low	Very low
A2: Straightforwardness	Average	Very high	Average	Very high	High*	Low	High	Very low	Very low
A3: Altruism	Average	High	Average	High	High*	High	Average	Average	Very low
A4: Compliance	High	Very high	Low	High	Average	High	Low	Very low	Very low
A5: Modesty	Very high	Very high	Low	Average	Average	High	Average	Low	Very low
A6: Tender mindedness	High	Very high	Average	High	Average	High	Average	Low	Very low
C1: Competence	Very low	Average	High	High	Average	Average	High	Average	Low
C2: Order	Very low	Average	High	Average	Average	High	Average	Average	Very low
C3: Dutifulness	Very low	Average	High	High	Average	High	Very high	Average	Very low
C4: Achievement striving	Very low	Average	Very high	Average	Low	High	High	Average	Low
C5: Self-discipline	Very low	Average	Very high	Average	Low	High	High	High	Very low
C6: Deliberation	Low	High	High	Average	Average	Average	Very high	High	Very low

Note. Patient numbers refer to the case studies described in this chapter. N = neuroticism; E = extraversion; O = openness to experience; A = agreeableness; C = conscientiousness. Very low ( $T = 34$  and lower); low ( $T = 35$  to 44); average ( $T = 45$  to 55); high ( $T = 56$  to 65); very high ( $T = 66$  and higher). \* = a rating based on the patient's customary state (not taking psychotropic medications).

low. Brief sketches of the nine patients, numbered 1 to 9 across Table 22.2, follow.

### Patient 1

This 18-year-old high school student was referred for therapy following a suicide attempt that led to

a brief hospitalization. Following the death of her mother in a car accident when she was 9 years old, she and her sister were raised by their father, whom they experienced as a "Jekyll and Hyde" figure: cordial with outsiders but tyrannical and hypercritical with them. Nothing she did was "right" in his eyes;

he would often strike her or throw things at her for failing to keep her room perfectly neat. She tried to escape his wrath by living with friends for as long as they would let her and had begun to feel, as she put it, like "Cinderella with no prince in sight." She lost all ambition; was falling behind in her schoolwork; began abusing marijuana and engaging in casual sex with boys she barely knew; and finally, feeling depressed and hopeless, took an overdose of the antidepressants she had received from a doctor she had seen at the school psychologist's suggestion. During the 6 months I worked with her, she seldom came on time and often "forgot" appointments altogether, necessitating my calling around town to various friends with whom she might be staying the night. Finally, she dropped out altogether; although less depressed than before, she still had no plan for what to do with the rest of her life. She moved to Italy where her mother's relatives resided. This patient's NEO PI-R profile is shown in Figure 22.1.

## Patient 2

The next patient is the elder sister of Patient 1. She sought help for depression following the breakup of a romantic relationship 2 years after her younger sister quit treatment. She had felt suicidal, saw her life as going nowhere, and was convinced people thought she was "worthless" and "stupid." More committed academically than her sister, she had nearly completed college. Living at home had become unbearable because her father constantly criticized her for being "dirty" or "bad smelling," even after she had just showered. Although she was actually the more attractive of his two very attractive daughters, he missed no opportunity to make sarcastic remarks about her looks or her clothes. She had lost self-confidence to the point where it was painful to be among friends because she assumed that they felt she was as much of a "nothing" as her father did.

In the course of her therapy, she revealed what her sister had never mentioned—namely, that their mother had been indifferent to them and had spent much of her time away from the family with a lover (in whose car she had died). Her father would sometimes wander into the bathroom undressed when she was there, "unaware" she was still in the shower.

Although he had never molested her sexually, it became clear to her that there was another side to the story of his criticism: He seemed to be defending himself against his own attraction to her by devaluing her as an "ugly good-for-nothing." As she began to understand her father, her depression lifted and she grew more self-confident.

## Patient 3

Hospitalized at 16 because of a suicide gesture, this woman had come from a family in which her parents were in continual battle with one another, and her mother was critical, rejecting, and hostile toward the patient and her younger sister. Her father, a surgeon, was possessive toward her, was intolerant of any boyfriend she might introduce to the family, and went so far as to do pelvic exams on her after a date, ostensibly to make sure she had not "done anything wrong." Sensing this exaggerated affection for his daughter and aware that he had crossed the line into a form of sexual molestation, her mother grew intensely jealous, hence part of the reason for her venomous anger. While at the hospital, the patient oscillated between moods of suicidal depression and extreme irritability. Therapy consisted of analytically oriented sessions four times a week. Because the home environment was so destructive, the hospital's plan was to keep her for 1 year until she could go to college directly from the unit. An outstanding student, she got accepted to a major university. From there she went on to obtain a medical degree and become a surgeon like her father. Married now with two children, she is still noticeably moody and has a biting, often sarcastic, way of talking. This patient's NEO PI-R profile is shown in Figure 22.2.

## Patient 4

This patient is the younger sister of Patient 3. She entered therapy 10 years after her sister had left the hospital. The problem was a deteriorating marriage. Her husband had grown inattentive and almost totally uncommunicative. She became depressed and often thought of suicide, although she had not as yet engaged in self-destructive behavior. Outwardly more integrated than her sister had been, she soon revealed material that called into question just how

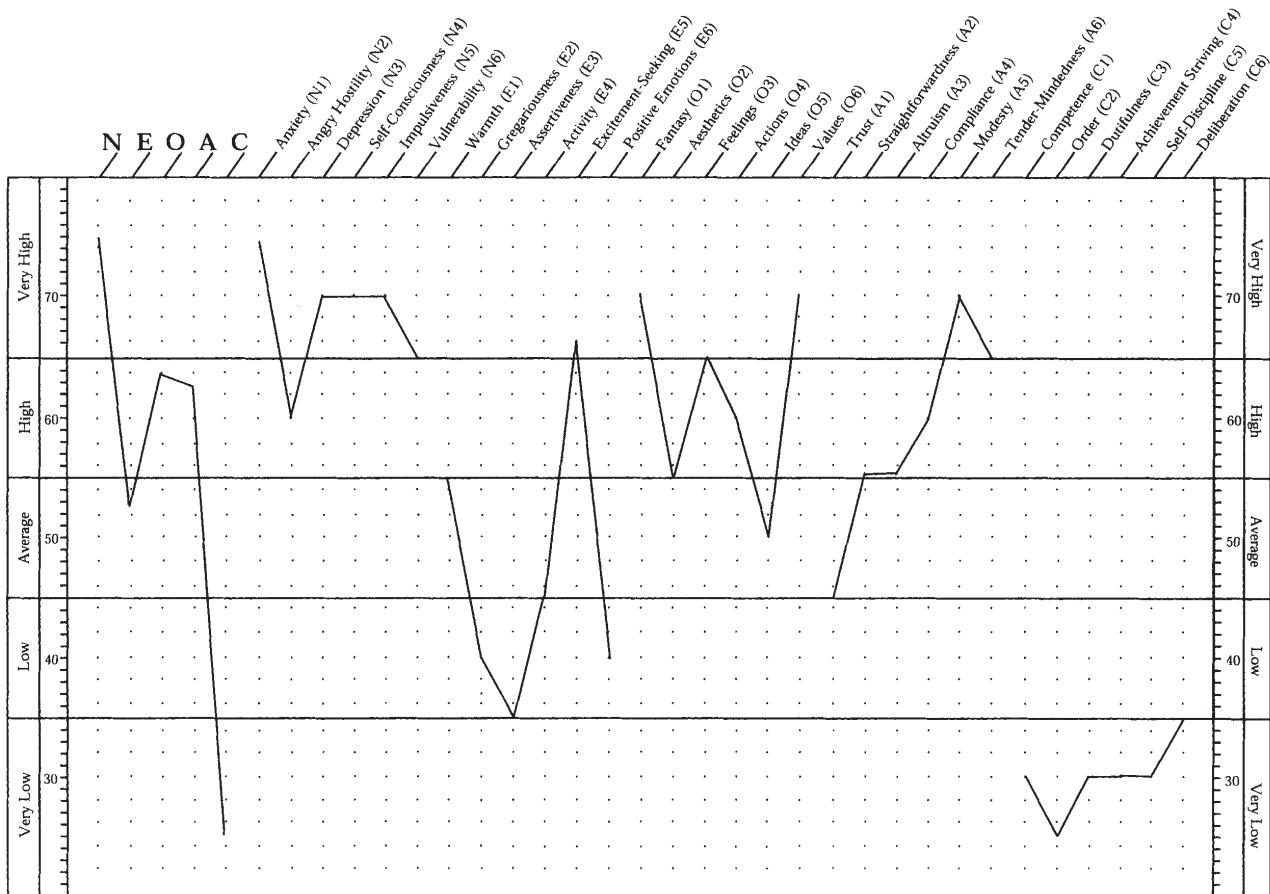


FIGURE 22.1 Revised NEO Personality Inventory profile of Patient 1. N = neuroticism; E = extraversion; O = openness to experience; A = agreeableness; C = conscientiousness. From the *NEO Personality Inventory—Revised*, by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1992 by PAR, Inc. Reproduced by special permission of the publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549. Further reproduction is prohibited without permission of PAR, Inc.

emotionally healthy she was. One of her first dreams she told me, for example, involved mutilation:

I am in the recovery room after surgery. All my vital organs are arranged at the sides of, and just outside, my body: the liver and kidneys to the right, my spleen and a lung to the left. An obviously drunk surgeon waves good-bye to me as he leaves the room, saying with slurred speech, "Don'chu worry, you're gonna be OK."

This was a tip-off to the transference: She viewed me as an unreliable person into whose hands she should not place her secrets and her life. This was also a reflection of the fact that her father had been

an alcoholic and had died when she was in her teens. She affiliated herself frequently with men who mistreated and neglected her. More attractive than her sister, she had actually been her father's favorite, only to draw even more fire from her jealous mother than had been directed at her sister. This seemed to be the key to her masochistic style: She could have relationships with men but only if (as she assumed her mother would want it) she suffered. She finally divorced her husband but then became alcoholic herself and began to drive at high speeds on the highway. She was hospitalized at this point for 2 months and treated with mood stabilizers and antidepressants before returning to therapy. Having worked through the mechanisms of her disastrous choices of men during the next 2 years, she eventually

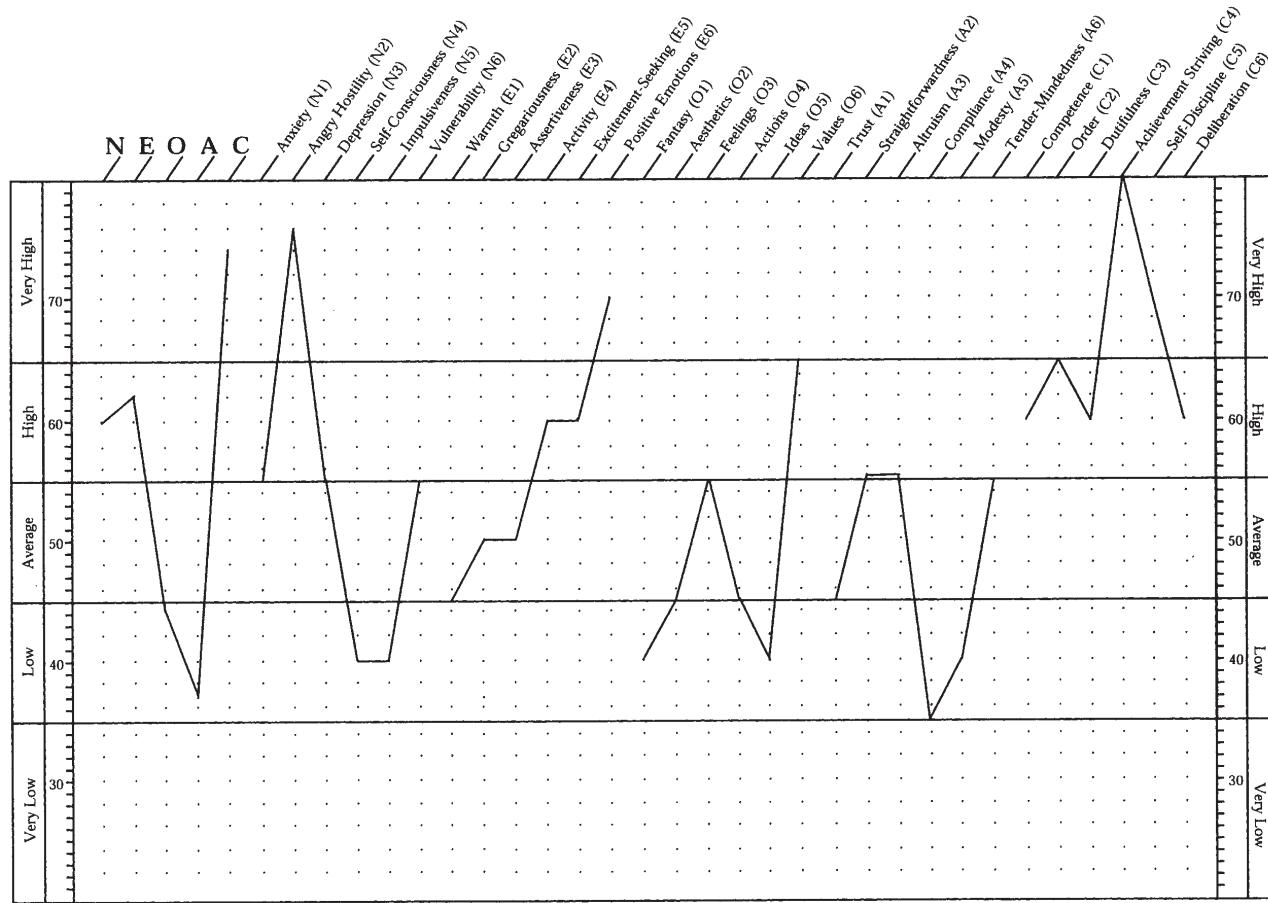


FIGURE 22.2 Revised NEO Personality Inventory profile of Patient 3. N = neuroticism; E = extraversion; O = openness to experience; A = agreeableness; C = conscientiousness. From the *NEO Personality Inventory—Revised*, by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1992 by PAR, Inc. Reproduced by special permission of the publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549. Further reproduction is prohibited without permission of PAR, Inc.

met a much more suitable man, whom she married. Unlike many borderline patients, she had always been highly focused and perseverant.

### Patient 5

At age 30 when she entered thrice-weekly therapy, this woman, a mother of three, had been unhappily married to a man she considered a boorish philanderer. She was pathologically jealous about his having affairs—on one occasion she actually caught him in the act. She grew depressed and suicidal, thought of hurling herself off the roof of her house, but was persuaded to come to a hospital instead. Between the ages of 6 and 15, she had been the “secret wife” of her father, who subjected her to performing oral sex on him as if to “work off” the punishments she

had “deserved” for any number of minor “offenses,” such as not finishing her vegetables at dinner. She cut her wrists when a teenager and finally told her mother what had been going on. Her mother promptly divorced her father and moved away with her daughter. The patient married early to escape her past but ended up with a man who was in many ways a carbon copy of her father: domineering, seductive, and exploitative. Toward the end of the marriage, she took on some of these qualities herself, going to bars to pick up men and using an assumed name. Although she did not have a dissociative disorder, she did shift rapidly, especially after her divorce, between two states: one in which she was dependent, docile, and affectionate toward the new men in her life, the other in which she

tortured them with her jealousy, used her beauty as a weapon, drawing men to her on whom she could then avenge herself (symbolically) for the wrong done to her by her father. She developed some insight into this mechanism during her therapy, although the jealousy did not diminish for several years. She remained highly anxious when alone and, like many borderline patients, was unable at such times to stifle her anxiety through vocational activities. She was a skilled sculptress but was unable to pursue her craft unless things were going well. Around the time of her divorce, she began to abuse alcohol but refused to go to Alcoholics Anonymous. She was unable to conquer the problem until several years later when her life stabilized after entering a less destructive marital relationship.

### Patient 6

At age 26 when she began therapy with me, this woman had been in psychiatric hospitals three times before, starting when she was in college. There, she made a serious suicide attempt with hypnotics after a love affair had ended. She had been in analytically oriented therapy with two previous therapists, and each time she had become erotomanically attached to the therapist and consumed with jealousy about the therapist's wife. The same pattern repeated itself with me. Merely seeing my wife in the hallway of our apartment building (where I also have my office) sent her into such despondency that she made a suicide gesture and had to be rehospitalized briefly.

Her early life had been traumatic. An older sister had been crazily jealous of her (the patient had been her mother's favorite) and had tried to stab her with a kitchen knife on several occasions. Her father was a successful professional man, a workaholic who was uncomfortable around his children and had time only for his wife. He was mercilessly critical of the patient and, during her teen years, derogated her boyfriends—one sign among many of his thinly veiled sexual attraction to her. The patient became bulimarexic while at college, a tendency that became exaggerated around the time of her menstrual period.

Dynamically, the jealousy toward the wives of her therapists hid a deeper layer of (now sexualized)

longing for closeness toward another woman. This was a layer she could never reach in her treatment. She was still terrified of her sister and worried that if she found happiness with a man, her sister would finish the job she had started years earlier and kill her (a totally unlikely scenario because the sister was now married with children of her own). The thrust of therapy changed after 2 years to a more supportive mode, where the emphasis was on enabling her to date men again (she had not done so for 10 years). Eventually, she met a suitable man, married, continued her work, and had a child. She was no longer symptomatic.

### Patient 7

A woman in her late 40s had been in analytic psychotherapy for a number of years with a colleague of mine, who referred her to me because the work had reached an impasse. A professional woman, she was married for the second time but felt trapped in a joyless marriage to a man whom she experienced as irritable; he was more interested in the television than in her. She had obsessive-compulsive personality disorder, with a prominent cancer phobia. In addition, she suffered from marked anxiety in social situations and bouts of depression. Just as irritable as her husband, she argued with him almost daily, mostly about his inertia and uncooperativeness around the house. During her early years, her mother, a highly narcissistic woman, had humiliated her about her appearance and was generally aloof. Her father alternated between being affectionate and being frighteningly irascible and physically punitive. Extraordinarily dependent and importunate, she wore out other people's (and her therapists') patience with frequent phone calls begging for reassurance. When she had to undergo a minor surgical procedure for a benign condition, she became panicky and threatened suicide, claiming she could not endure waiting over a weekend to receive the official report of a biopsy, although the surgeon had already told her by phone that the lesion was benign. Life for her was an unending series of catastrophes (as she envisioned them) that never occurred. In addition, she remained embittered over her past in such a way as to render her impatient, sour, and critical with others, often destroying friendships in the process.

## Patient 8

A woman of 48 years came for treatment at the urging of her husband. Their marriage, which had been satisfying for many years, had begun to deteriorate rapidly. She had become explosively irritable, suicidal, and abusive. At times she would snatch the newspaper away that her husband had been reading, throw his dinner at him from across the table, or smash down the screen of his laptop computer. She had grown to hate his “indifference” yet said she would kill herself if he ever divorced her. Her children twice rescued her from suicide gestures, on one occasion grabbing her at the last minute as she was about to jump off the roof of their house. At our first meeting, she announced that she was going to buy a gun, kill her husband, and then herself. When I reminded her of the law requiring me to warn her husband, she simply added me to the hit list. Meeting with her daily for a while helped defuse the situation. She grew calmer, although she was still enraged at her husband for his lack of attention. She was convinced he had a mistress. Having discovered that he had been renting a small apartment in the city, ostensibly to escape for some “peace and quiet,” she threatened to wreck it. Such an act would certainly lead to his divorcing her, I warned her, but she sneaked into his apartment anyway and reduced it to a shambles. He called his lawyer about divorce. She then quit treatment, wrote me a nasty note, and moved to Europe for several months. After her return, she cut her wrists and was hospitalized briefly. I did not hear how the story ended until recently when I learned that in the intervening 10 years, the couple had divorced, both had remarried, and were now happier. The patient herself had become more stable and was no longer aggressive nor out of control. Always tempestuous in her earlier years, she became borderline during her menopausal years, only to become calmer (to where a borderline diagnosis was no longer applicable) in her late 50s.

This woman’s situation illustrates one of the peculiarities of the *DSM* definition of borderline. The definition is based more on symptomatic behaviors (e.g., self-damaging acts, stormy relationships, brief psychotic episodes) than on true traits of personality (e.g., demandingness, unreasonableness,

vehement, manipulativeness, changeableness; all of which are encountered often in those diagnosed with borderline personality disorder). However, because symptoms can often be diminished or eliminated with medications and therapy—whereas real personality traits are much more tenacious—clinicians may sometimes treat a woman in her midlife who is passing through what proves to be a 4- or 5-year time frame of appearing to be borderline by the *DSM* criteria. Some women, of course, during the menopausal years show a resurgence of symptomatic behaviors that were characteristic of them in their 20s and 30s and who were correctly diagnosed with borderline personality disorder in their earlier years. I gave several examples of the latter in my book on the long-term follow-up of borderline patients (Stone, 1990a).

## Patient 9

This patient, the third woman described in the section on the use of the lexical checklist earlier in the chapter, got into trouble with credit card debt, among other things; 98 of the maladaptive traits were applicable.

## Discussion of Patients

As for the salient characteristics of these nine borderline patients, one could sum up their personalities in a few words, the maladaptive aspects of which point to the main areas of focus for psychotherapy (second column), the positive aspects of which point to their main strengths or “saving graces” (third column).

Patient 1	Chaotic, a “lost soul”	Appealing, sympathetic
Patient 2	Un-self-confident	Reflective, sweet mournful
Patient 3	Rebellious, contemptuous	Ambitious, brilliant
Patient 4	Masochistic, impulsive	Undemanding, pleasant
Patient 5	Jealous, manipulative	Seductive, refined
Patient 6	Erotomanic, envious	Sympathetic, perseverant
Patient 7	Bitter, “catastrophizing”	Independent minded, free of prejudice
Patient 8	Vengeful, abusive	Devoted, passionate
Patient 9	Exploitative, unscrupulous	Seductive, high-spirited

From an inspection of the NEO PI-R profiles, as outlined in Table 22.2, several interrelationships become apparent. All the patients were above average on the N1, N2, and N3 (neuroticism) scales for

anxiety, anger, and depressiveness, respectively. This is consistent with data customary for a group of borderline patients. Most showed "vulnerability" as well, although not as many were impulsive. On the extraversion and openness scales, the ratings were less consistent and less often at the extremes. On the agreeableness scale, only Patient 2 was even averagely "trusting"; all the others were less so (and some were extremely untrusting). Seven of the nine patients could be rated as adequate or better on the conscientiousness scale, whereas Patients 1 and 9 scored distinctly below average. Many of these patients ultimately did well, even the woman who threatened to kill me. These seven patients scored at least average or better on the conscientiousness scale (akin to Cloninger's persistence and self-discipline, which is self-embodied in the NEO PI-R scale and to which I drew attention in my follow-up study, concerning borderline patients who did better than average; Stone 1990a). The two whose Conscientiousness ratings were uniformly low were Patient 1, who was poorly motivated and disorganized, and Patient 9, who had strong psychopathic features. The virtue of the NEO PI-R is that it draws attention to the prognostically important variables having to do with conscientiousness and openness (which addresses artistic sensibilities). These variables are ignored in the *DSM*-category approach, which focuses on illness, not on areas of wellness.

For several of the patients, I added an asterisk to their rating (see Table 22.2) to indicate the patient's customary state (not taking psychotropic medication): Patients 7, 8, and 9 but especially Patient 5. Patient 7 was ordinarily the antithesis of impulsivity, but when she was on a serotonin reuptake inhibitor antidepressant, she became transitorily hypomanic and was given to overspending. Patient 8 had usually displayed a good degree of emotional warmth, but this quality disappeared during the time I worked with her when her hostility level was maximal. The same was true of Patient 9, who could show warmth toward others when she was younger and even recently toward a few key friends during the time she was otherwise in a fury for being reprimanded because of the credit card theft. Patient 5, as with many borderline patients at the height of their illness, showed a markedly unintegrated personality.

She could "turn on a dime," switching from friendly to hostile, pampering to abusive, trusting to delusionally jealous, fun loving and sensation seeking to despondent, from one moment to the next, depending on what was happening in her social life. It was therefore not possible to give her ratings for several of the facets of the scale that would be valid across long-time stretches. Oldham and Morris (1990) referred to these emotional oscillations in borderline patients as their "mercuriality"—a useful term and one that underlines the difficulty in assigning consistent ratings to this behavior. This mercurial quality is another indication of how the *DSM* definition of BDL belongs more to the sphere of symptom disorders than to the domain of true personality disorders—extreme lability of mood being more of a symptom, strictly speaking, than a personality trait.

I chose the two pairs of sisters (Patients 1 and 2, Patients 3 and 4) to highlight the influence of genetic-constitutional factors and of nonshared environment on the emerging personalities of siblings raised in the same family. These differences may affect amenability to therapy and long-term prognosis. For example, although exposed to the same abusive harshness of their father as was her sister and to the traumatic loss of their mother during their younger years, and although equally attractive and intelligent, Patient 1 was more impulsive, less outgoing, more sensation seeking, less reflective or straightforward and candid, more of a nonfocused "dreamer," and much less self-disciplined than was her older sister. The latter persevered with her treatment and has begun to make genuine progress, whereas the younger sister drifted away and remains in shakier circumstances.

The second pair were less different, yet the differences were important: Patient 3 was more driven, ambitious, and angry; less impulsive (at least as she got into her 20s); and not as emotionally warm. She was even more self-disciplined than her younger sister. These probably innate differences help account for her having become a surgeon, whereas her sister chose a more conventional, less challenging path.

Among the salient or defining traits of the patients in the nine vignettes, several were from a therapeutic standpoint particularly difficult to deal with. The last five patients, for example, were

described (along with their other traits) as jealous, envious, bitter, vengeful, and unscrupulous, respectively. Of course, almost any patient with a maladaptive trait exhibited to an extreme presents major hurdles to a therapist. However, certain traits, when present at all, are routinely challenging, constituting a nearly impenetrable “character armor” (the term is from Wilhelm Reich’s, 1939/1944, celebrated monograph, *Character Analysis*). Patient 3, for example, displayed a fair degree of contemptuousness when I first worked with her. She always had an abrasive facade and does so to this day. However, her contemptuousness melted away after the first few months of our work and thus did not become an impediment to the therapy nor to her maturation. Beyond a certain level, nevertheless, this trait—in a highly narcissistic personality disorder person with little motivation for change and with a strong tendency to devalue the therapist’s efforts—can easily sabotage treatment. Such patients generally drop out of therapy prematurely.

In my book on abnormalities of personality (Stone, 1993), I devoted the last two chapters to traits “less amenable to or not amenable to therapy” and to people who were beyond the reach of therapy altogether—namely, people who are psychopathic and who commit heinous acts short of or including murder. Some of the case illustrations in the first of those chapters concern traits similar to those of the last five vignettes mentioned earlier. I gave examples of a man who was extraordinarily cheap, so much so that he would make a scene in a restaurant where he had invited a new date to dinner, humiliating her by loudly accusing the waiter of overcharging him a dime. I mentioned another who was a “plastic” company man (i.e., so disposed to parrot back the sentiments and opinions of his superiors and to mouth platitudes that he seemed to have no personality of his own, just a kind of cerebral Play-Doh that could be molded at will). As a third example, a breathtakingly callous robber’s bullet paralyzed the policeman who was trying to arrest him and then squawked that he could not get a fair trial because the policeman’s wife wheeled her paraplegic husband into the courtroom to give his testimony and “all the sympathy went to the cop!” For a sensation-seeking

example, a bank executive had been carrying on a torrid affair with a much younger and extremely tempestuous woman. Their life together oscillated rapidly between days of wild love-making and days of raucous, alcohol-fueled arguments that ended in assaults and the damage of each other’s property.

On the distaff side, an indiscreet nanny, when accompanying the family she worked for on their vacation in Europe, ordered caviar for lunch while the family merely had sandwiches. She talked cheerily to the family’s two young boys about her homosexual brother who had been jailed for “sucking penises in the subway bathrooms” while the father tried to negotiate hairpin turns in the south of France. She cuddled naked with the 11-year-old boy in bed, ostensibly to “warm him up” after a swim during which she had held his head underwater for a time, terrifying him, as a punishment for not coming promptly to lunch.

For bitterness, I chose the example of the divorced technician in her 40s whose mental life was dominated by preoccupations with all the wrongs done her when she was young and with everything that was miserable about her current life. She complained of loneliness, yet she ensured this state by wearing out the patience of friends and relatives. Friends who were married were intolerable to her because “they have each other” (which stirred up her envy), but single friends were no good either because “they’re in the same boat I’m in.” When treating her, if I took notes (as I customarily do when patients report dreams), she would twit me with “All you seem to care about are those notes!” If I was not taking notes on another day, I would hear, “You’re not making notes—does this mean I don’t matter to you?” Her bitterness and suicidality grew particularly intense around the time of her mother’s birthday: She felt that was a good time to do herself in, “to teach the bitch what she did to me.” Once when she became seriously suicidal after a brief absence on my part, I felt very worried about her and took her myself to an emergency ward, preparatory to her being admitted to a psychiatric unit. Enraged, she yelled at me, “Who told you to save my fucking life?”

Curiously, the story ends better than it began. When I called her 10 years after the hospitalization

(and 6 years after my book appeared), she was happy to hear from me and mentioned how she had remained ill and embittered over the next 3 years and unable to work but then was able to work through certain childhood traumas with the therapist she had met while at the hospital. Almost 60 years old, she was more at peace, able to work again, and had gathered around her a circle of friends whom she no longer alienated with her complaints as in the old days. In her case, the bitterness proved not to be insuperable, although it had scarred her life for half a century. Patient 5, in contrast, remains embittered (also for half a century); it is not yet clear whether a similar kind of mellowing will take place later on.

For vengefulness, the example I provided was that of Betty Broderick, the divorcee who sneaked into the apartment of her former husband and his fiancée and shot them to death. The lurid details of her life just before the murders is told by her biographer, Taubman (1992). Broderick is an interesting case study because she was raised in a nurturing, well-to-do home; was never abused sexually or physically; was attractive and intelligent; and married a man with degrees in both medicine and law. The divorce settlement left her with custody of their four children, their large house, and an allowance of \$16,000 per month. Despite all this, she became so enraged as to burn her ex-husband's clothes with gasoline in front of the children, ram her car into his new house, smash his windows, and spray-paint his walls. Urged by her friends to get psychiatric help, she adamantly refused, saying that this would be proof that she was "crazy" and she would lose custody of her children. This refusal certainly ensured that her vengefulness would remain untreatable.

These scarcely treatable and outright untreatable personality traits are noteworthy for their virtual absence in the *DSM*. It is true that the *DSM-IV* description of obsessive-compulsive personality disorder does include "adopts a miserly spending style toward self and others" (American Psychiatric Association, 1994). Yet the man whose cheapness I mentioned (here and in Stone, 1993) showed none of the other obsessive-compulsive personality disorder traits. Even if he did meet the criteria for

obsessive-compulsive personality disorder, to refer to him just by that diagnostic term would gloss over this most striking characteristic—one that inevitably became the focal point of his treatment. Callousness is not even included in the *DSM* definition of anti-social personality disorder. In contrast, the FFM model, and the lexical lists from which the FFM was originally abstracted, can readily find a place for these challenging traits—which certainly deserve a home in any personality nomenclature of use to clinicians.

One can add to this list numerous other traits. Although the depressive-masochistic personality type within the domain of borderline personality disorder often has a more favorable prognosis (Kernberg, 1967) compared with hypomanic and paranoid types—one sometimes encounters more firmly entrenched cases of this type. Kernberg (1984) wrote of them under the heading "Self-Destructiveness as Triumph Over the Analyst" (p. 291). Masochistic patients of this type carry out their emotionally and at times physically self-destructive tendencies, not in an uncontrolled rageful state but with a "calm, determined, even elated attitude" (p. 292). For example, a depressive-masochistic woman in her 40s, whom I briefly treated, had had to work hard all her life to support herself and had nothing saved for the future. She had been married for a few years in her 20s, but after that ungratifying relationship, she had been living in an odd arrangement for more than 15 years, married to a wealthy older man who kept a separate apartment, was rarely actually with her, and for whom she did a great deal of decorating work for his chain of restaurants. For this she received no pay, was sometimes invited to join him on trips, but mostly lived apart; as he reminded her, she was not included in his will. She could never summon the courage to confront him about this, nor could she bring herself to divorce him in hopes of finding a man who would treat her less shabbily. She could acknowledge to me that she had some "worries" about the future, given the "somewhat insecure" situation she had been enduring for so many years. When I confronted her about the perilousness of her circumstances and the frustrating quality of having a husband who was not a husband, she quit treatment.

There is another trait that poses difficulties in both treatment and terminology. The trait is perhaps a blend of a few simpler qualities such as over-dramatic, disorganized, or scatter brained. People usually cover this blend by the colloquial word *flakey* (referring to the unpredictable zigzag course a snowflake follows as it descends to earth), for want of a more conventional term. I had an occasion to treat a remarkably flakey woman in her late 50s, who had married and divorced twice. She had a daughter by her first marriage, a budding artist with some promise, who died of a drug overdose when she was 23 years old. There were two children by the second marriage. The patient had never worked, having inherited a fortune from her parents. She fancied herself a choreographer, for which she had some experience, less talent, and no success. Although whimsical, articulate, and humorous, she had no close friends; they gave up on her after tolerating a number of spoiled luncheon appointments, theater dates, and the like, which she somehow forgot about. The same trouble cropped up in our meetings: She would forget her session times, wander off to a different city, give only vague possibilities for when she could come for the next appointment, and that only after I did some investigative work to track down where she was. Eccentric, like Giraudoux's "Mad Woman of Chaillot," and full of impractical plans for "making her name" in the dance world or in writing, she mostly frittered away her time doing nothing.

What propelled her into therapy was her newest infatuation with a bellhop she had met at a resort who had some aspirations as a violinist. She took him under her wing, imagined him the next Isaac Stern, and became totally infatuated with him, buying him expensive presents and in general making him as dependent on her as she had become dependent on him. Her children resented this relationship, which was so consuming as to marginalize them. They insisted she seek help. Reluctantly she did so, but there was no consistency to our work because of all the missed appointments. It was clear she was not motivated to explore the meaning of her relationship with the young man—namely, that it gave her surcease from her loneliness or that he was a stand-in for her dead (and same-aged) daughter. They could not be seen in public because of the age

difference, which rationalized her wish of having him all to herself. Therapy threatened this wish, and after a few months, she broke off the treatment.

### SADISTIC AND OTHER ESSENTIALLY UNTREATABLE, HIGHLY DESTRUCTIVE PEOPLE

As one moves further toward the limits of treatability, one encounters people with personality configurations dominated by destructiveness, usually in the form of sadism, either of a primarily verbal sort (the "psychological" sadism of betraying loved ones, crushing the self-esteem of others, humiliating others in public situations, etc.) or of a violent, physical sort. Not all such people meet the criteria for antisocial personality disorder nor for psychopathy (which I focus on in the next section). Mainly they are found as the cruel parents or spouses, known all too well to their families but scarcely at all to the authorities. Or they may be seen as the "bosses from hell" who make life miserable for their underlings in the workplace but who never cross the line over into grossly illegal, indictable behavior. Sadistic personality disorder (SDS) itself, largely for political reasons, is no longer even recognized in the *DSM* (Stone, 1998b; Widiger, 1996). The elimination of SDS from the *DSM* was not a reflection of its disappearance from the body social, however. Sadism is alive and well. In addition, there is a place for it in the FFM—namely, at the far end of the scale for antagonism (i.e., the opposite of agreeableness) on the facet for (the opposite of) tender-mindedness, where there are such traits as callous and ruthless. In what follows, I describe a few examples of this kind of callous and ruthless behavior—behavior that led Shengold (1989) to coin the term *soul murder*.

A psychologist of my acquaintance told me of a 9-year-old boy he had been treating for symptoms akin to posttraumatic stress disorder and depression. These conditions had been set in motion by his father, who had poured boiling water on his son's penis and had then proceeded to strap a "cherry bomb" (a powerful type of firecracker) under the boy's new puppy and blow the animal to bits. Because the boy was still alive and because of the "sacredness" of the family—where acts short of

attempted (or actual) murder rarely reach the light of day—the man was not arrested and imprisoned.

I served as an expert witness in a case involving a bitter custody battle between the divorced parents of two teenage children. The mother, with untreated manic bipolar disorder, had become progressively more out of control over the preceding 6 years. She arrived several hours late to pick up her daughter at the airport on her return from boarding school, whereupon the father went to get her and bring her to his home. The mother flew into a rage at the girl, as though the girl had “stood her mother up.” When the girl later paid her mother a visit, her mother threw a large flower pot at her and then chased her around the dining room table with a kitchen knife. Shortly thereafter, her son was to participate in an important religious ceremony. On the way to the ceremony, as he was sitting next to her in the limousine, she cut her wrist with a razor, cut his necktie in two, and spread some blood from her wrist on his shirt, thus ruining his desire to participate in the ceremony.

In the past, I cited many examples of this sort from biographies of famous (and infamous) people (Stone, 1993, p. 451). One of these examples concerned the father of Edie Sedgwick, the actress (Stein & Plimpton, 1982). Her father was an intensely narcissistic man who sponged off his heiress wife and paraded around the family mansion in a bikini. He violated Edie incestuously when she was an adolescent, precipitating a long series of psychiatric hospitalizations. Despite her transitory fame as an Andy Warhol protégé, she never really recovered, committing suicide shortly after her wedding. Of the remaining seven children, two of her brothers had been repeatedly humiliated and mocked by their father, and they too ultimately committed suicide.

The essence of sadism is the conscious scheming to inflict suffering or pain on another, often as part of an urge to assert absolute dominance over the victim. Wilson and Seaman (1992) drew attention to this phenomenon as a manifestation of the “Roman emperor syndrome,” referring to the likes of Nero and Caligula who took delight in the torture of others. As for torture, it would seem that its attraction derives from the knowledge that so long as the victim is alive and conscious of the pain being inflicted

on him or her, the torturer is vividly aware of being “top dog.” More subtle forms of torture are encountered in the workplace, such as when certain bosses taunt an employee about a shortcoming in front of coworkers or burden an employee with impossible assignments, with the failure to complete resulting in dismissal.

This century has witnessed too many sadistic tyrants to allow enumeration here, although it can be said that some were sadistic “at a distance,” ordering others to mete out the torture (Milosevic, Vladimir Lenin, Nicolae Ceaușescu), whereas others enjoyed direct participation in the sadistic acts (Lavrentia Beria, Josef Stalin, Saddam Hussein).

Having the protection of a powerful parent can at times convert a person with narcissistic personality disorder who feels like a nonentity into a person with confirmed SDS, as with the case of Ceaușescu’s son Niku. As Pacepa (1987) told the story, on one occasion, Niku presided over a banquet honoring the promotion of an army officer. It chanced that oysters were served as an appetizer. Niku asked a waiter if there was a sauce for this dish. After being told “no,” Niku hopped up on the table, urinated on the tray of oysters, and then commanded that the assembled guests feast on the oysters. From this and numerous other anecdotes in the book, one gains the impression that Niku was psychopathic and sadistic. It is possible to be one without the other, just as one can be described as antisocial (by DSM terms) without meeting the criteria for SDS as described in the appendix of the third edition of the DSM (DSM-III; American Psychiatric Association, 1980). The existence of any one of these heightens the likelihood that one or both of the other personality configurations will also be present, but none of them implies the simultaneous presence of the other(s). Niku’s example serves, at all events, as an introduction to the topic of psychopathy, to which I now turn.

## PSYCHOPATHY: ON THE FAR SIDE OF TREATABILITY

The concept of antisocial personality disorder as embedded in the DSM and as alluded to in the previous section, remains confusing; it is a mixture

of true personality traits and certain behaviors. Admittedly, the definition in the *DSM-IV* is better in this regard (emphasizes traits more than does the *DSM-III*) but still falls short of what would be most useful clinically. The Psychopathy Checklist—Revised (PCL-R) of Hare et al. (1990) represents an improvement in this regard, especially because one of the factors that emerged from the analysis of the 20 items—Factor I—is defined exclusively in traits terms. Glibness, grandiosity, manipulativeness, cunning, callousness, lack of remorse or compassion, mendacity, and the refusal to accept responsibility for one's harmful actions (which translates into a kind of haughty contemptuousness or what the French call *je-m'en-fichisme*—having the attitude of “I don't give a damn”) all represent the extreme of narcissistic personality disorder, namely, self-centeredness combined with ruthlessness and contempt.

More to the point, Hare's concept of psychopathy has proven a powerful predictor of recidivism when applied to offenders in either prisons or forensic hospitals (Cooke, Forth, & Hare, 1998; Harris, Rice, & Cormier, 1991) and an actual predictor of higher rates of recidivism in treated (vs. untreated) psychopaths (Rice, Harris, & Cormier, 1992), owing, it seems, to the proclivity of the treated psychopath to use the lessons transmitted in the therapy to “con” the staff more effectively, win release, and reoffend with greater bravado. Hare (1998) spoke of the psychopath, in evolutionary language, as the “intra-species predator who uses charm, manipulativeness, intimidation and violence to control others and to satisfy his own selfish needs” (p. 196)—a person “lacking in conscience and in feelings for others, who can do as he pleases without the slightest sense of guilt or regret” (p. 196). Furthermore, neurophysiological researchers have recently established correlations between the presence of psychopathy, as defined by a PCL-R score  $>29$  (each of the 20 items can be scored 0, 1, or 2, yielding a maximum score of 40), and a diminished evoked potential response to emotionally shocking words, which elicit stronger responses from people who are not psychopathic (Williamson, Harpur, & Hare, 1991). Similarly, the psychopath's startle response to nox-

ious stimuli is significantly less pronounced when assessed by evoked potential than is the response of nonpsychopathic people (Patrick, Bradley, & Lang, 1993). Elsewhere, I reviewed other data bearing on the reliability and validity of the psychopathy concept (Stone, 2000a).

Because psychopathy at the lower PCL-R scores (e.g., in the range of 5–15) reflects personality configurations that blend into the “normal” population, there are many “subclinical” cases, such as people who scarcely ever come to the attention of the law and people who cheat, bamboozle, and manipulate others, thanks to their charm, convincing insincerity, and forceful come-on. Others succeed through their harsh domineering attributes that take advantage of weak, dependent, and gullible people. One knows them as shady used car salesmen, corrupt but charismatic politicians, seductive gold diggers, and the like. Most of the latter stay this side of the law, but occasionally, for example, one murders her rich husband or other prey, such as in the case of the grifter Santé Kimes (Havill, 1999), who insinuated her way into the home of a wealthy New York widow and then murdered her.

In recent years, I have seen in consultation or have attempted to treat seven patients with significant psychopathic traits, including those of the true personality portion (Factor I items). In addition to Patient 9 in the earlier vignette, a young man in his late 20s would make repeated phone calls to women he knew as acquaintances of his family and badger them for dates. Routinely rebuffed, he would then adopt a more threatening tone. This would be brought to the attention of his mother, who finally had to warn him she would notify the police if he continued stalking these women. He had a low-paying job at a large company, whose director was his father's close friend. He did no useful work, came in late, stole important papers, and was eventually fired—only to carry on in a similar way at another company whose president owed his father a favor. After his father died, he took to spiriting away valuable books from his father's antiquarian collection to sell for supplementing his meager income. He took money from his mother's purse and from his brother's wallet until finally the family put locks

on all the doors of their sprawling apartment, locking the bedroom door when they went to the bathroom and then the bathroom door before returning to the bedroom.

My “treatment” of this obviously psychopathic but (thus far) nonviolent man was to urge the mother to change the apartment door locks when he was at work and leave a note with the doorman containing a week’s worth of money and the address of the hotel where she had reserved him a room and shipped his belongings. I had met with the mother and her son to explain why I felt this was the only recourse; they accepted this plan, not without regrets at having to recognize the immutability of the man’s character aberrations. Once implemented, they lived (separately) with a sense of freedom and security such as they had not experienced in the 6 years since his behavior had become so intolerable.

In another case, I treated for about 1 year a 39-year-old woman who had been married for a few years, during which time she was involved with another man by whom she had a son, now 4 years old. The ex-husband knew he was not the father, so he refused to pay child support; the actual father knew she had told the boy her ex-husband was the father to obviate the stigma of illegitimacy. He balked about paying any support, knowing that she would not take him to court lest the truth be exposed. Meantime, she worked sporadically at various menial jobs, getting fired from each because of lateness, missing items, and so forth. Her wealthy father, an alternately irascible and indulgent man, could be relied on to pick up the tab—that is, until I arranged a family meeting with the patient, her father, two brothers, and their wives about how best to handle the situation. At that meeting, she stole a watch and some money from the purse of one of her sisters-in-law. That was the last straw. The family sent her to another city where she had a distant relative willing to take her and the child in. Her father henceforth refused to “throw good money after bad” and cut off her allowance. She had been a seductive, idle, and larcenous charmer ever since she was in her teens, causing great trouble to the family. Until the stolen watch episode, they had used their wealth and connections to keep her out of trouble, so she

had no arrest record and no delinquency record. Therefore, her PCL-R score was artificially low. As for the year of psychotherapy with me and the years of therapy earlier on with several other therapists, this left intact her manipulativeness, deceitfulness, and penchant for petty thievery.

## THE UNTREATABLE AND THE DANGEROUS: THE VIOLENT PSYCHOPATH

Some of the patients alluded to earlier, those with moderate PCL-R scores, came from families with strong histories of bipolar manic-depression. Risk genes for this condition are associated with novelty seeking, impulsivity, irascibility, and sometimes emotional insensitivity. These are characteristics of psychopathy, and it is no surprise that there is a degree of overlap between bipolar manic-depression and psychopathic traits. In my study of murderers, I attempted to situate them on a spectrum I called the “gradations of evil” (Stone, 1993, p. 453; Stone, 1998b, p. 348). I enumerated 2.2 gradations, starting with cases of justified homicide (which is not murder) and ending with psychopathic torture, namely, murderers where torture was prolonged. Beginning with the ninth gradation, psychopathy is part of the personality profile. The ninth gradation is reserved for “jealous lovers with psychopathic features.” Many of these people are bipolar manic-depressives—for example, Ira Einhorn (Levy, 1988), Richard Minns (Finstad, 1991), and Buddy Jacobson (Haden-Guest, 1981).

As one moves toward the end of the spectrum, toward the region of people subjecting others to torture, serial sexual homicide, or both, manic-depression is no longer a noticeable feature. Instead, the personality profiles, besides full-blown psychopathy, include the traits of SZD. Of the serial killers in my biography series (now numbering 87), 40% were comorbid for SZD and SDS (as defined in the appendix of the *DSM-III-R*). Examples of those with psychopathy and SDS include Fred and Rose West from the English Midlands (Sounes, 1995) and Angelo Buono (the “leader” of the two Hillside Stranglers in Los Angeles, California; O’Brien, 1985). Examples of those with psychopathy and

SZD include Jeffrey Dahmer (Schwartz, 1992) and Gary Heidnick (Englade, 1988).

Although there seems to be no absolute bottom to human depravity—no case of torturous maltreatment more grotesque than all other examples (I limit myself to people operating in peacetime; the atrocities of the Nazis and the recent Serbian soldiers in Bosnia and Kosovo are another story)—there are some remarkable candidates. Two of these I described in some detail elsewhere (Stone, 1998b, pp. 352–353): Theresa Knorr (Clarkson, 1995) and Paul Bernardo (Burnside & Cairns, 1995). Knorr was predominantly sadistic, burning her daughters' arms with cigarettes and shooting one daughter in the chest and then (when the girl failed to die) extracting the bullet to hide the incident from the authorities. She finally, with the help of her sons, took the girl to the foothills of California's Sierra mountains, where they burned her alive and left her to die. Knorr was motivated by a crazy jealousy of her daughters, whom she subjected to tortures and imprisonment for years (e.g., chaining one inside a closet and leaving her without food) before murdering two of the three.

Toronto-born Bernardo was a “classic” psychopath of the charmer-con artist type. He became obsessed with sex, power, and rape fantasies, especially after finding out that his mother’s husband was not his real father. He married Karla Homolka, used this easily intimidated young woman, whom he had completely subjugated, as an accomplice in his torture and murders of young women, including Karla’s younger sister. Bernardo had built a secret room in their house where he carried out the tortures and forced Karla to have lesbian sex with two women, which he videotaped to ensure that she would not dare tell the authorities about him. Burnside and Cairns (1995) outlined the progression of the typical sexual sadist, as he moves from choosing a vulnerable and easily exploited woman, then charming her with his “loving and considerate” manner (none of it was genuine), next inducing her to indulge in sexual practices far beyond what is customary (use of bondage, dildoes, etc.), progressing to possessiveness and jealousy, isolating the woman from all her friends, and finally transforming her into a helpless object for his physical and psychological abuse (Burnside & Cairns, 1995, p. 551).

## SPIRITUALITY: THE OPPOSITE EXTREME FROM PSYCHOPATHY AND A POSITIVE PROGNOSTIC FACTOR

In the same way that psychopathy within the FFM model represents the extreme of antagonism, spirituality may be said to represent the extreme of agreeableness. More specifically, psychopathy is a step beyond narcissistic personality disorder. There are vain, self-centered (i.e., narcissistic) people who are not psychopathic. There are, likewise, agreeable people who show little spirituality, the latter being a step beyond the merely agreeable. Spirituality implies a general other-orientedness, a predisposition to minimize one’s own troubles, emphasizing instead serenity and one’s obligation to the whole human community. Such altruism is not limited to selfless acts on behalf only of one’s immediate circle. The term and the concept behind it are seldom discussed in psychiatry. There is an allusion to something closely akin to spirituality in Cloninger et al.’s (1993) personality factor that Cloninger called *self-transcendence*, as mentioned earlier.

What made me aware of this trait—perhaps it is best thought of as a superordinate or composite trait (and thus akin to a factor)—was my work with Patient 7 of the vignettes. What seemed to differentiate her dramatically from other depressed patients I have treated was her near total lack of the qualities that go to make up this attribute of spirituality. It was this deficiency that, at the same time, made her a much greater suicide risk than other patients who suffer considerably worse depressions yet retain a good measure of spirituality. This latter attribute thus appears to differentiate rather well the highly suicide-prone patients from the not-very-suicide-prone patients, who in other respects seem to have the clinical picture one associates with suicidality. By spirituality, I do not mean absorption within a religious group nor any profound belief in a deity. Of course, many profoundly religious people do, in addition, have a great deal of this quality.

What I feel comes under the heading of spirituality are such traits and attitudes as the following, which I have gathered into a scale (Stone, 2000b): hopefulness, forbearance, humility, oriented toward others, faith in self and others, self-acceptance, resignation, serenity, forgiveness, compassion,

uncomplainingness, self-transcendence, dignity, and a sense of mission oriented toward the repair of the world along with a sense of responsibility to do something positive for the world, coupled with a concern for the suffering of others. In my scale (which has 20 items and their opposites), each of these qualities can be envisioned on a visual analog scale with a high degree of the quality at one end of the line and the high degree of its opposite at the other end. The opposite traits—attitudes include despair, impatience, false pride, self-centeredness, disillusion, self-pity, bitterness, grudge holding, mean-spiritedness, cynicism, and a lack of respect for others.

Many of the facets of agreeableness, as enumerated in the NEO PI-R, overlap with these positive spiritual qualities: trustingness, giving and sacrificial, cooperative, self-effacing, and concerned—compassionate. It is my impression, however, that there is something to be gained by drawing attention to the array of these positive traits under the rubric of spirituality because of their prognostic implications. I believe attention to these qualities will help in alerting therapists to suicide risk where spirituality is lacking and to a diminished risk where they are present in abundance, independent of the other known risk factors such as a family history of depression, low cerebrospinal fluid serotonin, and the demographic variables associated with suicide risk.

## CONCLUSION

I hope to have demonstrated with the examples throughout this chapter the utility and indeed the superiority of the FFM approach to the diagnosis of personality and as a guide to what is treatable and what is not. Allied to the lexical system for detailing all aspects of personality including both the negative maladaptive traits and the positive traits, the FFM is also a dimensional model that permits greater subtlety of diagnosis than what can be derived from a category-based system, such as that of the DSM. The NEO PI-R allows the clinician or the prospective therapist to set down in a convenient way all the relevant strong and weak points of the personality in someone being considered for treatment. Because psychopathy has a place within the FFM schema as

the furthest outpost of “antagonism,” the schema is also useful in drawing the boundary line demarcating the kinds of personality aberrations that are still amenable to therapy from those that are not amenable or that, if Rice et al.’s (1992) study can be replicated in future studies, may even be made worse by treatment. The one area where I believe the FFM needs some modification is in dealing with the mercuriality of the typical borderline patient, whose rapid changes of mood make it difficult to give but one rating on a number of facets.

Because the FFM lends itself so well to the inclusion of both negative traits like those related to psychopathy and positive traits like those associated with spirituality, its use should be encouraged as a guide for whether to begin (or not to begin) one’s therapeutic work: who are likely to be amenable to treatment (those with high spirituality), who are likely to be intermediate in this regard, and who are most unlikely to respond with favorable outcomes to psychotherapy (those meeting the criteria for psychopathy).

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# CROSSOVER ANALYSIS: USING THE FIVE-FACTOR MODEL AND REVISED NEO PERSONALITY INVENTORY TO ASSESS COUPLES

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Although divorce rates of 50% for American couples (Tejada-Vera & Sutton, 2010) and 45% for European couples (Hahlweg, Baucom, Grawe-Gerber, & Snyder, 2009) could be taken as indicative of the need for couples therapy, it could also be argued that they are indicative of the failure of much couples therapy, given the data of outcome studies over the past 30 years. Jacobson's (Jacobson & Christensen, 1996, p. vii) early outcome studies led to the conclusion that "novice graduate students, with no previous clinical experience, could produce outcomes with behavioral marital therapy that were as good as or better than those produced by trained professionals." Applying clinical significance analysis to a number of published clinical trials, he discovered that a 50% success rate was characteristic of marital therapy outcome research generally and not unique to a behavioral approach (Jacobson & Addis, 1993; Jacobson & Christensen, 1996). Other long-term studies of treatment gains in couples therapy showed 56% to 58% of couples unchanged or deteriorated from their pretreatment status (Jacobson, Schmaling, & Holtzworth-Munroe, 1987; Snyder, Wills, & Grady-Fletcher, 1991) and only 56.4% of couples in conjoint forms of therapy and 29.8% of couples treated in nonconjoint formats still married 5 years after therapy (Cookerly, 1980). More recent long-term studies have shown a 51% to 56% maintenance rate of treatment gains for behavioral

couples therapy and emotionally focused therapy in 6 months to 2-year follow-up (Byrne, Carr, & Clark, 2004) and a 45.9% rate of maintained significant improvement after 5 years for traditional behavioral couples therapy couples and 50% for integrated behavioral couples therapy (IBCT; Jacobson & Christensen, 1996) couples (Christensen, Atkins, Baucom, & Yi, 2010).

The experience of many clinicians may be parallel to such data. On the one hand, they may experience a high level of demand for couples therapy. On the other hand, they may still be searching for a form of therapy that consistently contributes to positive outcomes. It is the intent of this chapter to show that use of the Revised NEO Personality Inventory (NEO PI-R) has significant clinical value in the early assessment phase of couples therapy and has a unique contribution to make in the construction of a way of understanding that can contribute to positive outcomes in couples therapy. Information from the NEO PI-R can enhance the clinician's ability to interpret controlling variables, to provide new meaning for old differences, to set limits, and to foster acceptance.

Whatever the form of couples therapy the clinician chooses, there usually follows some form of assessment that leads to an understanding of the problem(s) and to a subsequent treatment protocol. Depending on the assumptive world of the clinician, assessments

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can range from clinical interview style questions to pencil-and-paper tests. Although clinical interview questions grounded in the theoretical approach and experience of the clinician are the sine qua non of assessment, pencil-and-paper forms of "data" collection provide additional input into the level and nature of distress, interpersonal versus intrapersonal issues, the level of commitment, perception of positive and negative behaviors, direction of desired change, temperaments, and personality characteristics.

The value of personality assessment to the clinician is fivefold. First, it provides an ability to discern whether the intrapersonal issues are of such overriding concern that couples therapy is not warranted at this time. There may be significant mental health issues in one or both members that need to be addressed before couples therapy can be effective. Second, assessment enables the clinician to see whether both parties are invested in the process and if critical issues such as domestic violence are a concern. Third, assessment instruments provide a means for the clinician to gauge the degree of change that might be expected and to guard against overfunctioning to elicit change. Fourth, measures of personality, such as the NEO PI-R provide another, objective way of framing differences that enables the clinician and the clients to discuss difference in nonreactive ways. Finally, assessment contributes to a way of understanding that moves from a focus on derivative variables and techniques to controlling variables that underlie given behaviors (Jacobson & Christensen, 1996).

By way of illustration, IBCT is a form of therapy that has demonstrated sustained treatment gains over 5 years and with divorce rates only at 25.7% after 5 years (Christensen, Atkins, Baucom, & Yi, 2010). This form of therapy integrates traditional behavioral approaches with systems theory and Eastern philosophy and builds on the work of Linehan (1993) in her proposed treatment of borderline personality disorder. The missing link according to this theory has been *acceptance*. Jacobson and Christensen (1996) found that although traditional behavioral therapy might work with couples who were able and willing to change, it was acceptance that made the difference for those with incompatibilities and truly irreconcilable dif-

ferences. Central to the work of acceptance is the ability to come to a "formulation" in which a couple understands the core theme, polarization process, and mutual trap in many of their interactions:

The formulation provides an organizing principle for both therapist and client. Once therapists have formulations, there is something to refer back to when couples have conflicts either during or between therapy sessions. . . . For the partners, the formulation becomes a context for making sense out of a confusing, desperate, hopeless, and painful relationship. (Jacobson & Christensen, 1996, p. 57)

Jacobson and Christensen went on to say, "The primary purpose of assessment is to come up with a formulation, which will serve as the basis for a treatment plan" (p. 59).

Although this chapter is not intended to advocate for one form of couples therapy over another, only taking IBCT as an example, it does advocate for the importance of clear assessment in any therapeutic approach. Because couples therapy is a complex, multidimensional experience, assessments can be conducted on a number of levels, each with its own insights. The goal of assessment is to help construct an image or formulation of the relationship that can be discussed and examined by the couple and their therapist. The next section outlines the three levels on which assessments can be made.

## TYPES OF COUPLES ASSESSMENTS

The goal of couples' assessment is to capture important aspects of the relationship that affect personal satisfaction and dyadic harmony. We see three types of assessment that approach the relationship from different perspectives and can be used in addition to the clinical interview. The information that each provides varies in terms of complexity. The three levels of assessment are described in turn.

### Level 1 Assessment

Measures at this level of analysis capture individual perspectives on satisfaction and harmony. These

are the most basic and straightforward measures; they simply query each person separately about how satisfied he or she is. Measures such as the Locke–Wallace Marital Satisfaction Scale (Locke & Wallace, 1959) typify scales of this nature. Because the goal of these assessments is merely to identify an individual's perspective, no attempt is made to compare or contrast responses with the partner. It does provide an overall index of the individual's levels of satisfaction with the relationship. However, this level of assessment does not provide any context for evaluating these perspectives.

### **Level 2 Assessment**

Measures at this level attempt to incorporate information from both members of the couple about their beliefs, feelings, and attitudes. Essentially, measures at this level involve the comparison of self-reported scores from each person on a common set of questions. Responses are then compared, and discussion/dialogue between the members can proceed. The ENRICH/PREPARE (Olson, Fournier, & Druckman, 1987) scale characterizes measures at this level. Here each individual expresses his or her expectations about various aspects of the relationship, and these responses are compared between the two.

### **Level 3 Assessment**

At this level, an active effort is made to obtain a more complex, dynamic assessment of the couple. With this mode of assessment, self-reported scores are obtained and compared with ratings from the partner. This level of analysis attempts to address the more interactive aspects of the relationships: how perceptions of one's partner may have an impact on the quality of the relationship for the rater. Such comparisons call attention to how much or how little the individuals understand themselves and each other. Lack of agreement between the self and observer rating may indicate specific areas of contention for the rater. At this level, measurement scales attempt to summarize in static form the ongoing processes that have been characterizing the couple's patterns of interpersonal interaction. The Taylor–Johnson Temperament Analysis (Taylor & Morrison, 1984) is an exemplar of this level. Its

"criss-cross" paradigm will systematically examine both the extent to which the two self-reports complement one another and the level of agreement between the self-ratings and the corresponding partner ratings.

The NEO PI-R is another well-suited instrument for conducting Level 3 analyses of couples (see Piedmont, 1998). Unlike any other commercial measure, the NEO PI-R is based on an empirically robust, comprehensive taxonomy of personality. This ensures that all relevant personological qualities have been assessed. The NEO PI-R also has validated self- and observer-rating forms, which are essential for conducting this type of analysis. It is important that the self and observer responses are standardized on their own normative distributions, thus enabling a direct, meaningful comparison of their resulting T scores. Crossover analyses (COAs) can be easily accomplished using the NEO PI-R computer scoring program, which can automatically plot the various combinations of responses on a common graph.

## **SELF AND OBSERVER RATINGS IN THE ASSESSMENT OF COUPLES**

In assessing individuals, there is no gold standard for finding the truth about the person. There is no one method or measure that provides a perfect, or even near perfect, account of the underlying nature of an individual. As such, assessors are forced to use multiple types of measures that assess different aspects of the person. (There are four data sources: life outcome, self-reports, observer ratings, and test data. Piedmont, 2005, described the value of each source.) Although no one method is perfect, using different methods that complement one another will help reduce error due to responding characteristics (e.g., halo effects, response styles). Identifying areas of convergence across methods provides high confidence in the veracity of a finding.

Self-reports are perhaps the most frequently used method of assessment because of their ease of administration, scoring, and interpretation. Furthermore, the underlying assumption of a self-report is that the individual is in the best position to provide information about himself or herself

(e.g., private beliefs and past behaviors) that may not be readily accessible from others. It seems obvious that if you want to know something about people, ask them. However, despite such an appealing paradigm, there has always been skepticism and mistrust surrounding the use of self-reports. Concerns about defensiveness, faking, and response distortions have always created a pall over such procedures and have led to the development of many types of "validity" scales to correct for these sources of error (e.g., Schinka, Kinder, & Kremer, 1997). Despite the large literature that validates the use of self-reports, they do not provide a complete picture of people.

Observer ratings provide a counterpoint to self-reports (e.g., McCrae, 1994). Individuals providing ratings rarely have the same motivations to distort their responses as the target does. Raters are not necessarily committed to making the target appear "good" or socially desirable. Furthermore, raters provide another perspective on the individual, such as the type of social impressions he or she generates or a person's reputation, which cannot be obtained from a self-rating. Although ratings have their own sources of error (e.g., halo effects, stereotypes), these biases do not overlap with the errors that are inherent to self-reports (McCrae, 1982). Thus, convergence between peer ratings and self-ratings cannot be attributable to correlated error but to a reliable effect.

A large literature has developed demonstrating the cross-observer validity of the NEO PI-R, with self-other correlations on the five personality domains ranging from  $r = .30$  to  $r = .50$ . Interestingly, the level of self-other agreement is, not surprisingly, stronger in married couples than in general samples (convergence coefficients in couples range as high as  $r = .75$ ; Costa & McCrae, 1992). That the NEO PI-R personality domains do have such convergence makes it an ideal tool for use with couples. As we will show, the presence of disagreements between these two sources of information is indicative of some type of distortion in the relationship that may be causing levels of disharmony and conflict. We term the process of examining self-other agreement in a couple *crossover analysis*.

## CROSSOVER ANALYSIS FOR ASSESSING COUPLES

Research has already begun to evaluate the kinds of perceptions individuals hold of their spouses and the degree to which they correspond to spouses' self-perceptions. The underlying hypothesis is that the amount of congruence between a self-report and the partner's rating would be revealing of the level of satisfaction experienced by the rater. This approach goes by different names, such as *insight analysis* (Megargee, 1972) or *criss-cross testing* (Taylor & Morrison, 1984). Whatever its label, the approach provides a methodology for couple evaluation that focuses on the images each person holds of the other and the role these expectations play in facilitating marital adjustment.

The value of COA is that it focuses on the central dynamic of the relationship: how each person perceives the motivations underlying the behavior of his or her partner. When individuals form committed relationships, they have an inner image of the person they believe their partner to be. These internal images generate certain expectations about their partner's behavior, both inside and outside the relationship. As the couple spends more time together, these expectations (or hypotheses) are tested. Behaviors are observed, and the correspondence of these behaviors to the "expected" personality is evaluated. A good "fit" leads to more satisfaction in the relationship because the perceiver is able to accurately anticipate the behavior of his or her partner (e.g., Gaunt, 2006). Predictability in a relationship is hypothesized to lead to greater happiness and contentment. However, when the partner's behaviors are not consistent with the rater's implicit personality schema of the partner, the lack of predictiveness leads to dissatisfaction within the rater. The inability to anticipate the actions of one's partner correctly is hypothesized to lead to an increased sense of dissatisfaction and interpersonal anomie. Perhaps the failure to predict is associated with heightened feelings of interpersonal isolation and decreased feelings of intimacy.

Another reason why the lack of congruence would be related to dissatisfaction is that the individual is misperceiving the motivations of the part-

ner, which leads to misattributions of the partner's behavior. For example, Kevin may believe that his wife scores low on neuroticism; he thinks she is an emotionally stable person who is not prone to emotional outbursts and prolonged experiences of negative affect. If, however, his wife is indeed high on neuroticism, then Kevin will misattribute the reasons for her many complaints, her nagging, and her yelling at him. Rather than understanding these behaviors as a sign of her need for succorance and reassurance, he will instead interpret these behaviors as attacks on him. He may see her as very antagonistic, leading him to withdraw from her or to retaliate in kind. This, in turn, only exacerbates her feelings of loneliness and abandonment. A negative cycle of conflict and disharmony is created because Kevin does not accurately perceive the needs of his wife, or his own personal needs are creating expectations for his wife that she cannot fulfill.

In either case, the nature and degree of cross-observer congruence between a rating and a self-report can be a useful barometer of the levels of satisfaction in the couple. It can outline the motivational dynamics that may be precipitating and maintaining conflict. It is important to note here that the disagreement between the rating and the self-report is diagnostic of the lack of satisfaction in the rater. If the rater has misperceived the partner, then he or she will be unable to anticipate accurately the partner's behavior or be led to make incorrect attributions of the partner's motivations. In either case, the individual has a tenuous grasp of the interpersonal context of the relationship and this leads to conflict and unhappiness.

The value of the NEO PI-R in this context is threefold. First, the NEO PI-R provides a useful language for talking about and describing personality. The five-factor model (FFM) of personality is an empirically robust, comprehensive model for organizing traditional personality traits. It provides a clear, simple-to-understand language for describing motivations and conflict that couples can easily understand and apply. Second, the availability of a validated rater form makes the NEO PI-R an ideal medium for couples to express their own expectations about each other. Finally, it provides for clinicians' insights into the motivational forces that

may be creating conflict and dissatisfaction for the couple. These patterns may suggest intervention strategies that would benefit the couple. Taylor and Morrison (1984) provided a good description of the value of COA:

The test can be effectively used to shift the focus from the immediate complaints to an examination of the influence of the two personalities; as well as to develop an understanding of the interpersonal dynamics involved. [COA] . . . can help the couple objectify their problems and focus more on the role played by their individual personalities and behavior in the overall situation. (p. 17)

## PERFORMING A CROSSOVER ANALYSIS

To conduct a COA, one needs to have a couple complete the NEO PI-R for both themselves and his or her partner. This generates four separate profiles for each couple. The NEO PI-R works well in this context because it provides self-report and observer booklets as well as separate norms. Scores can also be readily translated into T scores, and the resulting profiles can be jointly plotted on the same profile sheet. In addition, the NEO PI-R computer scoring program has the capacity to combine a self-report and an observer rating into a single report, and it will statistically compare the two profile in terms of comparability (an overall profile congruence coefficient is calculated that quantifies the extent to which the two sets of ratings are similar) as well as determine whether any facets are significantly different. The computer program can also generate a simultaneous plotting of both profiles. The graphs produced for this chapter were generated by the scoring program.

### Step 1: Comparing the Self-Reports

Self-reported scores provide a statement of how people perceive their strengths and liabilities. These scores work directly from their self-concepts and present their perceptions of what motivates them and the goals they are pursuing. A comparison of

these profiles can provide information about how well the two individuals may complement each other temperamentally. Although the research literature suggests that happier couples will tend to be more alike temperamentally than less satisfied couples (Buss, 1984, 1991; Gaunt, 2006; Keller, Thiessen, & Young, 1996), there are times when differences may not be problematic. This section outlines some strategies for analyzing these data.

By evaluating these data, a clinician can identify motivational patterns that are likely to complement each other and those that may not. Furthermore, an analysis of the self profiles can also provide insights into the tone and texture of the relationship itself. Couples may wish to explore the expectations they have for themselves and the relationship. We provide some general hypotheses about how the five personality domains should relate to each another. Considering facet-level agreement would open up this type of analysis to another level of detail and precision. However, for the purposes of our brief review here, we will constrain our comments to the domain level. It should also be kept in mind that the comments we provide are general, and there may be instances where gender differences in the combinations may also be important. One final caveat, when analyzing couple data, it is important that profiles are examined configurally (i.e., a full consideration is given to how the various facet scores may combine to create a specific, individual personality style). Specific facet combinations may suggest potentially good couple compatibility while merely considering domains scores may suggest otherwise. COA is a complex interpretive endeavor that requires from the practitioner a high level of skill and a broad knowledge of the construct validity of all 35 scales included in the NEO PI-R. Reliance on simple interpretive formulas can quickly become inadequate.

Concerning neuroticism, perhaps the ideal combination would be if both individuals were low on this dimension, indicating that each is emotionally stable, hardy, and resilient. Having two people with good coping skills suggests that together the couple will be well equipped to manage external stressors and internal conflicts. Each person can be emotionally available to the other in times of need. Another

complementing pattern would be if one member were high and the other low. Here, one person can provide emotional support and succorance to the other when needed. Of course, the person low on neuroticism may find it difficult to obtain emotional support during his or her times of personal distress, although his or her own emotional adjustment can be helpful in periods of personal distress. In this high-low combination, the woman being higher on neuroticism may be better than if the man were higher. The least preferred combination would be if both members were high on this domain. High scores would indicate that this relationship would be characterized by much emotionally charged energy; interpersonal conflict may be common. Individuals may find it difficult to have their partner meet their emotional needs, which may be heavy and continuous. The relationship may carry a lot of tension within it. With both people in distress, it may be hard for them to find balance and emotional succor without the help of outside forces (e.g., counselor, family, etc.). Even with support, there may be chronic feelings of dissatisfaction with the relationship. Couples thinking about entering a committed relationship may want to explore strategies for finding the emotional support they need.

With regard to extraversion, there does not seem to be any "toxic" combination on this domain. When couples are consistent on this domain (e.g., both high or both low), they create for themselves an interpersonal world that is consistent with their own temperaments. Whether being socially active and ascendant or being quiet and solitary, the couple shares a similar level of personal arousal and desire for interpersonal contact. Inconsistency on this domain (e.g., one person high, the other low) may not necessarily be problematic. Sometimes the introvert may find the energy and social stimulation that the extraverted partner brings to the relationship engaging and interesting. The extravert may feel that the introvert helps to keep him or her grounded. It is only when one partner feels that the other is making unreasonable demands that problems may occur. The extraverted person may feel that his partner is "a stick in the mud," never wanting to socialize or to be involved in any type of social activities. The introvert may find her part-

ner to be a “good-time Charlie” or as running away from issues in the relationship. This may create some resentment, with the extravert being seen as someone who spends too much time with others and does not attend sufficiently to the needs of the relationship.

In evaluating openness, it is important to keep in mind that the dimension does reflect the types of values each person has. Regardless of how scores may or may not match on this domain, basic values and religious and political preferences ought to be examined. Does the couple share similar beliefs and priorities? This is particularly important for those couples who are both low on this domain. Such individuals may be traditional in their outlook and espouse conservative values. It would be important to determine that each person be clear about the values of the other. Lack of agreement on these values may prove to be the most distressing for the couple. Usually, couples who are low on openness share common values and beliefs, having specifically sought individuals who share their world view. For those high on openness, the lack of common values may be less problematic (given each person’s strong capacity for tolerance and diversity), but it may contribute to the couple drifting apart as they pursue their own interests. This assessment of values will be of particular importance for couples that are inconsistent on this dimension. With one person clearly committed to some set of truths, the other may be more tentative about such commitments. It would be important to evaluate how the differing value orientations affect the relationship. Does the high open person find his or her partner rigid and traditional? Does the high open person feel confined or bored by the habits of the partner? Conversely, does the person low on openness feel that he or she is being constantly challenged regarding his or her values? When the scores of the couple are in opposite directions, it would be important to discuss how the creative interests of one member are handled within the conventional orientation of the other.

Agreeableness is an important domain for consideration, given that it includes attitudes toward others. A couple in which both are high on this domain would be the ideal. Here, both individuals take a compassionate orientation toward others;

they are willing to be helpful and will sacrifice for the other. They are trusting and modest, they seek to support and enable others. Such a couple can find it easy to work together toward common goals. Their trusting nature makes it easier for them to develop intimacy and build interpersonal bonds. Couples in which both are low on agreeableness present an entirely different set of issues. With both individuals being manipulative, cynical, and distrustful, it will be hard for this couple to engage cooperatively in their relationship. Intrigue and dissimulation may be quite apparent as each struggles to find a strategic advantage in the relationship. Having two individuals low on agreeableness may be a toxic combination for a relationship, the key reason being their inability to reconcile once conflict erupts. Thus, for individuals low on agreeableness, it may be important for them to find an agreeable partner. A partner high on agreeableness would be less willing to retaliate when injured, would be more understanding and compassionate, and would be ready to make amends when emotional upsets occur. Here again, however, there may be another gender difference: In discordant pairs, having the female higher may be better than the reverse. We hypothesize that men often seek out partners who are accommodating, supportive, and “maternal” in orientation. Men sometimes harbor an expectation that they need to be assertive and dominant and sometimes to break the rules; after all, “boys will be boys.” Women are expected in these cases to understand men’s churlish behavior. However, the opposite pattern is believed to be less optimal in this example. A manipulative, selfish, abusive female would have a more ruinous effect on the relationship, even when her partner is high on agreeableness because such behavior may be perceived as belittling the man’s sense of masculinity.

With regard to the conscientiousness domain, optimal satisfaction may be found with couples who are discordant. Couples high on conscientiousness are highly organized, motivated toward high standards of success, and personally organized and reliable. Although these are all laudable qualities, when both members are high on this domain, the couple may be competing against each other. As with openness, what are the goals these individuals are pursuing? Are they in conflict with one another

or the relationship? In a dual-career relationship, it becomes essential that the couple find ways to work together at building intimacy and closeness despite a hectic work schedule. When both individuals are low on conscientiousness, there is a more relaxed family atmosphere that focuses on personal needs and gratification. Although it may be easy for such a couple to find the time to build closeness and intimacy, there may be issues around managing the logistics of the relationship. There may be problems with the individuals fulfilling their responsibilities and obligations, resulting in one person (or both) feeling put upon by the failures of the other. Discordant pairs may be more optimally configured, although ideally the "lower" partner on this dimension should be in the average range.

Low conscientiousness is never a desired quality in a partner by someone who is high on this dimension. Individuals high on conscientiousness always appreciate some level of personal organization and reliability in their partners who may be expected to provide essential support by managing the logistics of their lifestyle (e.g., caring for children, running the household). Here again, we hypothesize another gender difference. We believe in some cases that a woman scoring low on conscientiousness presents less of an issue in the relationship with a man scoring high on conscientiousness than the reverse. Regardless of their levels of conscientiousness, women sometimes prefer men who are successful and can "pull their weight," both emotionally and financially. For the woman low on conscientiousness, a man average to high on conscientiousness provides leadership and financial resources. For a woman high on conscientiousness, the high-scoring man is seen as a real partner in the relationship. The man scoring low may be perceived as being a sponge on the woman's financial and emotional resources.

The hypotheses just presented represent simply broad interpretive strokes in an effort to convey the basic sense for how such an analysis should proceed. Also, some of these comments reflect more stereotypical behaviors that certainly will not generalize to all couples. Furthermore, we have limited ourselves to heterosexual couples, and these comments may not be relevant to lesbian and gay relationships. Given the space limitations of this chapter, we are

not able to discuss what is meant by "high" and "low" scores; certainly different interpretations would emerge with individuals who are moderate or average on the various domains. Also, the magnitude of scores needs to be considered when giving an interpretation. Most important, our interpretations made no reference to scores on the other personality domains. For example, interpretations about conscientiousness scores need to proceed with consideration of the person's level of neuroticism. Extraversion and agreeableness are also considered in tandem. Finally, openness and conscientiousness need to be examined together. To understand the personological implications of any personality score, it must be viewed through the filter of the other four dimensions. Information from the NEO PI-R should also be combined with data obtained from other sources such as clinical interviews. For a fuller overview of interpretive strategies with the NEO PI-R, the reader is referred to Piedmont (1998).

## **Step 2: Crossover Analysis**

The essential feature of the COA is the comparison of a self-report profile with that of the person's rated profile generated by an observer. As we stated earlier, such a comparison speaks to the needs and issues of the person doing the rating. After all, self-other agreement is strong in couples. Therefore, when areas of disagreement appear, they should be diagnostically revealing of the kinds of issues and problems the rater is experiencing with the partner. Differences are determined by subtracting the self-report T score from the observer rating T score (i.e., rating minus self-report). Differences of 15 points or more ought to be considered statistically significant. Significant differences on the domains indicate a general class of problems that the *rater* is experiencing. For example, a higher rating on extraversion may suggest that the rater finds the spouse to be too dominant, overly involved with friends and acquaintances, overcontrolling, and taking too many risks. A lower rating on extraversion may suggest that the rater finds the partner to be unaffectionate, passive, unassertive, and not communicating in the relationship. Significant differences on the facet scales may suggest more specific issues and areas of contention.

**TABLE 23.1**

Potential Relationship Problems Experienced by Raters Who Perceive Their Partners Higher or Lower on the Five-Factor Model Personality Domains

<b>Personality domain</b>	<b>Potential problems</b>	
	<b>Rated higher on domain</b>	<b>Rated lower on domain</b>
Neuroticism	Feels inadequate, complains a lot, immature, jealous	Too calm, emotionally bland, too much emotional control
Extraversion	Always wants to “party,” hyperactive, shows little interest in my projects	Loner, aloof, has few or no friends, does not communicate
Openness	Snobbish, nonconformist, over analytical	Uncultured, rigid, lacks emotional depth
Agreeableness	Unable to set limits, easily manipulated, gullible	Conceited, arrogant, selfish, cruel, confrontational
Conscientiousness	Compulsive, miserly, too regimented, expects too much from others	Self-centered, pleasure seeking, lazy, spends money too easily, unreliable

Note. Items taken from the Couples Critical Incidents Check List, an unpublished test. Copyright 1996 with permission from R. L. Piedmont and R. I. Piedmont.

Piedmont (1998) provided data validating the usefulness of COA for identifying specific marital conflicts. Table 23.1 presents some of the potential issues that may arise when raters perceive their partners as being higher or lower on each of the personality domains. For example, when the partner is rated higher on neuroticism than he or she rates self, the rater may perceive the partner as immature, jealous, and complaining. If the rater sees the partner as lower on neuroticism than he or she rates self, the rater may see the partner as being emotionally bland and as expressing too much emotional control.

Significant differences on each personality domain are associated with specific types of perceived issues and points of conflict. The more dissatisfaction the rater is experiencing in the relationship, the more discrepancies there will be. The NEO PI-R scoring program does calculate a profile agreement coefficient (PAC) when a rating and self-report are combined into a single report. This coefficient is similar in nature to a correlation coefficient in that it ranges in value from zero to one. Unlike the correlation coefficient, the PAC assesses agreement in terms of both pattern and magnitude (see McCrae, 2008, for a review of this statistic). The program also provides an interpretive context for evaluating the magnitude of this coefficient (i.e., denotes whether the level of agreement is below average, average, or above average).

It should be kept in mind that distortions in perception are not always bidirectional. It is possible that only one partner in a relationship is experiencing distress, and that person's PAC value should be low. Yet the partner may have a higher level of marital satisfaction and evidence a higher PAC. Thus, COA can be useful in identifying which individual is having a problem and the corresponding issues that are at stake. The following section presents a single case of a couple who were in marital counseling and how the COA can be applied in a therapeutically meaningful manner.

#### CASE STUDY: ALBERT AND RHONDA C.

Albert is a 45-year-old Caucasian male with a master's-level education who has worked in various nonprofit church agencies for the past 10 years but who is currently unemployed as a result of a recent affair with a woman in his latest place of employment. Prior to his work in ministry, he was in the military for 9 years and after that held various secular jobs. He reports that he had an emotional affair with a woman 20 years ago and a “one-night stand” with a woman 19 years ago, neither of which he had reported to his wife before the current disclosure of an affair. Albert reported in our first session that he was not sure that he was “in love” with his wife and that he still had “feelings” for the other woman.

However, he did eventually make the decision to stay in the marriage because “it was the right thing to do” and because he began to understand the nature of the distance that had been occurring in the marriage over the past 10 years. Albert agreed that throughout the marriage, he had a “wandering eye” and some issues with boundaries. He reports that his “love language” is physical touch and that he has a high need for affection. Whereas his wife sees him as too critical and too needy, he experiences a lack of nurture and respect in the marriage. His wife reports that he is not dependable or responsible, but he experiences this as a lack of playfulness and openness to adventure on her part. In his family of origin, Albert was the sixth of seven children and the youngest male in the family. He describes his father as something of a “ladies’ man” and his mother as submissive and overprotective.

Rhonda is a 43-year-old Caucasian female with a college education who holds a high-level job in a U.S. government agency. She is the oldest child in her family of origin, having a brother who is 2 years her junior. Her father was a pastor who early on moved frequently because of church conflict, eventually becoming a military chaplain. She describes herself as “Daddy’s girl” and a “princess.” She was not close to her mother. Rhonda reported sexual difficulties in the marriage from the beginning, being nonorgasmic and having a history of yeast infections and pain during intercourse. These difficulties were even more pronounced over the past 10 years. Rhonda reported that in the marriage, she was always the responsible one and always was the “fix-it” person for her children and spouse. Sex for her was something she had to do to “fix” his neediness. Rhonda reported that in the marriage, she felt disrespected and used. Her love language was “acts of service” or having someone who would help her with all of the family responsibilities. Whereas her husband sees her as controlling and having to have her own way, she sees herself as not letting things drop or picking up the pieces that no one else will take care of. Rhonda admitted that she has a low need for touch and can get angry.

The couple has been married for 24 years, marrying when she was 17 and he was 19 years old. They have four children aged 21, 19, 6, and 2. They

came to therapy as the result of Albert’s affair and the additional stress created by the loss of his job, exacerbating their long-standing issue of debt. Both Albert and Rhonda early in therapy evaluated their commitment to the marriage, but both did recommit to the marriage after “discovering” some of the reasons for marrying the other person in the first place and recentering on their common religious values.

The couple completed the COA on March 8, 2010, which was the seventh session of therapy. The assessment occurred somewhat later than normal in the therapy process owing to the crisis generated by Albert’s affair and the process of evaluating their continued commitment to the marriage and their desire for couples therapy. Each person also completed the Couples Critical Incidents Check List (CCICL; Piedmont & Piedmont, 1996), a form that contains a number of specific marital problems that have been linked with high and low scores on each of the FFM personality domains. Individuals check those behaviors they find problematic in the relationship (see Piedmont, 1998).

Essentially a Level 1 assessment, the CCICL identifies specific personal qualities of the partner that are causing distress for the rater. These ratings can be usefully compared with the observer ratings of personality to determine whether the identified problem characteristics are consistent with the personality expectations that the rater holds of the partner. Discrepancies between these two sets of ratings provide a basis for exploring with the rater the reasons why he or she maintains a belief about the partner that is not substantiated by experiences. As we will see, Rhonda rated her husband high on conscientiousness, yet she complained about behaviors of his that are characteristic of low-conscientious individuals. Such discrepancies begin to pinpoint those areas of the relationship where the rater’s needs, expectations, and psychic dynamics may be creating tension in the relationship.

### **Step 1: Comparing Self-Reports**

Figure 23.1 presents the comparison of Alfred’s and Rhonda’s self-report profiles. As can be seen, there are areas of similarities as well as areas of difference between the two profiles. The agreement coefficient

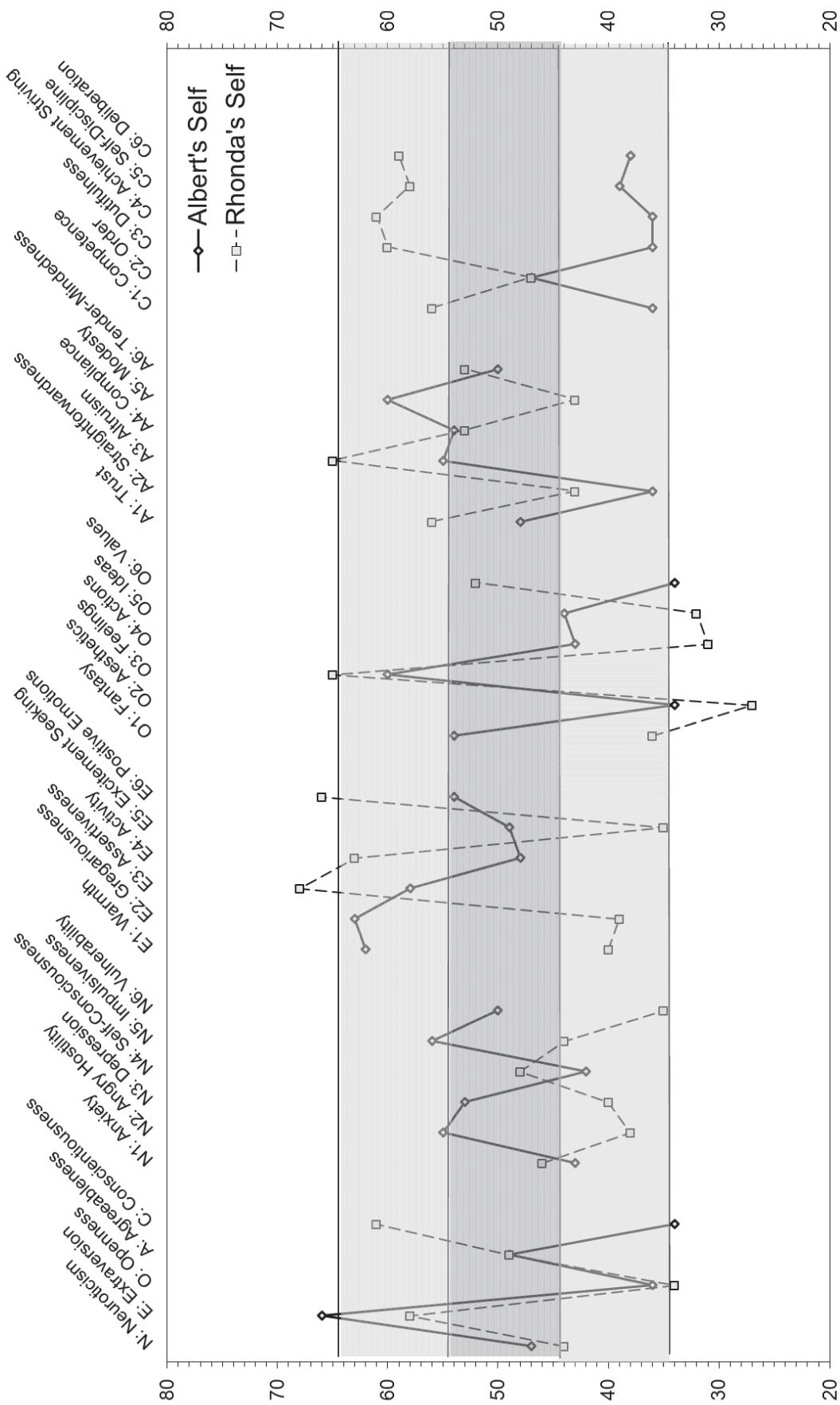


FIGURE 23.1. Self-ratings for both Albert and Rhonda on the NEO Personality Inventory—Revised. Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the *NEO Personality Inventory—Revised* by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1991, 1992 by Psychological Assessment Resources inc. (PAR). Further reproduction is prohibited without permission of PAR.

for these two protocols is .37, indicating a low level of convergences across the two profiles.

On neuroticism, both score similarly overall, but Albert scores higher on the facet scales of hostility, excitement seeking, and vulnerability to stress. Thus, Albert may experience more negative emotions than his wife. As noted earlier, such a pairing may create some areas of concern for Rhonda, who may feel that her husband is too emotionally needy and unavailable during her times of crisis or stress.

The extraversion domain presents some interesting areas of disagreement. Rhonda is much less warm and sociable than Alfred, who clearly prefers being with others. This may create some stress in their lives because Alfred will seek to identify and develop relationships whereas his wife will prefer that they spend more time together and alone, including being away from him. Given Rhonda's high levels of assertiveness and positive emotions, she may feel herself to be a persuasive individual who likes to take charge of where the relationship will go. Thus, Rhonda may find herself feeling hurt or rejected by her husband's ongoing desires to bring others into their social world and then see him as needy for attention when he tries to get back into her social circle. Alfred, in contrast, may find his wife bossy, manipulative, and overcontrolling when she tries to get Alfred to direct his attention only toward her.

On openness, both share similar scores on aesthetics, feelings, actions, and ideas. Clearly both have some need for structure, clarity, and focus in their daily lives. Both appreciate routines, both share a preference for seeing things in a concrete manner, and both have strong levels of empathy. However, Rhonda scores higher on values, suggesting that she may not have the same strength of commitment to a set of moral values as her husband. Thus, some consideration needs to be given to what expectations Alfred has for marriage, religion, and family life and whether Rhonda shares a similar outlook. Rhonda may find her husband rigid, dogmatic, and authoritarian on certain matters that are important to her. Conversely, Alfred may not appreciate it when Rhonda questions his worldview (such as his desire to work in ministry). Interestingly, Alfred scores high on fantasy, indicating that he has a well-

developed inner world, where he may like to spend time. This would be something that Rhonda may not understand. She tends to be quite realistic in her views and may find it difficult when Albert spends time in flights of fancy. It would be important to make sure that Albert does not use this inner world as a place of refuge in times of conflict in the marriage. He does not want to appear as if he is actually escaping from his relationship.

The couple shares many similarities on agreeableness, suggesting that both have a comparable view of others and their own sense of care and compassion. Rhonda appears more altruistic, whereas Alfred is more modest. Both are low on straightforwardness, suggesting that at times both can be deceptive in how they relate to one another. Both can be charming when they need to be, and both may use such tactics to manipulate and control the other. It may not always be clear whether each appreciates this quality in the other. An examination of the COA profiles will determine the extent of insight they have into each other's manipulativeness.

Finally, on conscientiousness the two indicate their greatest difference, with Rhonda scoring significantly higher. Albert evidences a more self-oriented profile that is directed toward the immediate gratification of physical needs and desires. He will tend to put things off and avoid working toward goals. As noted earlier, this is likely to create an area of dissatisfaction for Rhonda, who will see her husband as being selfish, self-centered, and demanding of others. She may feel that it is up to her to provide the structure and support that the family needs. Albert may be seen as unreliable and perhaps as a failure as a provider. It would be interesting to explore how Albert reconciles his strong moral commitments with his difficulty in following through on them. The phrase "the spirit is willing but the flesh is weak" may be his personal mantra. When such failures occur, knowing Rhonda's reaction and experience of them would be key for identifying a potential source of perennial conflict in this relationship.

The self-report profiles provide insights into some of the potential motivational conflicts this couple will have to deal with in their relationship. These will be ongoing issues, and how they respond to them will set the tempo and texture of their mar-

riage. It becomes important therefore to examine the crossover profiles of the couple to determine how these conflicts may have shaped their perceptions of each other.

### Step 2: Crossover Analysis

Figure 23.2 presents the self-rated profile of Rhonda with Albert's observer rating. The NEO PI-R combined report indicated a couple agreement coefficient of .55, suggesting a low level of convergence between the two ratings. Overall, Albert rated Rhonda significantly higher on neuroticism, indicating a tendency to see her as being emotionally labile and insecure. An examination of the facet scales indicates significantly higher ratings on all of scales except excitement seeking. Thus, Albert feels his wife to be much more emotionally undercontrolled, hostile, anxious, lacking in self-esteem, and unable to cope with stress. High ratings on neuroticism indicate that Albert sees Rhonda as being emotionally selfish, self-absorbed, and unable to understand his feelings and needs. Such ratings indicate that these behaviors are found to be problematic by Albert. On the CCICL, he indicated that he found his wife feels inadequate, yells and screams frequently, can't receive criticism, moody, and worries too much.

Concerning extraversion, Albert tends to rate Rhonda lower than she does herself, with a significant difference emerging on positive emotions. Although both individuals agree that Rhonda is high on assertiveness and activity, Albert's lower ratings on warmth, gregariousness, and positive emotions indicate that he does not see her as approachable, friendly, and "fun to be with." Without any personable "cushions" around her surgency and energy, she is perceived by Albert as being dominant, bossy, controlling, unaffectionate, and self-absorbed, which were all items selected by him on the CCICL.

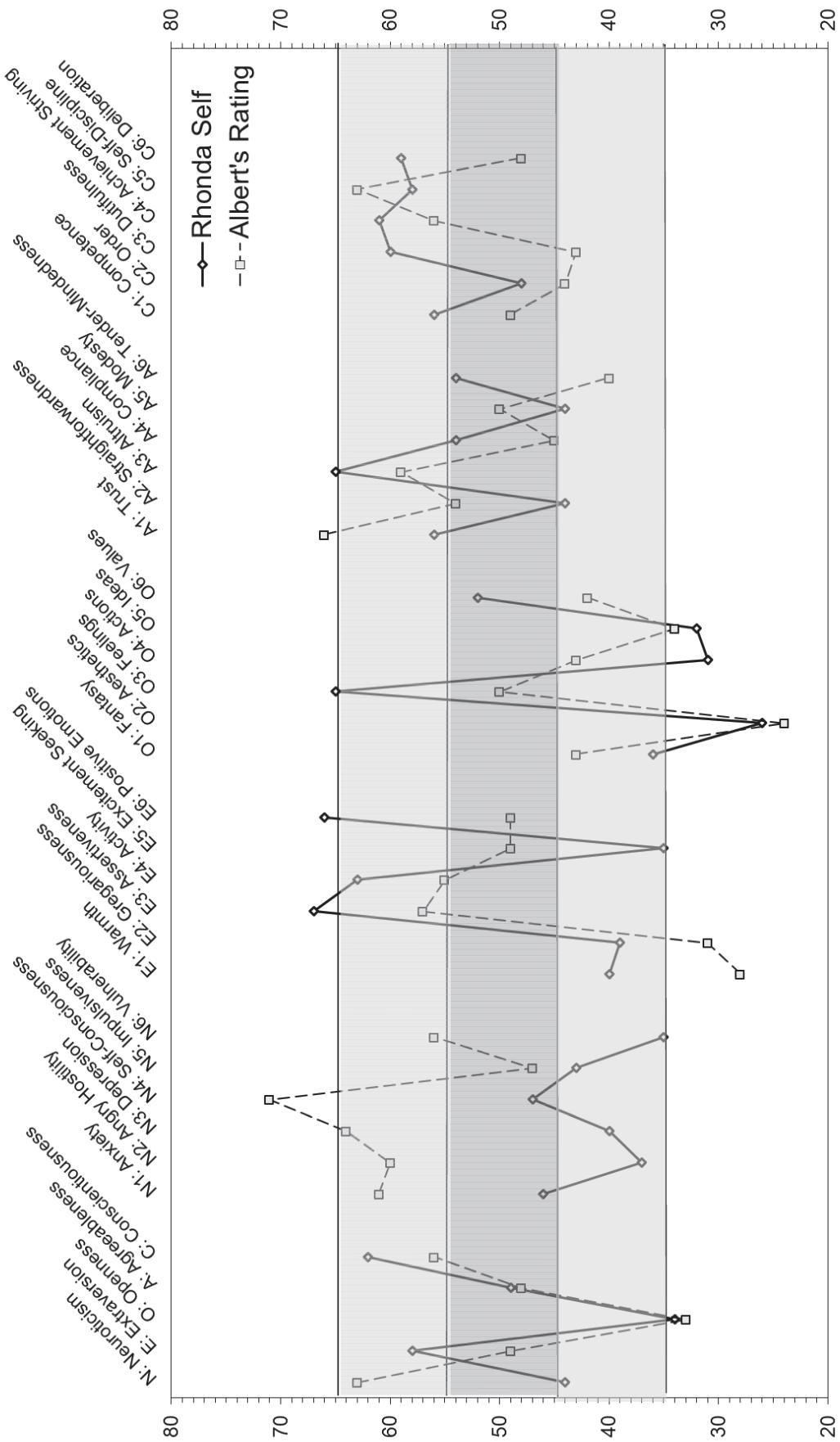
Both parties agree that Rhonda is low, overall, on openness to experience. This suggests that she prefers routine and structure in her daily activities, tends to avoid flights of fancy, and is concrete in discussing ideas and issues. She tends to be conservative in her values and may be dogmatic. However, Rhonda does see herself very high on feelings, indicating that she is empathic and open to a wide range of emotions.

Albert, however, rates her significantly lower on this facet scale, suggesting that she is not as aware of her own, as well as of others', feelings. Albert noted on the CCICL that he found Rhonda to be "very conservative," "too set in his or her ways," "lacks emotional depth," and "sees the world in black or white terms."

Overall there is consensus on agreeableness, although Albert rates Rhonda significantly lower on tender-mindedness and higher on straightforwardness. This indicates that Albert may see his wife as being cold, uncaring, and very direct in expressing her displeasures about him. Although not significant, Albert does rate her higher on trust, suggesting that she may be gullible and overly trusting of others. This possibly indicates that Albert may believe that Rhonda is being influenced by others outside the relationship with regard to how she ought to react to him. These "others" may be parents, siblings, or friends, but Albert may feel that Rhonda allows them too much influence on how they conduct their relationship. On the CCICL, Albert indicated that he finds his wife to be "stubborn," "selfish," and "overly trusting."

Finally, there is some overall agreement on domain levels of conscientiousness, with both partners acknowledging that Rhonda is organized, reliable, and disciplined. However, there are significant differences on the facet scales of dutifulness and deliberation, where she is rated lower by Albert. Such ratings indicate that while Albert believes that Rhonda is committed to a set of values, she does not follow through on them, making her appear hypocritical in her actions. The reason for this may be that Rhonda does not take the time to think through her actions and how they may or may not be consistent with her values.

The overall picture that emerges from this COA is that Albert sees his wife as being very emotional and having large amounts of negative affect. He sees her as being insecure, anxious, fearful, and unable to cope with problems in productive ways. She is seen as being selfish and not understanding of Albert and his needs. She may appear rigid and moralistic in her approach to Albert, who believes that her claims of higher virtue seem hypocritical and manipulative. What Albert may not be seeing is that Rhonda is not an overly emotional woman. The negative affect he



### NEO Personality Inventory-Revised

FIGURE 23.2. Rhonda's self-report with Albert's ratings of her. Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the NEO Personality Inventory—Revised by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1991, 1992 by Psychological Assessment Resources Inc. (PAR). Further reproduction is prohibited without permission of PAR.

encounters is not just insecurity and anxiety. Rather, it may represent real pain and hurt that Rhonda feels as a result of Albert's betrayals. She is conservative in her beliefs and values, and she may view marriage as something sacred. Commitments between couples are to be honored, despite the many temptations that one may encounter. Rhonda clearly feels her pain and can articulate it well. Albert should not see her complaints as an attack but rather as a reflection of real pain that Rhonda is feeling.

Figure 23.3 presents Rhonda's ratings of Albert along with his self-report scores. From the NEO scoring report, the congruence coefficient is .87, suggesting a high level of agreement. Rhonda appears to have more accuracy in describing Albert's personality style than he does of hers. Nonetheless, there are a number of significant (i.e., 15-point) differences between the two profiles, indicating areas where Rhonda may not clearly understand Albert's motivations.

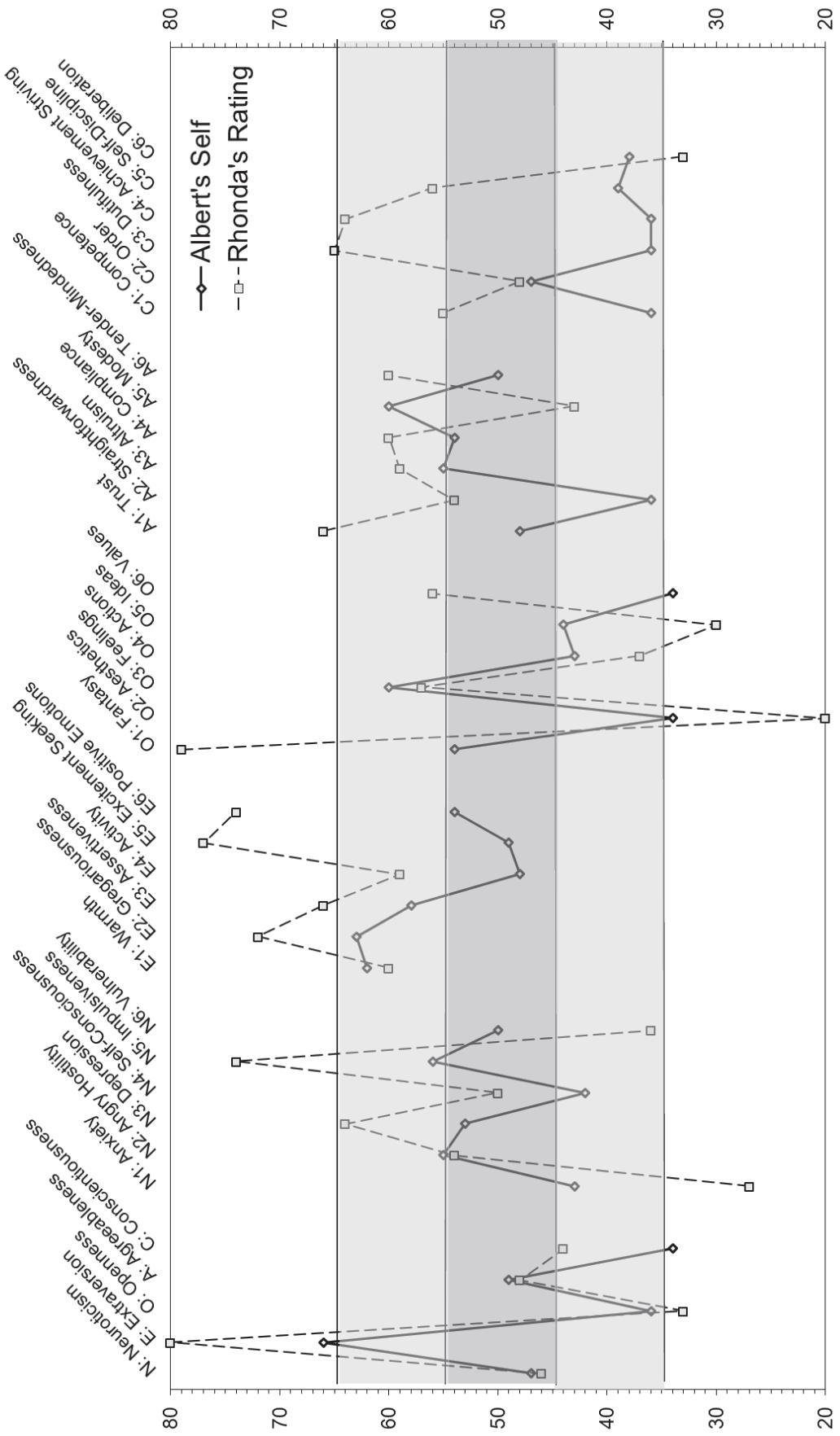
There is agreement on Albert's overall levels of neuroticism: Both scores portray an individual who experiences as much negative affect as the average man and who is able to manage stressors in his life. However, an inspection of facet scores indicates some discrepancies. Rhonda sees Albert significantly lower on anxiety and significantly higher on impulsiveness. Although the difference is not significant (i.e., 14 points), she does rate him lower on vulnerability. This combination suggests that Albert is seen as being very unflappable, but this appearance may mask his own inability to deal with stress and conflict in his life. Furthermore, his high impulsiveness rating suggests a perception of him doing things he knows he should not. This issue is elaborated further when we consider openness. On the CCICL, Rhonda indicates that she finds her husband "whiny," that he "feels inadequate," and is "flirtatious" and "self-absorbed."

On extraversion, Rhonda rates Albert significantly higher than he does. She seems to see him as being very outgoing and sociable, perhaps seeing this as a fault. Both ratings agree that Albert is warm, gregarious, and assertive. He likes being with others and enjoys being the center of attention. The significant difference in the ratings occurs with excitement seeking and positive emotions.

Here Rhonda sees her husband as being charismatic and charming, no doubt seeking relationships with others. However, there seems to be a perception of Albert being a thrill seeker and engaging in risky activities. Thus, his interpersonal behaviors may not always be well thought out or appropriate.

On openness, again, there is overall agreement, with Albert being a more closed individual who enjoys structure and clarity. However, a number of significant differences do emerge. Albert is rated higher on fantasy, suggesting that Rhonda may see him as a dreamer, lost in personal fantasies that may not be in touch with reality. Rhonda's high rating here may indicate that she believes her husband to be preoccupied and out of touch. She also rates him significantly lower on aesthetics, suggesting that Albert is not very artistically inclined and unresponsive to the nuances and textures of sensory experience. Rhonda also rates him lower (not significantly at 14 points) on ideas, indicating that she may see him as not being very creative and limited in understanding the range of possibilities in situations. However, Rhonda does rate him significantly higher on values than he does himself, suggesting that despite his claims of being committed to a fundamental set of values, she believes that he evidences more tolerance for different values systems than he would otherwise acknowledge. This may suggest that Rhonda may see her husband as being hypocritical as well, in that he does not live up to the values that he putatively espouses. On the CCICL she indicated that she found her husband to be a "dreamer."

Agreeableness shows overall good convergence, but there are significant differences on three of the facet scales. Rhonda rates her husband as being higher on trust and straightforwardness and lower on modesty. She perceives the same gullibility in him that he finds in her. His desire to be with others and to form relationships with them may lead him into situations where he frequently overrides his own desires and needs to be accommodating of them. He may be too quick to want to please others and may be willing to compromise his own ideals, values, and beliefs to make a relationship work. Items she checked on the CCICL included "can't say 'no' to others," "unable to set limits," "overly accommodating of others." However, her rating on



### NEO Personality Inventory-Revised

FIGURE 23.3. Albert's self-report with Rhonda's ratings of him. Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the NEO Personality Inventory—Revised by Paul T. Costa Jr. and Robert R. McCrae. Copyright 1978, 1985, 1989, 1991, 1992 by Psychological Assessment Resources Inc. (PAR). Further reproduction is prohibited without permission of PAR.

straightforwardness may indicate that she is not truly aware of how discerning and shrewd Albert may be when it comes to relating information. Although he may be charming and entertaining with others, he can also be manipulative and demanding of them as well.

Less overall agreement is seen on conscientiousness, where Rhonda sees her husband as being higher in these qualities than he rates himself. A significant difference is found on competence, where Albert scores himself lower. In conjunction with his low score on self-consciousness, this indicates that although Albert may have good self-esteem, his personal feelings of self-efficacy may only arise in very specific situations. In other words, he may believe himself to be competent in a very small range of circumstances. Rhonda, in contrast, does not share this perception, believing that her husband can do well wherever he may be. She similarly overestimates his capacities for self-directedness and drive in the areas of dutifulness, achievement striving, and self-discipline. Albert rates himself in the low end of scores on these facet scales. It is interesting to note that on the CCICL, Rhonda noted her husband as being “self-centered,” “pleasure seeking,” “unambitious,” and “unfaithful,” but she did not rate him this way on the personality scales. Thus, she may not realize just how laid back, immature, careless, and selfish Alfred really is. She may believe that his involvement in adulterous relationships and his need for others is a rejection of her or a signal that he finds her inadequate. Instead, his scores reflect a more carefree, “me first,” feel-good style that actively seeks fun, excitement, and physical satisfaction.

### **Interpreting the Crossover Analysis Findings**

What Rhonda may not be seeing is that Alfred very much seeks involvement in a lifestyle that will cater to his needs for socializing, excitement, physical pleasure, and personal indulgence. He may have some idealized fantasy of what this world may look like to him. However, there may not be much reality to these dreams. Alfred may be unwilling to share these ideas with her because he perceives her as being rigid, demanding, and emotionally unavailable to him. He may also believe that she is unable to understand what his issues and concerns are.

Given that Rhonda rates Albert higher on positive emotions than she rates herself (which is also high), Rhonda may be jealous of her husband’s many relationships; however, people may just prefer him over her. She may not realize that she may appear much more aloof and uninterested in socializing to others than she thinks she does. There are certainly some emotional issues in Rhonda of which she is not aware. Alfred rates her significantly higher on self-consciousness, suggesting that there may be some narcissistic injury being experienced by Rhonda. What Alfred may not realize is that the low self-esteem he senses in his wife is not necessarily a general temperament but rather a specific reaction to his apparent need to spend time finding, relating, and enjoying the company of others instead of being with her.

Comparing the two profile congruence coefficients (.87 vs. .55), it is clear that Alfred’s lower rating indicates greater distortion in his understanding of Rhonda than the reverse. Treatment may wish to begin with an examination of his perceptions. It may be illuminating to Rhonda to see how she is being perceived and to provide an opportunity for her to comment. She may be able to provide Albert with reinterpretations of her behavior that would be helpful in him overcoming some of his hesitations in expressing his desires. Rhonda will need to hear these comments and respond to them in nonjudgmental ways. Alfred will need to examine why he is not able to live up to the moral code to which he so strongly adheres. He will need to develop some cognitive consistency across his beliefs, values, and behaviors. Rhonda will need to realize that her husband is not as ambitious and driven as she believes. He may “talk a good story,” but he really has a personal agenda that does not always match with the direction he is moving in his personal life.

The most essential step needed to be performed during the course of therapy will be to examine the specific areas of divergence for each rater and to have him or her identify those behaviors and attitudes that led to make the discrepant evaluation. For example, Rhonda rates Albert significantly higher on four of the conscientiousness facet scales than he rates himself. Yet on the CCICL, she complains that he is self-centered, pleasure seeking, and unambi-

tious, all characteristics of someone low on conscientiousness. So the important question is, "Why?" What are characteristics in Albert that led Rhonda to believe that her husband is conscientious? This becomes a potentially key therapeutic opportunity for a client to step back from the immediacy of the marital conflict and to examine his or her own distorted beliefs and values about the partner and how these perceptions may be precipitating, contributing to, or exacerbating the conflict. Helping the client to accept the responsibility of his or her own behaviors in the conflict may work to short circuit the process by which feelings of being injured and victimized come to dominate the attitudinal perspectives of the couple.

Thus, COA can be used to provide an "objective" source of information that can prod a client to examine his or her own subjective psychological processes that are creating unfulfilled expectations for the relationship. Promoting this type of self-understanding would facilitate a client to seek reconciliation or acceptance with his or her partner rather than demanding the partner to change.

### Therapeutic Epilogue

The issues identified in this COA found clear expression throughout the therapeutic process. For instance, in one session Rhonda was very irritated over Albert's attention being diverted toward others, but she never said anything until she became so angry that she emotionally exploded. Albert then felt like she was too demanding and controlling. Their similar levels of low agreeableness always created an undercurrent of manipulation, with both partners behaving as though the other had an "upper hand" and each devising strategies to keep the other from having an advantage. On another occasion, Rhonda commented in session that

he is too needy and wants too much from me and is critical of me—like I have to fix him. This makes him feel like I don't want to be connected to him or the marriage and that I do not trust him to take care of himself.

The couple also worked on "checking out our assumptions" (i.e., working on catching those

thoughts about the other that were not necessarily true and pausing to think in a more understanding way). Use of the NEO and how they perceive each other in the COA was a part of this work that helped to reinforce their "prejudiced" viewpoint of the other person. In this way, the NEO was used to get at the "formulation" (Jacobson & Christensen, 1996) about styles of interacting generated by the couple based on (unconscious) assumptions and attributions. Discussing the COA results with the couple together promoted a discussion of those differences that emerged in the ratings. This opened up an inner awareness within the rater about the choice of his or her perceptions of the other. Exploring how these perceptions developed over the course of their relationship provided perspective on their current problems. Furthermore, helping the couple understand that they have the ability to change these images advanced personal growth and marital satisfaction.

For instance, Rhonda had to recognize in this process how her own images of her father were affecting her perceptions and expectations for her husband. She saw her father as the fun-loving one who said she was a princess and Daddy's girl. He took time for her on some Saturdays, but basically he was working and not there most of the time. He was an alcoholic in her very young years before he became a pastor, and she realized only recently that he still smoked and, hence, had "another side." Rhonda's discrepancy in her rating of Albert on conscientiousness runs parallel to her more positive images of her own pastor father, which were not true in reality. Part of her survival strategy as a child was to hold an image of her ideal father for whom she was a princess. The image helped her to survive, but it was an overvaluation of the father who really was unable to nurture her, setting up an inner conflict that she learned to avoid with an emotionally distant style of engaging in life. The same could be said of the person she selected as a husband. Taking the COA of her husband on conscientiousness shows how she rates him higher than he rates himself. She expects this pastor husband to be like the ideal image of her pastor father. At the same time, her apparent conflicting assessments given of her husband on the CCICL are indicative of

that inner conflict carried deep inside of her about the significant male in her life. She knows the “other side” of this significant person, but she holds onto the ideal and lives a life of distance in order to avoid dealing with the “known” discrepancy. Coming to understand this about herself as the rater opened up for her the ability to reformulate her understanding of her husband and to reconsider her own style of interaction. The COA analysis provided numerous other opportunities for Rhonda to explore and to take responsibility for her own style of interacting and for the images held of her husband.

## CONCLUSIONS

Couples therapy is complex work, involving interactions at multiple levels. The dynamic process of two people interacting can be difficult to track and organize. Personality assessment provides a tool for capturing specific aspects of this process in ways that promote understanding and encourage dialogue. The NEO PI-R is an ideal tool for use within couples therapy. Its validated self- and observer-rating forms provide a tremendous amount of information about the personal styles of the couple, both separately and together. The personality interpretations provide clear and nonreactive information about the relationship that enables both members to step back and see themselves in a way that promotes them taking a “second look” at their style of relating. The use of the COA paradigm generates a tremendous amount of relevant material. The essence of COA is identifying those points of discrepancy among the various ratings. The areas of disagreement identify where important points of conflict exist. They also help to identify the underlying issues in the rater that may be fueling the conflict. Thus, COA provides the clinician with areas of engagement with the clients in an effort to understand the psychological dynamics underlying these discrepancies.

Although trait based, FFM scores can be easily integrated with a broad variety of theories for interpreting the expectations behind the ratings of the partner. Psychodynamic, behavioral, gestalt, interpersonal, or humanistic interpretations can easily be fit to the perceptions evidenced in the NEO PI-R

protocol. There is no doubt that this type of personality information can serve as the platform for clinical hypothesis generation.

Perhaps the most useful application of the COA would be with premarital couples. Individuals exploring the possibilities of a committed relationship could greatly benefit from this intimate examination of each other’s personal preferences and expectations. Individuals can come to examine aspects of their own personalities as well as the implications these qualities may have for their ongoing relationship.

As noted earlier, the hypotheses we presented were intended for heterosexual couples, demonstrating the need for research to determine whether these expectations would hold for gay and lesbian couples as well. Greater examination of the personological implications of discrepancies between self- and observer ratings needs to be done. The CCICL was a first effort at trying to link specific relationship issues with particular incongruities on the NEO PI-R profile. Much more work needs to be done in empirically developing these relationships, especially as they relate to the facet scales. Finally, one area that was not touched on in this chapter but offers a new dimension of analysis concerns a comparison of the two observer ratings. Do areas of convergence and divergence have implications for relationship stability and satisfaction? What new insights would a consideration of the observer ratings provide over what is already gleaned from the COA?

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# DIALECTICAL BEHAVIOR THERAPY FROM THE PERSPECTIVE OF THE FIVE-FACTOR MODEL OF PERSONALITY

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Dialectical behavior therapy (DBT) was originally designed to treat women with acute borderline personality disorder (BPD)—that is, women engaging in multiple impulsive, suicidal, and dysregulated behaviors as well as behaviors that get in the way of making progress in treatment. Over the past decade, the use of DBT has expanded considerably to treat a wide variety of other patient populations, including patients with bulimia nervosa, binge eating disorder, recalcitrant depression, substance use disorders, personality disorders characterized by constricted behavior and perfectionism, adults with attention-deficit/hyperactivity disorder, adolescents engaging in suicidal behavior, and inmates with antisocial personality disorder (for overviews, see Lynch & Cheavens, 2008; Robins & Chapman, 2004). It is our proposition that using the five-factor model (FFM) of personality as a framework as opposed to a system based on categorical diagnoses will enhance our ability to articulate which populations can be effectively served with DBT services. Additionally, this reconceptualization will help clinicians identify individual patients who might benefit from this treatment approach who might otherwise be missed using a categorical diagnostic system. For instance, the dimensional nature of the FFM will allow clinicians to select patients who may be subsyndromal but DBT might prevent further exacerbation of

symptoms. Lastly, using dimensional personality ratings may help ease the stigmatization that often comes with a diagnosis of BPD or from using DBT services in our current health system.

In this chapter, we describe how DBT can be viewed from the FFM of personality, focusing on how this treatment has been conceptualized and applied to women with BPD. To this end, we first provide a brief overview of DBT and the FFM model of BPD. Next, we review the main tenets of DBT: (a) the biosocial model of BPD development and maintenance, (b) the stages of treatment model and the hierarchy of primary treatment targets within each stage, and (c) dialectical dilemmas and secondary treatment targets. Each of these components will then be conceptualized from a FFM perspective. We conclude with how the FFM might be used in DBT practice and provide an illustrative case study that is based on treatment conducted by the first author at a forensic inpatient hospital. Casting DBT in this light is hoped to provide a fresh perspective on the clinical utility of the FFM.

## DIALECTICAL BEHAVIOR THERAPY

DBT is a branch of cognitive behavior therapy that grew out of attempts to treat patients engaging in suicidal behaviors (Linehan, 1993a, 1993b). Randomized clinical trials have found significant

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reductions in suicide, other self-injurious behaviors, and anger expression, as well as improvement in treatment retention and social adjustment for women who have received 1 year of DBT compared with those in control conditions (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Heard, & Armstrong, 1993; Linehan, Tutek, Heard, & Armstrong, 1994; Verheul, van den Bosch, Koeter, de Ridder, Stijnen & van den Brink, 2003) and when compared with treatment by experts (Linehan et al., 2006). In addition, the maintenance of these effects has been demonstrated at 1 year posttreatment (Linehan et al., 1993, 2006). Randomized clinical trials have also reported that DBT can be effectively modified to treat other populations, such as women with binge eating disorder, women with comorbid substance dependence and BPD, and depressed older adults (Koerner & Dimeff, 2000; Koerner & Linehan, 2000; Lynch, Morse, Mendelson, & Robins, 2003; Robins & Chapman, 2004; Safer, Telch, & Agras, 2001).

DBT views BPD as a disorder that is primarily a function of emotion dysregulation across many negative emotions and situations. Therefore, enhancing and teaching skills to effectively cope with and experience emotions will result in improvements across a wide variety of symptoms. Four standard DBT outpatient components aim to improve emotion regulation capabilities: individual therapy, skills group, telephone coaching, and therapist consultation team.

### FIVE-FACTOR MODEL OF BORDERLINE PERSONALITY DISORDER

The FFM provides an overall framework for the structure of personality in both healthy and clinical populations. As such, it has been used as a model to explain characteristic patterns of behavior in those with personality disorders, including BPD. The FFM views BPD (as well as all other personality disorders) as extreme or maladaptive patterns of a universal set of personality traits. Within this framework, BPD is viewed as a disorder of extreme neuroticism (Widiger, Trull, Clarkin, Sanderson, & Costa, 2002). The characteristic instability in emotions, behaviors, self-representations, and interpersonal relationships

can be viewed in terms of maladaptive variants of many of the neuroticism facets, including high levels of trait anxiousness, angry hostility, depression, impulsiveness, and vulnerability to stress.

Studies have demonstrated that high levels of neuroticism as well as low levels of conscientiousness and agreeableness characterize individuals with a diagnosis of BPD (e.g., Hopwood et al., 2009). Widiger and colleagues (Widiger, Trull, Clarkin, Sanderson, & Costa, 1994; Widiger et al., 2002) provided a FFM facet-level profiles for BPD, which yielded increased differentiation among the personality disorders when compared with the broader factor profile (e.g., Bagby, Costa, Widiger, Ryder, & Marshall, 2005; Samuel & Widiger, 2008). To link the FFM directly to the *Diagnostic and Statistical Manual of Mental Disorders* personality disorder diagnoses, Lynam and Widiger (2001) determined trait profiles of BPD based on expert ratings. These expert ratings have subsequently been correlated with an individual's FFM profile to yield a similarity score (e.g., Miller, Lynam, Widiger, & Leukefeld, 2001; Miller, Reynolds, & Pilkonis, 2004; Stepp & Trull, 2007; Trull, Widiger, Lynam, & Costa, 2003). The Borderline FFM index from these trait ratings has been found to correlate with functional impairment, childhood abuse, impulsive behaviors, related forms of psychopathology, as well as parental psychopathology (Stepp & Trull, 2007; Trull et al., 2003). In addition to the mean-level differences in FFM ratings that differentiate BPD from other personality disorders, Hopwood and colleagues (Hopwood et al., 2009; Hopwood & Zanarini, 2010b) found evidence that individuals with BPD exhibit more variability in terms of their neuroticism and conscientiousness scores compared with those with other personality disorders.

### DBT CONCEPTS IN RELATION TO THE FFM

In the subsequent sections, we review the core components of DBT, including the biosocial model, treatment hierarchies, and secondary treatment targets. We conclude each section with a discussion of how the FFM can be used to provide an integrated framework that extends the use of DBT beyond the categorical diagnosis of patients with BPD.

## The Biosocial Model of Borderline Personality Disorder

A major contribution of DBT has been the articulation of the biosocial model, a theory regarding the development and maintenance of BPD (Linehan, 1993a). The biosocial theory places disruptions in the emotional system as key to the subsequent manifestation of other BPD features (Crowell, Beauchaine, Linehan, 2009; Linehan, 1993a; Putnam & Silk, 2005). This model provides the framework from which all aspects of the treatment flow, specifically that helping individuals skillfully cope with their intense emotions will lead to an improvement across a variety of other problems, including suicide and other impulsive behaviors, interpersonal difficulties, and cognitive and identity disturbances.

According to the biosocial theory, the dysfunction in the emotion regulation system emerges from transactions between biologically vulnerable individuals and specific invalidating environmental influences. The biological vulnerability to emotional dysfunction may result from genetic liability or insults and traumas during the prenatal and early childhood developmental periods. The emotionally

vulnerable child then encounters an environment that tells her or him that these feelings and behaviors are not valid and do not make sense and that the child's problems should be readily solved without parental support. This pervasive invalidation leads the child to experience extreme self-doubt and also trains the child to engage in extreme behaviors (e.g., self-harm) to get help solving problems.

The emotional dysfunction is thought to arise from a broad dysregulation across all domains of emotional experiencing and responding. This dysfunction results in (a) lower threshold to detect negative emotional stimuli, (b) intense negative emotions, and (c) sustained emotional responding. Therefore, the emotional experience for individuals with BPD is characterized by lability of extreme negative emotional states (e.g., anger, sadness, anxiety) and chronic negative affectivity. Emotion dysregulation subsequently leads to the maladaptive behavior patterns of BPD as either a direct consequence or to cope with the emotional response (Figure 24.1). Specifically, emotional dysregulation results in an inability to communicate about emotions and preferences, which leads to vacillations

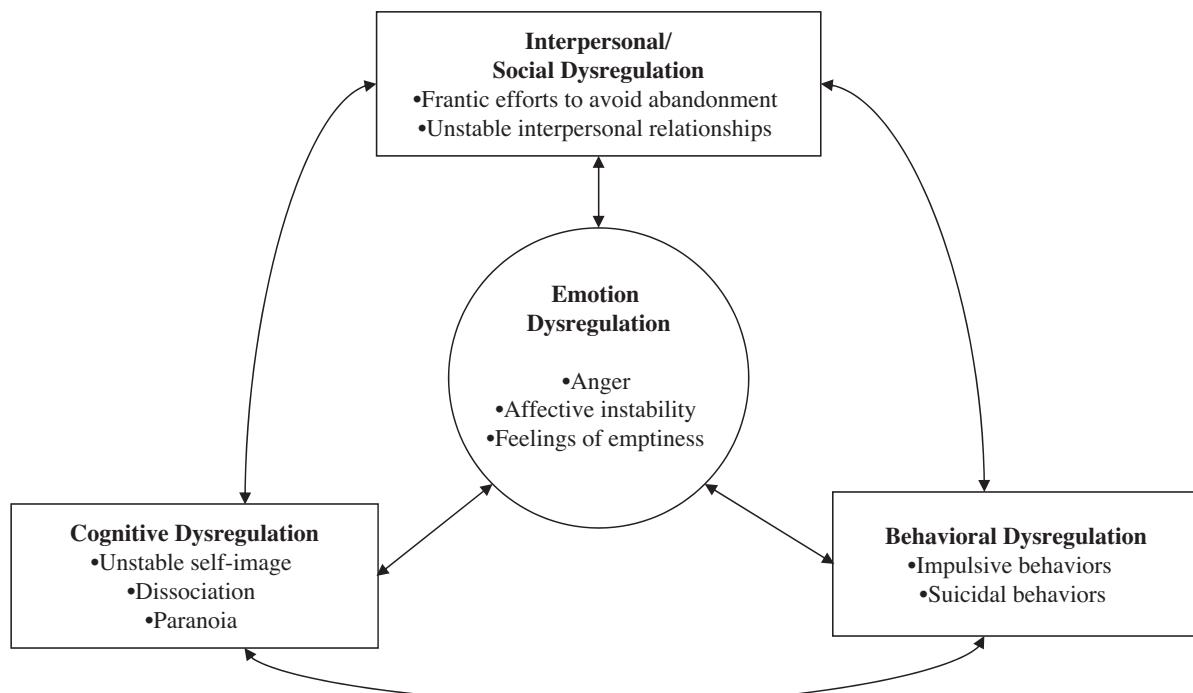


FIGURE 24.1 Dialectical behavior therapy views borderline personality disorder symptoms as a function of emotion dysregulation. Compilation of information from Linehan (1993b).

in interpersonal behavior, from passivity to angry demands. Additionally, individuals with BPD engage in impulsive behaviors, such as substance use and suicidal behaviors, to regulate intense and sustained negative affective states (Brown, Comtois, & Linehan, 2002; Yen et al., 2004). Lastly, individuals with unrelenting negative affect that changes rapidly are likely to have a self-image that is constantly in flux (Linehan, 1993a; Putnam & Silk, 2005).

Consistent with this theory, Tragesser, Solhan, Schwartz-Mette, and Trull (2007) found that self-reported affective instability predicted other BPD features 2 years later in 18- to 20-year-olds. Other studies have demonstrated the association and specificity between BPD and particular components of emotion dysregulation: increased levels of emotional intensity (e.g., Gratz, Tull, Baruch, Bornovalova, & Lejuez, 2008), emotional reactivity (e.g., Lobbstaedt & Arntz, 2010), and sustained emotional responding (Stiglmayr et al., 2005).

Overall, the biosocial view of BPD as a disorder of extreme emotion dysregulation maps well onto the FFM conceptualization of BPD as an extreme form of neuroticism. When examining the link between specific components of emotion dysregulation and facets of neuroticism, many overlapping features emerge (Widiger, 2005). For instance, emotional reactivity might be understood in terms of trait vulnerability, that is, the propensity to be overwhelmed and panicked in the face of even minor stressors. Additionally, emotional intensity is readily apparent from the extremely high scores across all of the facets of negative affectivity that characterize BPD: trait anxiousness, angry hostility, and depression. This high level of trait negative affectivity combined with an increased vulnerability to stress may also explain the sustained negative emotional responding, or slow return to euthymia, that characterizes the emotional dysregulation in individuals with BPD.

Studies have demonstrated the link between neuroticism as measured with the NEO Personality Inventory—Revised (NEO PI-R) and the emotion dysregulation that characterizes BPD. Hopwood and Zanarini (2010a) found that neuroticism scores were strongly related to the affective component of BPD as assessed with the Diagnostic Interview

for Borderline (DIB-R; Zanarini, Gunderson, Frankenburg, & Chauncey, 1989). Individuals high on neuroticism also report experiencing less momentary positive affect and more variable negative affect in their daily lives (Jacobs et al., 2011). Neuroticism has been associated with an anxious, avoidant interpersonal style and a lower self-reported sense of social competence (Miller & Pilkonis, 2006). The chronic and variable negative affect and chronic interpersonal problems makes it difficult to use effective emotion-regulation strategies and may lead to self-harm, suicide attempts, or dissociation. For example, a longitudinal study of a New Zealand birth cohort found increased risk for suicide ideation and suicide attempt in late adolescence for youth with high neuroticism at age 14 compared with youth low on neuroticism (Fergusson, Woodward, & Horwood, 2000). As a result, those high on neuroticism exhibit both prospective and concurrent functional impairments across a variety of domains including physical health (Friedman, Kern, & Reynolds, 2010; Lahey, 2009), romance (Karney & Bradbury, 1997; Lehnart, Neyer, & Eccles, 2010), and occupational success (Miller & Pilkonis, 2006).

Crowell, Beauchaine, and Linehan (2009) extended the biosocial model by incorporating trait impulsivity as a developmental precursor to BPD. They hypothesized that trait impulsivity develops earlier, independently from emotion dysregulation, and that these two traits interact over time within an invalidating environmental context to predict features and symptoms of BPD. Trait impulsivity is also a central feature of the FFM conceptualization of BPD. Specifically, individuals with BPD are likely to have high levels of trait impulsiveness and low levels of self-discipline and deliberation. Maladaptive levels of impulsiveness—the inability to resist urges—may explain difficulties with controlling mood-dependent behavior, such as self-injury and episodes of rage and aggression.

Future research examining the validity of the biosocial model should include the FFM. For example, the FFM might be used to test whether trait impulsivity precedes problems with the negative affectivity and vulnerability facets of neuroti-

cism. The FFM should also be used to test whether neuroticism maintains the other behavioral, interpersonal, and cognitive features of BPD once the disorder has developed. A developmental psychopathology approach to the development of BPD could be assessed using the FFM to determine whether early and sustained levels of neuroticism predict the development of other BPD features in children and adolescents.

### **Stages of Treatment and Primary Treatment Targets**

DBT organizes treatment targets within a “stages of change” hierarchy (Linehan, 1993a). Treatment targets vary depending on the point of entry into this treatment hierarchy, which is determined by the patients’ presenting problems. There are four stages of treatment. Stage 1 is concerned with reducing self-harm and other life-threatening behaviors as well as reducing treatment-interfering behaviors that can obstruct progress, such as a patient shutting down and being unable to talk with the therapist when conducting a behavior chain analysis regarding a recent episode of self-injury. Symptoms of Axis I disorders that interfere with the patient’s quality of life and ability to make progress in treatment are also directly addressed, such as hypersomnia that interferes with job and treatment attendance. Although at the end of Stage 1 patients will have these behaviors and symptoms better under control, they are likely to continue to experience intense misery and suffering. At this point, patients enter Stage 2. The treatment targets for this stage focus on effectively experiencing emotion. This is the stage during which posttraumatic stress responses are addressed and skillful coping strategies continue to be developed and enhanced. As patients begin “feeling more and feeling better,” they enter Stage 3. Treatment targets in Stage 3 focus on treating remaining symptoms of Axis I disorders and other problems in living. It is during this stage that patients work toward experiencing “ordinary happiness and unhappiness.” Patients enter Stage 4 treatment as they learn to navigate everyday problems effectively, improve relationships with others, and increase their sense of self-efficacy. During the final stage, treatment focuses on overcoming a sense of

incompleteness and increasing feelings of joy and freedom.

When patients present for DBT treatment, they are likely to enter into Stage 1, with the presenting problems of engaging in suicidal behaviors, using crisis and emergency services, as well as engaging in behaviors that interfere with treatment progress. Stage 1 is the only manualized treatment phase (i.e., Linehan 1993a, 1993b) and is the only one that has been empirically evaluated. It is expected that once patients complete Stage 1 treatment, they will continue to need ongoing therapy. Completing Stage 1 is thought to lay the foundation for sufficient behavioral control and ability to work effectively with a therapist so that subsequent phases of treatment will be successful.

The stages of DBT treatment parallel the notion that BPD may manifest in different “stages” across time, perhaps reflecting a developmental course (McGlashan et al., 2005; Stepp & Pilkonis, 2008; Zanarini et al., 2007). Self-injury and suicide behaviors as well as attempts to cope with interpersonal problems, especially with treatment providers, such as frantic efforts to avoid abandonment as well as hostility, appear to remit most readily and at a younger age. On the other hand, chronic anger, affective instability and trait impulsivity endure. Thus, self-injurious and treatment-interfering behaviors may be more amenable (and necessary) to change before attempting to target the ingrained emotional responding and traitlike impulsivity that will likely cause ongoing problems in living.

The waxing and waning of BPD symptoms and features has been extended to FFM traits. Hopwood and colleagues (Hopwood et al., 2009; Hopwood & Zanarini, 2010b) compared stability of FFM traits in individuals with a BPD diagnosis with those diagnosed with another personality disorder (OPD) in two separate samples over 6- and 10-year periods. Generally, results were consistent across the two studies. Neuroticism scores for the BPD group decreased more quickly over time than the OPD group, whereas conscientiousness scores for the BPD group increased more quickly. BPD patients also demonstrated more individual-level variability in these personality traits, highlighting the within-group heterogeneity and the need for individualized,

ongoing assessment. Thus, not all patients with BPD may present with extremely high levels of neuroticism, which might reflect their need for a form of treatment outside of DBT.

In terms of the FFM, individuals who would likely benefit from DBT would be expected to start treatment with extremely high levels of neuroticism, which would be expected to decline most rapidly, naturally (as demonstrated in observational, longitudinal studies) as well as within the context of treatment. The administration of FFM-based assessments over regular intervals can help track the treatment goal of decreasing facets of neuroticism linked to mood-dependent and severely dysregulated behaviors during Stage 1 therapy, especially facets of vulnerability to stress and impulsiveness. Agreeableness facets would also be expected to increase over the course of Stage 1 treatment as therapy-interfering behaviors improved and difficulties in working with the therapist improved. These changes would be anticipated to continue throughout Stage 2 treatment, when the patient begins to be able to experience and cope with emotions, as well as other people, more skillfully. At the end of Stage 2 treatment, neuroticism trait scores, although perhaps still high, might parallel those of an outpatient with an intermittent mood or anxiety disorder. Progress across the stages of treatment would be indicated by decreasing levels of neuroticism as well as increasing agreeableness and conscientiousness. Patients not experiencing this type of change in the FFM profile might benefit from a referral to another treatment program. Thus, the use of the FFM can help identify patients with extremely high and maladaptive neuroticism scores who would be most likely to benefit from Stage 1 DBT, whether or not they carry a BPD diagnosis. Additionally, tracking patients' FFM profiles over time will help track progress in treatment. A clinically significant decrease in facets of neuroticism during Stage 1 DBT might be expected to occur.

### Dialectical Dilemmas and Secondary Treatment Targets

The primary treatment targets just discussed are concrete, lending themselves to between-session monitoring (e.g., patients' use of a diary card to

monitor the intensity of their feelings of shame and the frequency of self-harm behaviors). However, there are often more complex behavioral contingencies operating between and within sessions that may serve to maintain primary treatment targets. These behavioral patterns are referred to as *dialectical dilemmas*. These patterns, when noticed within a session, are assessed and treated in terms of a set of secondary treatment targets. Linehan (1993a) outlined three common dialectical dilemmas faced by patients with BPD: emotional vulnerability versus self-validation, active passivity versus apparent competence, and unrelenting crisis versus inhibited grieving. In the science of individual differences and personality, these dialectical behavioral patterns can be thought of as characteristic adaptations that have resulted from the transaction between specific FFM personality traits and the invalidating environmental context (Harkness & McNulty, 2002).

The core dialectical dilemma often observed during treatment revolves around emotional vulnerability and self-validation. Emotional vulnerability is an extreme hypersensitivity to negative emotional cues. When experiencing this behavioral pattern, the individual is likely to have difficulty controlling strong emotional reactions, such as worries, aggressive behaviors, or facial expressions. The opposite side, self-validation, is a pattern of continually discounting private emotional experience and looking to others to provide an accurate appraisal of events. Solutions to difficult problems are oversimplified, and self-punishment and disappointment occur when goals are not met. This maladaptive behavioral adaptation might arise from the FFM facets of vulnerability to stress as well as high levels of trait anxiety, anger hostility, and depressiveness. Self-validation might also result from the high levels of the FFM facets anxiousness and self-consciousness. Treatment targets associated with this dilemma include increasing emotional modulation and self-validation as well as decreasing emotional reactivity and hypersensitivity.

The remaining dialectical dilemmas can also impede progress in therapy. Active passivity refers to an individual demanding that other people solve her problems, believing she is helpless. In contrast, apparent competence is the mismatch between

private experience and public performance. For instance, a patient may tell her therapist how she is effectively coping with a recent breakup with her boyfriend, all the while hiding her intense feelings of panic and shame, which may precipitate an episode of self-injury. Thus, the individual may feel helpless and may be afraid of being left alone. This maladaptive behavioral adaptation might arise from the interplay between the neuroticism facet of vulnerability to stress as well as low levels of the agreeableness trust and compliance facets. For example, low levels of trust and compliance when combined with a history of early caretaker separations, might result in the behavioral adaptation of acting as if things are okay (apparent competence) when, in reality, they are not, believing that the therapist may quit if the patient is not able to cope on her own. Treatment targets associated with this dilemma include increasing active problem solving, increasing accurate communication, and decreasing mood-dependent behavior.

The third dialectical dilemma concerns the experience of repeated stressful, even traumatic events and the inability to grieve these losses effectively. Unrelenting crisis refers to an inability to fully recover before the next stressful event strikes, leading to a seemingly endless string of misfortunes. Inhibited grieving stems from the individual's attempts to block the painful emotions associated with the traumatic events. Unrelenting crises may stem from low levels of the conscientiousness facets of low self-discipline and deliberation, which may explain poor judgment and hasty decision making. Treatment targets include increasing judgment, increasing realistic decision making, decreasing crisis-generating behaviors, and increasing emotional experiencing.

Treatment targets associated with these maladaptive behavioral adaptations might generally be viewed from the perspective of acquiring and practicing more adaptive behavioral strategies given the individual's inherent personality traits and behavioral tendencies. Overall, the FFM can be used to assess the idiographic behavioral adaptations resulting from the combination of personality traits and environmental influences. The FFM assessment can then be used as a guide to formulate more adap-

tive behavioral strategies, facilitating progress in treatment.

## **USING THE FFM IN DBT PRACTICE**

### **Assessment and Treatment Targets**

Instruments designed to assess the FFM (e.g., NEO PI-R; Costa & McCrae, 1992) can be used for screening and identifying potential patients, conceptualizing characteristic behavioral patterns, and ongoing treatment planning for patients in DBT programming (Sanderson & Clarkin, 2002). First, these assessment instruments can be used to screen patient populations to identify individuals for whom DBT might be useful. As we have discussed, patients with very high scores across most neuroticism facets as well as low agreeableness and conscientiousness scores might be well suited for Stage 1 DBT. These individuals are likely to have difficulty with dysregulated behaviors that may interfere with "treatment as usual."

The FFM profile can then be used to conceptualize the presenting problems and formulate secondary treatment targets. An individualized assessment of personality traits, developmental history, and the patient's current social context is useful to understand the contingencies surrounding characteristic adaptations that give rise to the impulsive and treatment-interfering behaviors that led the patient to treatment.

Continued assessment of FFM traits will also ensure that patients are benefiting from the treatment approach. Neuroticism scores should be expected to decline significantly during Stage 1 DBT treatment; agreeableness and conscientiousness scores should increase as well. These improvements would reflect that patients are improving their ability to engage in non-mood-dependent behavior.

### **An Example of a DBT Formulation From the Perspective of the FFM**

Donna was a 24-year-old unmarried African American woman who had resided in state institutions almost continuously since she was 15 years old. She was removed from her home at age 11 and placed in the custody of Child Protective Services because of serious neglect and alleged sexual abuse.

The patient was a guardian of the state and had never lived independently as an adult.

Donna faced an extremely invalidating environment during childhood and also had an increased genetic risk for disinhibitory psychopathology based on her family history. On the basis of the biosocial model, these two risk factors likely culminated in emotion dysregulation. When Donna was a child, her home environment was highly chaotic and disorganized because both her mother and father used excessive amounts of drugs and alcohol. Her parents spent much of their time obtaining drugs, being intoxicated, and suffering from withdrawal symptoms, which left little time to care for their two children, Donna and her older brother. She reported that her mother frequently used crack cocaine when Donna was a young child and stated that she ran away because she felt that "my mom loved crack more than me." Family reports indicated that the mother enrolled in a drug treatment program when Donna was 11 years old. Donna reported that her mother continued to struggle with drug addiction. Members of the family vehemently denied any history of psychiatric illness in the family. However, Donna reported that both her mom and older brother had a "temper problem" and that they periodically engaged in aggressive behavior. Donna's father lived in her home for only a short period of time when she was a very young child, and she has had no contact with him since. When her father left, the family moved into the maternal grandmother's home. When Donna began running away from home, foster care became involved in her case.

Donna had a history of mental illness since childhood, including major depressive disorder and conduct disorder. She reported experiencing her first major depressive episode when she was 10 years old and remembered that she wanted to kill herself at that time. She began running away from home at age 11 and abusing alcohol, crack cocaine, and marijuana on a daily basis when not in a controlled environment. She reported participating in outpatient drug rehabilitation programs but denied maintaining sobriety following discharge from these facilities. She also reported engaging in prostitution since that time when she was "on the run" or "needed money or drugs." From age 12, Donna had been in more

than 30 placements from juvenile detention centers, foster homes, psychiatric hospitalizations, residential treatment centers, family placements, and crisis shelters. Her aggressive and elopement behaviors significantly interfered with her treatment. For example, she would get into physical fights with other residents in detention centers, which would result in her getting transferred. Her legal records indicated that she was picked up several times by juvenile detention for elopement from placements. She had been charged with trespassing and prostitution, but all charges were dropped when she was admitted to the forensic hospital.

The patient reported being sexually abused by her father and by her mother's boyfriends. The grandmother also reported that Donna was raped by one of her mother's boyfriends at age 6 and was sexually assaulted while living on the streets. Donna reported being sexually active since age 7 or 8. She gave birth to one son when she was 13 years old and does not know the father of the child. This child lived with an aunt. Donna had very limited contact with her son, having one visit with him over 3 years. She also gave birth a second time when she was 14 or 15 years old, but this child died shortly after being delivered. She reported that she had used crack cocaine during her second pregnancy and did not know that she was pregnant.

Donna required special education throughout her academic history. She did not know how much school she had completed but noted that since she started running away, she did not stay in one place long enough to receive education. Her grandmother reported that Donna completed through the fifth grade. Past psychological records placed her in the mild mental retardation range of intellectual functioning. Her difficulties with daily living tasks, interpersonal skills, and work skills supported this diagnosis.

Donna was referred to an intermediate security state forensic hospital because of escalating aggression toward staff and peers in a minimum security state hospital setting, where she had resided for 1 year after repeated elopements and suicide attempts in a group home. At the minimum security facility, she verbally threatened to cause others serious physical injury, hit peers and staff, and threw furniture

at them. She also engaged in property damage by breaking doorstops when slamming doors, throwing chairs and tables, and breaking the ward television. She was also referred because of increased acts of self-injurious behavior, including head banging and scratching and biting her wrists, causing slight tissue damage. The treatment team at the minimum security setting deemed that her behavior posed a significant risk of dangerousness that exceeded the capabilities of that facility. At the time of her referral to intermediate security, she was enrolled in cognitive-behavioral skills training groups. Donna continued to display frequent acts of physical aggression toward staff and peers, causing several minor injuries. She also engaged in frequent acts of self-injurious behavior, for example, breaking and rebreaking her wrist on multiple occasions. Numerous physical conditions also affected her quality of life, including Type II diabetes, obesity, enuresis, a fractured wrist, and hepatitis C.

Because of complications from breaking and rebreaking her wrist, there was a possibility of having to amputate her hand. As a result of her high acuity, treatment staff reported "giving up" on her and wanted to send her to a maximum security level setting. At this point, Donna was enrolled in comprehensive DBT services. At the beginning of her DBT treatment, the patient was in physical restraints for up to 15 hours per month. From the patient's perspective, being aggressive toward others and hurting herself "let out" the intense feelings of anger and frustration she felt because no one cared about her.

At the time of Donna's referral, the Structured Interview for the Five-Factor Model (Trull & Widiger, 1997) was administered to her. Given her compromised intellectual functioning, informant reports were also obtained from her maternal grandmother and several staff members who had worked with her for several years. Donna had very high scores on neuroticism, including the facets of anxiety, angry hostility, depression, impulsiveness, and vulnerability, but only high scores on the facet of self-consciousness. Her high levels of misery and despair made it difficult for her to engage in non-mood-dependent behavior, such as going to a skills group when she was completely overwhelmed with

despair. Donna had very low scores on conscientiousness, reflected in all facet scores. She was very low on self-discipline and deliberation, which was reflected in her inconsistent treatment attendance and noncompliance with unit rules and guidelines. Even though she had low scores on agreeableness, including the facets of trust and compliance, her scores on the extraversion facets of warmth and gregariousness were high. Donna had little faith in others being there for her, but she was also very friendly and genuinely cared about other people. This was a great asset for her therapy relationship. Lastly, she had low scores across all of the facets on the openness dimension, which might be due, at least in part, to her compromised intellectual functioning. On the basis of Donna's FFM trait profile as well as her recent self-injurious, aggressive, and treatment-interfering behaviors, she was considered to be an excellent candidate for DBT.

Donna was committed to reducing both the self-injurious and aggressive behaviors to obtain unit privileges and rewards, peer and staff praise, as well as for her ultimate goal of being discharged to the minimum security unit and working in a supervised setting. She was actively involved in treatment and was considered to be in Stage 1. Our primary targets were to decrease life-threatening and aggressive behaviors. We focused on decreasing the behaviors of banging and rebreaking her wrist as well as punching, biting, slapping, and kicking other people and verbal threats of physical harm. These were noted to be the most severe behaviors that were making her unable to be transferred to a less secure unit. Additionally, we focused on decreasing therapy-interfering behaviors: aggression during skills groups and demanding items and privileges from therapists and staff. We also focused on improving her quality of life by decreasing the frequency of nocturnal bed-wetting. Not only was this behavior posing a risk to her physical health, it was also the source of many arguments on the unit. Other patients and staff members often ridiculed Donna for bed-wetting. This prompted her to feel ashamed and angry, which often resulted in her lashing out at them. We aimed for improvement in these areas by increasing the use of skillful behaviors, especially distress tolerance and mindfulness skills. A bell and

pad method was used to treat enuresis (Mowrer & Mowrer, 1938).

To identify her unique characteristic adaptations resulting from her personality trait profile and developmental context, we utilized her FFM profile in conjunction with an assessment of her developmental history and unit observation. One key pattern of dysfunctional behavior was readily apparent that obstructed her ability to work on the primary treatment targets with the therapist. Donna had a very high score on the vulnerability, impulsiveness, and angry hostility facets, which often manifested as an acute awareness that staff and patients were mistreating her. She felt a great deal of emotional pain when she noticed this injustice, which resulted in her feeling as though she could not control her behavioral outbursts and might result in aggressive or self-injurious behavior. After Donna had been aggressive, she would then state that she would never be aggressive again and underestimated the difficulty she would have in reaching this goal. Her extreme hypersensitivity coupled with very high levels of anxiety and warmth contributed to this behavior pattern. When she failed to meet her unrealistic goal of never being aggressive again, Donna felt extremely guilty, shameful, and worthless. To target this behavioral pattern, we taught Donna skills that would help her regulate her emotions more effectively and prevent feelings of extreme sensitivity to negative emotional cues and perceived injustices. We also taught Donna how to shape her own behavior and to increase self-compassion and feelings of self-worth throughout the process of working toward a goal.

To help Donna increase her ability to tolerate uncomfortable and strong emotions, distress tolerance skills were increased. Given her cognitive limitations, we provided her with tangible cues to prompt her to practice these skills. To meet this end, a coping card was created that listed high-risk situations on one side and a plan for coping with them on the back. During individual therapy sessions, behavioral rehearsal was used to practice using the coping card. Staff members had copies of the coping card and were trained in how to use it effectively. We provided more immediate reinforcement to increase the strength and frequency of Donna prac-

ticing distress tolerance skills. Specifically, Donna could receive a token each time she completed a distress tolerance worksheet, which she could turn in at the end of the week for a larger prize.

Donna made significant improvements over the 2 years in the DBT program. We tracked progress in several ways: amount of time in restraints, number of self-injurious behaviors, and from her FFM profile. We reevaluated her personality profile every 12 months and noticed the most dramatic improvements in the facets of anxiety, depressiveness, and vulnerability, which declined from the very high to the high range. The facets of angry hostility and impulsiveness, although they declined somewhat, still remained in the very high range. Her agreeableness facets of trust and compliance had increased to the low range but her conscientiousness scores remained in the very low range. Scores on extraversion and openness did not change. Notably, the frequency of banging her wrist had decreased significantly. She had not broken her wrist in approximately 12 months and was no longer in danger of having her hand amputated. In the last 6 months of treatment, Donna engaged in three episodes of self-injury which posed very low lethality risk. She had not engaged in an episode of aggression for approximately 10 months. The frequency of restraint use decreased over the course of treatment, and she had not been in restraints at all for 1 year. As a result of these significant changes, staff members were more willing to interact with her and had not expressed wishes to have her transferred for several months. Donna had more friends on the unit and reported that she genuinely felt cared for most of the time. The transactional nature of Donna's recovery was obvious; as the patient was more able to manage her behavior, staff members were much more able to validate her. This, in turn, made it easier for Donna to cope skillfully. At the end of this treatment period, Donna was referred to a minimum security hospital setting where she could work in a supervised setting.

The case of Donna provides one example of how the FFM can be used in DBT programming. The FFM guided the identification of Donna as a potential DBT candidate, regardless of her *Diagnostic and Statistical Manual of Mental Disorders* diagnosis. This

assessment was also useful in identifying secondary treatment targets. Lastly, the FFM was used in ongoing assessments across a 2-year period, and changes in Donna's personality profile corresponded with decreases in self-injurious and therapy interfering behaviors.

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# DISORDERS OF PERSONALITY: CLINICAL TREATMENT FROM A FIVE-FACTOR MODEL PERSPECTIVE

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Despite the fact that the American Psychiatric Association has been publishing practice guidelines for the diagnostic categories of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000) for more than 10 years, treatment guidelines have been developed for only one of the 10 personality disorders (PDs; borderline personality disorder; American Psychiatric Association, 2001). There are varied explanations for this deficiency, but it is certainly not because PD is untreatable (Leichsenring & Leibing, 2003; Perry & Bond, 2000). In fact, even normal personality can be altered through pharmacology. Knutson et al. (1998) reported that administration of a selective serotonin reuptake inhibitor (SSRI); relative to placebo significantly reduced scores on a self-report measure of trait neuroticism in participants who were not currently or previously diagnosed with any psychological disorder. Additionally, they found a significant increase in behavioral measures of affiliative behavior (agreeableness).

The absence of treatment guidelines for *DSM-IV-TR* PDs (apart from borderline PD) is also not due to a lack of demand. Between 7.7% and 10.3% of the general population in the United States are estimated to have a PD other than borderline PD (Lenzenweger, Lane, Loranger, & Kessler, 2007). One plausible reason for this unmet clinical and empirical need is the complexity involved with

developing a specific and explicit treatment program for any given PD (Gabbard, 2007; Livesley, 1993; Magnavita, 2010; Millon & Grossman, 2007a, 2007b; Widiger, Livesley, & Clark, 2009).

The overlapping and heterogeneous diagnostic categories of *DSM-IV-TR* are ill suited for specific treatment recommendations (Smith, McCarthy, & Zapolski, 2009). Within each disorder, there exists a compound assortment of maladaptive personality traits. Two clients, each meeting the diagnostic criteria for the same PD, may have only a single trait in common (Trull & Durrett, 2005). Given the substantial variability of defining features within a diagnostic category, it is understandably difficult to develop a uniform treatment program for persons sharing the same PD diagnosis (Verheul, 2005).

What is evident from the PD treatment literature is that current approaches attempt to sidestep this issue, resulting in treatment delivery that is incapable of addressing the entire personality structure (Paris, 2006). Instead, clinicians may treat, for instance, the affective instability, behavioral dyscontrol, or self-mutilation of clients diagnosed with borderline PD. Effective change occurs with respect to these components rather than the entire, global construct.

The greater construct homogeneity of the five-factor model (FFM) domains and facets (McCrae & Costa, 2008) is more suited for developing specific

treatment recommendations, as opposed to the heterogeneous collection of personality traits within each *DSM-IV-TR* PD (Lynam & Widiger, 2001). Additionally, the factor analytic development of the FFM provides a more conceptually and empirically coherent structure than the syndromal constellations of traits within *DSM-IV-TR* (Smith, McCarthy, & Zapolski 2009). Therefore, the FFM should allow for more specific treatment implications than the existing diagnostic categories.

For example, at the level of the five broad domains, extraversion and agreeableness concern all manner of interpersonal relatedness; conscientiousness is a domain of work-related behavior and responsibility; neuroticism is a domain of emotional instability and dysregulation; and openness is a domain of cognitive intellect, curiosity, and creativity (Costa & McCrae, 1992). Extraversion and agreeableness are then confined primarily to interpersonal dysfunction (Hopwood et al., 2009; Mullins-Sweatt & Widiger, 2010), an area of functioning that is relevant not only to daily relationships but also to the therapeutic relationship (Pincus & Gurtman, 2006). It is not difficult to imagine that interpersonal models of therapy, marital–family therapy, and group therapy would be particularly applicable to these two domains (Horowitz & Wilson, 2005). In contrast, neuroticism provides information with respect to mood, anxiety, and emotional dyscontrol, traits that are potentially responsive to pharmacologic interventions (as well as cognitive, behavioral, and psychodynamic interventions). Treating cognitive–perceptual aberrations (part of maladaptively high openness) would also have pharmacologic implications but ones that would be quite different from those of neuroticism (i.e., neuroleptics; Soloff, 2005). Maladaptively high levels of conscientiousness involve workaholism and compulsivity; low levels involve irresponsibility, negligence, laxness, and disinhibition. There are likely specific pharmacologic treatment implications for low conscientiousness (e.g., methylphenidate; Nigg et al., 2002), whereas a cognitive–behavioral approach may be appropriate for high conscientiousness.

In sum, a reasonable appraisal of the FFM indicates that its structure is more conceptually suitable for specific treatment implications than the overlap-

ping and heterogeneous categories of the current *DSM-IV-TR* diagnostic system. This suggests that when viewed through the lens of the FFM of PD, treatment research and treatment planning has the potential to be both fascinating and fruitful. It is this outlook that propels the following overview of treatment approaches, which align rationally with each of the 10 poles of the FFM of PD.

## MALADAPTIVE HIGH NEUROTICISM

### Clinical Presentation, Associated *DSM* Diagnoses, and Problems in Living

It is often said that personality involves ego-syntonic traits and that persons with PDs rarely seek help to change their personality (Millon, 2011; Tyrer, 2009). This perception may be true generally for most of the domains of the FFM. Perhaps many of the persons with maladaptively high levels of agreeableness, antagonism, extraversion, or introversion do not seek treatment to make changes to their characteristic personality traits. However, this is unlikely to be true for high neuroticism, which is associated with chronic and characteristic feelings of pain, suffering, and distress. Clients frequently present with chief complaints of feeling anxious, despondent, shameful, and emotionally vulnerable (Zimmerman & Mattia, 2000). The subjective experience of these negative affective states creates, by definition, internal discomfort that demands resolution. The personality trait of neuroticism refers to the tendency to experience these states of emotional distress, rather than the discrete experiential states themselves (McCrae & Costa, 2008). As such, clients presenting with maladaptively high neuroticism (MHN) will likely describe the distress as an ongoing pattern that has become increasingly unbearable, rather than a theretofore wholly unfamiliar emotional experience of acute anxiety, anger, despair, or vulnerability only recently elicited by life events. Clients with high trait neuroticism in the midst of an immediate crisis will likely note experiences that may differ from previous distress in degree, but not in kind. Neuroticism, then, is one of the few traits of the FFM that could be said to be ego-dystonic. Many clients will be entirely comfortable with their high levels of agreeableness or antagonism, with their

high levels of extraversion or introversion, but not with their high levels of neuroticism.

Although a measure of high trait neuroticism is a component of all *DSM-IV-TR* disorders of personality (with perhaps the exception of schizoid; see Chapter 6, this volume), the presentation of the facets of MHN may differ. The anxiousness of neuroticism may appear as social anxiousness or evaluation apprehension, as in the schizotypal and avoidant PDs, and can resemble social phobia. MHN may be confined to relationship anxiety, as in dependent PD, or it may appear in a more diffuse manner, as in the excessive worry and anxious uncertainty in obsessive-compulsive and borderline PDs. Angry hostility may manifest as the reactive anger of narcissistic PD, the dysregulated anger of borderline PD, or the intimidating rage of antisocial PD. Despondence, despair, and hopelessness appear in borderline, avoidant, and dependent PD and may mimic dysthymia or major depressive disorder. The self-disturbance of borderline PD and the shame of narcissistic and dependent PDs hold the element of self-consciousness in common.

### **Selected Therapeutic Approaches and Application**

Because emotional distress has historically been a chief component in clients' presenting complaints, virtually all modes of psychotherapy target aspects of high neuroticism to some degree (Widiger & Trull, 1992). With this wealth of resources, however, comes the responsibility of the clinician to accurately assess the specific characteristics of a given client's MHN. Although operating from an entirely ideographic approach tends to push the clinician further from scientifically guided treatment principles, treating all forms of high neuroticism identically can be equally unscientific. Ideally, practitioners will integrate their knowledge of current research with the specific needs of the client in treatment (American Psychological Association Presidential Task Force on Evidence-Based Practice, 2006).

Cognitive-behavioral techniques such as role-play, behavioral experiments, and imagery can be used to reduce anxiety or self-consciousness and to address resulting avoidance. For example, the therapist may ask a client to imagine an anxiety-provoking

situation, role-play a successful version of that situation in therapy, and then test the new behaviors in an environment with a high likelihood of success. Additionally, cognitive-behavioral therapy identifies and challenges common automatic thoughts, such as catastrophizing, that are present in an individual high in FFM depressiveness and self-consciousness (Beck, Freeman, & Davis, 2003). Behavioral techniques such as relaxation and stress-reduction can address the negative effects of depressiveness and vulnerability, and assertiveness training and increasing positive events can effect change in the environmental reinforcers that maintain depressiveness and impulsivity (Millon & Grossman, 2007a).

Mindfulness-based techniques use strategies such as breathing exercises, progressive muscle relaxation, mental imagery, and a nonjudgmental stance toward thoughts (Dimidjian & Linehan, 2008; Roemer, Salters-Pedneault, & Orsillo, 2006). These strategies target the somatic portion of MHN (muscle tension, rapid heart rate, etc.) as well as the cognitive aspects (racing thoughts, rumination, worry). Rather than attempting to remove these experiences, mindfulness-based techniques focus on observation and acceptance of the experience in the moment. In fact, clients are encouraged not to attempt to judge these aspects as negative but instead to take a gentle and inquisitive attitude. This acceptance and understanding may reduce the self-perpetuation that can occur with all aspects of MHN, particularly angry hostility, self-consciousness, and vulnerability.

From among the 10 poles of the FFM, MHN appears to be one of the most suited to pharmacologic intervention. As noted earlier, SSRIs have been shown to decrease measured levels of neuroticism, even in individuals without a clinically diagnosed Axis I disorder. As Knutson et al. (1998) described, they

examined the effects of a serotonergic reuptake blockade on personality and social behavior in a double-blind protocol by randomly assigning 51 medically and psychiatrically healthy volunteers to treatment with a selective serotonin reuptake inhibitor (SSRI), paroxetine . . . ( $N = 25$ ), or placebo ( $N = 26$ ). (p. 374)

None of the participants met, currently or throughout their lifetime, *DSM-IV-TR* diagnostic criteria for any mental disorder, as assessed with a semi-structured interview. None had ever received a psychotropic medication, abused drugs, or been in treatment for a mental disorder, nor were any of them currently seeking or desiring treatment for a mental disorder. In other words, they were in many respects above normal in psychological functioning. Therefore, one certainly could not attribute any subsequent changes in their personality traits to the effect of treating a co-occurring mood or anxiety disorder. The paroxetine (and placebo) treatment continued for 4 weeks. Knutson et al. reported that the SSRI administration (relative to placebo) significantly reduced scores on a self-report measure of neuroticism. The magnitude of change even correlated with plasma levels of SSRI within the SSRI treatment group. As concluded by Knutson et al., this was a clear “empirical demonstration that chronic administration of a selective serotonin reuptake blockade can have significant personality and behavioral effects in normal humans in the absence of baseline depression or other psychopathology” (p. 378). These findings have since been replicated (Tang et al., 2009). The effectiveness of these medications in reducing nonacute levels of neuroticism bodes well for long-term maintenance treatment of PD.

### Complications, Considerations, and Future Research

When treating MHN, the clinician must keep in mind that high levels of neuroticism, although seemingly negative and unpleasant, also have a measure of adaptive benefit (discussed in more detail later in this chapter). Clients may not be aware of the function of negative emotions, they may simply view emotions as a needless burden, and they may express a desire to eliminate negative emotions completely. Education regarding the purpose of emotions should be a priority early in therapy; this can help clients understand the value of (adaptive-range) negative emotions. Discussing the function of emotions may also provide context in which the therapist can validate the client’s emotions while also working on strategies to reduce the negative consequences associated with MHN.

The research of MHN and PD will inevitably approach the boundaries and nature of Axis I mood and anxiety disorders. Previous research has indicated that high trait neuroticism may be a risk factor for developing Axis I anxiety and mood disorders (Lahey, 2009; Widiger, 2009; Widiger & Smith, 2008), but the delineation between chronic Axis I disorders and MHN continues to challenge research. The implications of their relationship to (and demarcation from) one another are significant to the clinician, given that treatment planning, prognosis, and financial compensation may differ greatly on the basis of the application of diagnostic borders.

### MALADAPTIVE LOW NEUROTICISM

#### Clinical Presentation, Associated *DSM* Diagnoses, and Problems in Living

Although most people attempt to minimize or avoid the experience of negative, unpleasant, or uncomfortable emotions, the ability to experience and take advantage of these emotions are necessary for human survival. Anxiety alerts us to potential danger or an unexplained change in our environment, signals the need for caution, and engages the autonomic nervous system in preparation of a defense (Lang, Bradley, & Cuthbert, 1998). Anger indicates that a goal is being blocked, prepares the body for potential action to obtain the desired goal, and communicates to others that such action is imminent (Ciani, 2000). It has been theorized that depression evolved to prompt the individual to conserve emotional and physical resources (Nesse, 2000), to signal others that help is needed (Ingram & Smith, 2008), or to deescalate conflict (Price, Sloman, Gardner, Gilbert, & Rohde, 1994). Self-consciousness increases sensitivity to external social cues regarding one’s own behavior. When impulsivity functions adaptively, it decreases the time lag between the perception of stimulus and the execution of the appropriate response. Vulnerability to negative emotions increases the likelihood that one’s internal cues will be noticed and may indicate to others that assistance is needed. Individuals with maladaptively low levels of neuroticism (MLN) are unable to take advantage of these mechanisms.

Clients presenting with MLN (e.g., psychopathic persons; Lynam & Widiger, 2007) may report repeatedly finding themselves in unhealthy or dangerous situations, despite being aware of previous negative consequences. They may feel unable to gather emotional resources to change potentially harmful situations or may continue to squander emotional resources in situations that have diminishing returns. Social norms that rely on embarrassment or shame for enforcement may go unheeded, an adaptive trait that is at times absent in persons characterized by grandiose narcissism (Miller, Widiger, & Campbell, 2010). Individuals with MLN may be overly restrained in situations that usually prompt others to act decisively based on emotion. Reduced vulnerability to negative emotions may produce feelings of fearless invincibility. Because individuals with MLN possess a reduced capacity to experience, exhibit, or act on the associated negative emotions (such as worry, shame, fear, or guilt), their behavior may be mistaken for low agreeableness (antagonism).

### **Selected Therapeutic Approaches and Application**

Individuals with MLN have a deficit in the link between perception of negative emotional content and the appropriate action based on that information. There is currently no treatment designed to increase neuroticism per se. However, cognitive-behavioral training may help MLN individuals to cognitively assess a situation and give weight to external cues in ways that might usually be prompted by the internal emotional state in normal population (Beck et al., 2003). Rather than attempting to create the “missing” neuroticism, this simply focuses on the adaptive benefits usually associated with neuroticism. For example, individuals with MLN may be less emotionally sensitive to interpersonal cues, particularly facial expressions of fear, anger, or disgust. Although MLN individuals may be able to reasonably distinguish facial expressions on demand, they may be less likely to automatically integrate the information provided by facial expressions because it lacks emotional salience. Combining emotion recognition training with cognitive-behavioral therapy could work toward the goal of purposefully increas-

ing the awareness of facial expressions and their associated implications.

In addition to cognitive-behavioral therapy, family therapy may be necessary to educate and engage the client’s support system. MLN may create tension in a family system when (for example) the client does not experience anger in reaction to mistreatment of a loved one, does not express worry when finances are strained, or does not feel shame or embarrassment after behaving in a socially inappropriate manner. Working together, the family (including the client) can discuss expectations and develop behavioral plans. The family members may need to learn to explicitly communicate their own emotions and make specific behavioral requests, and the client may need to commit to complying with requests to act even when unprompted by his or her own emotions.

MLN may be most prevalent in criminal justice settings. Individuals who are less prone to feel self-consciousness, shame, and guilt may be more willing to engage in behaviors that are illegal and result in incarceration. Lack of shame and guilt is also a key component (in combination with low agreeableness) in the callousness of psychopathy (Frick, 1998; Lykken, 1995). The absence of remorse and empathy in psychopathy is notoriously difficult to treat; research suggests, however, that intensive individual cognitive-behavioral or psychoanalytic therapy appears to be beneficial (Salekin, 2002). Early intervention has been recommended, and group therapy is discouraged because it has been shown to encourage manipulation in MLN individuals who are also low in agreeableness.

### **Complications, Considerations, and Future Research**

The nature of MLN implies that the client is not apt to feel distressed by events or situations that would likely be upsetting to the average person. This lack of emotional reaction will extend to the very problem of MLN itself and its repercussions. Despite feedback from family, friends, or colleagues, and even the judicial system, the client may be quite perplexed as to why others would want him or her to “feel bad.” It is rare, therefore, that the individual with MLN will autonomously initiate treatment.

It would not be uncommon to find these individuals in nonelective treatment situations, such as court-ordered or employer-mandated evaluations and treatment. Additionally, once involved in treatment, such clients will not have the discomfort of their situation acting to prod them toward change. Treatment success will therefore be highly affected by the client's remaining personality characteristics, particularly agreeableness and conscientiousness.

### MALADAPTIVE HIGH EXTRAVERSION

#### Clinical Presentation, Associated DSM Diagnoses, and Problems in Living

High extraversion can provide interpersonal advantages and is often viewed as socially desirable. The warm, outgoing, energetic individual will often be rewarded by others with attention, positive affect, and cooperation. At maladaptively high levels, however, gregariousness turns into attention seeking, assertiveness becomes pushy, and excitement seeking becomes reckless. Clients who are maladaptively high in extraversion (MHE) will likely sense that they have a strong need for interpersonal connections and excitement but that the intensity of this drive frequently overwhelms others; this may lead to a vicious circle in which extraversion is continually “amped up” to engage with others, resulting in increased disengagement by the target of the clients’ attentions. When engaged with others, those with MHE will often experience their symptoms as ego-syntonic. When isolated, they may begin to reflect on past interactions and question why they “scare people off”; these times will likely be rare, however, because individuals with MHE will avoid spending time alone.

The general perception of the MHE client by others may initially be positive, particularly if the MHE individual is also average or high in agreeableness. Over time, however, the MHE individual may be seen as too “intense” in his or her interpersonal attention; paradoxically, the undiscriminating nature of these intense interpersonal interactions may also lead to a shallowness of relationships and a perception that the MHE individual is fake or insincere, outcomes often seen in people who have been diagnosed with histrionic PD (Millon, 2011). On

presentation, MHE clients may be suffering from the long-term impact of exhausting their interpersonal resources.

Aspects of MHE are components in several DSM PD diagnoses (Widiger & Lowe, 2008; see also Chapter 6, this volume). The maladaptive need for intense attachment and intimacy is present in dependent and histrionic PDs. Maladaptive gregariousness may manifest as histrionic attention seeking or narcissistic exhibitionism. High levels of assertiveness are seen in the authoritativeness of narcissistic PD and in the interpersonal dominance of antisocial PD. The frantic nature of maladaptive high activity may occur in antisocial and histrionic PDs. Excessive excitement seeking in antisocial and narcissistic PDs will appear to be reckless and foolhardy thrill seeking and may also appear as the extreme flirtatious and “social butterfly” behaviors of histrionic PD. Individuals diagnosed with histrionic PD will also exhibit unusually high positive emotions, which may be perceived by others to be melodramatic.

When diagnosing and treating a client with MHE, a differential diagnosis of bipolar disorder must be considered. An individual with MHE will report symptoms that tend to remain consistent and are confined primarily to interpersonal relationships. Although the frantic energy, risk taking, and interpersonal dominance may mimic manic symptoms, these are generally not accompanied by marked cycles of withdrawal and severely decreased energy (as is present in bipolar disorder). The diagnosis of substance abuse may frequently be comorbid with the excitement seeking in MHE (Ruiz, Pincus, & Schinka, 2008); not only is risk-taking behavior frequently associated with drug and alcohol use, but social dynamics may encourage and reinforce the use of substances. Clients with MHE may also experience discord in romantic relationships because of their manner of actively pursuing outside interpersonal interactions, resulting in suspected (or actual) infidelity.

#### Selected Therapeutic Approaches and Application

One of the most logical approaches to therapy with MHE clients is individual interpersonal therapy, with the eventual transition to group interpersonal

therapy. Interpersonal therapy creates a setting in which the therapist gives immediate, clear, and direct feedback regarding the impact of the client's interpersonal behaviors (Benjamin, 2003). A skilled clinician will communicate the thoughts, emotions, and reactions elicited when the client is engaging in behavior driven by MHE. Through learning to accept frank interpersonal feedback and respond appropriately, the client should begin to gain enough insight to engage meaningfully in an interpersonal therapy group. In a group setting, the client experiences the demands of competing attentions, which will both draw out and challenge MHE behaviors.

Cognitive therapy is useful in examining any faulty beliefs the MHE client may hold regarding interpersonal interactions (Beck et al., 2003). For example, a client reports that people have commented that s/he "comes on too strong." After determining a specific instance in which the client may have been overly gregarious or assertive, the therapist prompts the client to reflect on what s/he was thinking before, during, and after the interaction, and his subsequent reflections on that situation. The therapist will then help the client to challenge unrealistic cognitions, such as "I need to make sure that people know what I mean and what I'm all about," and to increase more realistic cognitions, such as "It is not crucial to make people understand everything about me immediately." The effectiveness of cognitive therapy will likely be increased with the addition of mindfulness skills, in order to be aware of maladaptive cognitions in the moment (Dimidjian, & Linehan, 2008).

Behavior therapy (either independent from or in tandem with cognitive therapy) can be used to identify specific behavioral goals, such as spending more time alone, remaining quiet for a proportion of a given interpersonal interaction, or not engaging in risk-taking behaviors (Hayes, Strosahl, & Wilson, 1999). There are several behavioral techniques that are particularly useful in treating MHE. Video or audio recordings of the client's behavior *in vivo* can be reviewed in session and can be helpful to identify behaviors that should become targets for change. Additionally, random behavior sampling (i.e., with a PDA) or scheduled phone check-ins require the cli-

ent to leave an interpersonal interaction temporarily, creating some distance to evaluate behaviors in the moment.

### **Complications, Considerations, and Future Research**

When treating a client with MHE, it is important to recognize the environmental forces that may serve to maintain extraverted behaviors. In Western society, high extraversion is culturally rewarded and interpersonally reinforced, particularly in casual relationships. In group social situations, it is likely that MHE individuals will be encouraged to behave in an increasingly extraverted manner. Peers and acquaintances may consider the MHE individual "the life of the party" and will be unaware of (or indifferent to) the negative personal consequences the individual incurs. In fact, they may revel in the costs to the individual; one only needs to look as far as "reality TV" programming to see this principle in effect. This can easily become a self-maintaining cycle in which the MHE client desires to socialize in lively, raucous groups, and such groups reward gregariousness, excitement seeking, and high positive emotions with attention, praise, and esteem, or even with physical rewards of alcohol and sex.

When treating an MHE client, care should be taken to engage his or her support system whenever possible. If the client has managed to maintain close relationships (not just numerous acquaintances), the therapist would be wise to involve friends and family in the treatment process. They may be able to help identify situations in which the client's extraversion is adaptive rather than maladaptive, as well to provide targeted social interaction while being mindful of the client's therapeutic goals.

MHE may also be reinforced or even required by the client's vocation. Individuals with MHE will likely be drawn to careers with a substantial component of intense interpersonal interaction. Professions such as sales, investment trading, entertainment, and acting (particularly at high levels that incur celebrity) demand assertiveness, an outgoing and engaging nature, and the willingness to "push the edge." Although it is possible to be successful in such professions without engaging in maladaptively extraverted behavior, the MHE client will likely face

additional struggle if employed in these areas. In some cases, the client and therapist may find it necessary to weigh the costs and benefits of continuing in a career that incurs significant personal costs.

Although there is a significant amount of research regarding the nature of high sensation seeking and risk taking, markedly less attention has been directed toward the other aspects of MHE. Unwarranted warmth, excessive gregariousness, and inappropriate assertiveness may have been studied within the context of histrionic and narcissistic PDs (Millon, 2011) but are otherwise largely ignored by the literature. The examination of these traits may prove challenging because there are few measures that are tailored to measure the maladaptive aspects of high extraversion. Therefore, it is imperative that researchers first focus on the accurate assessment of MHE, forming the foundation for future studies regarding its treatment.

## MALADAPTIVE LOW EXTRAVERSION

### Clinical Presentation, Associated DSM Diagnoses, and Problems in Living

The clinical presentation of maladaptive low extraversion (MLE) is likely familiar to clinical practitioners. An MLE client may describe himself or herself as shy, introverted, or a “loner.” Others may hold a less charitable view, describing the MLE client as cold, unsociable, unexcitable, and uninterested. As with all FFM personality traits, these will not be recent behavioral developments but will be stable characteristics experienced throughout the life span. Therefore, an MLE client will report having always felt like an outsider, accompanied by some confusion as to why others are so energetic and engaged. MLE clients may initiate therapy because they are feeling as though they are missing out on something in life; however, they will likely be reticent to aggressively pursue interpersonal interactions or novel activities. It is more probable that clients with MLE will have a select few friends, acquaintances, or colleagues who have expressed concern, distress, or frustration with their detached, withdrawn, and unassertive behavior. In response to these expressions of dissatisfaction, individuals with MLE may seek treatment in the hope of quelling external pressure.

MLE is a component of many *DSM-IV* PDs (Widiger & Lowe, 2008). The detached coldness of low warmth can be seen in paranoid, schizoid, schizotypal, and obsessive-compulsive PDs. The social isolation and withdrawal associated with low gregariousness is apparent in paranoid, schizoid, schizotypal, and avoidant PDs. Unassertive characteristics are present in avoidant and dependent PDs. Low trait levels of activity describe the lethargic and sedentary tendencies in schizoid PD. Low excitement seeking appears in the risk aversiveness in obsessive-compulsive and avoidant PDs and the dull, listless presentation of schizoid PD. Low levels of positive emotion are observed in the anhedonia of schizoid and schizotypal PDs.

In addition to being a component of the aforementioned PDs, MLE is a risk factor for Axis I disorders. Research indicates that individuals with MLE are at a greater lifetime risk for major depressive disorder and social phobia (Clark, Watson, & Mineka, 1994) as well as schizophrenia (Berenbaum & Fujita, 1994). Not only are these individuals at a greater risk of developing these disorders, they are also more likely to have a negative prognosis in treatment because of their reduced level of social support (Erickson, Beiser, & Iacono, 1998).

The primary problems in living associated with MLE will be interpersonal in nature. Many MLE clients will experience family strain because of their withdrawn and disinterested behavior (unless the client's family is also very low in extraversion). If they have friends or a romantic partner, MLE clients will struggle to find the energy required to sustain these relationships. Children of individuals with MLE may feel that their parent does not express positive emotions in reaction to their accomplishments. As MLE clients age, these interpersonal deficiencies are likely to compound one another. They may become increasingly socially isolated, which decreases their exposure to learning and improving social skills.

MLE may also create employment difficulties, including problems with an initial job search, interviewing, and maintaining employment. Individuals with MLE may have trouble finding employment that requires little interpersonal interaction. Low energy levels may compound the difficulties in the

hunt for an appropriate workplace. Interviewing, even for positions that do not require “people skills,” will likely place MLE job applicants at a severe disadvantage compared with others of average or high levels of extraversion. If MLE clients successfully obtain employment, they may struggle with negotiating raises, engaging in office politics, or looking interested and engaged.

### **Selected Therapeutic Approaches and Application**

Problems in living resulting from MLE are primarily interpersonal. It follows logically that interpersonal therapy will be one of the chief therapeutic approaches. Ideally, clients with MLE will have access to both individual and group interpersonal therapy. Individual therapy may create a less intimidating introduction to interpersonal therapy. Additionally, the individual therapist can assist clients in setting appropriate goals and expectations, in understanding the nature of MLE and the responses it evokes in others, and in clarifying the specific negative impact of MLE in individual clients’ lives (Benjamin, 2003). If possible, clients should begin with individual interpersonal therapy (without concurrent group therapy) to provide context and a framework on which the group therapy can build. An individual therapist should establish him or herself as a trusted ally with whom the MLE client can discuss the group therapy. Developing any therapeutic relationship takes time; this is particularly true for clients with MLE, as their low levels of assertiveness, activity, or gregariousness may leave their individual therapists feeling like dentists (pulling teeth!).

Group therapy with an MLE client is an appropriate progression after establishing the individual therapeutic relationship. It is preferable that the group have members who are at varying levels of therapeutic progress. Having other novice members in the group increases the likelihood that the MLE client will feel (relatively) comfortable participating, and intermediate and advanced members should be able to provide more insightful and appropriate feedback. The clinician facilitating the group should work to maintain a balance of encouraging the MLE client to initiate verbal participation in the group

with an awareness of the limitations related to the client’s level of functioning. Group therapy has been shown to be effective in treating disorders related to MLE (Hope, Herbert, & White, 1995).

Behavioral therapy and skills training, such as behavioral activation (Lejuez, Hopko, Acierno, Daughters, & Pagoto, 2011), can be integrated into the individual interpersonal therapy sessions but could also be a primary therapy modality for treating clients with MLE. To begin behavioral therapy, it is critical to understand the specific deficits of extraversion that are most detrimental to the client’s successful functioning, as well as the reinforcers that are maintaining maladaptive behaviors. This can be accomplished by first conducting an in-depth FFM assessment, for example, the Structured Interview for the Five-Factor Model (Trull & Widiger, 1997), followed by functional behavioral analysis. The clinician can then use skills training and behavioral modification to target the areas that are most in need of change. For example, if a client reports that he is frequently underpaid by his employer but that he feels unable to address the situation, assertiveness skills training may be appropriate. Furthermore, the clinician should probe to discover other relationships in which the client is unable to be sufficiently assertive and should work with the client to apply the skills from one situation to other similar situations. Typical social reinforcers (such as attention or physical touch) are unlikely to be effective for clients with MLE, so it is imperative that the clinician and the client work together to determine what will increase the likelihood of extraverted behavior.

Pharmacologic treatments can provide valuable support to interpersonal and behavioral therapy. Tang et al. (2009) examined the effects of paroxetine (an SSRI) on FFM extraversion and neuroticism in moderately depressed individuals over a period of 8 weeks. They found that the extraversion of participants in the paroxetine condition increased significantly more than the participants in the placebo condition (effect size = .63). Even when matching for depression improvement (to account for the state effect of depression), the increase of extraversion levels in the participants on paroxetine increased 6.8 times more than the placebo participants

(Tang et al., 2009). Increasing levels of extraversion through pharmacology could be crucial for clients with MLE, particularly in the early stages of establishing new patterns of behavior.

### Complications, Considerations, and Future Research

Clients with MLE will likely have difficulty finding value in therapy, particularly if they feel that it requires a large exertion of energy. MLE clients with maladaptively low levels of activity may terminate therapy early simply by failing to show up. The therapist and the MLE client must work together to devise strategies that will keep treatment adherence high. In some situations, this might involve meeting at or near the client's home or workplace. Phone or Internet video chat sessions may also present a novel but effective alternative. Suggesting gradually increasing levels of activity may be more successful than requiring the client to initially commit to weekly sessions in an unfamiliar environment.

Another consideration when treating MLE clients is the reduced level of information that will be provided spontaneously by the client. MLE clients will rarely volunteer information if it has not been requested. It is important to distinguish this from the purposeful withholding or concealment of information which occurs in clients with low agreeableness. Instead, clients with MLE are likely to respond to direct, specific questions but may experience difficulties determining how much information to supply in response to open-ended questions. Therapists should not assume that the MLE client will offer any details without being asked, even if they are significant to therapy.

Conceptually, extraversion has a legacy that extends to the infancy of psychology (Jung, 1921) and was one of the initial traits identified by personality research (Eysenck, 1947). Therefore, the quantity of literature related to MLE is vast and the topics diverse. However, the development of empirically validated treatments for trait MLE (as opposed to associated Axis I disorders) has not been fully explored. Treatment outcome research for clients with MLE would likely be a fruitful and well-received endeavor.

## MALADAPTIVE HIGH OPENNESS

### Clinical Presentation, Associated DSM Diagnoses, and Problems in Living

The clinical presentation of individuals with maladaptive high openness (MHO) will likely vary to some extent. Historically, factor analysis of personality structure has yielded openness as the fifth factor to be extracted; as a result, the variance comprising openness may appear somewhat diverse. Clients presenting with MHO may report feeling misunderstood and out of place in what they perceive to be a concrete and inflexible world; however, they may also report that they are able to understand almost anyone's point of view (Piedmont, Sherman, Sherman, Dy-Liacco, & Williams, 2009). They may express idealistic and impractical perspectives, which might result in frustration when confronted with "real-world" practicalities. Clients with MHO may often find themselves intensely absorbed by a new or unusual interest but may unexpectedly divert and redirect their intensity elsewhere. Clients whose MHO is ego-syntonic may describe themselves as creative, visionary, or avant-garde. However, clients with ego-dystonic MHO may consider themselves to be unrealistic, weird, odd, or bizarre. All clients with MHO are likely to have heard these descriptions of themselves by others.

Maladaptive high fantasy may manifest in the form of cognitive-perceptual aberrations (as in schizotypal PD), dysregulated absorption and dissociative tendencies (borderline PD), or romantic fantasies (seen in histrionic PDs). A maladaptive openness to feelings may present differently, depending on whether the feelings are primarily intensely positive (such as in histrionic PD, which includes MHE facet of positive emotions) or intensely negative (such as in borderline PD, which is heavily MHN). The odd and eccentric nature of MHO to actions can describe the willingness to engage in behaviors that most people would consider outside the norm; this willingness to act can be seen in antisocial, borderline, histrionic, narcissistic, and schizotypal PDs. MHO to ideas is represented in the peculiar thought processes (such as magical thinking) characteristic of schizotypal PD.

When considering whether a client has MHO, the clinician must carefully take into account the client's problems in living. Openness that is very high (but not maladaptive) may still be considered unusual, unrealistic, or eccentric but will not have a significant negative impact on the individual's mental, emotional, interpersonal, or occupational functioning. High openness to experience that is maladaptive will necessarily adversely affect one or more of these areas. MHO to fantasy can create interpersonal tension because of the client's experience of reality conflicting with the reality recognized by others. MHO to aesthetics, although perhaps uncommon, could result in the abandonment of practical needs (such as employment, interaction with others, or self-care) for the pursuit of music, art, or beauty. Maladaptive openness to feelings may entail dramatic shifts of emotion that are easily influenced by external or internal events, regardless of the client's stated core beliefs. MHO to values may result in radicalized political or religious views that interfere with the client's ability to maintain relationships or sustain employment. A common result of any permutation of MHO is that people in the clients' lives stop taking them seriously; their thoughts, feelings, and opinions become devalued.

### **Selected Therapeutic Approaches and Application**

There has been a considerable amount of research on the pharmacologic treatment of the cognitive-perceptual aberrations that characterize MHO. In particular, psychopharmacologic studies have focused on the magical thinking present in schizotypy (Kirrane & Siever, 2000) and the dissociation appearing in borderline PD (Bellino, Paradiso, & Bogetto, 2008). These symptoms are believed to be the result of a hyperdopaminergic state of the right hemisphere (Mohr et al., 2005). Early research demonstrated the usefulness of first-generation antipsychotics, such as thiothixene (Goldberg et al., 1986; Serban & Siegel, 1984) and haloperidol (Hymowitz, Frances, Jacobsberg, Sickles, & Hoyt, 1986) in decreasing symptoms associated with MHO. Atypical (or second-generation) antipsychotics similarly block receptors in the dopaminergic pathways with fewer extrapyramidal side effects. Researchers have indi-

cated that the atypical antipsychotics olanzapine (Keshavan, Shad, Soloff, & Schooler, 2004) or risperidone (Koenigsberg et al., 2003; McClure et al., 2009) are effective in controlling the cognitive-perceptual and thought disorder symptoms that occur in persons with MHO. Although these studies appear to be primarily concerned with MHO to ideas (i.e., cognitive-perceptual aberrations), it is conceivable that atypical antipsychotics may have similar effects on other aspects of MHO, particularly maladaptive openness to fantasy and actions.

The mercurial nature of emotions associated with borderline PD has been the subject of the mindfulness and emotion regulation components of dialectical behavior therapy (DBT; Linehan, 1993; Linehan & Dexter-Mazza, 2008). One can make a reasonable argument that these techniques are targeting high openness to feelings and could potentially be applied to the other facets of MHO. In particular, observing and describing aspects of mindfulness may assist MHO clients in thinking concretely. The emotion regulation skills that focus on reducing emotional vulnerability are likely more targeted to MHN vulnerability but may also be effective for treating MHO feelings, actions, and ideas. These skills are basic self-care, with an emphasis on balance: treat physical illness, balance eating, avoid mood-altering drugs, balance sleep, get exercise, and build mastery. It is not suggested that these skills will significantly lower clients' MHO in isolation; rather, they may provide structure and consistency that can serve as a base on which to build other concrete skills.

### **Complications, Considerations, and Future Research**

Assessment of MHO should involve ruling out Axis I diagnoses of schizophrenia, drug intoxication, and bipolar disorder with psychotic features. This is not to say that these disorders are mutually exclusive of MHO; it is probable that they would be highly correlated. However, the aforementioned diagnoses have clear, empirically validated treatment implications that should be pursued, some of which may serve to treat MHO in the process.

Unless clients exhibit significant signs of thought disorder or dissociation, therapists may not even recognize the negative effects of MHO. Moderately

high openness tends to be predictive of positive therapeutic outcome; therefore, even when an FFM assessment has been administered, MHO is likely to be viewed positively or simply ignored rather than receiving further evaluation. This may also be partially attributed to the limitations of the commonly used FFM self-report inventory items in capturing MHO (Haigler & Widiger, 2001).

## MALADAPTIVE LOW OPENNESS

### Clinical Presentation, Associated DSM Diagnoses, and Problems in Living

Clients presenting with maladaptive low openness (MLO) will be extremely rigid in their thoughts, ideas, or beliefs (Piedmont et al., 2009). They may describe themselves as practical, realistic, down to earth, or “no nonsense.” Others might describe them as closed-minded, intolerant, rigid, or inflexible. Clients with MLO will have difficulty adapting to change, and they may initially seek therapy because they are struggling to adjust to a recent life change. MLO clients will likely begin the therapeutic relationship with very concrete views on how therapy should progress. At the outset of therapy, it is possible that they will not consider their MLO as a contributor to their concerns but may instead see themselves as perhaps the only level-headed person in what they believe to be an outlandish circumstance. Despite this presentation, the therapist will find that on closer inspection, the MLO client is unable to adapt flexibly to inevitable variation that occurs over time, regardless of the specifics of a given situation.

MLO to feelings, which can be described as dispassionate or alexithymic, is a component of schizoid, narcissistic, and obsessive-compulsive PDs. The mechanized, routine-bound aspects of paranoid, schizoid, avoidant, and obsessive-compulsive PDs fall under MLO to actions. Individuals with obsessive-compulsive or paranoid PDs are likely to demonstrate the dogmatic and moralistically intolerant attitudes of MLO to values. Obsessive-compulsive PD also contains a measure of MLO to ideas, which might be termed *closed-mindedness*.

Clients with MLO will experience difficulties relating to others, even those clients that are average

or moderately high on agreeableness and extraversion. Although some clients with MLO could potentially be tender-minded or warm, MLO will limit their ability to “put themselves in someone else’s shoes.” In other words, they may be compassionate but incapable of empathy. Additionally, MLO to feelings will restrict clients’ emotional interactions with others. Clients with MLO are not generally incapable of experiencing the full range of emotions (because they can have differing levels of N and E); however, their expression and reactivity are considerably diminished. Clients with MLO will also have difficulty with creative or flexible thinking, unconventional problem solving, and adapting to changing demands. Depending on the client’s vocation, this may have a severe negative impact on his or her career advancement. Moreover, even if they have an average or high IQ, the MLO clients’ lack of cognitive flexibility may cause others to view them as dull or unintelligent.

### Selected Therapeutic Approaches and Application

Treatment with MLO clients should begin concretely, with clear and specific goals that are directly related to the client’s presenting concerns. It can also be helpful to break up the session into several discrete sections; these can be tailored to fit the client’s requirements but could involve (for example) 20 minutes of the client discussing his or her immediate concerns, 20 minutes of targeted skill building, and 10 minutes of strategizing for the following session. The key to effective structure, however, is to involve the client heavily in the planning; if the structure is simply imposed by the clinician, the MLO client will likely be resistant. When developing an initial structure for the session, it is critical to give the MLO client advance notice that this will not be the permanent structure for the sessions. Rather, it is the concrete foundation on which the therapist will build. (Despite its use here, metaphor is to be mostly avoided during the beginning stages of therapy with MLO clients.)

After rapport has been established, the clinician can begin to introduce less concrete forms of therapy. As mentioned previously, this transition should be slow, gradual, and expected by the cli-

ent; any abrupt shift will be met with rigidity. All forms of therapy involve acceptance, change, or (in most cases) a combination of both acceptance and change. By definition, clients with MLO will struggle with these concepts. In a sense, therefore, the successful introduction of any unfamiliar approach to an MLO client will be indirectly targeting the client's pathology. There are, however, some therapeutic approaches that may be more directly applicable to MLO. One of these is Acceptance and Commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999).

ACT has been labeled as part of the "third wave" of behavior therapy (Hayes, 2004). It is a behavioral approach that is based on the relational frame theory of cognition (Hayes, Barnes-Holmes, & Roche, 2001) and functional contextualism, meaning that all behaviors are considered contextually rather than in isolation. ACT seeks to attack "cognitive fusion" (adherence to a context without awareness of that context) to separate the clients' cognitions from the rigidity of their relational frame. In other words, the purpose of ACT is to increase cognitive flexibility, which could potentially be applied to MLO to fantasy, actions, ideas, and values.

Although not currently a viable option, clinical research from Johns Hopkins University examining the effects of psilocybin indicates that it may increase emotionality, mystical experiences, and a sense of unity. Unfortunately, of the 30 participants, "two . . . compared the experience to being in a war, and three indicated that they would never wish to repeat an experience like that again" (Griffiths, Richards, McCann, & Jesse, 2006, p. 279). Fortunately, there may be a legal alternative to advising the use of hallucinogenic mushrooms. Current research indicates that increased levels of dopamine in the prefrontal cortex are positively correlated with cognitive flexibility and openness (DeYoung et al., 2011). If MLO clients are willing to pursue pharmacologic intervention, a dopamine reuptake inhibitor (such as bupropion) may significantly compound the positive effects of therapy.

### **Complications, Considerations, and Future Research**

As mentioned previously, the nature of MLO implies that MLO clients will be highly resistant to change.

Treatment of any PD requires time and patience, but treatment of clients with MLO will require these in spades. The clinician should continually draw the connection between the client's MLO and his or her problems in living. Additionally, clients with MLO will likely be seeking therapy for another presenting problem (i.e., an Axis I disorder) rather than being aware that their personality is problematic; therefore, the treatment of the presenting problem may be all that is able to be accomplished.

Although there is extensive research in the areas of openness and aging, it is confined to normal variations in openness rather than MLO. For example, researchers have suggested that low openness is associated with Alzheimer's disease and other negative aging outcomes (Duchek, Balota, Storandt, & Larsen, 2007; Gregory, Nettelbeck, & Wilson, 2010). Given these findings, it would be worthwhile to explore empirically both the short- and long-term effects of MLO.

### **MALADAPTIVE HIGH AGREEABILITYNESS**

#### **Clinical Presentation, Associated DSM Diagnoses, and Problems in Living**

An individual rated high in FFM agreeableness is traditionally conceptualized as cooperative, pleasant, giving, considerate, kind, and honest. These traits are considered prosocial and are nearly universally valued as positive. Behaviors associated with high agreeableness may even be described as virtuous. Maladaptively high agreeableness (MHA) may be initially considered a paradox, perhaps edging toward diagnosing Mother Theresa and Mahatma Gandhi. However, clients with MHA will not simply be extremely kind or giving; instead, they will exhibit excessive subjugation of their own wants, needs, thoughts, and beliefs. Adaptive high agreeableness propels an individual to act in accordance to their moral, ethical, and social values, even when this requires struggle or sacrifice. In contrast, MHA pushes individuals to think, feel, and behave following a preconceived social blueprint, even when this conflicts with their own values or is self-destructive.

In general, an individual with dependent PD will likely exhibit several aspects of MHA. The gullibility of high trust, the selflessness of high altruism, the

docility of high compliance, and the self-effacement of high modesty are all characteristic of an individual with dependent PD (Lowe, Edmundson, & Widiger, 2009). Additionally, individuals with histrionic PD are overly suggestible and trusting, and those with avoidant PD may be self-effacing. Although MHA is not directly related to any Axis I disorders, it is reasonable to believe that the negative effects of MHA could lead to mood and anxiety disorders. For example, clients with maladaptive high trust and straightforwardness may repeatedly entrust the wrong people with sensitive personal information, recurring violations of which could lead to social phobia. Clients with maladaptive high tender-mindedness and altruism may find that others repeatedly take advantage of them, which could contribute to agoraphobia. Finally, maladaptive high modesty and compliance could lead to lowered self-esteem, increasing the likelihood of dysthymia or major depressive disorder.

Clients with MHA will primarily have interpersonal problems in living, and these will have emotional consequences. In general, they will give more (whether it be time, information, emotion, or money) than the other person in their relationships. Emotionally, they may express vacillating feelings regarding these relationships because they are “playing by the rules” of society but also feel that they must be even more kind, more generous, and more trusting. MHA clients will likely have a belief in a just world and will maintain the expectation that increased agreeableness will elicit agreeable behavior in return. This may eventually lead to negative or pessimistic views about relationships and society in general, despite continued MHA behavior. In the most severe cases, clients with MHA will remain in physically or emotionally abusive relationships and over time may become financially destitute.

### **Selected Therapeutic Approaches and Application**

Because of the relational nature of MHA, interpersonal therapy is a logical therapeutic approach. In interpersonal therapy, the clinician is able to use the therapeutic relationship to address the client’s MHA in a number of ways (Millon & Grossman, 2007b). From the outset, the therapist must build sufficient

rapport. Although clients with MHA may trust the clinician implicitly and be quite willing to comply with treatment, the clinician should not mistake this for rapport; the therapist must establish that this relationship will be safe but at times uncomfortable. After the initial relationship has been established, the therapist can then test the relationship by challenging the MHA client’s deference. “Challenging” in this context may be a misnomer; instead of directly telling the client that he or she needs to act differently (which could further elicit the client’s MHA), the clinician should selectively use silence and repetition of the client’s own words to highlight the maladaptivity of the client’s interpersonal functioning (Benjamin, 2003). After the client becomes aware of how MHA affects his or her own manner of relating, the clinician can then use the therapeutic relationship as a model of adaptivity. This is accomplished by engaging in appropriate and balanced interactions with the client as well as giving the client feedback regarding the thoughts, feelings, and behaviors in others that are elicited and reinforced by the client’s MHA.

In addition to interpersonal therapy, systems theory and cognitive-behavioral methods may be integrated into treatment. Although MHA is not simply a product of a system (any maladaptive trait should be present across settings), clients’ interaction with a given system may serve to maintain or strengthen MHA cognitions, emotions, and behaviors. Any change on the part of the client will likely upset the homeostasis of the system, which will pressure clients to revert to their previous functioning. The therapist and the MHA client can work together to evaluate the client’s current relationship systems and can then determine how to adapt to, change, or exit these systems. The addition of cognitive-behavioral therapy can focus on changing the specific thoughts and behaviors involved in MHA (Beck et al., 2003). For example, clients with maladaptive high modesty and compliance may believe that minimizing their own strengths and deferring to the wishes of others will earn the respect and love of others; the therapist can challenge clients to target the cognitive distortions implicit in these beliefs and to then develop more realistic beliefs. When clients are ready to attempt

to change specific MHA behaviors, cognitive-behavioral therapy can gradually introduce “behavioral experiments” in which clients test out self-preserving (i.e., less “agreeable”) behaviors in their lives and then discuss the consequences of those behaviors in therapy.

### **Complications, Considerations, and Future Research**

When delivering therapeutic interventions for MHA, therapists must remain vigilant regarding their own reinforcement of clients’ MHA behaviors in therapy. The idea of treating a trusting, guileless, and compliant client can be almost seductive in its appeal, and even experienced and savvy clinicians may inadvertently encourage MHA clients to behave in overly agreeable ways. For example, the clinician makes an offhanded comment regarding the busy traffic in the mornings; in response, MHA clients suggest an alternate meeting time, neglecting to mention that it requires them to use vacation hours or pay extra for a babysitter. Likewise, if the clinician believes that therapy is going smoothly, MHA clients are unlikely to voice thoughts or feelings that contradict the therapist’s impressions.

Clinicians must also be aware of cultural factors that interfere with the assessment and treatment of MHA (López & Guarnaccia, 2000). Because standards for prosocial behavior vary across cultures, teasing apart adaptive from maladaptive agreeableness can become complicated if the therapist is not familiar with the cultural context. If treating clients’ MHA will alienate them from their entire support system, therapists must carefully weigh the risks versus rewards of treatment. The gender of both the clinician and the client should also be considered a cultural factor; it is not uncommon for women in most cultures to be reinforced for agreeableness, even when it is maladaptive.

### **MALADAPTIVE LOW AGREEABLENESS**

#### **Clinical Presentation, Associated DSM Diagnoses, and Problems in Living**

Of the 10 maladaptive extremes within the FFM, maladaptive low agreeableness (MLA) is perhaps the trait that clinicians would most prefer to avoid.

From the outset of therapy, clients presenting with MLA will be resistant to therapists’ efforts to establish rapport, will oppose most forms of assessment, will be frequently evasive or dishonest, and will explain that other people are the cause of their problems. Clients with MLA may be referred through the justice system or by their employer or may be seeking therapy to obtain some secondary gain (e.g., lawsuit settlement, child custody, etc.). Even if MLA is the most extreme or maladaptive aspect of their personality, it is unlikely to be the client’s reported reason for seeking therapy.

Maladaptive low trust is represented by the cynicism, distrust, and interpersonal suspiciousness in antisocial, borderline, schizotypal, paranoid, and narcissistic PDs. Maladaptive low straightforwardness, including manipulation, deception, and melodramatic emotionality, is a component of antisocial, narcissistic, paranoid, borderline, and histrionic PDs. Maladaptive low altruism is present in the self-centeredness, exploitativeness, and entitlement observed in clients with antisocial and narcissistic PDs. Maladaptive low compliance is the facet associated with the oppositional and combative nature seen in paranoid, antisocial, borderline, and narcissistic PDs; it is also associated with treatment resistance. Maladaptive low modesty is apparent in the arrogance of antisocial and narcissistic PDs, and the vanity of histrionic PD. Finally, maladaptive low tender-mindedness encompasses the callousness and lack of empathy associated with antisocial, narcissistic, and paranoid PDs.

As mentioned previously, agreeableness is primarily a domain of interpersonal functioning. Clients with MLA will generally be dislikeable to others, and this will limit their ability to maintain interpersonal relationships (apart from those perpetuated through fear and manipulation). Clients who are maladaptively low in most or all of the facets of agreeableness are unlikely to have any healthy relationships. Suspiciousness, dishonesty, self-centeredness, defiance, arrogance, and callousness tend to elicit negative responses from others, which can serve to reinforce MLA over time. Because many prosocial behaviors overlap with legal expectations, it is not uncommon for clients with MLA to have a history of criminal behavior.

## Selected Therapeutic Approaches and Application

Clinicians embarking on therapy with MLA clients must maintain realistic expectations regarding treatment outcomes. MLA has considerable overlap with antisocial and narcissistic PDs; examination of the literature for these disorders reveals that although they may be resistant to intervention, they are not untreatable (Gunderson & Gabbard, 2000; Ronningstam, 2005; Salekin, 2002). Therapeutic techniques, such as cognitive-behavioral or interpersonal therapy, should use rational and utilitarian arguments that focus on the benefits of prosocial behavior (Presnall & Widiger, *in press*; Young, Klosko, & Weishaar, 2003). Therapists must identify the MLA clients' goals to make therapy relevant. For example, if a client is self-centered, defiant, and arrogant and is struggling to obtain employment, the therapist should illustrate why altruism, compliance, and modesty would be attractive to an employer.

Although the choice of therapeutic technique is important, the attitude of the therapist may be the most important component when treating clients with MLA. The behaviors associated with MLA are almost certain to elicit negative feelings in treatment providers. Within the therapeutic relationship, clients with MLA will engage in the same manipulation, dishonesty, arrogance, and defiance that they exhibit in other relationships. Clinicians must consciously avoid engaging in power struggles or responding defensively when challenged; however, this must be combined with savvy and a healthy dose of skepticism. There is a constant tension between the therapist attempting to model trust, straightforwardness, and empathy while remaining alert to the client's dishonesty and manipulativeness.

Clinicians would be wise to supplement psychotherapy with pharmacotherapy. As mentioned previously, Knutson et al. (1998) demonstrated in nonclinical participants that observational measures of affiliative behavior (agreeableness) increased in response to paroxetine, an SSRI. Their findings regarding the effects of SSRIs in normal populations have been supported by subsequent research (Tang et al., 2009), although the other

reviews for this particular finding have been mixed (Knorr & Kessing, 2010; Serretti et al., 2010). Additionally, studies have found that increasing the level of biochemical precursor to serotonin, L-tryptophan, increases affiliative behavior (aan het Rot, Moskowitz, Pinard, & Young, 2006; Moskowitz, Pinard, Zuroff, Annable, & Young, 2001). Lithium has also been suggested to control impulsive aggression (Markovitz, 2001).

## Complications, Considerations, and Future Research

When assessing for MLA, clinicians may find it difficult to distinguish enduring traits from behaviors that develop in response to other psychopathology. For example, mistrust, dishonesty, and manipulation are frequently seen in clients with substance abuse and eating disorders. Clients diagnosed with bipolar I disorder will often exhibit low modesty during a manic episode. The presence of these Axis I disorders do not preclude the existence of MLA, but they warrant further examination as to whether the behaviors are ego-syntonic or ego-dystonic.

As mentioned previously, clients with MLA may be unmotivated to change their behavior unless they recognize the negative personal consequences of their actions. They may be dishonest in their desire to change and are apt to discontinue therapy in response to a reduction in external pressures (e.g., completion of court-mandated treatment). Therapists who are considering initiating treatment with MLA clients should reflect on their ability to confront unpleasant behaviors without defensiveness or moral judgment.

The most promising future for the treatment of MLA appears to be in the area of psychopharmacology. Although some research indicates that personality change may be achieved through pharmacotherapy (Knutson et al., 1998; Tang et al., 2009), these studies are preliminary and confined to SSRIs. Further research should continue to examine the effects of SSRIs as well as those of the new classes of antidepressants and atypical antipsychotics, which have been found to have myriad positive benefits.

## MALADAPTIVE HIGH CONSCIENTIOUSNESS

### Clinical Presentation, Associated DSM Diagnoses, and Problems in Living

An individual presenting with maladaptive high conscientiousness (MHC) will have extremely high standards of thought and behavior. The effort required to meet these lofty standards will dominate MHC clients' attention, eventually depleting their emotional and interpersonal resources. Some clients with MHC may recognize that their disordered personality is leading to negative life consequences and will identify it as the target for therapy. Others may seek therapy to treat the consequences of MHC, such as neglected and failed relationships or physical and emotional exhaustion.

MHC is primarily associated with obsessive-compulsive PD. Individuals with all of the facets of MHC will be perfectionistic, preoccupied with order, rigidly principled, workaholic, single-mindedly determined, and ruminative in their deliberation. Individuals with narcissistic PD will demonstrate the acclaim-seeking aspect of maladaptive high achievement striving. Clients with obsessive-compulsive disorder may exhibit tendencies that resemble MHC; in particular, the perfectionistic, methodical, orderly, and deliberative qualities of compulsive behaviors. Although some clients with obsessive-compulsive disorder may have trait MHC, the underlying personality trait mechanism of obsessive-compulsive disorder is not conscientiousness but perhaps neuroticism (Rosellini & Brown, 2011). Perfectionism may also be a risk factor for anorexia nervosa (Cockell et al., 2002).

Clients with MHC may not report widespread problems in psychosocial functioning; they are most likely to have deficits in their interpersonal relationships with friends, parents, spouses or romantic partners, and siblings or other relatives but are less likely to report problems with their children (Skodol et al., 2002). In the most severe cases, clients with MHC may become so preoccupied with perfection and detail that they lose sight of deadlines or goals, which may interfere with educational or occupational functioning. Some clients with MHC will experience distress related to their inability to meet

perceived expectations; others may only feel anxious or depressed when they are confronting the prospect of changing their behavior.

### Selected Therapeutic Approaches and Application

Because of its organization, straightforward approach, and homework components, cognitive-behavioral treatment is likely to appeal to clients with MHC. In the cognitive portion, therapists can assist MHC clients in examining their faulty beliefs regarding perfection, order, and control. Behaviorally, the clinician should make strong use of shaping within the context of homework assignments. For example, a client who tends to work 12 to 14 hours a day at his or her salaried job would be encouraged to first track his or her work hours and would then work to gradually reduce them, perhaps by 10 minutes per day (Beck et al., 2003). DBT could also address the cognitive-behavioral aspects; additionally, DBT also incorporates mindfulness practice and the concept of dialectics, which may target the rigidity of MHC (Miller & Kraus, 2007).

Psychodynamic therapy may also be effective in treating MHC. Therapy may focus on dynamics from childhood that may have established or maintained their preoccupation with order, perfection, and achievement and how these dynamics are continuing to replay in the client's adult life. Analytically speaking, the client would ultimately be working to reshape and quiet an overactive superego (Gabbard & Newman, 2007). In conjunction with any type of psychotherapy, introducing SSRIs such as paroxetine may be effective. Although MHC is unlikely to be treated by SSRIs alone, they may help to reduce anxiety that can arise when the client is in the midst of changing MHC behaviors.

### Complications, Considerations, and Future Research

If a client with MHC has decided to initiate therapy, treatment is likely to be successful. Clients with MHC will likely be diligent about completing homework, consistent in their attendance, and unlikely to prematurely terminate treatment (unless it begins to conflict with a previous commitment). Unfortunately, clients may discover that employers

tend to reinforce their MHC behavior, despite negative interpersonal costs to the client. MHC clients who are also relatively high in agreeableness may have developed relationships in which others have taken advantage of them.

One key complication when treating MHC is the issue of assessment. When using self-report measures, MHC clients may accurately describe themselves as conscientious; it is also possible, however, that clients with severe MHC would underestimate their conscientiousness because of their unreasonably high expectations. That is, they will consider themselves to be insufficiently conscientious, diligent, or competent because of their excessively high standards. In these cases, peer assessment may provide the more accurate description. However, a further complication is that if perfectionism and rumination interfere with task execution, they may be perceived as being not adequately conscientious. Future research should address these dilemmas because assessment may be the most problematic aspect for diagnosing MHC clients.

## MALADAPTIVE LOW CONSCIENTIOUSNESS

### Clinical Presentation, Associated DSM Diagnoses, and Problems in Living

Clients presenting with maladaptive low conscientiousness (MLC) will probably arrive late to their first session, if they manage to arrive at all. Individuals with MLC are unlikely to have come to therapy under their own motivation; a family member or friend may have called for the appointment and transported the client to therapy (assuming treatment is not compulsory because of legal concerns). They may appear unkempt, although not necessarily unclean, and might neglect to pay for treatment if not prompted. When describing the nature of their problems, clients with MLC may be vague and unfocused.

MLC is a component of several *DSM-IV-TR* PDs as well as a risk factor for some Axis I diagnoses. In some clients with borderline or dependent PDs, ineffectiveness and low competence may describe the clients' beliefs that they are unequipped and incapable of handling difficult or important tasks

and the actions that result from these beliefs. Carelessness, disorderliness, and haphazard behavior are often present in individuals with schizotypal and histrionic PDs. Irresponsibility and undependability are characteristic traits of antisocial PD and are associated with unfulfilled commitments and broken promises. Individuals with low self-discipline have difficulty persevering in tasks that become difficult or unpleasant; this lack of persistence is a feature in antisocial, dependent, and histrionic PDs. Maladaptive low deliberation could be considered a deficit in conscientious cognition; it can account for the rashness of antisocial and borderline PDs and the impressionistic thinking observed in histrionic PD. Although the relationship is not yet fully understood, MLC may have biological ties to attention-deficit/hyperactivity disorder (ADHD; Martel, Nikolas, Jernigan, Friderici, & Nigg, 2010); additionally, MLC increases the likelihood of dysthymia and major depressive disorder.

Clients with MLC will potentially have widespread functional impairments, including occupational, financial, legal, social, and health concerns. Clients' primary concerns will likely include difficulties finding and maintaining employment; examination of MLC individuals' work history will likely reveal tardiness and inability to meet expectations. Financially, clients with MLC will struggle to obtain enough money (because of employment problems), appropriately spend money (e.g., will make impulse purchases), and pay bills (e.g., will lose financial statements and postpone unpleasant tasks). Legal difficulties can vary widely; they may range from minor (failure to pay taxes) to severe (theft, reckless driving, or neglect of minors). Although MLC is not primarily an interpersonal deficit, the preceding list of associated behaviors will clearly have interpersonal consequences. Finally, health and aging research indicates that MLC is an extremely strong predictor of negative health consequences (Bogg & Roberts, 2004).

### Selected Therapeutic Approaches and Application

Behavioral therapy is one potentially effective treatment option for MLC. The clinician should begin by identifying what is rewarding or punish-

ing for the client; these must be strong enough to effectively change the likelihood that a behavior will take place. After pinpointing these stimuli, the client and therapist should discuss which of the client's behaviors are creating the most severe negative consequences; these will be the first behavioral targets. In addition to directly changing behaviors, the therapist should assist the client in changing his or her environment to create an effective reward and punishment system that is naturally maintained by the environment. The clinician should keep in mind that feelings of mastery and accomplishment are unlikely to be effective reinforcers for clients with MLC.

Family systems therapy may also be an appropriate option for the treatment of MLC. Families and friends of individuals with MLC will have established ways of interacting with the client; these patterns are likely to play a role in maintaining the MLC behavior. For example, some families treat the MLC client as the "scapegoat." Positive changes in the client are viewed skeptically by the family, and the system functions most smoothly when the client can be blamed for negative situations. The clinician will work with the family to identify these entrenched patterns of interaction and to change possible reinforcers that have served to maintain the client's MLC.

Pharmacotherapy may also target some aspects of MLC. Nigg et al. (2002) demonstrated a significant correlation between the inattentive symptoms of ADHD and low conscientiousness in adults, assessed through both self- and spouse reports. Additionally, they determined that adults diagnosed with ADHD were significantly lower in trait conscientiousness ( $d = -1.95$ ) than non-ADHD controls. Research has also indicated that personality may serve as a mediator between possessing the genetic markers of ADHD and the expression of inattentive symptoms (Martel et al., 2010). Because the inattentive symptoms of ADHD can be well controlled by methylphenidate and other stimulant medication (Wender et al., 2011), it is conceivable that these could be effective for treatment of MLC as well. However, for medication to be effective, it must be taken conscientiously; the problem this presents for a client with MLC is self-explanatory.

## Complications, Considerations, and Future Research

Treatment of clients with MLC will be plagued with treatment adherence issues. If possible, involving a spouse, another family member, or a close friend in the beginning of therapy could prove valuable. The therapist should be judicious in engaging this support person because clients should be considered accountable for their own therapy; over time, however, the external motivator can be reduced as the therapist increases the client's responsibilities. Therapists must also be skilled in prioritizing MLC clients' targets of change. Multiple areas of the client's life are apt to be in disarray, but the most pressing concerns (e.g., paying rent, refraining from criminal behavior) must be tackled first, and multi-tasking will not be one of MLC clients' strengths.

Psychotherapy with MLC clients is faced with the tremendous obstacle of minimal participation on the part of the client. If the client is high in neuroticism, the negative emotional impact due to the consequences of MLC may serve to motivate increased therapeutic involvement. Previous research has established the serious health ramifications of MLC (Bogg & Roberts, 2004), the costs of which are likely to be borne by the public. As such, continued exploration regarding the treatment of MLC should be relevant to researchers in public health. In particular, the biological substrates and neurological mechanisms involved in conscientiousness may be fertile ground for future investigation.

## CONCLUSION

The classification, diagnosis, and treatment of PD should be theoretically sound, empirically derived, and clinically useful. Treatment planning, a key aspect of clinical utility, should be aided rather than hindered by diagnosis. The overlapping and heterogeneous criteria that make up the *DSM-IV-TR* categories have created an obstacle to the development of empirically supported treatment guidelines for PD. In contrast, the FFM of PD is a structurally sound framework on which treatment planning can build. If PD is diagnosed using the FFM four-step procedure (Widiger, Costa, & McCrae, 2002; Widiger & Lowe, 2007; see also Chapter 19, this

volume), the clinician is armed with the knowledge provided by the third step: determining whether the dysfunction reaches a clinically significant level of impairment. Not only does this information aid in the diagnosis of PD, it also assists the clinician in prioritizing treatment based on the level of impairment associated with a given area of dysfunction.

The current state of treatment outcome research leaves much to be desired, particularly in the area of PD. This should not deter the pursuit of effective treatment for individuals with PD (Magnavita, Levy, Critchfield, & Lebow, 2010) but should rather spur increased attention from scientist-practitioners. Although a multitude of treatment approaches may exist in practice, these are largely a patchwork assortment that are applied in the absence of a guiding theoretical structure. These approaches may become more clearly aligned when viewed through the lens of the FFM; therefore, it becomes incumbent on researchers to evaluate empirically the outcomes of clinical treatment from an FFM perspective.

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## PART V

# CONCLUSIONS AND FUTURE RESEARCH



# FINAL WORD AND FUTURE RESEARCH

*Thomas A. Widiger and Paul T. Costa Jr.*

Little in psychology is ever truly conclusive (Rorer & Widiger, 1983; Smith, 2005). This is one of the reasons that the construction of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) can be so controversial because it attempts to provide the authoritative answers for questions that remain in considerable dispute (Frances & Widiger, *in press*; Frances, Widiger, & Pincus, 1989). With respect to the five-factor model (FFM), there will continue to be questions and research on the optimal content and number of facets (e.g., DeYoung, Quilty, & Peterson, 2007), on its assessment (De Raad & Perugini, 2002), and even on the validity of the five domains (e.g., Ashton & Lee, 2008).

We would hope that every chapter within this text will generate an interest in and ideas for future research. We do not consider any matter covered within this text to no longer need additional research. On the contrary, as suggested in our chapter on FFM personality disorder research (see Chapter 6, this volume), this is a highly productive line of scientific investigation that we hope and expect will continue to grow.

We make a few suggestions in this final chapter for what we consider to be particularly productive lines of investigation, with all due apology to the fact that we will most definitely fail to cover everything that is important and will, in all likelihood, neglect to cover some central, fundamental lines of

investigation. We discuss in particular research concerning clinical utility, treatment manuals, *DSM-5* (which includes a number of research areas), and new scales.

## CLINICAL UTILITY

In a survey of members of the International Society for the Study of Personality Disorders and the Association for Research on Personality Disorders, 80% of respondents indicated that "personality disorders are better understood as variants of normal personality than as categorical disease entities" (Bernstein, Iscan, & Maser, et al., 2007, p. 542). However, shifting to a dimensional trait model for conceptualizing, assessing, and diagnosing personality disorders may represent a true paradigm shift in psychiatry (Widiger & Edmundson, 2011). It is not surprising then that it is met with significant concern and opposition (e.g., Gunderson, 2010; Shedler et al., 2010). Some of this opposition represents a fundamental disagreement with respect to validity. However, much of it is couched and/or expressed with respect to matters of clinical utility (First, 2005; Shedler et al., 2010).

An important line of investigation for future research will be to document further the clinical utility of the FFM of personality disorder. As indicated by Mullins-Sweatt (Chapter 20, this volume), quite a bit of empirical support for the clinical utility of the FFM has been published, but more will need

to be done. As she indicates, surveys of the opinions of existing clinicians, including psychiatrists, psychologists, and social workers, is of considerable importance to obtain empirical documentation of the receptivity of mental health professionals for this shift (rather than just assuming that one can speak for them). However, it will also be useful for future researchers to document empirically how an FFM conceptualization of patients effectively alters or improves clinical treatment, communication, and perhaps even outcome. This research should involve the application of the four-step method of an FFM diagnosis, recommended in Chapter 19 of this volume.

Education will also be important. We included clinically oriented chapters within this text to help illustrate how the FFM can inform clinical practice. We hope that the chapters by Sanderson and Clarkin (Chapter 21); Stone (Chapter 22); Piedmont and Rodgerson (Chapter 23); Stepp, Whalen, and Smith (Chapter 24); and Presnall (Chapter 25) are indeed helpful in this regard. In addition, the more research-oriented chapters concerning individual personality disorder constructs, such as psychopathy (Derefinko & Lynam, Chapter 7) and dependency (Gore & Pincus, Chapter 11) may also be helpful clinically, as well as the chapters on assessment, such as those by Samuel (Chapter 15), Oltmanns and Carlson (Chapter 16), and Miller (Chapter 17).

Obviously, educating the field with respect to the clinical utility of the FFM requires more work. The clinical utility studies have consistently reported that the participants were considerably more familiar with the *DSM* than with the FFM. Some populations of clinicians can be more difficult to reach than others. Curiously, there has never been an article published in *The American Journal of Psychiatry* that was favorable toward the FFM. This may now change, however, if the current proposals for *DSM-5* are approved and clinicians become more interested in the dimensional trait approach.

We do expect that the exposure that will come with *DSM-5* will be fruitful in developing familiarity, comfort, and even confidence with the application of the FFM in clinical practice. As we have indicated elsewhere, it is really not that difficult of a

model to learn and apply (Widiger, 2011b; Widiger & Lowe, 2007) because it uses a common language and is structured in a manner consistent with how language is itself structured (see McCrae & Costa, Chapter 2, and Allik, Realo, & McCrae, Chapter 5, this volume).

## TREATMENT MANUALS

The clinical dissemination of the FFM would of course be greatly facilitated by treatment manuals constructed from the perspective of the FFM. As suggested by Presnall (Chapter 25) and Zapolski, Guller, and Smith (Chapter 3), the FFM has considerable potential as a basis for developing empirically validated treatment manuals, given that the constructs are so much more specific and clearer than the complex syndromes of the fourth edition, text revision, of the *DSM* (*DSM-IV-TR*; American Psychiatric Association, 2000).

Extraversion and agreeableness are domains of interpersonal relatedness, neuroticism (or negative emotionality) is a domain of emotional instability and dysregulation, conscientiousness is a domain of work-related behavior and responsibility, and openness is a domain of intellectual functioning (Mullins-Sweatt & Widiger, 2010; Widiger, 2011b). Maladaptive extraversion and agreeableness are confined specifically to social, interpersonal dysfunction, an area of functioning that is relevant to relationship quality both outside and within the therapy office. It is not difficult to hypothesize that interpersonal models of therapy, marital-family therapy, and group therapy will be especially relevant to these two domains. In contrast, neuroticism provides information with respect to mood, anxiety, and emotional dyscontrol, often targets for pharmacologic interventions, as well as cognitive, behavioral, and psychodynamic interventions. There are very clear pharmacologic implications for mood and anxiety dysregulation and emotional instability (e.g., anxiolytic, antidepressants, mood stabilizers, and combinations of these), whereas there are no comparably clear pharmacologic treatment implications for maladaptive antagonism or introversion, the interpersonal domains of the FFM (with some exceptions; see Gore & Pincus, Chapter 11, this

volume). Maladaptively high openness implies cognitive-perceptual aberrations and would also have pharmacologic implications but ones that would be quite different from those of neuroticism (i.e., neuroleptics). The domain of conscientiousness is, in contrast to agreeableness, extraversion, and neuroticism, the domain of most specific relevance to occupational dysfunction, or impairments concerning work and career. Maladaptively high levels involve workaholism and compulsivity, low levels involve irresponsibility, negligence, laxness, and disinhibition. There might be specific pharmacologic treatment implications for low conscientiousness (e.g., methylphenidates; Nigg et al., 2002) although, as yet, none for maladaptively high conscientiousness. Perhaps there never will be a pharmacotherapy for the compulsivity of high conscientiousness, but the point is that the structure of the FFM is much more commensurate with identifying specific treatment implications than the existing overlapping and heterogeneous diagnostic syndromes. As indicated in the chapters by Gore and Pincus (Chapter 11) and Presnall (Chapter 25), there have already been pharmacotherapy studies directly relevant to specific domains of the FFM. The future of treatment research and treatment planning could be quite rich and exciting.

### **DSM-5**

We end this book with the same point with which it began: This is both a difficult and exciting time for the diagnosis and classification of personality disorders. It is evident that the diagnosis of personality disorders provided by the American Psychiatric Association's official nomenclature is shifting strongly toward the FFM four-step procedure developed by Widiger, Costa, and McCrae (2002). If the proposal posted on June 21, 2011, holds, then *DSM-5* will include a five-domain dimensional trait model of personality disorder that is closely aligned with the five domains of the FFM. The 25 traits within this model are maladaptive variants of FFM facets (Step 2 of the four-step procedure), and the diagnostic criteria for each personality disorder type are governed largely by these traits (Step 4 of the four-step procedure).

However, it is risky to predict what will actually happen with *DSM-5*. The initial proposals were radical, to say the least, including the deletion of half of its diagnoses (Skodol, 2010). In response to significant and compelling objection (e.g., Miller, Widiger, & Campbell, 2010; Pincus, 2011; Ronningstam, 2011; Shedler et al., 2010; Widiger, 2011c), at least one of the initially deleted diagnoses, narcissistic personality disorder, has been returned (American Psychiatric Association, 2011). Also proposed was the abandonment of diagnostic criterion sets for subjective, global matching to lengthy and complex narratives (Skodol, 2010). In response to immediate criticisms of this proposal (Pilkonis, Hallquist, Morse, & Stepp, 2011; Widiger, 2011c; Zimmerman, 2011), it was soon abandoned (American Psychiatric Association, 2011). Replacing the narrative paragraphs were the lists of maladaptive personality traits (American Psychiatric Association, 2011). This shift will also receive substantial opposition (Gunderson, 2010; Shedler et al., 2010) and may not then survive.

Nevertheless, if the personality disorders appear in *DSM-5* as currently proposed (American Psychiatric Association, 2011), there will be a number of important lines of investigation with respect to its various components. Of course, many of these areas of research will still apply in modified form if the proposals are revised once again. Discussed briefly herein are the alignment of the trait model with the FFM, the assignment of traits to the personality types, the coverage of maladaptive personality functioning, the relationship between traits and the self and interpersonal impairments, and the reformulation of the types as Axis I (nonpersonality) disorders.

### **Alignment of the Trait Model With the FFM**

The alignment of the *DSM-5* five-domain dimensional trait model (i.e., emotional dysregulation; detachment; psychotism, previously identified as peculiarity; antagonism; and disinhibition) with the FFM is fairly clear. However, there are and will be some who will argue that this alignment does not exist. For example, Krueger, Eaton, Clark, et al. (2011) suggested that the peculiarity dimension of the *DSM-5* trait model is independent of FFM

openness. We summarized the body of research that supports this alignment in Chapter 6. Frankly, if this alignment is rejected, one is left with a less than parsimonious and certainly incongruous model in which one dimension of normal personality (FFM openness) has no maladaptive variants and one dimension of abnormal personality (i.e., *DSM-5* peculiarity or psychotism) has no normal variant. This is fundamentally inconsistent with all prior conceptualizations of an integrative model of normal and abnormal personality. Nevertheless, there will likely be the need for additional research to further address the relatively weaker relationship of FFM openness with *DSM-5* peculiarity.

### Trait Coverage of Personality Types

If the personality types continue to be diagnosed in large part by a list of maladaptive personality traits, an important focus of future research will be the identification of which traits are optimal for each respective personality type. The rationale for the current trait assignments has not been provided (Samuel, Lynam, Widiger, & Ball, 2012), and some of them are difficult to understand. For example, anhedonia is part of the diagnostic criteria for avoidant personality disorder (American Psychiatric Association, 2011), despite the fact that anhedonia has long been considered to be central to schizoid personality disorder.

It will be of interest for future research to study the validity of the *DSM-5* trait assignments, compared with how they are assigned within the FFM (see Table 6.1, this volume). FFM research has already been conducted that might have informed the *DSM-5* assignments, including surveys of researchers as to their preferred assignments (Lynam & Widiger, 2001), surveys of clinicians as to their preferred assignments (Samuel & Widiger, 2004), and studies testing empirically the association of these traits to the *DSM-IV-TR* personality disorders (Miller, Bagby, Pilkonis, Reynolds, & Lynam, 2005; Samuel & Widiger, 2008). Some of the empirical support for the FFM assignments was provided in Chapter 6, but further detail regarding the empirical support for individual types was provided within the chapters on psychopathy (by Dereckson & Lynam), borderline (by Trull &

Brown), narcissism (by Campbell & Miller), schizotypal (by Edmundson & Kwapis), and dependent (by Gore & Pincus). It will be of interest for future research to compare and contrast the trait assignments provided by the FFM and those provided by *DSM-5*, if the latter are not revised before the final decisions to be more commensurate with the FFM research.

In addition, the number of traits assigned to each personality type is substantially imbalanced within the June 2011, *DSM-5* proposal. For example, seven traits are assigned for the diagnosis of borderline personality disorder, four for avoidant, and only two for narcissistic (American Psychiatric Association, 2011). Many of the personality disorders are provided with only two or three traits for their diagnosis. Why there is so much disparity in simply the number of assigned traits is unclear (Samuel et al., 2012). More specifically, it is possible that narcissistic personality disorder will not be adequately described by just the two traits of grandiosity and attention seeking (Ronningstam, 2011), obsessive-compulsive will not be adequately described by just rigid perfectionism and perseveration (Samuel et al., 2012), and dependency will not be sufficiently well described by just submissiveness, anxiousness, and separation insecurity (Bornstein, 2011). It is possible that only a few traits are really needed to adequately describe a *DSM-IV-TR* or *DSM-5* personality type, and the results of the *DSM-5* field trial may indeed demonstrate this point (Skodol et al., 2011). However, the FFM descriptions of each respective personality disorder type are considerably more extensive and perhaps therefore richer and more thorough in their coverage (see Table 6.1, this volume). It will be of interest for future research to compare these alternative trait descriptions of personality disorder constructs.

### Coverage of Maladaptive Personality

Beyond the question of the coverage of each respective personality disorder type is the broader question of the coverage of all manner of maladaptive personality functioning. One of the repeated criticisms of the *DSM* diagnostic categories has been inadequate coverage (Verheul & Widiger, 2004; Westen & Arkowitz-Westen, 1998; Widiger & Trull, 2007).

This problem will be significantly worse in *DSM-5* with the likely loss of four personality disorder types (Widiger, 2011c).

The maladaptive personality traits for the types being deleted are to be recovered by the dimensional trait model (Skodol et al., 2011). However, the trait model may itself be sorely limited in scope. It was originally limited to only 37 traits (of unspecified origin), and even this list was reduced to just 25 on the basis of a factor analysis (Krueger, Eaton, Derringer, et al., 2011). It is possible that the list of 25 provides a reasonably comprehensive coverage of all of clinically important maladaptive personality traits (see Figure 19.1, this volume), but there are reasons to be concerned that this list might be insufficient.

For example, the *DSM-5* trait model is largely unipolar, whereas the FFM is consistently bipolar. The FFM includes maladaptively low neuroticism, high extraversion, low openness, high agreeableness, and high conscientiousness. Chapters 6 and 19 in this volume provide the empirical support for this bipolarity of maladaptivity (see also Samuel, 2011; Widiger, 2011a). For the most part, the *DSM-5* trait model does not include the poles of personality opposite to emotional dysregulation, detachment, psychotism (or peculiarity), antagonism, and disinhibition (the exceptions are two traits that are keyed negatively for a respective domain). As a result, the *DSM-5* trait model is unable to recognize a number of important personality traits. For example, because the model does not include maladaptively low neuroticism (low negative affectivity), it is unable to acknowledge the existence of psychopathic fearlessness and glib charm (Lynam & Widiger, 2007; see also Chapter 7, this volume, by Derefinko & Lynam). Because the model does not include maladaptive agreeableness, there is no ability to recognize the self-denigration, gullibility, and selfless self-sacrifice of the dependent (Lowe, Edmundson, & Widiger, 2009; see also Chapter 11, this volume, by Gore & Pincus). Because the *DSM-5* trait model does not include low openness it is unable to recognize alexithymia (see Chapter 13, this volume, by Taylor & Bagby).

Much of the FFM personality disorder research has been and may continue to be focused on the

extent to which the *DSM* personality disorders are adequately understood as extreme or maladaptive variants of the FFM domains and facets. We hope that readers of this text will be convinced by the research provided herein. However, we expect that this fundamental question will continue to be investigated. Piedmont, Sherman, Sherman, Dy-Liacco, and Williams (2009), alternatively, made the compelling argument that there should as well be attention given to the question of the extent to which the *DSM* adequately represents the domains and facets of the FFM. The FFM provides a reasonably comprehensive description of general personality structure (see Chapter 2, this volume, by McCrae & Costa). It is possible that the *DSM-5* is not providing adequate coverage of maladaptive personality functioning by not fully representing all of the domains and facets within the FFM, such as low openness and high agreeableness.

There are likely to be other traits even within the domains included within the *DSM-5* trait model that are not represented. Missing from antagonism, for example, are such traits as aggressiveness, self-centeredness, vanity, and pretentiousness (see Table 19.3, this volume). Missing from conscientiousness are ruminative deliberation, workaholism, and acclaim seeking. An important area of future research will be determining whether the 25-trait *DSM-5* model provides adequate coverage, whether the additional traits included within the FFM have important clinical utility, and whether there are maladaptive personality traits outside of the FFM.

## Self and Interpersonal Impairments

The diagnosis of the personality types in *DSM-5* will not be limited to just the traits (see Chapter 19, this volume, and <http://www.dsm5.org>). The diagnostic criteria will also likely include self and interpersonal impairments or pathologies. The distinction between traits and self- interpersonal impairments parallels to some extent the distinction that McCrae, Löckenhoff, and Costa (2005) make between maladaptive traits and problems in living (see Chapter 19, this volume). In *DSM-5*, however, the self and interpersonal impairments are also said to refer to underlying, organic pathologies that are unique to personality disorders and, equally important,

cannot be adequately understood simply in trait terms (Skodol et al., 2011).

Many of these self and interpersonal impairments might in fact be understood as behavioral manifestations of additional personality traits (Mullins-Sweatt & Widiger, 2010). One infers the presence of maladaptive personality traits largely on the basis of impairments and evident dysfunction, and these impairments can in turn be well understood as behavioral expressions of a respective trait. For example, proposed impairments for narcissistic personality disorder include an “impaired ability to recognize or identify with the feelings and needs of others” and an “excessive reference to others for self-definition and self-esteem regulation” (American Psychiatric Association, 2011). These two impairments could represent pathologies that are distinct from maladaptive personality traits (Skodol et al., 2011). Alternatively, they might simply be understood as behavioral manifestations of maladaptive personality traits (i.e., low tender-mindedness and high self-consciousness, respectively). It will be of interest for future research to determine whether the self and interpersonal impairments are indeed simply manifestations of additional personality traits or a form of psychological pathology that is qualitatively distinct from personality.

### Schizotypal as a Personality Disorder

It is currently proposed to shift schizotypal personality disorder out of the personality disorders section and into a section for schizophrenia spectrum disorders, within which it will receive its primary coding, with only a secondary reference as a personality disorder (Siever, 2011; Skodol, in press). This proposal does have empirical support (Krueger, 2005; Siever & Davis, 1991). Schizotypal is already classified as a form of schizophrenia in the World Health Organization’s (1992) *International Classification of Diseases*. It is genetically related to schizophrenia, most of its neurobiological risk factors and psychophysiological correlates are shared with schizophrenia (e.g., eye tracking, orienting, startle blink, and neurodevelopmental abnormalities), and the treatments that are effective in ameliorating schizotypal symptoms overlap with

treatments used for persons with schizophrenia (Krueger, 2005; Lenzenweger, 2006).

However, there is also support for conceptualizing schizotypy as a personality disorder (Skodol, in press; see also Chapter 10, this volume, by Edmundson & Kwapis). Schizotypal is far more comorbid with other personality disorders than it is with other schizophrenia spectrum disorders, persons with schizotypal personality disorder rarely go on to develop schizophrenia, and schizotypal traits are seen in quite a number of persons who lack a genetic association with schizophrenia and would not be at all well described as having a schizophrenic mental disorder (Raine, 2006).

Classifying schizotypal outside of the personality disorder section will also represent a fundamental inconsistency of the DSM-5 type and trait models because schizotypal cognitive-perceptual aberrations will remain within the psychoticism (peculiarity) domain of the personality trait model (see Figure 19.1, this volume), yet the personality type will be within the section for schizophrenia spectrum disorders. However, this would be consistent with a recent study by Ashton and Lee (2012), in which they suggested that the oddity factor of Watson, Clark, and Chmielewski (2008) is aligned with FFM openness, whereas some cognitive-perceptual aberrations and dissociation are better understood as symptoms of an Axis I disorder. The Watson et al. title for this dimension is *peculiarity*, which is well within the FFM domain of openness (Ashton & Lee, in press; Lee & Ashton, 2004; Piedmont et al., 2009), but the DSM-5 title is *psychoticism*, which, by definition, would appear to be referring to an Axis I disorder.

The American Psychiatric Association might even disband the personality disorders section entirely (e.g., see Krueger, Eaton, Derringer, et al., 2011). One proposal, for example, is to shift antisocial (renamed as *dysocial personality disorder*) into a new class of disorders called disruptive, impulse control, and conduct disorders (Siever, 2011; Skodol, in press; Widiger, 2011c). It is difficult to imagine a personality disorder as well established as antisocial-psychopathy no longer being conceptualized as a personality disorder, but there is considerable pressure for a reformulation of

all personality disorders as early-onset, chronic manifestations of existing Axis I disorders. These pressures include the difficulties many clinicians experience in obtaining insurance coverage for the treatment of personality disorders and the shifting of psychiatry away from psychodynamic perspective toward a neurobiological orientation (Widiger & Gore, *in press*). Borderline personality disorder could become an early-onset and chronic mood dysregulation (or impulse dyscontrol) disorder, avoidant personality disorder could be folded into generalized social phobia, and obsessive-compulsive could somehow be reconceptualized as an early onset, chronic variant of obsessive-compulsive anxiety disorder (Krueger, Eaton, Derringer, et al., 2011).

This proposal might create more problems than it solves. It does appear to be true that persons have constellations of maladaptive personality traits (McCrae & Costa, 2003) that are not well described by just one or even multiple personality disorder diagnoses (Widiger & Trull, 2007). These constellations of maladaptive personality traits would be even less well described by multiple Axis I diagnoses across broad classes of anxiety, mood, impulsive dyscontrol, delusional, disruptive behavior, and schizophrenia spectrum disorders (Widiger & Smith, 2008). It is perhaps difficult to imagine such a radical proposal being implemented, but it is on the table (e.g., Krueger, Eaton, Derringer, et al., 2011); schizotypal is likely to be shifted out of the personality disorders section, and considerable pressure is being put to bear to shift antisocial out as well (Siever, 2011; Skodol, *in press*). It is unclear what would happen to the dimensional trait model if all of the categorical types were reformulated as early onset, chronic variants of Axis I disorders.

## New Scales

The recognition that *DSM-IV-TR* personality disorders are extreme or maladaptive variants of FFM personality traits has generated the development of a wide variety of new scales. For example, Piedmont et al. (2009) have developed scales to assess for maladaptive variants of high and low openness. Simms et al. (2011) are developing self-report inventories for maladaptive variants of all five domains of the

FFM (see Chapter 15, this volume, by Samuel). De Clercq, De Fruyt, Van Leeuwen, and Mervielde (2006) have developed scales for the assessment of maladaptive variants of FFM traits within children and adolescents (see Chapter 4, this volume, by De Fruyt & De Clercq). Lynam et al. (2011) developed scales to assess the elements of psychopathy from the perspective of the FFM. Edmundson et al. (2011) have similarly developed scales to assess the schizotypal personality traits from the perspective of the FFM (see also Chapter 18, this volume, by Lynam). The *DSM-5* dimensional trait model is also accompanied by a 220-item self-report inventory (American Psychiatric Association, 2011). An important area of future research will be the further documentation that these scales are indeed assessing maladaptive variants of the FFM, as well as the convergent, discriminant, and incremental validity of these alternative instruments.

Future research should also explore the potential value of developing semistructured interviews to assess for maladaptive variants of the FFM. The Structured Interview for the Five-Factor Model (Trull et al., 1998) is currently the only semistructured interview for the assessment of a dimensional model of general personality. It does provide coverage of maladaptive personality functioning (Bagby, Costa, Widiger, Ryder, & Marshall, 2005), but perhaps not to the extent that will be provided by the many new self-report inventories.

As suggested by Oltmanns and Carlson (Chapter 16, this volume), it will also be useful to explore the development of informant versions of these maladaptive personality trait scales. One of the strengths of the Revised NEO Personality Inventory (Costa & McCrae, 1992) has been the codevelopment of an informant, peer report version in addition to the self-report version. No such informant version of any of the new FFM maladaptive personality trait scales has yet been developed, even though a central feature of personality disorders includes distortions in self-image and self-perception. It might also be useful to explore whether any such informant measures should include new items that are specific to the perspective of the informant, rather than simply shifting sentences from first-person to third-person format.

## CONCLUSION

So much has occurred in the development and validation of the FFM of personality disorder since the prior edition of this book. It was a real delight preparing this third edition in recognition of all that has happened. If you are a student or professor, we hope we have stimulated your thinking and interest for future work. If you are a researcher, we hope we have stimulated some ideas for your future research. If you are a clinician, we hope that we have stimulated an interest in applying this model to your work.

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# Appendix: Description of the Revised NEO Personality Inventory (NEO PI-R) Facet Scales

## NEUROTICISM FACETS

### N1: Anxiety

Anxious individuals are apprehensive, fearful, prone to worry, nervous, tense, and jittery. The scale does not measure specific fears or phobias, but high scorers are more likely to have such fears and free-floating anxiety. Low scorers are calm and relaxed; they do not dwell on things that might go wrong.

### N2: Angry Hostility

Angry hostility represents the tendency to experience anger and related states such as frustration and bitterness. This scale measures the individual's readiness to experience anger; whether the anger is expressed depends on the individual's level of agreeableness. Note, however, that disagreeable people often score high on this scale. Low scorers are easy-going and slow to anger.

### N3: Depression

This scale measures normal individual differences in the tendency to experience depressive affect. High scorers are prone to feelings of guilt, sadness, hopelessness, and loneliness. They are easily discouraged and often dejected. Low scorers rarely experience such emotions, but they are not necessarily cheerful and lighthearted—characteristics that are associated instead with extraversion.

### N4: Self-Consciousness

The emotions of shame and embarrassment form the core of this facet of neuroticism. Self-conscious individuals are uncomfortable around others, sensitive to ridicule, and prone to feelings of inferiority. Self-consciousness is akin to shyness and social anxiety. Low scorers do not necessarily have poise or good social skills; they are simply less disturbed by awkward social situations.

### N5: Impulsiveness

In the NEO PI-R, impulsiveness refers to the inability to control cravings and urges. Desires (e.g., for food, cigarettes, possessions) are perceived as being so strong that the individual cannot resist them, although he or she may later regret the behavior. Low scorers find it easier to resist such temptations, having a high tolerance for frustration. The term *impulsive* is used by many theorists to refer to many different and unrelated traits. NEO PI-R impulsiveness should not be confused with spontaneity, risk taking, or rapid decision time.

### N6: Vulnerability

The final facet of neuroticism is vulnerability to stress. Individuals who score high on this scale feel unable to cope with stress, becoming dependent, hopeless, or panicked when facing emergency situations. Low scorers perceive themselves as capable of handling themselves in difficult situations.

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## EXTRAVERSION FACETS

### E1: Warmth

Warmth is the facet of extraversion that is most relevant to issues of interpersonal intimacy. Warm people are affectionate and friendly. They genuinely like people and easily form close attachments to others. Low scorers are neither hostile nor necessarily lacking in compassion, but they are more formal, reserved, and distant in manner than are high scorers. Warmth is the facet of extraversion that is closest to agreeableness in interpersonal space, but it is distinguished by a cordiality and heartiness that is not part of agreeableness.

### E2: Gregariousness

A second aspect of extraversion is gregariousness—the preference for other people's company. Gregarious people enjoy the company of others, and the more the merrier. Low scorers on this scale tend to be loners who do not seek—or who even actively avoid—social stimulation.

### E3: Assertiveness

High scorers on this scale are dominant, forceful, and socially ascendant. They speak without hesitation and often become group leaders. Low scorers prefer to keep in the background and to let others do the talking.

### E4: Activity

A high activity score is seen in rapid tempo and vigorous movement, a sense of energy, and a need to keep busy. Active people lead fast-paced lives. Low scorers are more leisurely and relaxed in tempo, although they are not necessarily sluggish or lazy.

### E5: Excitement Seeking

High scorers on this scale crave excitement and stimulation. They like bright colors and noisy environments. Excitement seeking is akin to some aspects of sensation seeking. Low scorers feel little need for thrills and prefer a life that high scorers might find boring.

### E6: Positive Emotions

The last facet of extraversion assesses the tendency to experience positive emotions such as joy, hap-

piness, love, and excitement. High scorers on the positive emotions scale laugh easily and often. They are cheerful and optimistic. Low scorers are not necessarily unhappy; they are merely less exuberant and high spirited. Research shows that happiness and life satisfaction are related to both neuroticism and extraversion and that positive emotions is the facet of extraversion most relevant to the prediction of happiness.

## OPENNESS TO EXPERIENCE FACETS

### O1: Fantasy

Individuals who are open to fantasy have a vivid imagination and an active fantasy life. They day-dream not simply as an escape but as a way of creating for themselves an interesting inner world. They elaborate and develop their fantasies and believe that imagination contributes to a rich and creative life. Low scorers are more prosaic and prefer to keep their minds on the task at hand.

### O2: Aesthetics

High scorers on this scale have a deep appreciation for art and beauty. They are moved by poetry, absorbed in music, and intrigued by art. They need not have artistic talent nor even necessarily what most people would consider good taste, but for many of them, their interest in the arts leads them to develop a wider knowledge and appreciation than that of the average individual. Low scorers are relatively insensitive to and uninterested in art and beauty.

### O3: Feelings

Openness to feelings implies receptivity to one's own inner feelings and emotions and the evaluation of emotion as an important part of life. High scorers experience deeper and more differentiated emotional states and feel both happiness and unhappiness more intensely than do others. Low scorers have somewhat blunted affect and do not believe that feeling states are of much importance.

### O4: Actions

Openness is seen behaviorally in the willingness to try different activities, go to new places, or eat

unusual foods. High scorers on this scale prefer novelty and variety to familiarity and routine. Over time, they may engage in a series of different hobbies. Low scorers find change difficult and prefer to stick with the tried-and-true.

### O5: Ideas

Intellectual curiosity is an aspect of openness that has long been recognized. This trait is seen not only in an active pursuit of intellectual interests for their own sake but also in open mindedness and a willingness to consider new, perhaps unconventional ideas. High scorers enjoy both philosophical arguments and brain teasers. Openness to ideas does not necessarily imply high intelligence, although it can contribute to the development of intellectual potential. Low scorers on this scale have limited capacity and, if highly intelligent, narrowly focus their resources on limited topics.

### O6: Values

Openness to values means the readiness to reexamine social, political, and religious values. Closed individuals tend to accept authority and honor tradition; as a consequence, this type is generally conservative, regardless of political party affiliation. Openness to values may be considered the opposite of dogmatism.

## AGREEABLENESS FACETS

### A1: Trust

High scorers on this scale have a disposition to believe that others are honest and well intentioned. Low scorers on this scale tend to be cynical and skeptical and to assume that others may be dishonest or dangerous.

### A2: Straightforwardness

Straightforward individuals are frank, sincere, and ingenuous. Low scorers on this scale are more willing to manipulate others through flattery, craftiness, or deception. They view these tactics as necessary social skills and may regard more straightforward people as naive. When interpreting this scale (as well as other Agreeableness and Conscientiousness scales), one must recall that scores reflect standings relative to other individuals. A low scorer on this scale is more

likely to stretch the truth or to be guarded in expressing his or her true feelings, but this should not be interpreted to mean that he or she is a dishonest or manipulative person. In particular, this scale should not be regarded as a lie scale, either for assessing the validity of the test itself or for making predictions about honesty in employment or other settings.

### A3: Altruism

High scorers on this scale have an active concern for others' welfare, as shown in generosity, consideration of others, and a willingness to assist others in need of help. Low scorers on this scale are somewhat more self-centered and are reluctant to get involved in the problems of others.

### A4: Compliance

This facet of agreeableness concerns characteristic reactions to interpersonal conflict. The high scorer tends to defer to others, to inhibit aggression, and to forgive and forget. Compliant people are meek and mild. The low scorer is aggressive, prefers to compete rather than cooperate, and has no reluctance to express anger when necessary.

### A5: Modesty

High scorers on this scale are humble and self-effacing, although they are not necessarily lacking in self-confidence or self-esteem. Low scorers believe they are superior people and may be considered conceited or arrogant by others. A pathological lack of modesty is part of the clinical conception of narcissism.

### A6: Tender-Mindedness

This facet scale measures attitudes of sympathy and concern for others. High scorers are moved by others' needs and emphasize the human side of social policies. Low scorers are more hardheaded and less moved by appeals to pity. They consider themselves realists who make rational decisions based on cold logic.

## CONSCIENTIOUSNESS FACETS

### C1: Competence

*Competence* refers to the sense that one is capable, sensible, prudent, and effective. High scorers on this

scale feel well prepared to deal with life. Low scorers have a lower opinion of their abilities and admit that they are often unprepared and inept. Of all the conscientiousness facets, competence is most highly associated with self-esteem and internal locus of control.

### C2: Order

High scorers on this scale are neat, tidy, and well organized. They keep things in their proper places. Low scorers are unable to get organized and describe themselves as unmethodical. Carried to an extreme, high order might contribute to a compulsive personality disorder.

### C3: Dutifulness

In one sense, *conscientious* means “governed by conscience,” and that aspect of conscientiousness is assessed as dutifulness. High scorers on this scale adhere strictly to their ethical principles and scrupulously fulfill their moral obligations. Low scorers are more casual about such matters and may be somewhat undependable or unreliable.

### C4: Achievement Striving

Individuals who score high on this facet have high aspiration levels and work hard to achieve their goals. They are diligent and purposeful and have a sense of direction in life. Very high scorers, however, may invest too much in their careers and become worka-

holics. Low scorers are lackadaisical and perhaps even lazy. They are not driven to succeed. They lack ambition and may seem aimless, but they are often perfectly content with their low levels of achievement.

### C5: Self-Discipline

*Self-discipline* refers to the ability to begin tasks and carry them through to completion, despite boredom and other distractions. High scorers have the ability to motivate themselves to get the job done. Low scorers procrastinate in beginning chores and are easily discouraged and eager to quit. Low self-discipline is easily confused with impulsiveness—both are evidence of poor self-control—but empirically they are distinct. People high in impulsiveness cannot resist doing what they do not want themselves to do; people low in self-discipline cannot force themselves to do what they want themselves to do. The former requires an emotional stability; the latter, a degree of motivation that they do not possess.

### C6: Deliberation

The final facet of conscientiousness is deliberation: the tendency to think carefully before acting. High scorers on this facet are cautious and deliberate. Low scorers are hasty and often speak or act without considering the consequences. At best, low scorers are spontaneous and able to make snap decisions when necessary.

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