EXTENDING INTERPERSONAL PROBLEMS TO INCLUDE THE

"BIG FIVE" PERSONALITY DIMENSIONS

by

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ABSTRACT

Current advances in the science of personality structure were discussed with reference to the utility of assessing dimensions of normal personality for clinical research and psychological treatment. The current debate in the field of clinical personality assessment suggests that the extreme behaviors, attitudes, symptoms, and actions seen in patients in clinical settings may be widely separated from behaviors in the normal range, and hence, current conceptions of normal personality structure may be insufficient to provide useful information. The basic dimensions of normal personality have not been directly related to maladaptive, rigid, and abnormal behavior seen in psychopathology.

Based on the construct of interpersonal problems (Horowitz, 1979), it was proposed that two ways personality traits may be expressed rigidly and maladaptively are via chronic behavioral excesses (behaviors a person does too much) and chronic behavioral inhibitions (behaviors a person finds hard to do). Three investigations were conducted to determine if this operationalization of maladaptive behavior would lead to the identification of a taxonomy of personality traits of particular relevance to clinical assessment and treatment. Additionally, specific methodological techniques were used to impose a taxonomic structure on the trait domain, conforming to the Dyadic-Interactional Five-factor Model of personality structure (Pincus & Wiggins, in press; Trapnell & Wiggins, 1990; Wiggins & Pincus, 1992, in press).

In the current research, a valid and reliable self-report instrument was derived in a large normal sample, cross-validated on an independent normal sample, and cross-validated on a small psychiatric sample. This instrument extended a recent circumplex modification of Horowitz' (1979) Inventory of Interpersonal Problems (IIP-C; Alden, Wiggins, & Pincus, 1990) to include the three additional personality dimensions of neuroticism, conscientiousness, and openness to experience. The final inventory, the IIP-B5, is a 140 item questionnaire that assesses maladaptive trait expression (problems) related to the five basic personality dimensions by assessing a number of lower-order problems facets within each superordinate trait domain.

The advantages of the IIP-B5 compared to currently available five-factor model inventories for clinical assessment and research was discussed. The instrument was used to operationalize the five-factor model of personality in a fourth study comparing a competing model of adjustment to the five-factor model of personality. The clinical utility of the IIP-B5 was demonstrated in a brief case presentation of a patient who was seen for intensive group psychotherapy with the author.

Results of all studies suggest that a taxonomy of maladaptive personality traits can be subsumed by the five-factor model of personality and that a dimensional perspective on abnormal behavior may be a viable alternative to the categorical classification system of the DSM-III.

Some structural weaknesses of the IIP-B5 were identified and further improvements and investigations are required.

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CHAPTER 1

Introduction

During the decade of the 1980's, a renewed (and
improved) wave of interest emerged in the application of
personality traits and normal personality assessment for
research purposes in clinical psychology. This wave of
interest coincided with considerable advances in the science
of personality structure; and in many ways, the two domains
have complemented each other. By the mid-1980's, a number of
theoretical perspectives on trait structure and ontology, and
their associated personality assessment methodologies were
proposed as useful additions to the domain of clinical
assessment. Buss and Craik (1986) applied their Act
Frequency Approach to personality assessment (e.g., Buss &
Craik, 1983, 1984) to the categories of personality disorder
found in the Diagnostic and Statistical Manual of Mental
Disorders (DSM-III; American Psychiatric Association, 1980).
Wiggins (1982), Kiesler (1983, 1986), and Horowitz and Vitkus
(1986) reviewed and extended the interpersonal theory of
personality and the application of the circumplex model of
interpersonal behavior to a number of domains in clinical
psychology. Costa and McCrae (1986a) proposed that
"recognition of the stability of normal personality
traits...points to important similarities between normal
personality and personality disorders, facilitates research
on the psychological processes that maintain both adaptive
and maladaptive traits, reminds the clinician that current

problems in functioning may be the expression of enduring
personality patterns, and promotes more realistic
expectations about how much therapeutic change is possible"
(pp. 415-416).

These proposals both advanced areas of inquiry and
spurred ongoing debates regarding the merits of normal
personality assessment in clinical psychology (Waller & Ben-
Porath, 1987). Adoption of a particular model of normal
personality organization was, in fact, equally rich with
diverse opinions. For example, Costa and McCrae (1986b)
proposed that the most useful model of personality for
research applications in clinical psychology is the Five-
factor Model (FFM) of personality trait organization, which
has a long developmental history to be reviewed later (see
Wiggins & Trapnell, in press). Of the numerous models of
personality trait structure proposed over the years, two have
recently emerged as the most enduring, most widely applied,
and most complementary--the circumplex model of interpersonal
behavior and the FFM of personality (Wiggins & Pincus, 1992;
see Figure 1).

This emerging consensus in the field of personality
psychology has generally reframed basic questions. The
debate regarding the clinical utility of normal personality
assessment is now generally couched in terms of the utility
of either the FFM (Ben-Porath & Waller, 1992a, 1992b; Costa &
McCrae, 1992a, 1992b; Widiger, in press), the interpersonal
circumplex (Alden, Wiggins, & Pincus, 1990; Kiesler, 1991;

Figure 1. The circumplex model of interpersonal behavior and five-factor model of personality structure.

Circumplex Model

Five Factor Model

I SURGENCY/EXTRAVERSION

II AGREEABLENESS

III CONSCIENTIOUSNESS

IV NEUROTICISM

V OPENNESS TO EXPERIENCE
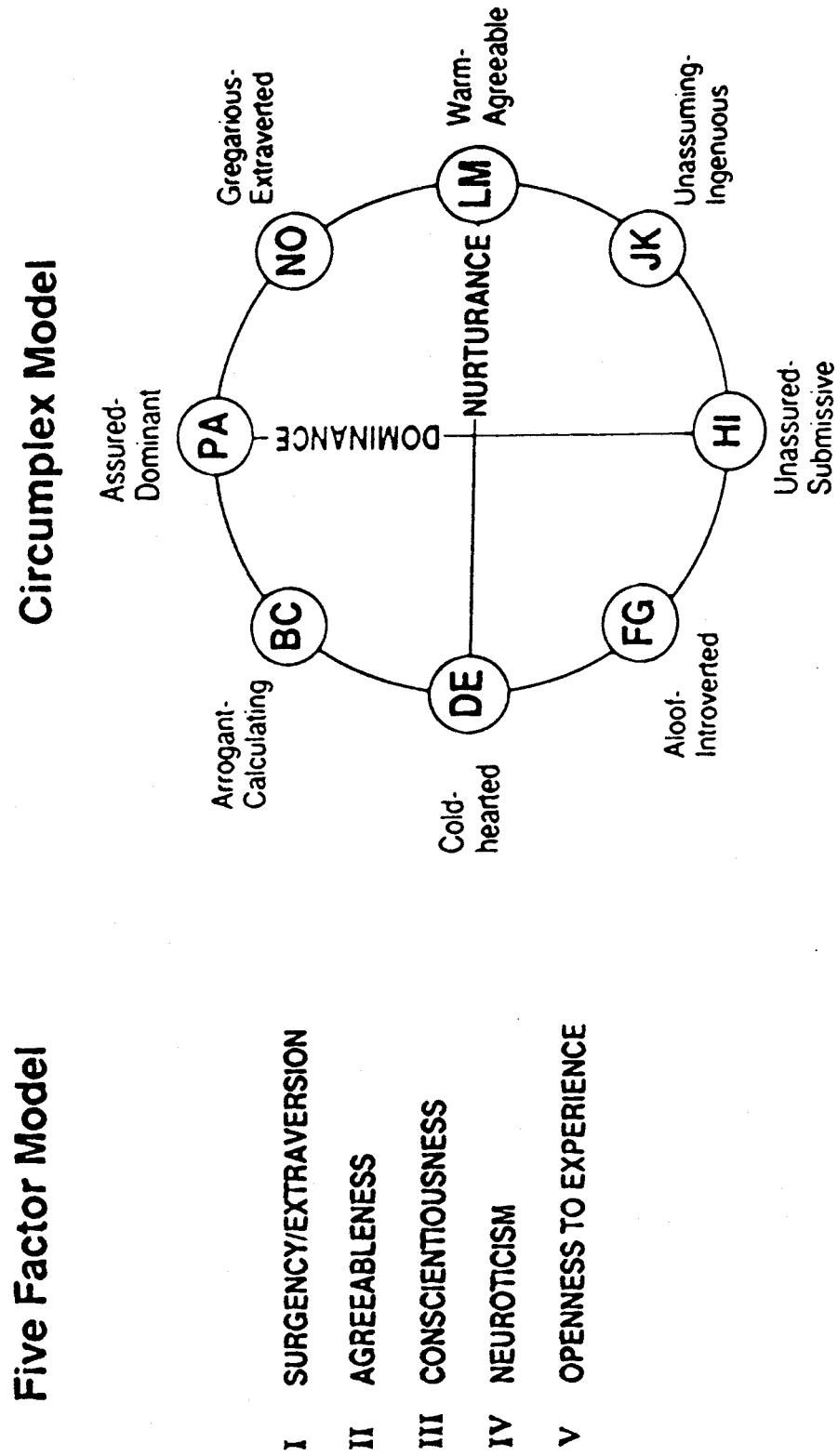
Van Denburg, Schmidt, & Kiesler, in press), or a combination of both models (Carson, in press, Pincus & Wiggins, in press; Trapnell & Wiggins, 1990). In order to fully evaluate the utility of normal personality assessment in clinical settings, and to identify possible shortcomings to be improved upon, a brief review of both models and their recent clinical applications is necessary.

The Circumplex Model of Interpersonal Behavior

The circumplex model of interpersonal behavior has its roots in Sullivan's (1953a, 1953b) interpersonal theory of psychiatry and the psychotherapy research begun in the 1950's by Timothy Leary and the Kaiser Foundation group (Freedman, Leary, Ossorio, & Coffey, 1951; Leary, 1957). Interpersonal theory proposes that personality is best viewed in terms of recurrent interpersonal dispositions or tendencies to display certain characteristic patterns of interpersonal behavior (e.g., Carson, 1969; Leary, 1957; Sullivan, 1953b; Wiggins, Phillips, & Trapnell, 1989). There is general agreement that the appropriate structural model for representing interpersonal traits is a two-dimensional circumplex (Guttman, 1954) in which variables are ordered in a circular arrangement around the basic orthogonal dimensions of dominance (vs. submission) and nurturance (vs. coldness) (e.g., Benjamin, 1974; Kiesler, 1983; Leary, 1957, Lorr & McNair, 1963; Wiggins, 1979).

By basic, interpersonal theorists mean that in
interpersonal transactions and ongoing relationships, we
continually define and negotiate our behavior with respect to
the relative status of interactants and the quality of the
engagement, from friendly-engaged to hostile-detached
(Benjamin, 1974; Foa & Foa, 1974; Kiesler, 1983; Wiggins,
1979, 1980). Over the years, this model has been
operationalized by a variety of instruments such as
Benjamin's Structural Analysis of Social Behavior (SASB;
Benjamin, 1974, 1984, 1988), Wiggins' Revised Interpersonal
Adjective Scales (IAS-R; Wiggins, Trapnell, & Phillips,
1988), Lorr & McNair's Interpersonal Behavior Inventory (IBI;
Lorr & McNair, 1965), LaForge and Suczek's Interpersonal
Check List (ICL; Laforge & Suczek, 1955), Alden, Wiggins, &
Pincus's Inventory of Interpersonal Problems Circumplex
Scales (IIP-C; Alden et al, 1990), and Kiesler's 1982
Interpersonal Circle (IPC; Kiesler, 1983) and Impact Message
Inventory Form IIA (IMI-IIA; Kiesler & Schmidt, 1991). While
all of the inventories mentioned purportedly assess a
circumplex model, the empirical structure of many remain
unevaluated (e.g., IPC, SASB) or manifest structural
shortcomings (e.g., ICL--see Paddock & Nowicki, 1986).

The Five-Factor Model of Personality

A review of the FFM is a difficult task, as the current
Zeitgeist of the field of personality structure includes
numerous and voluminous efforts to articulate the long and

interrupted history of the model. These efforts include
Annual Review chapters (e.g., Digman, 1990), book chapters
(e.g., Wiggins & Trapnell, in press), special issues of
journals (Costa, 1991; McCrae & John, in press), and an
upcoming edited Handbook of Personality Psychology with
chapters devoted to each dimension of the model (Briggs,
Hogan, & Jones, in press). The FFM has been the subject of
considerable research over the last 10 years and that time
span covers only one fifth of the model's history. Thus a
comprehensive review would be well beyond the scope of the
present introduction. The following introduction to the
model will thus emphasize important features of the FFM's
history and current applications that are of significance for
the present research. Readers interested in a comprehensive
review are directed to the primary literature just cited.

History and Current Perspectives. The FFM consisting of
the superordinate trait dimensions of extraversion,
agreeableness, neuroticism, conscientiousness, and openness
to experience, has developmental roots tracing back to the
multivariate factor analytic traditions of Cattell (1943,
1945, 1957), Guilford (1948, 1959), and Eysenck (1947). The
model's genesis might well be traced back to Allport and
Odbert's (1936) initial attempts to assemble a comprehensive
lexicon of trait-descriptive terms in the English language.
Cattell was the first investigator to apply factor analysis
to trait-descriptive terms, although he has generally opposed
reducing factor analytic solutions to superordinate higher

order dimensions (Cattell, 1973). It was Donald Fiske (1949) who first identified a superordinate five-factor structure within the Cattell system. The following decade of the 1950's was rich with both the expansion of factor analytic investigations and the development of construct validity introduced by Cronbach and Meehl (1955) and Jane Loevinger (1957). However, little research focussing on the FFM was conducted. Despite the interrupted development of the FFM, the fundamentals of assessment advanced during the decade created the foundations for further articulation and development of the model (Wiggins & Trapnell, in press).

The first true five factor advocates were Tupes and Christal (1958, 1961) and Warren Norman (1963), who provided both convincing empirical data that personality could be captured by five orthogonal dimensions, and a clear rationale and scientific direction to validate and generalize their findings. Through the 1960's and 1970's methodological work continued to provide comprehensive evidence of the FFM. However, influenced by the critique on personality trait ontology started by Walter Mischel (1968) and the methodological, rather than substantive emphasis of personality structure over the years, many came to view multivariate trait investigations as mere number crunching with little relation to people whose personalities were presumably being described.

The FFM advocates and investigators of the 1980's and 1990's and trait psychology in general have clearly turned

that perspective around. In the most recent Annual Review chapter, Wiggins and Pincus (1992) note a strong resurgence in the fundamental assertion that traits are real. Compelling arguments by individuals such as Auke Tellegen (1991), Arnold Buss (1989), David Buss (1991), David Funder (1991), and McCrae and Costa (1990), as well as the increasing evidence of genetic heritability of traits (e.g., Henderson, 1982; Plomin & Daniels, 1987; Rushton, Fulker, Neale, Nias, & Eysenck, 1986; Tellegen, Lykken, Bouchard, Wilcox, Segal, & Rich, 1988) are converging to provide a new trait ontology that in many ways returns to and improves upon Gordon Allport's (1937) original assertions. And, these arguments are congruent with assertions made within the interpersonal tradition of personality. From Sullivan (1953b) onward, the assumption has been that the traits influencing interpersonal behavior have real biological and psychological substrates that are transactionally influenced by, and concurrently influence, the development of the individual.

Wiggins and Pincus (1992, in press) note at least four major ontological perspectives on the FFM, one of which will be emphasized in the following section. These perspectives differ in their foci of convenience, theoretical orientations, universes of content, assessment instruments, and representative applications. Collectively, these perspectives, and the empirical work conducted within them, demonstrate the comprehensiveness of the FFM (Wiggins &

Pincus, 1992, p. 479). The picture gleaned from review of these perspectives is that the FFM endorsed today has a true substantive basis in addition to methodological and empirical support (see Tables 1 to 4).

Costa & McCrae's Eduring-Dispositional view asserts that it is the enduring nature of individual's behaviors and experiences, which is what we apply trait names to, that makes them so central to, and predictive of, the ways in which emerging lives develop (Costa & McCrae, 1980; McCrae & Costa, 1990). Their demonstrations of longitudinal stability (Costa & McCrae, 1988b) and convergent validity (McCrae & Costa, 1987) provide the empirical basis for their assertions. Using the NEO Personality Inventory (NEO-PI; Costa & McCrae, 1985), these investigators have demonstrated that virtually all systems of personality trait organization can be interpreted within the FFM framework (Costa, Busch, Zonderman, & McCrae, 1986; Costa & McCrae, 1988a, 1990; Costa, McCrae, & Holland, 1984; McCrae & Costa, 1985a, 1989a, 1989b; McCrae, Costa, & Busch, 1986; McCrae, Costa, & Piedmont, in press; Piedmont, McCrae, & Costa, 1991, 1992; Watson & Clark, in press).

Robert Hogan's Social-Competency perspective asserts that the basic needs of humans as social beings are approval, status, and predictability (Hogan, 1983, 1986; Hogan, Cheek,

Table 1. Costa & McCrae's Enduring-Dispositional Perspective

Focus of Convenience   longitudinal studies of personality
                              and aging

Theoretical Orientation   traditional multivariate trait
                              theory of individual differences is
                              a legitimate alternative to other
                              theories of personality

Universe of Content   literature review of earlier scales
                              with reference to study of aging

Assessment Instruments   NEO-PI: domains of extraversion,
                              agreeableness, conscientiousness,
                              neuroticism, and openness; each
                              measured by six facets

Representative   relations between NEO-PI and
Application   instruments from major research
                              traditions in personality assessment

& Jones, 1985; Hogan & Johnson, 1981). Gratification of these needs are sought through ritualized interactions with others. Trait attributions in the natural language evolved as a means of social control necessitated by the circumstances of group living. Thus, for Hogan, the Big Five, are exclusively dimensions employed by observers in the evaluation of actors' contributions to social living groups or work organizations (Hogan, Carpenter, Briggs, & Hansson, 1984).

Lewis Goldberg is the most prominent figure in the long-standing Lexical approach to the study of personality (John, Angleitner, & Ostendorf, 1988). Lexical approaches to the study of personality structure have the most resemblance to the original multivariate approaches to trait structure. However, Goldberg's work is not merely number crunching. The lexical approach asserts that those individual differences that are most important in the daily transactions of persons will eventually become encoded in their natural language. And, the more important an individual difference is for human transactions, the more languages that will have a term for it (Goldberg, 1981, 1982). The work of Goldberg and his colleagues (Goldberg, 1990, 1992; John, 1990a, 1990b; Peabody & Goldberg, 1989) continues to provide evidence for the FFM in the structure of natural language trait descriptors. He continues to engage in and motivate others to pursue cross cultural linguistic investigations of trait structure with good success (Angleitner & Ostendorf, 1989; Angleitner,

Table 2. Hogan's Social-Competency Perspective

<u>Focus of Convenience</u>   prediction of effective performance

in work and social settings

<u>Theoretical Orientation</u>   actors have needs for social

approval, status, and

predictability; observers use trait

terms to evaluate social usefulness

of actors

<u>Universe of Content</u>   review of earlier five-factor

studies from a social-competency

perspective

<u>Assessment Instruments</u>   <u>HPI</u>: primary scales of ambition,

likability, sociability, adjustment,

prudence, and intellectance; each

measured by subsets of homogeneous

item clusters (HICs)

<u>Representative</u>   prediction of organizational and

<u>Application</u>   occupational performance

Table 3. Goldberg's Lexical Perspective

Focus of Convenience   development of compelling taxonomy
                            of personality-descriptive terms in
                            the natural language

Theoretical Orientation   those individual differences that
                            are of the most significance in the
                            daily transactions of persons will
                            eventually become encoded in their
                            natural language

Universe of Content   semantic relations among trait
                            terms selected from dictionary
                            searches

Assessment Instruments   Standard Markers: domain scores for
                            surgency, agreeableness,
                            conscientiousness, emotional
                            stability, and intellect; each
                            marked by 20 adjectives

Representative   investigations of the generali-
application   zability of English taxonomy to
                            Dutch and German languages

Ostendorf, & John, 1990; Borkenau & Ostendorf, 1989; Hofstee, 1990; Hofstee & Van Heck, 1990: Ostendorf, 1990; Ostendorf & Angleitner, 1990).

Integrating the Circumplex and FFM.

Over the last five years it has become increasingly apparent to those who are familiar with both systems, that the circumplex model of interpersonal behavior and the FFM are complementary rather than competing models of trait structure (e.g., McCrae & Costa, 1989b). Wiggins and his colleagues (Pincus & Wiggins, in press; Trapnell & Wiggins, 1990; Wiggins & Pincus, in press; Wiggins & Trapnell, in press) have proposed a Dyadic-Interactional perspective on the FFM that supplements circumplex classifications of interpersonal behaviors with reference to the additional dimensions of conscientiousness, neuroticism, and openness.

Considerable empirical, theoretical, and practical evidence has accumulated that argues for the integration of the interpersonal circumplex and the FFM perspectives on trait structure. The circumplex model provides an alternative to the simple-structure model of factor analysis in which all variables are expected to have their principal loadings on one or the other of two orthogonal factors. The Dyadic-Interactional perspective argues that the circumplex be used to represent the first two dimensions of the FFM. In the circumplex, there is no optimal rotation of the principal axes, because on only empirical grounds, no

Table 4   Wiggins' Dyadic-Interactional Perspective

Focus of Convenience	dyadic interactions in psychotherapeutic settings
Theoretical Orientation	agency and communion are propaedutic to the study of characterological, emotional, and cognitive dispositions
Universe of Content	theoretically-based taxonomy of trait terms derived from Goldberg's earlier taxonomy
Assessment Instruments	IASR-B5: domains of dominance and nurturance form eight circumplex scales; domain scores for openness, conscientiousness, and neuroticism
Representative application	relations between IASR-B5 and conceptions of personality disorders

rotation is superior. Therefore arguments which emphasize that placing the axes through dominance and nurturance provides considerable advantages over simple-structure assessment of extraversion and agreeableness for the study of interpersonal behavior must be presented.

There are a number of empirical advantages of the circumplex model. The geometric properties of precise circumplex measurement allow investigators to plot outside variables onto two dimensional interpersonal space and evaluate their relations to interpersonal traits, thus operationalizing a superordinate framework to organize an interpersonal trait taxonomy (Gurtman, 1991; Wiggins & Broughton, 1985, 1991). To locate any outside variable onto circumplex space, one obtains the correlations between the variable and the circumplex factor scores for dominance and nurturance. The angular location of that variable, theta, is derived by taking the arctangent of the variable's dominance value over its nurturance value. Angular location provides substantive information regarding which interpersonal traits are most related to the variable. The distance from the center of the circle, labelled r, can be obtained using the Pythagorean Theorem. This vector length is an indication of the strength of relation between an outside variable and the interpersonal dimensions of personality. Individual persons can be located similarly by replacing the correlations with self or observer ratings on dominance and nurturance (Wiggins et al, 1989). With regard to an individual person, vector

length informs us of the level of rigidity or strength of his or her central interpersonal tendencies identified by the individual's angular location (Kiesler, 1983; Leary, 1957; Wiggins et al, 1989). One potential clinical application of the ability to place individuals at a single point in two dimensional interpersonal space is to determine discrepancies in angular location and vector length between self-ratings and significant other-ratings of a target. This would be particularly helpful in understanding some components of marital distress.

This ability to plot outside variables onto the circumplex can be demonstrated by examining the relations between the circumplex and the first two dimensions of the FFM as assessed by Costa & McCrae's NEO-PI and the Hogan Personality Inventory (HPI; Hogan, 1986). The NEO-PI, the HPI, and the IAS-R were administered to 581 university students and their results were plotted as explained (Wiggins & Pincus, in press). Examination of Figure 2 clearly demonstrates that the issue is one of rotation, and not substantive differences in the trait domain itself. All the scales plot relatively equidistant from the center of the circle. If these scales were unrelated to dominance and nurturance, they would not fall in the common space. Thus, Extraversion and Agreeableness (NEO-PI) and Ambition/Sociability and Likability (HPI) are the interpersonal dimensions of the simple structure form of the FFM. Empirical advantages of the circumplex include the

Figure 2. Projections of the interpersonal dimensions of the
Hogan Personality Inventory and the NEO
Personality Inventory onto the Revised Inter-
personal Adjective Scales circumplex.
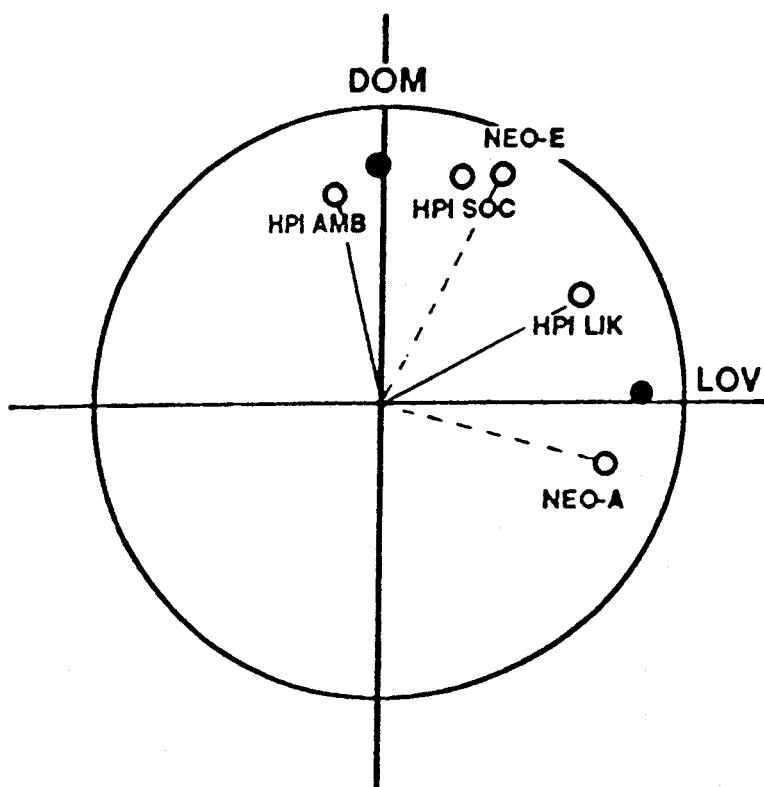
possibility of more detailed analyses of the relations between additional clinical and personality measures and the interpersonal dimensions of the circumplex. If we had conjointly factored the scale sets we would have extracted two dimensions with a number of split factor loadings. This way, we see, for example that the NEO-E scale assesses a "warm dominance" and the NEO-A scale assesses a "submissive friendliness." Additionally, precise circumplex measurement allows one to accurately assess an individual's or diagnostic cohort of patients' central interpersonal tendencies by locating the person(s) in a similar way.

Additional empirical advantages of the circumplex model have been articulated by the work of Gurtman (in press-a; in press-b). Gurtman has provided additional circumplex-based item statistics and scale construction methods which can generate assessment scales with optimal interpersonal construct validity. He has additionally proposed trigonometric curve-fitting analysis procedures that can be applied to enhance our understanding of the interpersonal aspects of clinically relevant personality constructs (in press-c).

Theoretical evidence arguing for the fundamental nature of dominance and nurturance has also accumulated across a number of domains in the social sciences and humanities. Wiggins (1991) has reviewed this evidence in a chapter recently published in the volumes honoring Paul Meehl. The superordinate concept of agency (including individual

differentiation and strivings for mastery and power), and the superordinate concept of communion (including strivings for intimacy, union, and solidarity with a larger entity) are represented among the basic tenets of a number of philosophies and personality theories, the study of gender, and the study of language. For example, Agency and Communion resemble Alfred Adler's (1912, 1964) concepts of "striving for superiority" and "social interest"; and Karen Horney's (1937) concepts of "moving against others" and "moving toward others." One of the most fascinating findings is that of Benjafield and Carson (1985), who found that words classified as falling at the nodal points of the circumplex (e.g., dominant, submissive) have significantly earlier dates of entry into the language than words falling in the four off-quadrants (e.g., extraverted, aloof).

For practical reasons, clinicians interested in psychotherapy and psychopathology clearly require accurate descriptions of interpersonal behavior both for diagnostic purposes and for effective psychotherapeutic interventions. Interpersonal constructs have been increasingly applied to psychotherapy practice and research (e.g., Anchin & Kiesler, 1982; Safran & Segal, 1990). The predictive concepts of interpersonal complementarity are often used to evaluate treatment effectiveness (e.g., Henry, Schacht, & Strupp, 1990; Kiesler & Watkins, 1989; Talley, Strupp, & Morey, 1990), and to systematize therapeutic interventions (Benjamin, in press; Kiesler, 1988).

Interpersonal complementarity is assessed with reference to dominance and nurturance. Sullivan (1953a, 1953b) observed that our interpersonal behavior is enacted to confirm our own self-definitions. Leary (1957) proposed the principle of reciprocal interpersonal relations as an explanation of how interpersonal behavior could fulfill a self-definitional function: "Interpersonal reflexes tend (with probability significantly greater than chance) to initiate and invite reciprocal interpersonal responses from the other person in the interactions that lead to a repetition of the original reflex" (p. 123). An interpersonal transaction is complementary if the behaviors of the two participants endorse and confirm each others' self-definitions relative to the circumplex axes. On the circumplex, complementarity occurs on the basis of reciprocity in regard to dominance (dominance pulls submission; submission pulls dominance) and correspondence in regard to nurturance (hostility pulls hostility; friendliness pulls friendliness) (Carson, 1969). Since any interpersonal behavior can be located at a point around the circle, we can identify a complementary behavior based on reciprocity of dominance and correspondence on nurturance (Kiesler, 1983). What happens when noncomplementary responses occur? Typically, conflict, anxiety, termination of the ongoing transaction, or negotiation with respect to dominance and nurturance is likely to ensue (Carson, 1982; Horowitz, Locke,

Morse, Waiker, & Dryer, 1991; Kiesler, 1983, 1988; Sullivan, 1953a, 1953b; Tally et al, 1990).

An additional practical use of the circumplex is diagnostic description. McLemore and Benjamin (1979) endorsed the rigorous, systematic description of interpersonal behavior as uniquely critical for effective definition and treatment of psychopathology. The interpersonal nature of psychopathology can be well articulated with the circumplex. A number of recent applications of the circumplex model of interpersonal behavior to diagnostic assessment have demonstrated the utility of the model. Alden and Phillips (1990) used the interpersonal problems circumplex to differentiate socially anxious depressives from pure depressives, suggesting that subtypes of depression may involve the presence or absence of interpersonal problems. Tunis, Fridhandler, and Horowitz (1990) used the SASB to assess maladaptive schemas in phobic patients. Johnson, Popp, Schacht, Mellon, and Strupp (1989) also use the SASB as a component of their "Cyclical Maladaptive Pattern" assessment of patients. Humphrey (1989) used the SASB to differentiate interaction patterns among families of anorexic, bulimic, and patients with mixed eating disorders.

A number of recent studies have investigated the utility of the Interpersonal Circle in discriminating and describing DSM-III, Axis II personality disorders. These studies are noteworthy for the range of methodologies and variety of

assessment instruments that have been brought to bear on this topic. Strack, Lorr, and Campbell (1990) conducted principal components analyses of the Millon Clinical Multiaxial Inventory-II (MCMI-II, Millon, 1987) and the Personality Adjective Check List (PACL; Strack, 1987, 1990) personality disorder scales and concluded that the interpersonal dimensions of personality can be identified in instruments operationalizing Millon's personality theory. Wiggins and Pincus (1989) used principal components analyses to demonstrate the relations between the IAS-R and a number of self-report personality disorder scales. Romney and Bynner (1989) used structural equations to reanalyze a number of previously published sets of correlational data involving personality disorder diagnoses. Kiesler, Van Denburg, Sikes-Nova, Larus, and Goldston (1990) provided interpersonal behavior profiles for eight personality-disordered patients based on ratings of multiple judges who viewed videotaped psychotherapy sessions. Pincus and Wiggins (1990a, 1990b) demonstrated that a subset of the DSM-III personality disorders are systematically related to the interpersonal problems circumplex. Sim and Romney (1990) used multidimensional scaling techniques to investigate the relations between the Interpersonal Circle and personality disorders. Their results, and the results of DeJong, van den Brink, Jansen, and Schippers (1989) are less clear, and may be limited by the structural shortcomings of the Interpersonal Check List (see Paddock & Nowicki, 1986).

Given the general consistency of the other results, however, it appears that interpersonal dysfunction seems central to histrionic, narcissistic, dependent, avoidant, schizoid, and antisocial personality disorders.

Figure 3 presents interpersonal profiles for two analogue groups of PDs (Wiggins & Pincus, in press). The schizoid individuals consistently describe themselves and are rated by others as aloof, introverted, and socially avoidant, thus the schizoid profile has a systematic shape referred to as an interpersonal space ship (Wiggins et al, 1989). The target octant is highly elevated and adjacent octants consistently decrease in elevation, ending in a highly truncated opposing octant of the circle. Given such a profile, the likelihood of schizoid patients enacting strongly dominant, gregarious, and nurturing behaviors is quite low.

Thus, I argue that for empirical, theoretical, and practical reasons, the circumplex is a more useful and promising way of conceptualizing interpersonal behavior than the simple structure assessment of extraversion and agreeableness. However, Figure 3 also shows a weakness in the circumplex model--that is its comprehensiveness. The second profile in this figure is an analogue cohort of individuals manifesting a borderline personality disorder. This disorder is characterized by intense oscillations in interpersonal behavior and marked ambivalence with regard to

Figure 3. Interpersonal profiles of analogue cohorts representing schizoid and borderline personality disorders.

SCHIZOID PERSONALITY DISORDER
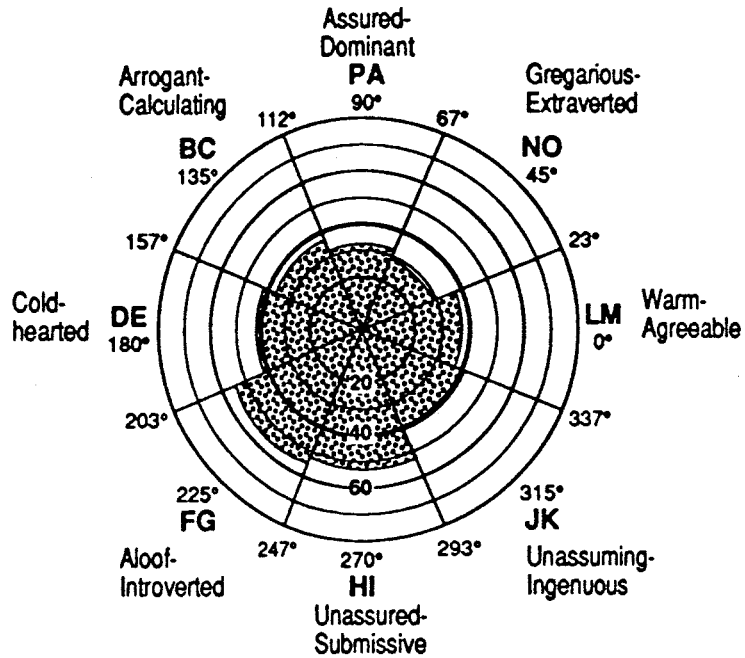
BORDERLINE PERSONALITY DISORDER
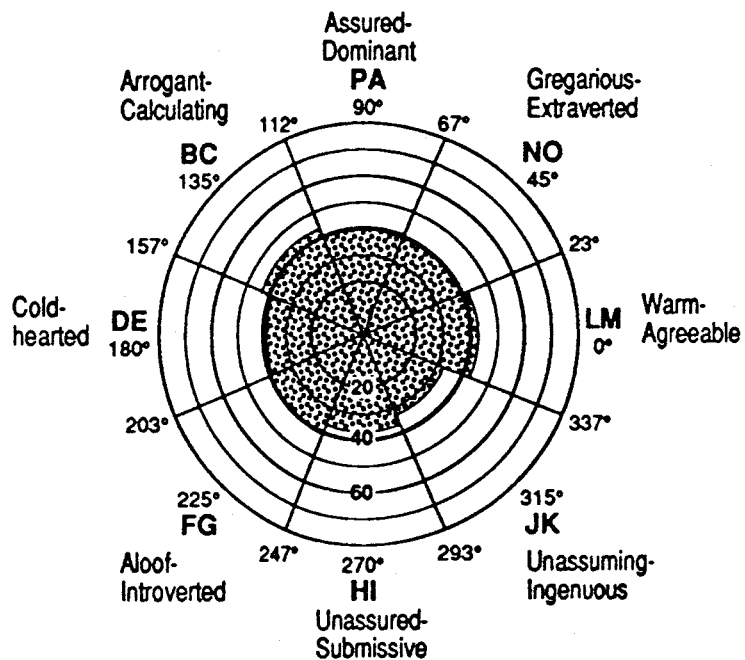
relationships. Hence, the marked differences among the cohort seem to cancel each other out and one cannot identify a single central interpersonal tendency. A rather circular profile is generated. It is perhaps another personality dimension that is central to the dysfunction of the borderline personality. Additionally, even if we could identify an individual as extremely dominant, his characteristic interactions and the impressions he leaves with others will also be colored by his emotional lability and distress (or Neuroticism), his impulse control, motivation, and responsibility (or Conscientiousness), and his conformity, tolerance, and imagination (or Openness). Hence, the three additional dimensions of the FFM are required to provide a truly comprehensive description of an individual personality. Thus, the Dyadic-Interactional perspective on the FFM combines the advantages of circumplex assessment of interpersonal behavior and traits with the comprehensiveness of the FFM. Currently, the only assessment instrument used to assess the Dyadic-Interactional FFM is Trapnell and Wiggins' (1990) Extended Interpersonal Adjective Scales (IASR-B5). This is an adjective-based rating instrument which has been little used for clinical research purposes.

Recent Applications in Clinical Psychology.

Returning to the debate introduced at the beginning of this review, a small number of studies have applied the FFM

to research domains in clinical psychology. The majority of
investigations have used the NEO-PI as the measure of the
FFM. Wiggins and Pincus (1989) demonstrated that the FFM
captures the range of psychopathology found in the DSM-III
personality disorders through the use of canonical analyses
and by conjointly factoring the NEO-PI, IASR-B5, PACL, and
the MMPI Personality Disorder scales (Morey, Waugh, &
Blashfield, 1985). These results were replicated by Costa
and McCrae (1990) and discussed at length by Widiger and
Trull (in press). Additional work has been focussed on the
area of psychopathy (Harpur, Hart, & Hare, in press). For an
alternative approach, see Schroeder, Wormworth, and Livesley
(1992).

In a special section of the Journal of Personality
Assessment (Costa, 1991), a number of research efforts
applying the FFM to clinical domains were presented. Using
standard correlational methods, McCrae (1991) demonstrated
significant correlational relations between the NEO-PI and
the MMPI and the MCMI-I (Millon, 1983). Miller (1991)
presents his attempts at using the NEO-PI to facilitate
psychotherapy treatment in private practice. His paper is
substantially theoretical in nature and proposes: a)
Neuroticism influences the intensity and duration of the
patient's distress, b) Extraversion influences the patient's
enthusiasm for treatment, c) Openness influences the
patient's reactions to the therapist's interventions, d)
Agreeableness influences the patient's reaction to the person

of the therapist, and e) Conscientiousness influences the
patient's willingness to do the work of psychotherapy.
Fagan, Wise, Schmidt, Ponticas, Marshall, and Costa (1991)
compared personality profiles of men with sexual dysfunction
to those of age-matched men with a primary diagnosis of
paraphilia. Analysis of variance showed significant
differences between dysfunctional and paraphillic groups on
neuroticism and agreeableness. The group personality profile
of the sexually dysfunctional men was comparable to the
normative sample of the NEO-PI, except for a slight elevation
in neuroticism. By contrast, men with paraphilia had a
personality profile marked by high neuroticism, low
agreeableness, and low conscientiousness. The authors
discuss treatment implications given differential personality
profiles for subsets of sexual dysfunction. Muten (1991)
describes the use of the FFM as a component of assessment
procedures used in an outpatient behavioral medicine program.
The use of FFM personality information to assist in
diagnosis, rapport building, style of treatment delivery,
tailoring goals to the individuals' intrapersonal and
interpersonal dynamics, and predicting relative success and
compliance with noninvasive self-regulation procedures and
psychotherapy is reviewed. Costa and McCrae (1992a)
demonstrate significant correlational relations between the
NEO-PI and two additional clinical assessment instruments-the
Basic Personality Inventory (BPI; Jackson, 1989) and the
Personality Assessment Inventory (PAI; Morey, 1991).

This brief review exhausts the primary literature applying the FFM to research domains in clinical psychology. In a special section of Psychological Assessment (Butcher, 1992), Costa and McCrae (1992a, 1992b) summarized this research as initial evidence arguing in favor of assessing normal personality characteristics in clinical settings and proposed that useful clinical information is obtained by such assessment. Ben-Porath and Waller (1992a, 1992b) take issue with these claims and point out possible shortcomings of such assessment procedures for clinical purposes.

Costa and McCrae (1992a, 1992b) suggest that knowledge of patient's enduring emotional, interpersonal, experiential, attitudinal, and motivational styles (i.e., personality) can aid clinicians in six specific areas. Information regarding the basic personality of patients will help the clinicians' understanding of individuals they treat. Costa and McCrae vaguely define "understanding" as "a sense of both the patient's strengths and weaknesses" (p. 11). Additionally, they suggest that such information will help determine if the presenting problems are reactive or symptoms of enduring maladjustments.

Knowledge of patients' personality traits may aid in diagnosis. They suggest "extreme scores on normal personality traits are not necessarily an indication of psychopathology, but extreme scores are often contraindicative of certain diagnoses (e.g., very high

extraversion scores are inconsistent with the diagnosis of schizoid personality disorder)" (p. 11).

Costa and McCrae suggest that personality information may help clinician's establish rapport and empathy with patients, as well as aid in providing feedback and insight in client-centered assessment (see McReynolds, 1989). They suggest that relating scale scores to concrete examples of problematic behavior can be of benefit to the patient and provide further insight into his/her behavior.

Finally, they suggest that personality information will aid in anticipating treatment course and matching treatments to patients. They provide hypotheses regarding the response to treatment types based on patient individual differences on the dimensions of the FFM. Miller (1991) provides a more extensive discussion and elaboration of relations between individual differences in personality and patient presentation and treatment selection, and treatment efficacy.

Ben-Porath and Waller's (1992a, 1992b) response appears to focus on two specific assessment instruments (the NEO-PI and the MMPI-2). In comparing instruments they tend to avoid the conceptual argument itself. They outline the basic tasks of clinical assessment as assessment of protocol validity, provision of diagnostic information, description of current level of adjustment and stable personality patterns, and articulating treatment implications. They argue that the MMPI-2 can accomplish such tasks to an acceptable degree. This may be so; however, in so arguing for the use of the

MMPI-2, they inherently endorse the potential benefit of more direct assessment of personality traits. The strengths of their argument are not directed toward the benefit of normal personality assessment in clinical psychology, but at the use of the NEO-PI as a stand alone clinical measure (a claim never made by Costa and McCrae). The strength of their argument lies in the fact that the MMPI-2 has extensive extratest correlates of significant clinical utility. Additionally, they correctly point out the fact that Costa and McCrae's (1992a, 1992b), and Miller's (1991) suggestions are yet to be tested empirically.

Like many debates in psychology, further research is the best way to advance this field of inquiry. However, if we were to limit ourselves to a debate between the utility of the NEO-PI and the MMPI-2, our frame of inquiry would be limited indeed. It is my contention that a fruitful way to advance the applications of personality traits to domains of clinical psychology is to integrate the fields of personality structure and psychopathology and psychotherapy. Butcher (1992) asserts, "Clinical personality assessment deals with extremes of behavior, symptoms, attitudes, and actions that may seem to many to be a class in themselves, widely separated from behaviors in the normal range. In the current conceptualization of the Big Five dimensions, practitioners might find it difficult to typify the deviant behavior and personality traits that are found in many who are referred for clinical assessment. Whether the Big Five and the NEO

can be found to provide sufficiently useful information in the 'extremes' of behavior is yet to be determined" (p. 3). Costa and McCrae (1992a) also refer to the need to relate NEO-PI scale scores to concrete examples of dysfunctional behavior.

The potential for the FFM to provide clinically useful information is partially hampered by it's long history embedded in the study of normal personality. Butcher's (1992) contention that the FFM has not ventured into the realm of problematic trait-behaviors seems true. The DSM-III, for example, defines personality disorders in terms of personality traits which when "inflexible and maladaptive can cause either significant impairment in social or occupational functioning or subjective distress...constitute Personality Disorders" (APA, 1980, p. 305). One immediate question is how to operationalize and define inflexible and maladaptive trait expression.

What seems to be a shortcoming of the current FFM assessment instruments is their clinical applicability. Most clinical assessment instruments focus on either symptoms or dysfunctional behavior; whereas normal personality inventories have historically avoided particularly evaluative items because of the long debated issues of social desirability (e.g., Edwards, 1953, 1966, 1967; Jackson & Messick, 1958; Wiggins, 1968, 1973). A clinical instrument scaled to the FFM is lacking in the repertoire of clinical researchers. Assuming that the basic dimensions of

personality are related to abnormal, deviant, rigid, or maladaptive behaviors, it would be a productive research program that would articulate the maladaptive or problematical trait domain. I believe such a taxonomy of maladaptive traits could be captured by the FFM. The interpersonal tradition in personality theory has always considered abnormal behavior to be a matter of extreme or rigid manifestation of traits, rather than a qualitatively different domain (Carson, 1969, Leary, 1957, Millon, 1981). Therefore, it may be that combining the interpersonal tradition and the FFM as achieved in the Dyadic-Interactional perspective will be of some service in the attempt to improve FFM assessment for clinical purposes.

Interpersonal Problems and Maladaptive Trait Expression

The problems which bring individuals into psychotherapy vary from symptoms (e.g., insomnia), to disturbing views of the self (e.g., low self-esteem), to difficulties interacting with other people (e.g., social avoidance). Horowitz (1979) noted that in therapy outcome research, there was often a mismatch between the outcome measure and the focus of psychotherapy. Specifically, he noted that psychotherapy outcome was often evaluated by assessment of symptomatic change, yet the interventions of psychotherapy often focused on specific behavioral disabilities of an interpersonal type (e.g., I can't get along with other people).

In order to improve the accuracy of outcome assessment, Horowitz (1979) proposed that an inventory of interpersonal problems would provide the investigator with a method to evaluate changes in dysfunctional behavior. The interpersonal tradition of personality and psychotherapy has long recognized the clinical importance of interpersonal problems and their relations to personality. However, a systematic and comprehensive measure of such concerns was lacking.

Through programmatic research, Horowitz and his colleagues (Horowitz, 1979; Horowitz & Vitkus, 1986; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) articulated the construct of interpersonal problems and developed an assessment instrument--the Inventory of Interpersonal Problems (IIP). To identify problems, intake interviews of patients seeking outpatient psychotherapy were videotaped. Two observers recorded statements made by these individuals which began with the phrases "I can't," "I have to," or acceptable synonyms. A total of 192 problems that were agreed upon by both observers as having been expressed in the interviews were generated, but not all of these problems were interpersonal (e.g., "I can't seem to fall asleep at night"). Fourteen judges then rated each problem as interpersonal or not interpersonal. Items identified as interpersonal by 13 or more judges were retained. When redundant statements were removed, a total of 127 statements reflecting a wide range of interpersonal difficulties

remained. The final items were divided into two types of
interpersonal problems: behaviors that are hard for the
person to do (behavioral inhibitions), and behaviors the
person does too much (behavioral excesses).

Multidimensional scaling procedures identified three
major dimensions of the IIP domain which Horowitz (1979)
labeled: a) "degree of psychological involvement," b)
"nature of involvement" (friendly to hostile), and c)
"intention to influence, change, or control other" (dominance
to submissiveness). More recently, factor analytically
derived scales were developed in a sample of individuals
beginning outpatient psychotherapy who rated IIP items on two
occasions separated by two months (Horowitz et al, 1988). A
principal components analysis of the correlations among the
items from the first assessment yielded a first unrotated
factor with an eigenvalue of 28.8, accounting for 23% of the
variance. Because every item had a positive loading on this
factor, a general complaint factor was postulated (Horowitz
et al, 1988). Principal components analyses conducted
independently on data from each assessment period identified
six replicable factors following varimax rotation: Hard to
be Assertive, Hard to be Social, Hard to be Intimate, Hard to
be Submissive, Too Controlling, and Too Responsible.

The substantial correlations found among the subscales
were ascribed to a complaint factor, patient's general
tendency to report distress. This general tendency is seen
as varying across patients, systematically raising or

lowering a person's score on all subscales. Ipsatized scores, expressing an individual's response as a deviation from his or her mean response across all items, significantly reduced intercorrelations among the subscales. Thus, when a general complaint factor was removed by ipsatizing scores, the various subscales seemed relatively independent of one another (Horowitz et al, 1988, p. 888).

The intercorrelations among ipsatized subscales were subjected to a principal components analysis, which yielded two factors accounting for 73% of the variance. The first factor was identified as a dimension ranging from hostility to friendliness. The second factor was identified as a dimension ranging from submissiveness to dominance (Horowitz et al, 1988). Earlier, Horowitz (1979) noted that the multidimensional scaling dimensions of nature of involvement and intention to influence, change, or control other were similar to the dimensions of Leary's (1957) circumplex model of interpersonal dispositions. Horowitz et al (1988) concluded that the two higher order factors of the IIP "matched the two interpersonal dimensions postulated by interpersonal theorists like Wiggins (1979) and Kiesler (1983)" (p. 888).

It appeared possible to construct scales assessing interpersonal problems that would be scaled to the structure of the interpersonal circumplex in order to fully capitalize on the conceptual and structural advantages of the interpersonal circumplex and its associated assessment

methodologies described earlier. To accomplish this, it is
necessary to derive scales in accord with a strong geometric
model. Alden et al (1990) plotted the 127 items of IIP on
the two interpersonal factors. Three findings were clear: a)
The distribution of items was circular, b) The universe of
content of interpersonal problems was well represented (there
were no major gaps in item distribution, and c) Some items
were more strongly interpersonal than others, that is, they
had longer vector lengths.

Alden et al (1990) divided this space into eight sectors
and selected eight items with high vector length values that
were close to the midpoint of each sector. This resulted in
eight 8-item IIP circumplex scales (IIP-C). Principal
components analysis revealed a robust circumplex structure
that can be seen in Figure 4. A more detailed description of
the final IIP-C scales can be found in Table 5.

Alden et al (1990) investigated the structural relations
between interpersonal problems and interpersonal traits as
assessed by the IAS-R (Wiggins et al, 1988). These two
instruments were independently derived, one assessing
interpersonal problems derived from videotaped intake
interviews and one assessing interpersonal dispositions from
lexical investigations of trait-descriptive adjectives. A
conjoint factor analysis of the two scale sets in a sample of
974 subjects demonstrated the domain of interpersonal
problems manifested homologous structure with the domain of
interpersonal traits.

Figure 4. The interpersonal problems circumplex.
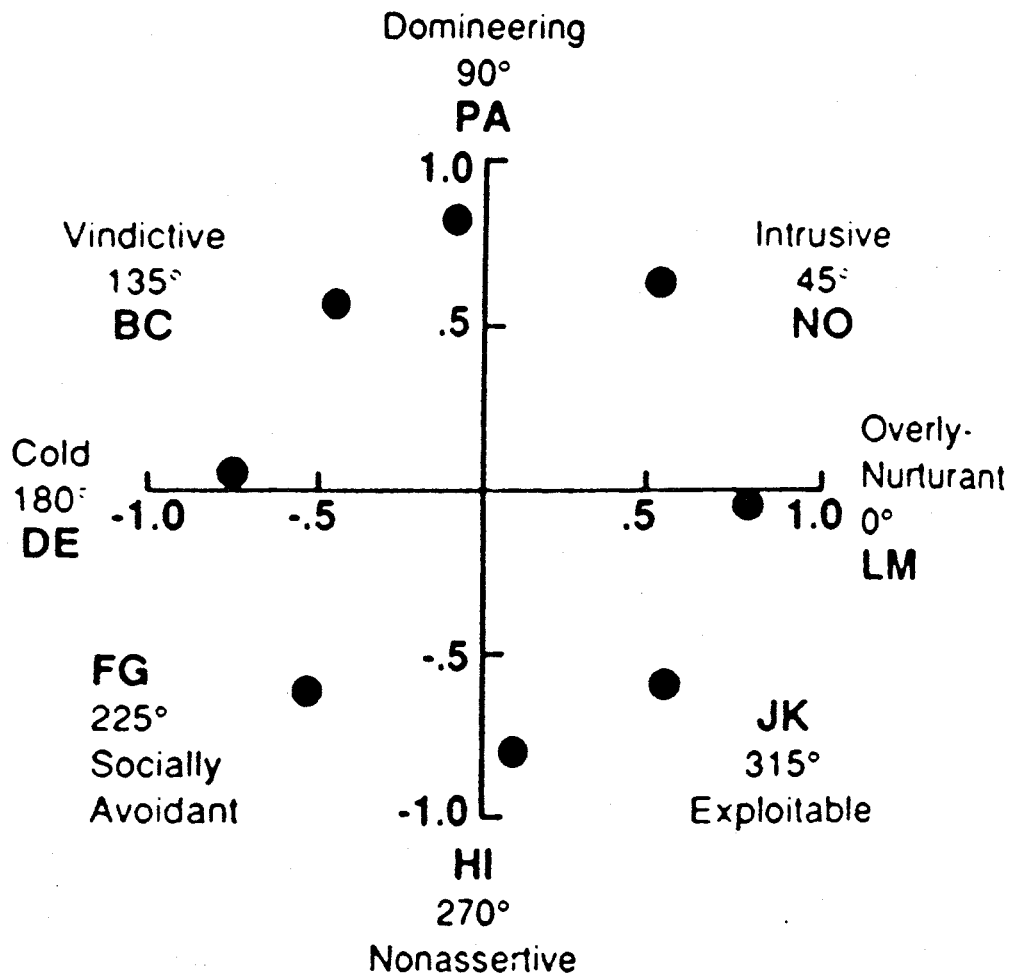
Table 5. Inventory of Interpersonal Problems Circumplex
          Scales

Circumplex Scale	Sample Items
Domineering. (PA) High scorers report problems related to controlling, manipulating, expressing aggression toward and trying to change others.	"I am too aggressive toward other people" "I try to control other people too much"
Vindictive. (BC) High scorers report problems related to distrust and suspicion of others, and an inability to care about other's needs and happiness.	"It is hard for me to trust other people" "I want to get revenge against other people too much"
Cold. (DE) High scorers report an inability to express affection toward and feel love for another person, difficulty making long-term commitments to others, and an inability to be generous to, get along with, and forgive others.	"It is hard for me to feel close to other people" "It is hard for me to get along with other people"

Table 5 continued

Socially Avoidant. (FG) High scorers feel anxious and embarrassed in the presence of others, and have difficulty initiating social interactions, expressing feelings, and social- izing with others.

"It is hard for me to ask other people to get together socially with me" "I feel embarrassed in front of others too much"

Nonassertive. (HI). High scorers report difficulty making their needs known to others, discom- fort in authoritative roles, and an inability to be firm and assertive toward others.

"It is hard for me to tell a person to stop bothering me" "It is hard for me to be assertive with another person"

Exploitable. (JK) High scorers find it difficult to feel anger and to express anger for fear of offending others. They describe themselves as gullible and readily taken advantage of by others.

"I am too easily per- suaded by other people" "I let other people take advantage of me too much"

Table 5 continued

Overly-Nurturant. (LM) High scorers   "I try to please other

    report that they try too hard to   people too much"

    please others and are too   "I put other people's

    generous, trusting, caring and   needs before my own

    permissive in dealing with   too much"

    others.

Intrusive. (NO) High scorers are   "I want to be noticed

    inappropriately self-disclosive,   too much"

    attention-seeking, and find it   "It is hard for me to

    difficult to spend time alone.   stay out of other

                                        people's business"

    Maladaptive Trait Expression. Butcher (1992) expressed
concern regarding the ability of the FFM to incorporate
extreme behaviors. Costa and McCrae (1992b) suggested that
NEO-PI scale scores needed to be related to specific
dysfunctional behaviors in patients. In a study
investigating interpersonal problems associated with
personality disorders (defined in the DSM-III as inflexible
and maladaptive expressions of personality traits), Pincus
and Wiggins (1990) proposed that two ways in which a trait
could be manifested in an inflexible and maladaptive manner
are: in behaviors one "does too much" and in behaviors one
consistently finds "hard to do." Pincus and Wiggins (1990)

also noted that such behavioral excesses and behavioral
inhibitions (problems) can currently be assessed for
interpersonal traits through the use of the IIP-C; and, the
application of the problems construct to additional
personality traits was also possible. Thus, one way to
address the concerns of Butcher and Ben-Porath and Waller is
to operationalize inflexible and maladaptive trait expression
through the problems construct of chronic behavioral excesses
and chronic behavioral inhibitions.

A Brief Review of Research on Interpersonal Problems.
If the application of normal personality assessment to
clinical domains can be improved by the adoption of the
problems construct, some empirical evidence of its
applicability and advantages is required. The IIP has proven
useful in predicting problems that would become the focus of
psychotherapy, even when judge's IIP ratings were based on
independently formulated case summaries (Horowitz, Rosenberg,
Ureno, Kahlehzan, & O'Halloran, 1989). This report also
provided important evidence indicating that patients with
primarily interpersonal (as opposed to symptomatic) problems
are better candidates for brief dynamic therapy. A number of
studies have used the IIP and the IIP-C to predict positive
and negative treatment response and demonstrated the
instrument's sensitivity to patient change (Horowitz et al,
1988, 1989; Horowitz, 1991; Mohr, Beutler, Engle, Shohan-
Solomon, Bergan, Kaszniak, & Yost, 1990). Mohr et al (1990)
concluded that interpersonal problems and distress activate

the individual to seek change in psychotherapy. Alden and
Phillips (1990) used the IIP-C to differentiate socially
anxious depressives from pure depressives, suggesting that
subtypes of depression may involve the presence or absence of
interpersonal problems. Alden (1991) and Alden and Capreol
(1992) demonstrated that the IIP-C was useful in
discriminating subtypes of avoidant personality disorder that
responded differentially to two treatment approaches. Pincus
and Wiggins (1990a, 1990b) have shown that a subset of
personality disorders are systematically related to the
interpersonal problems circumplex. Finally, Gurtman,
Fernandez, and Phillips (1991) have investigated
interpersonal problems related to narcissism; and, Gurtman
(1992) has done the same for trust and distrust.

Combining Personality Structure and Clinical Research

The interpersonal problems circumplex is a model of
maladaptive interpersonal trait-behaviors operationalized by
the assessment of chronic behavioral inhibitions and chronic
behavioral excesses. It conforms to a model of personality
trait structure which is now recognized as a component of the
FFM of personality trait organization. When the
interpersonal circumplex is used to operationalize the first
two dimensions of the FFM, a number of empirical,
theoretical, and practical advantages accrue. This is
referred to as the Dyadic-Interactional perspective on the
FFM (Pincus & Wiggins, in press; Trapnell & Wiggins, 1990;

Wiggins & Pincus, 1992, in press). The present research program builds on the development of the IIP-C (Alden et al, 1990) by expanding the problems construct to operationalize maladaptive and inflexible expression of the remaining three dimensions of the FFM: neuroticism, conscientiousness and openness to experience. The goal is to derive an assessment instrument of significant clinical utility that is scaled to the FFM of personality trait structure. A FFM of maladaptive trait-behaviors (problems) may succeed in mapping a taxonomy of personality traits of significance to the understanding of psychopathology, diagnosis, and psychotherapy.

CHAPTER 2

Study 1:   Scale Derivation

Methods

Overview.

The major purpose of Study 1 was to derive initial problems scales for the domains of neuroticism, conscientiousness, and openness.   A combined rational/empirical scale construction strategy was adopted. Such an approach combines the "internal" and the "intuitive" approaches to scale construction outlined by Hase and Goldberg (1967).   These two approaches have also been referred to as "inductive" and "deductive" strategies (Burisch, 1986).   A rational (intuitive/deductive) approach involves choosing the concepts to be measured first, and then writing items to fit implicit or explicit definitions of the chosen concepts.   An empirical (internal/inductive) approach involves amassing a large heterogeneous item pool, often from existing inventories, and applying multivariate data reduction analyses to identify groups of correlated items. The approach to constructing additional scales for the IIP combines these methods by rationally generating items to fit the chosen constructs of neuroticism, conscientiousness, and openness at the superordinate level of the construct hierarchy (Comrey, 1988), while identifying substantive subscales at a lower level of the construct hierarchy through factor analytic techniques.

Four psychologists (Dr. Jerry S. Wiggins, Dr. Kim Bartholomew, Aaron L. Pincus, and Paul D. Trapnell) familiar with both the FFM and interpersonal problems generated an initial pool of 236 items which, a priori, spanned the domains of neuroticism, conscientiousness, and openness. The item content was based on familiarity with a number of FFM assessment questionnaires, such as the NEO-PI (Costa & McCrae, 1985) and the IASR-B5 (Trapnell & Wiggins, 1990). Items were worded in the same form as the original IIP; that is, behaviors "you do too much" and behaviors "that are hard for you to do."

It was also considered that problems of conscientiousness and openness could be bipolar in nature, hence problems were generated that indicated both high and low ranges of these two dimensions (e.g., overly-conscientious and unconscientious problems; and problems of being too open and too closed). The problems related to neuroticism were considered unipolar in nature and items were generated to capture high levels of neuroticism. All problems items were assembled in a test booklet and the format was identical to that of the original IIP. Subjects were asked to rate how much of a problem each item has been for them on a Likert scale ranging from "not at all" (0) to "extremely" (5).

An additional empirical method based on Loevinger's (1957) concept of structural validity was used to clarify the structure of the derived scales. Structural validity refers

to the extent to which structural relations between test items parallel the structural relations of other manifestations of the trait being measured. In the present case the convergence of a number of theoretical perspectives on trait ontology and the results of numerous investigations of the validity, stability, and predictive utility of the five-factor and interpersonal circumplex models cited in the introduction, provide information regarding both test and nontest structural relations of neuroticism, conscientiousness, and openness.

Loevinger's (1957) concept of "structural fidelity" proposes that items be selected from a large pool on the basis of empirical properties that indicate which items best conform to an appropriate structural model. Wiggins (1973) proposes: "One should not seek to discover structural relationships among test items. The choice of measurement model should be determined by the structural relationships posited by a theory of nontest behaviors. Once again, we emphasize the importance of developing theories of personality trait organization that are sufficiently articulated to permit the selection of appropriate measurement models" (p. 405).

Therefore, a structure was imposed on the item pool by including each of the twelve items marking the dimensions of neuroticism, conscientiousness, and openness from the Five-Factor Inventory, a short form of the NEO-PI (FFI; Costa & McCrae, 1989). These items were modified to problem item

format and included in the initial item pool as structural markers. These modified items were removed from final scale item selection. The importance of including appropriate structural markers when investigating the superordinate structure of questionnaire scales is increasingly recognized (Goldberg, 1990; Ostendorf, 1990). The use of structural markers for scale construction is one way of empirically operationalizing Loevinger's and Wiggins' recommendations (see also Gurtman, 1991).

Sample. The entire 272 item pool, along with a variety of FFM inventories and additional clinical, adjustment, and personality questionnaires was administered to a sample of 706 university students. This sample consisted of 393 women (56%) with an average age of 19.7 years, and 313 men (44%) with an average age of 20.2 years. The sample was used to derive the initial version of the Inventory of Interpersonal Problems-Big Five version (IIP-B5).

Instruments. In addition to the experimental IIP-B5 item pool, a number of self-report questionnaires were administered in a large assessment battery. Some of the questionnaires included in the battery were used for independent research projects. Only those pertaining to the derivation of the IIP-B5 will be discussed.

The Inventory of Interpersonal Problems Circumplex Scales (IIP-C; Alden et al, 1990), consist of eight 8-item scales that form a circumplex of interpersonal problems around the dimensions of dominance and nurturance. These

scales were initially developed independently from any other circumplex instrument. The IIP-C scales have shown strong convergence between self- and peer-rating profiles (Bartholomew & Horowitz, 1991); ability to discriminate subgroups of depressed patients (Alden & Phillips, 1990); homologous structure to the IAS-R (Alden et al, 1990), and an ability to discriminate important features of diverse self-report scales measuring personality disorders (Pincus & Wiggins, 1990), trust and distrust (Gurtman, in press-b) and narcissism (Gurtman, Fernandez, & Phillips, 1991). Alpha coefficients range from .72 for the Intrusive scale to .85 for the Nonassertive and Socially Avoidant scales.

The Extended Interpersonal Adjective Scales (IASR-B5; Trapnell & Wiggins, 1990) consists of a) eight 8-item adjectival scales that form a circumplex around the dimensions of dominance and nurturance (IAS-R; Wiggins et al, 1988), and b) three 20-item adjectival scales measuring the dimensions of neuroticism, conscientiousness, and openness. The instrument has excellent structural properties at the item level, and promising convergent and discriminant properties when compared with the NEO-PI and the HPI. Alpha coefficients range from .87 for the Openness scale to .94 for the composite Dominance and Nurturance Scales.

The NEO-Five Factor Inventory (FFI; Costa & McCrae, 1989) consists of five 12-item scales assessing extraversion, agreeableness, conscientiousness, neuroticism, and openness. For each domain, the 12 NEO-PI items with the highest factor

loadings were selected. Ten item substitutions were made to diversify item content. FFI scales show excellent convergent validity with the full NEO-PI. Alpha coefficients range from .74 for the Agreeableness scale to .89 for the Neuroticism scale.

The revised Shyness scale (Cheek & Melchior, 1985) is a 20-item scale which assesses individual's discomfort and inhibition in the presence of others. This scale has been used widely for research purposes (e.g., Arnold & Cheek, 1986; Briggs, 1988; Cheek & Stahl, 1986). The alpha coefficient for this scale is .94.

The Trait Anxiety scale from the State-Trait Anxiety Inventory (STAI; Spielberger, 1983) is a 20-item scale assessing individuals general level of anxiousness. Items are face valid and assess a variety of physical, cognitive, and behavioral manifestations of anxiety. The reported alpha coefficient for this scale has ranged from .86 to .92 in various versions of the STAI manual.

The Interpersonal Dependency Inventory (IDI; Hirschfeld, Klerman, Gough, Barret, Korchin, & Chodoff, 1977) is a 48-item questionnaire that assesses three components of interpersonal dependency: Emotional Reliance on Others, Lack of Social Self-Confidence, and Defensive Autonomy. The three subscales demonstrate adequate validity and the split-half reliabilities range from .72 to .87. Including Defensive Autonomy in scoring subjects' dependency ratings is a matter of some debate, and some investigators (e.g., Birtchnell,

1991) argue against including the third subscale when assessing dependency.

Procedures. Subjects were recruited from the Department of Psychology subject pool at the University of British Columbia and were given course credit for their participation. Subjects completed the assessment battery in two 1-hour sessions. In all testing sessions, subjects completed the IASR-B5 first. The order of all other inventories including the IIP-B5 item pool was varied.

Analyses

Ipsatization. The derivation of IIP-B5 scales for neuroticism, conscientiousness, and openness proceeded in a step-wise fashion, beginning with data transformation. In their principal components analyses, Horowitz et al (1988) found a large general factor in the original IIP item pool. A general factor accounts for a large proportion of item variance and all items have a positive loading on the factor. This general factor led them to conclude that subjects have differential tendencies to endorse complaints. Whether or not this factor is viewed as a "complaint factor," or an "acquiescence factor," or an "intensity factor," such a component is thought to reflect individual differences in the use of response format, rather than (substantive) differences in the perception of self or others (Wiggins, Steiger, and Gaelick, 1981, p. 283). Therefore, it must be treated separately from the substantive components in interpreting a given solution.

One way to control for this individual difference is to ipsatize the individual item scores by expressing each score as a deviation from the subject's mean score across all items (Alden et al, 1990; Cronbach, 1949; Horowitz et al, 1988; Strack, 1987; Wiggins & Pincus, 1989). One particularly ambiguous issue in this procedure is determining the substantive effects of ipsatization on the content of the data. Interpretation of the effects would be facilitated by a determination of the content domain of the general factor and the effects of ipsatization on derived scales. In Study 1, the first unrotated general factor was interpreted by examining its external correlates.

Data Reduction. Ipsatization produces an intercorrelation matrix which is not of full rank. Although there are a number of statistical procedures which allow one to utilize common factor analysis on such matrices, the most parsimonious dimension reduction technique is principal components analyses, as such analyses do not require the calculation of a matrix inverse. Therefore, scales were derived through the use of principal components analysis. In the current study, the likelihood of significantly different results occurring from the use of different factor analytic techniques is small. In their comparison of factor and component analyses, Bentler and Kano (1990) concluded that if the number of factors (m) stays small as the number of variables (p) gets large, there is no need to choose between components and factors because the component and maximum

likelihood factor patterns, and corresponding scores, become equivalent. When one is concerned solely with data summarization, especially dimension reduction, principal components analysis may be fruitfully employed (p. 73). In the present case the number of items (p) is large, but the number of derived factors (m) was relatively small.

To develop superordinate higher order problems factors for neuroticism, conscientiousness, and openness, several lower order scales should be developed in each major factor area (Comrey, 1988). To obtain the broader, more general personality constructs, the intercorrelations among several lower order factor scales must be subjected to further principal components analyses. Each of the item sets representing the three superordinate domains were first analyzed separately to develop subscales, or facets of homogeneous items. Costa and McCrae (1985) refer to such lower order constructs as facets, whereas Hogan (1986) refers to "homogeneous item clusters" or HIC's, and Comrey (1988) refers to "factored homogeneous item dimensions" or FHID's. After removal of modified FFI items, these derived facets were reanalyzed to ensure structural fidelity.

Following their derivation, the entire set of problem facets was subjected to a conjoint principal components analysis with markers of neuroticism, conscientiousness, and openness from the IASR-B5. The use of adjectival scales allows for appropriate structural markers while reducing the common method variance in the analyses (i.e., adjective vs.

questionnaire scales). The derived facet scales should be at a level in the construct hierarchy that is similar to the IIP-C octant scales. The superordinate problems factors for the three domains should be at the equivalent level as the circumplex dimensions of dominance and nurturance. Conjoint principal components of all derived problems facets and IIP-C octant scales was performed. Conjoint principal components analyses of the superordinate dimensions of the derived problems domains and the interpersonal problems circumplex axes followed.

Reliability and Validity. Alpha coefficients and item-total correlations for derived facets and domain scales were determined to assess internal consistency. Item modifications may be introduced based on such results. Convergent validity correlations for the three new problems dimensions were obtained by examining the relations between derived problems scales and the neuroticism, conscientiousness, and openness scales of the IASR-B5 and the FFI concurrently assessed in the sample. Additional validity correlations were obtained by examining the relations between the derived scales and the IDI, STAI Trait Anxiety scale, and the Shyness scale.

Expectations

1. Chronic behavioral excesses and chronic behavioral inhibitions (problems) can by systematically related to the remaining three dimensions of the FFM.

2. The general factor running through the original IIP will replicate across the enlarged item pool.

3. A number of studies have shown that trait neuroticism is associated with both recall of, and distressed reactivity to physical symptoms and daily stressors (Affleck, Tennen, Urrows, & Higgins, 1992; Bolger & Schilling, 1991; Costa & McCrae, 1987; Larsen & Kasimatis, 1991; Larsen, in press; Watson & Pennebaker, 1989). Therefore, it is hypothesized that the general factor found in problems endorsement will be related to trait neuroticism.

4. Additional problems facets can be derived to expand the problems construct from the interpersonal domain to the broadened domain of the FFM of personality and a valid and reliable inventory to assess such problems can be constructed.

5. The newly constructed inventory will demonstrate structural fidelity with the Dyadic-Interactional perspective on the FFM (Trapnell & Wiggins, 1990; Wiggins & Pincus, 1992, in press).

<div align="center">Results</div>

Ipsatization.

The entire 272 experimental IIP-B5 item pool was subjected to a principal components analysis prior to ipsatization procedures to determine if an unrotated general factor could be extracted; and if so, correlational relationships between this general factor and major personality dimensions could be examined. The results of

this principal components analysis indicated that a large
unrotated general factor, with an eigenvalue of 47.6,
accounted for 20.0% of the item variance. All but six items
(97.5%) had positive loadings on this first unrotated factor.
The second factor extracted had an eigenvalue of 11.5 and
accounted for 4.8% of the variance. Notably, the pattern of
item loadings on this factor were of mixed valence.

The general factor was then correlated with the FFM
scales of the IASR-B5, the NEO-FFI, and mean item endorsement
(elevation) across the item pool. These correlations are
presented in Table 6. The statistical power of the large
sample size allows for correlations as low as .09 to be
significant at $p < .01$. Therefore, the relative magnitudes
of the correlations are of most importance. Mean endorsement
across the item pool correlates .98 with the first unrotated
factor. Thus this factor clearly represents the elevation of
the problems items. The general factor correlates .65 with
the IASR-B5 Neuroticism scale and .76 with the NEO-FFI
Neuroticism scale. The average correlation between the
general factor and additional dimensions of the FFM is .28.

When the item pool is ipsatized, the general factor is
removed. If this general factor is interpreted as
substantially trait neuroticism, rotation of the factor
through derived component scales would create increased scale
interdependencies similar to those seen in Horowitz et al
(1988). While Horowitz et al (1988) and Alden et al (1990)

Table 6. Intercorrelations between the general factor of the Inventory of Interpersonal Problems-Big Five version and the domain scales of the NEO-Five Factor Inventory, the Extended Interpersonal Adjective Scales, and mean endorsement across the item pool.

	General Factor
Mean Endorsement	.98
IASR-B5 Scales	
Dominance	-.28
Nurturance	-.27
Neuroticism	.65
Conscientiousness	-.29
Openness	-.14
NEO-FFI Scales	
Extraversion	-.30
Agreeableness	-.38
Neuroticism	.76
Conscientiousness	-.41
Openness	-.18

Note. N = 706. All correlations $p < .01$.

were concerned with a two-factor interpersonal model, the current study involves a five-factor model. One of the additional three factors in the model (neuroticism) is, in fact, assessed within the item pool. Since ipsatization substantively removes neuroticism from item content, the procedure was only applied to the circumplex, openness, and conscientiousness domains during scale derivation procedures.

Derivation of Problems Scales for Neuroticism, Conscientiousness, and Openness.

The problems items generated for neuroticism, conscientiousness, and openness were first subjected to intradomain principal components analyses with oblique rotations to develop facet scales. Oblique rotations were extracted because facets for a superordinate domain are assumed to be substantively related, but not redundant. As Ben-Porath and Waller (1992a) point out: "The greater the psychometric independence among facets within domains (i.e., the greater the discriminant validity of the facets), the less likely it is that the factorial integrity of each domain will be maintained" (p. 17). By performing oblique rotations and reviewing component intercorrelations, it is possible to identify nonredundant, but interrelated facets that will aid in maintaining domain integrity. The number of factors extracted was determined by two criteria: a) components with eigenvalues greater than one, and b) examination of the scree plot. Items were selected based on relative loadings across components and substantive homogeneity. Items with component

loadings greater than .40 on the target component and less than .30 on additional components were examined. Items meeting these criteria were then examined for substantive homogeneity and final selection was made with a goal of retaining a minimum of five items per facet to a maximum of ten items per facet. Modified FFI items were discarded at this point.

Neuroticism Items. All 52 unipsatized a priori neuroticism items were subjected to a principal components analysis with an oblique rotation. Extraction criteria suggested either a five or six component solution was best. Examination of the sixth component determined that too few items met selection criteria and a homogeneous theme could not be determined. Therefore, a five component solution accounting for 31.6% of the item variance was extracted. The item loadings can be examined in Table 7. The derived neurotic problems facets can be seen in Table 8.

The five facets of neurotic problems retained were identified as Depression (sad affect), Anger, Anxiety, Low Self-esteem, and Urge Control. The average correlation between oblique components is .16 (see Table 9).

Conscientiousness Items. All 67 ipsatized a priori conscientiousness items were subjected to a principal components analysis with an oblique rotation. Extraction criteria suggested a six component solution. Examination of the sixth component determined it was a doublet, hence too few items met selection criteria and a five component

Table 7. Principal components of neurotic problems items.

Factors

Item	1	2	3	4	5
X215	.80				
X107	.77				
X229	.66				
X224	.64				
X157	.40				
X116		.80			
X54		.76			
X154		.59			
X153		.47			
X143		.40			
X69			.72		
X88			.65		
X62			.63		
X78			.62		
X84			.54		
X41				.71	
X49				.65	
X186				.57	
X52				.40	
X45				.40	
X194					.66
X148					.62
X167					.48

Table 7 Continued

X35   .46

X110   −.40

_____

Note.   N = 706. Loadings < .30 deleted.

Table 8.   Derived Neuroticism Facets

Factor 1:   Depression

215. I feel sad too much.

107. I feel depressed too much.

229. I feel empty inside too much.

224. I feel discouraged too much.

157. Hard to feel cheerful.

Factor 2:   Anger

116. I lose my temper too much.

 54. Hard to control my temper.

154. Hard to keep from exploding at someone when they've

     really angered me.

153. Hard to keep calm when things don't go my way.

143. Hard to keep from smashing something when I'm in a rage.

Factor 3:   Anxiety

 69. I feel panicky too much.

 88. I worry about what bad things might happen to me too

     much.

 62. I worry about things going wrong too much.

 78. I feel tense and jittery too much.

Table 8 continued

84. I am too fearful.

Factor 4: Low Self-Esteem

  41. Hard for me to like myself.

  49. Hard for me to have faith in myself.

186. I feel I am inferior too much.

  52. Hard for me to feel ambitious.

  45. Hard for me to feel I deserve affection from others.

Factor 5: Urge Control

194. I do things I know aren't good for me too much.

148. Hard for me to stop doing things I know are hurting me.

167. Hard for me to control my urges.

  35. Hard for me to control my bad habits.

110. I think about my health too much.

Table 9. Neuroticism Component Intercorrelations.

	1.	2.	3.	4.	5.
1. Depression					
2. Anger	.29				
3. Anxiety	.29	.14			
4. Low Self-Esteem	.36	.05	.18		
5. Urge Control	.10	.04	.11	.03	

Note. N = 706.

Table 10. Principal Components of conscientiousness problems
items.

Factors

Item	1	2	3	4	5
X165	.70				
X85	.69				
X105	.67				
X8	.62				
X140	.61				
X225		.70			
X203		.69			
X226		.66			
X66		.60			
X104		.57			
X74			.57		
X217			.55		
X109			.49		
X112			.44		
X208			.43		
X159			.38		
X121			.33		
X199			.31		
X65				.61	
X36				.58	
X99				.55	
X61				.50	
X118				.46	

Table 10 continued

X191	.75
X234	.66
X222	.58
X190	.56
X201	.55

Note. N = 706. Loadings < .30 deleted.

Table 11. Derived Conscientiousness Facets.

Factor 1: Laziness

165. Hard for me to concentrate on work for really long periods of time.

 85. I waste too much time before settling down to work.

105. I feel lazy towards my work too much.

  8. Hard to work systematically toward goals.

140. Hard for me to work hard at something that I'm not particularly interested in.

Factor 2: Recklessness

225. I crave excitement too much.

203. I'm attracted to dangerous or adventurous activities too much.

226. I get "out of control" too much.

 66. I do impulsive, "crazy" things too much.

104. I act recklessly too much.

Table 11 continued

Factor 3: Compulsivity

74. I constantly strive for perfection too much.

217. I fret over keeping things well-organized too much.

109. I make lists too much.

112. I'm concerned about keeping my appearance neat too much.

208. I schedule my time too much.

159. Hard to be relaxed in the middle of disorder or

    uncleanliness.

121. I'm concerned about others being on time too much.

199. I watch the clock too much.

Factor 4: Unreliability

65. I'm late for appointments too much.

36. Hard for me to meet my obligations.

99. I break commitments too much.

61. I forget to pay bills on time too often.

118. I forget to return phone calls too much.

Factor 5: Impulsivity

191. I start something too quickly without thinking it

    through first.

234. I act without thinking of the consequences too much.

222. I overlook important details too much.

190. I blurt things out that would be better left unsaid too

    much.

201. I react impulsively too much.

solution accounting for 31.2% of the item variance was extracted. The item loadings can be examined in Table 10. The derived conscientiousness problems facets can be seen in Table 11.

The five facets of conscientiousness problems retained were identified as Laziness, Recklessness, Compulsivity, Unreliability, and Impulsivity. The average correlation between facets extracted obliquely is .12 (see Table 12).

Table 12. Conscientiousness component intercorrelations.

	1.	2.	3.	4.	5.
1. Laziness					
2. Recklessness	.05				
3. Compulsivity	-.11	-.05			
4. Unreliability	.16	.18	-.15		
5. Impulsivity	.24	.11	-.01	.14	

Note. N = 706.

Openness Items. All 63 ipsatized a priori openness items were subjected to a principal components analysis with an oblique rotation. Extraction criteria suggested a six component solution. Examination of the sixth component determined that too few items met selection criteria and a five component solution accounting for 27.8% of the item variance was extracted. The item loadings can be examined in

Table 13. Principal components of openness problems items

	Factors				
	1	2	3	4	5
Item					
X133	.68				
X149	.66				
X134	.62				
X51	.44				
X124		-.50			
X131		-.43			
X164		-.43			
X97		-.43			
X180		.37			
X214			.57		
X202			.55		
X235			.53		
X238			.52		
X77			.49		
X56				.55	
X119				.54	
X48				-.50	
X59				.49	
X120				-.47	
X163					.62
X128					.54
X176					.51
X209					.45

<u>Table 13 continued</u>

X155   .43

_____

<u>Note</u>. N = 706. Loadings < .30 deleted.

<u>Table 14</u>. Derived Openness Facets

<u>Factor 1: Unimaginative</u>

133. Hard to feel captivated when looking at a work of art.

149. Hard to play with theories or abstract ideas.

134. Hard to be creative.

 51. Hard to imagine things just by thinking about them.

<u>Factor 2: Nonconformity</u>

124. Hard to break the law, no matter what the circumstance.

131. Hard to break with traditions.

164. Hard to question authority.

 97. I am too conservative.

180. Hard to adjust to activities that are routine and
     predictable.

<u>Factor 3: Lack of Focus</u>

214. I am too openminded.

202. I am interested in too many things.

235. I am attracted to variety too much.

238. I am too eclectic in my thinking.

 77. I am too curious.

Table 14 continued

Factor 4:   Oversensitivity

  56. Hard to resist crying when other people are crying.

119. I am too affected by sad or frightening movies.

  48. Hard to experience intense emotions.

  59. I get caught up in the feelings of the moment too much.

120. I ignore my emotions too much.

Factor 5:   Egocentrism

163. Hard to accept new and different ideas.

128. Hard to appreciate other cultures.

176. Hard to understand people who are unusual.

209. I am too rigid about the way I do things.

155. Hard to be tolerant of differing religious beliefs.

Table 15.   Openness component interrcorrelations

	1.	2.	3.	4.	5.
1. Unimaginative					
2. Oversensitive	-.09				
3. Lack of Focus	-.19	.02			
4. Egocentrism	-.12	.09	.06		
5. Nonconformity	-.03	.03	.08	.10	

Note.   N = 706.

Table 13. The derived openness problems facets can be seen
in Table 14.

The five facets of openness problems retained were
identified as Unimaginative, Nonconformity, Lack of Focus,
Oversensitivity, and Egocentrism. The average correlation
between facets extracted obliquely is .08 (see Table 15).

Principal Components of Selected Items. The selected
items making up each of the five facets of neuroticism,
conscientiousness, and openness generated a reduced item
pool: 25 neurotic problems items, 28 conscientious problems
items, and 24 openness problems items. The reduced, domain-
specific problems items were then subjected to a second round
of principal components analyses to verify facet structure
with nonselected items removed. All analyses extracted five
facets per domain using oblique rotations.

Principal components of the 25 selected neurotic
problems items generated a five component solution accounting
for 47.3% of the item variance. As can be seen in Table 16,
all but one selected item loaded on the expected facet. The
item "I feel inferior too much" (X186) previously loaded on
the Low Self-esteem facet. In the second analysis, it split
its loading between Depression (.51) and Low Self-esteem
(.47). A decision was made to retain item 186 in the Low
Self-esteem facet scale pending further analyses. The
average facet intercorrelation was .09 (see Table 17).

Principal components of the 28 selected conscientious
problems items generated a five component solution accounting

Table 16. Principal components of selected neuroticism items.

	Factors				
	1	2	3	4	5
Item					
X215	.81				
X107	.74				
X229	.74				
X224	.70				
X157	.50				
X116		.78			
X54		.76			
X154		.74			
X153		.56			
X143		.49			
X69			.77		
X88			.72		
X78			.68		
X62			.65		
X84			.62		
X49				.68	
X41				.65	
X52				.56	
X45				.56	
X186	.51			.47	
X194					.72
X148					.65
X167					.56

<u>Table 16 Continued</u>

X35	.51
X110[a]	-.24

<u>Note</u>. N = 706. [a]All other loadings < .3 deleted.

<u>Table 17</u>. Neuroticism component intercorrelations II.

	<u>1.</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>	<u>5.</u>
1. Depression					
2. Anger	.06				
3. Anxiety	.21	.00			
4. Low Self-Esteem	.13	-.08	.07		
5. Urge Control	.13	.09	-.04	.10	

<u>Note</u>. N = 706.

Table 18. Principal components of selected conscientiousness items.

| | Factors | | | | |
	1	2	3	4	5
Item					
X105	.70				
X85	.69				
X165	.64				
X8	.58				
X140	.58				
X225		.74			
X226		.73			
X203		.68			
X66		.62			
X104		.61			
X191			.79		
X234			.73		
X190			.62		
X201			.61		
X222			.49		
X65				.67	
X99				.55	
X61				.54	
X118				.52	
X36				.44	
X217					.66

Table 18 continued

X208		.61
X74		.59
X112		.52
X109		.50
X159		.43
X199		.40
X121[a]	-.38	.27

Note. N = 706. [a]All other loadings < .3 deleted.

for 41.3% of the item variance. As can be seen in Table 18, all but one selected item loaded on the expected facet. The item "I'm concerned about others being on time too much" (X121) previously loaded on the Compulsivity facet. In the

Table 19. Conscientiousness component intercorrelations II.

	1.	2.	3.	4.	5.
1. Laziness					
2. Recklessness	.01				
3. Impulsivity	.14	.14			
4. Unreliability	.07	.11	.07		
5. Compulsivity	-.19	-.02	-.07	-.19	

Note. N = 706.

second analysis, it split its rather low loading between Unreliability (-.38) and Compulsivity (.27). A decision was made to retain item 121 in the Compulsivity facet scale pending further analyses. The average facet intercorrelation was .10 (see Table 19).

Principal components of the 24 selected openness problems items generated a five component solution accounting for 47.1% of the item variance. As can be seen in Table 20, all but two selected items loaded on their expected facets. The items "I ignore my emotions too much" (X120) and "Hard to experience intense emotions" (X48) previously loaded on the Oversensitivity facet. In the second analysis, item 120 split its loading between Nonconformity (.64) and Oversensitivity (-.38). Item 48 also split its loading between Nonconformity (.61) and Oversensivity (-.45). A decision was made to retain item 120 and item 48 in the Oversensitivity facet scale pending further analyses. The average facet intercorrelation was .07 (see Table 21).

Superordinate Structure of Derived Problems Facets. In order to evaluate the superordinate structure of the derived problems facets, all fifteen facet scales were conjointly factored with the appropriate domain scales of the IASR-B5. Oblique and simple structure extractions were nearly identical and only the varimax rotations will be presented. Extraction criteria indicated a three component solution accounting for 51% of the variance was indicated (see Table 22).

Table 20. Principal components of selected openness items.

	Factors				
	1	2	3	4	5
Item					
X97	.79				
X164	.78				
X131	.73				
X124	.55				
X180	.32				
X134		.77			
X149		.74			
X133		.65			
X51		.62			
X235			.73		
X202			.71		
X214			.67		
X77			.54		
X238			.53		
X56				.68	
X119				.64	
X59				.59	
X48	.64			.45	
X120	.61			.38	
X128					.71
X155					.62
X176					.62

Table 20 continued

X163	.60
X209	.40

Note. N = 706. All loadings < .3 deleted.

Table 21. Openness component intercorrelations II.

	1.	2.	3.	4.	5.
1. Nonconformity					
2. Unimaginative	.07				
3. Lack of Focus	.03	−.15			
4. Oversensitivity	.06	−.02	.06		
5. Egocentrism	−.04	.13	−.14	−.04	

Note. N = 706.

Table 22. Three component solution of conjoint principal
components analysis of derived problem facets and
domain scales of the IASR-B5.

Factor

Scale	I	II	III
Neuroticism (IASR-B5)	.81		
Anxiety	.75		
Depression	.71		
Nonconformity	-.70		
Low Self-esteem	.54		
Oversensitivity	.35		
Anger	.34		
Conscientious (IASR-B5)		.81	
Compulsive		.79	
Lazy		-.63	
Unreliable		-.51	
Impulsive		-.39	
Urge Control		-.35	
Openness (IASR-B5)			.75
Unimaginative			-.73
Lack of Focus			.56
Egocentrism		.34	-.53
Reckless	-.36		.48

Note. N = 706. Loadings < .30 deleted.

The conjoint principal components analysis of the derived problems facets demonstrated that the superordinate structure of the facets could be captured by the dimensions of neuroticism, openness, and conscientiousness. However, a number of facets loaded on unexpected dimensions. Both Nonconformity and Oversensitivity (derived from the a priori openness item pool) loaded on the neuroticism dimension, while Reckless (derived from the a priori conscientiousness item pool) split its loading between neuroticism and openness. Urge Control (derived from the a priori neuroticism item pool) loaded on the conscientiousness dimension.

In order to determine the most accurate superordinate structure, a number of secondary analyses were performed. From the item component analyses, it was apparent that the Oversensitivity items were of questionable homogeneity.

Table 23. Correlations of Oversensitivity with domain scales of the IASR-B5.

Oversensitivity

Scale	
Neuroticism	.28
Openness	.25
Conscientiousness	.19
Dominance	.25
Nurturance	.33

Note. N = 706. All correlations p < .01.

Examination of the facet's correlations with the dimensions of the FFM indicated no significant differential relationships (see Table 23).

The Oversensitivity facet failed to demonstrate discriminant validity among the dimensions of the FFM. Examination of the item content indicated that the items involved the presence or absence of strong affective experiences; whereas the remainder of the initially derived neuroticism problem facets assessed specific affective experiences. A decision was made to drop the Oversensitivity facet from further analyses.

The Nonconformity facet was also derived from the a priori openness item pool. Item component analysis indicated greater item homogeneity than the Oversensitivity facet. Examination of the facet's correlations with the dimensions

Table 24. Correlations of Nonconformity with domain scales of the IASR-B5.

Nonconformity

Scale	
Neuroticism	-.52
Openness	.26
Conscientiousness	.06
Dominance	.30
Nurturance	.13

Note. N = 706. All correlations $p < .01$.

of the FFM demonstrated significant differential
relationships (see Table 24).

The Nonconformity facet correlated -.52 with trait
neuroticism. As this facet appeared to belong on the
neuroticism problems dimension, it was rescored without
ipsatization as were all other neurotic problems facets.
When the scales were refactored, the unipsatized
Nonconformity facet loaded most highly on the openness
dimension. Thus, subsequent principal components analyses of
the openness facets including either the ipsatized or
unipsatized Nonconformity facet were conducted (see Tables 25
and 26).

Table 25. Principal components analysis of Openness problems
facets with Nonconformity ipsatized.

Scale	Factor	
	I	II
Egocentrism	.75	.07
Unimaginative	.75	-.10
Lack of Focus	-.62	-.09
Nonconformity	.04	.99

Note. N = 706.

Table 26. Principal components analysis of Openness problems
            facets with Nonconformity unipsatized.

                                    Factor

                                       I

Scale

Egocentrism   .75

Unimaginative   .73

Lack of Focus   -.53

Nonconformity   -.43

_____

Note.   N = 706.

    The principal components analysis presented in Table 25

indicated a 2 component solution accounting for 62.3% of the

variance.   When the Nonconformity facet is ipsatized (as are

all other facets not loading on the neuroticism dimension) it

is clearly unrelated to the three additional derived openness

facets.   And, the facet loads on the neuroticism dimension.

However, when the Nonconformity facet is scored in an

unipsatized manner (as are all other neuroticism problems

facets), it loads substantially on the openness dimension.

This indicates that the ipsatization process may be more

complex than was originally hypothesized.   A decision was

made to score the Nonconformity facet in an unipsatized

manner and retain it as a facet of the openness dimension

pending further analyses.

Examination of the correlations between the Urge Control facet and the dimensions of the FFM indicated significantly greater relationship between the facet and trait conscientiousness and a decision was made to retain the Urge Control facet on the conscientiousness problems dimension. Examination of correlations between the Reckless facet and the dimensions of the FFM indicated significantly greater relationship between the facet and trait dominance assessed by the IASR-B5 (r = .44) and trait extraversion assessed by the FFI (r = .43) than trait conscientiousness (r = -.13 as assessed by the IASR-B5; r = -.05 as assessed by the FFI). A decision was made to drop the Reckless facet from further structural analyses. However, the facet was retained in the item pool, as reckless behavior is of significant importance is clinical assessment.

After removal of the Oversensitivity and Reckless facets from structural analyses, the remaining 13 derived problems facets were subjected to a conjoint principal components analysis with appropriate domain scales from the IASR-B5. Examination of the Scree Plot indicated a three factor solution accounting for 52% of the variance which was rotated to varimax criterion. The final superordinate structure of the derived problems facets can be seen in Table 27.

Table 27. Three component solution of conjoint principal components analysis of remaining derived problem facets and domain scales of the IASR-B5.

Scale	Factor		
	I	II	III
Anxiety[a]	.88	.00	.03
Depression[a]	.85	.15	.00
Neuroticism (IASR-B5)	.83	-.03	.10
Low Self-esteem[a]	.76	.24	-.14
Anger[a]	.65	.05	.03
Conscientious (IASR-B5)	-.12	-.83	.00
Compulsive	.05	-.80	.10
Lazy	.03	.63	-.08
Unreliable	-.26	.52	.22
Impulsive	.19	.40	.19
Urge Control	.15	.38	.03
Openness (IASR-B5)	-.08	-.06	.83
Unimaginative	-.23	-.07	-.78
Egocentrism	-.20	-.34	-.56
Lack of Focus	-.09	-.09	.47
Nonconformity[a]	-.35	.28	.42

Note. N = 706.
[a]Unipsatized facet scales.

Reliability. Cronbach's alpha was calculated for both the individual facet scales and the domain scales of the IIP-B5. Examination of item-total correlations indicated significant improvements in alpha reliabilities due to removal of the following items from the following facets: a) deletion of item X112 (I'm concerned with keeping my appearance neat too much) and item X199 (I watch the clock too much) from the Compulsive facet, b) deletion of item X169 (Hard for me to abide by rules and regulations even if they are good ones) from the Nonconformity facet, and c) deletion of item X110 (I think about my health too much) from the Urge Control facet. It was decided to retain the reduced item facets and generate new items to improve scale reliability and thematic homogeneity in further investigations. Final alpha coefficients for the derived IIP-B5 facet scales can be seen in Table 28. IIP-B5 domain scales are scored as follows:

1. Neuroticism =

    Depression + Anxiety + Anger + Low Self-esteem

2. Unconscientiousness =

    Lazy + Unreliable + Impulsive + Urge Control – Compulsive

3. Openness =

    Nonconformity + Lack of Focus – Egocentric – Unimaginative

Reliability coefficients ranged from .52 for Unreliability and Urge Control to .93 for domain Neuroticism. Alphas for

Table 28. Alpha coefficients for derived facet and domain scales.

Alpha

Scale

Scale	Alpha
Depression	.89
Anxiety	.88
Low Self-esteem	.81
Anger	.82
Neuroticism (IIP-B5)	.93
Lazy	.70
Unreliable	.52
Impulsive	.71
Urge Control	.52
Compulsive	.80
Unconscientiousness (IIP-B5)	.67
Unimaginative	.74
Egocentric	.78
Lack of Focus	.65
Nonconformity	.62
Openness (IIP-B5)	.73
Reckless	.74

Note. N = 706

the former two scales may be attenuated due to moderate variance of these scales in a college sample.

Structural Validity. The final derived IIP-B5 problems domain scales were subjected to a conjoint principal components analysis with the domain scales of the IASR-B5. This analysis also included the circumplex dimensions of dominance and nurturance from both the IASR-B5 and the IIP-C to determine the structural fidelity of the derived scales with the Dyadic-Interactional perspective on the FFM. The analysis indicated a five factor solution accounting for 84.8% of the variance which was rotated to varimax criterion (see Table 29). Structural fidelity was supported.

Table 29. Conjoint principal components analysis of IASR-B5 domain scales and IIP-B5 domain scales.

	Factors				
	I	II	III	IV	V
Scales					
Neuroticism (IASR-B5)	<u>.94</u>	-.03	-.05	.00	.05
Neuroticism (IIP-B5)	<u>.89</u>	.13	-.15	-.17	-.04
Unconscientious (IIP-B5)	.02	<u>.90</u>	.06	.08	.07
Conscientious (IASR-B5)	-.07	<u>-.90</u>	.12	.14	-.04
Dominance (IIP-B5)	.01	.01	<u>.91</u>	-.19	.11
Dominance (IASR-B5)	-.27	-.07	<u>.87</u>	.13	.16
Nurturance (IIP-B5)	-.02	.09	.07	<u>.91</u>	.08
Nurturance (IASR-B5)	-.15	-.15	-.15	<u>.86</u>	.03
Openness (IASR-B5)	-.01	-.10	.19	.08	<u>.87</u>
Openness (IIP-B5)	.02	.22	.06	.03	<u>.86</u>

Note. N = 706.

A principal component analysis of the domain scales of the IIP-B5 also demonstrated strong support for a five factor structure of the instrument. The final structural analyses applied to the derived IIP-B5 scales was to subject all derived facet scales and circumplex octant scales to a principal components analysis with markers of the neuroticism, conscientiousness and openness from the IASR-B5. Results of the analysis can be found in Table 30. A five factor solution accounting for 59.4% of the variance was rotated to varimax criterion. All derived facets loaded most highly on the expected dimensions, further supporting the structural fidelity of the IIP-B5 at the facet level.

Table 30. Full facet and circumplex octant principal
components analysis of the IIP-B5.

	Factors				
	I	II	III	IV	V
Scales					
Anxiety[a]	.87	-.06	-.04	-.02	.03
Depression[a]	.85	-.18	.00	-.18	.03
Neuroticism (IASR-B5)	.83	.04	.01	.00	.07
Low Self-esteem[a]	.77	-.26	-.17	-.26	-.08
Anger[a]	.65	.11	.42	-.09	-.04
IIP-C (FG)	.22	-.83	-.17	.02	-.14
IIP-C (DE)	-.06	-.72	.27	.09	-.06
IIP-C (NO)	-.13	.71	.06	-.04	.17

Table 30 continued

IIP-C (JK)	-.07	-.06	-.84	.06	-.07
IIP-C (HI)	.11	-.45	-.72	-.05	-.21
IIP-C (PA)	-.20	.34	.68	.18	.17
IIP-C (BC)	.03	-.29	.67	.13	-.14
IIP-C (LM)	-.17	.35	-.66	.23	.17
Conscientious (IASR-B5)	-.17	-.01	.03	.82	-.09
Compulsive	.00	.05	.19	.78	-.01
Lazy	.08	.05	.00	-.63	-.02
Unreliable	-.24	.09	.05	-.51	.28
Impulsive	.24	.40	.21	-.48	.12
Urge Control	.19	.15	.12	-.40	.01
Openness (IASR-B5)	-.12	.17	.13	.06	.81
Unimaginative	-.19	-.04	-.02	.07	-.79
Egocentric	-.20	-.01	.21	.33	-.60
Lack of Focus	-.10	.36	.03	.12	.42
Nonconformity[a]	-.35	.10	.29	-.29	.42

Note. N = 706. [a]unipsatized scales.

Convergent Validity. The IIP-B5 domain scales were
correlated with the domain scales of the FFI and IASR-B5 to
assess convergent validity. These correlations can be found
in Table 31. Additional validity correlations between IIP-B5
facets and the Interpersonal Dependency Inventory (Hirschfeld

et al, 1977), the State-Trait Anxiety Inventory (Spielberger,
1983), and the Shyness Scale (Cheek & Melchior, 1985) can be
found in Table 32.

Table 31. Correlations between IIP-B5 domain scales and
domain scales of the FFI and IASR-B5.

	FFI			IASR-B5		
	<u>N</u>	<u>O</u>	<u>C</u>	<u>N</u>	<u>O</u>	<u>C</u>
<u>IIP-B5 Scales</u>						
Neuroticism	<u>.80</u>	-.13	-.31	<u>.72</u>	-.09	-.20
Openness	.03*	<u>.56</u>	-.14	.04*	<u>.55</u>	-.20
Unconscientious	.15	.10	<u>-.72</u>	.00*	.05*	<u>-.66</u>

Note. N = 706. *r is not significant.

The convergent validity correlations between the IIP-B5
domain scales and the IASR-B5 domain scales support the
contention that each derived problem domain is assessing
maladaptive traits related to one of the dimensions of the
FFM. Each IIP-B5 domain correlated most highly with its FFI
and IASR-B5 counterpart. While these correlations are
acceptable, further revisions of the IIP-B5 scales may reduce
the off diagonal correlations in Table 31 and increase the
correlation between IIP-B5 openness problems and trait
openness assessed by the FFI and IASR-B5. It should be noted
that in the IIP-B5, the conscientiousness domain is scored in
the direction of unconscientiousness, leading to the

consistent negative factor loadings and correlations with other measures of trait conscientiousness.

Table 32. Convergent validity correlations between IIP-B5 facets and the STAI Trait anxiety scale, the Interpersonal Dependency Inventory, and the Shyness Scale.

<u>Validity Scales</u>

	STAI-T	IDI-1	IDI-2	IDI-3	IDI-Tot	SHY
IIP-B5 Facets						
Depression	.78	.48	.44	-.21	.48	.58
Anger	.41		.28		.21	.28
Anxiety	.78	.53	.47	-.24	.53	.57
Low Self-esteem	.76	.60	.38	-.24	.52	.59
Lazy						
Compulsive						
Unreliable						
Impulsive						
Urge Control						
Nonconformity		-.29			-.25	-.27
Lack of Focus						
Unimaginative	-.23					
Egocentric	-.25					

<u>Note</u>. N = 706. All r's p < .01. r < .20 deleted. Abbreviations: STAI-T = Trait Anxiety Scale; IDI-1 = Lack of Social Self-confidence; IDI-2 = Emotional Reliance on Others; IDI-3 = Assertion of Autonomy; IDI-Tot = Dependency; SHY = Shyness Scale.

The majority of correlations above .20 in Table 32 involve the IIP-B5 neuroticism facets. The depression facet is strongly related to trait anxiety (.78) and moderately related to shyness (.58). It is moderately related to dependency (.48) and negatively related to the assertion of autonomy (-.21). The anxiety facet shows a similar pattern of convergent correlations--strongly related to trait anxiety (.78), moderately related to shyness (.57) and dependency (.53), and negatively related to the assertion of autonomy (-.24). The anger facet is moderately related to trait anxiety (.41), and was less strongly related to dependency (.21) and shyness (.28). The low self-esteem facet exhibits strong associations with trait anxiety (.76), dependency (.52) (particularly lack of social self-confidence r = .60), and shyness (.59).

None of the unconscientious problems facets exhibited significant relationships to anxiety, dependency, or shyness. The nonconformity facet exhibited moderate negative relationships with a lack of social self-confidence (-.29), dependency (-.25), and shyness (-.27). This seems intuitively congruent, as nonconforming behavior contraindicates lack of confidence, shyness, or dependence on others. The egocentric facet was negatively correlated with trait anxiety (-.25) indicating a relationship between emotional stability and the ability to reject people or customs very different from one's own. The unimaginative facet was also negatively correlated with trait anxiety

(-.23). Interpretation of this relationship is difficult; however it could be that concrete thinking attenuates self-consciousness and the ability to ruminate over possible future events or possible alternatives to previously experienced situations. Simply put, concrete thinking may reduce a person's tendency to worry.

Discussion

General Factor. The general factor running through the domain of self-reported problems noted by Horowitz et al (1988) and Alden et al (1990) replicated in the enlarged experimental item pool of neurotic, conscientious, and openness problems. When this factor was correlated with independent measures of the FFM, it was most strongly related to trait neuroticism and mean item endorsement.

Gurtman (in press-b, in press-c) noted that for the IIP-C this general factor contributed to scale elevation (or interdependencies among octant scales) which could be assessed by calculating the average intercorrelation among IIP-C octant scales. When these scales are unipsatized, the intercorrelation matrix includes all positive correlations rather than a circumplex pattern of correlations (Wiggins et al, 1981).

Gurtman applied multidimensional scaling techniques to the all positive IIP-C intercorrelation matrix and determined that a strong circulant property remained intact. This led him to conclude that the ipsatization procedure may exclude information of importance for assessment. However, Gurtman

was working within a two-dimensional interpersonal system; whereas the present study involved the FFM. One of the additional dimensions of the FFM is, in fact, strongly related to the general factor. Thus it was concluded that: a) the general factor is most strongly related to trait neuroticism, b) neurotic problem items should be excluded from the ipsatization procedure, and c) ipsatization would be used to remove the effects of the factor on facet intercorrelations for the remaining FFM domains. The relationship between trait neuroticism and elevation in self-reported problems is congruent with recent findings that this trait is significantly related to both recall of, and distressed reactivity to physical symptoms and daily stressors (Affleck, Tennen, Urrows, & Higgins, 1992; Bolger & Schilling, 1991; Costa & McCrae, 1987; Larsen & Kasimatis, 1991; Larsen, in press; Watson & Pennebaker, 1989).

Scale Derivation. Initial facet and domain scales for neurotic, conscientious, and openness problems were derived from the experimental item pool. The problems construct of behavioral excess and behavioral inhibition was expanded from the interpersonal domain to the additional personality domains of neuroticism, conscientiousness, and openness. Initial facet scales for neuroticism are unipolar and include: Depression (sad affect) (+), Anxiety (+), Low Self-Esteem (+), and Anger Control (+). Initial facet scales for unconscientiousness are bipolar and include: Compulsivity

(-), Lazy (+), Impulsivity (+), Urge Control (+), and
Unreliable (+). Initial facets scales for Openness are
bipolar and include: Egocentric (-), Unimaginative (-), Lack
of Focus (+), and Nonconformity (+). The Nonconformity facet
loaded strongly on the openness dimension only if it remained
unipsatized. This indicated that the substantive effects of
ipsatization may differ if the target facet or scale is
strongly negatively correlated with trait neuroticism than if
the target facet or scale is positively correlated with
neuroticism. If a problems scale is negatively related to
trait neuroticism, retaining the distress component appears
to reduce the strong negative correlation, leaving the facet
or scale free to load on the most substantively related
dimension.

An additional problems facet, Reckless, was retained as
clinically significant, although it is most strongly related
to trait extraversion. This facet appears to assess
maladaptive sensation-seeking (Zuckerman, 1971; Zuckerman,
Bone, Neary, Mangelsdorff, & Brustman, 1972), a construct
that has been a thorn in the structural side of the FFM over
the years (see Zuckerman, Kuhlman, & Camac, 1988).

Scale reliabilities ranged from .52 to .93. While the
lowest reliabilities may have been attenuated by low variance
in university sample, item changes may be required to raise
alpha coefficients to acceptable levels. Convergent validity
correlations between IIP-B5 domain scales for neurotic,
unconscientious, and openness problems and independent

measures of the FFM (FFI, IASR-B5) supported the expectation

that the new scales were most strongly related to the FFM

dimension for which scale construction was targeted.

Validity correlations for derived neuroticism facet scales

indicated excellent convergence. The five item Anxiety

problems facet correlated .78 with the 20-item Trait Anxiety

scale of the STAI. All neuroticism facets showed significant

relations with measures of dependency and shyness. The

unconscientiousness problems facets failed to demonstrate

significant relations with the scales from the IDI, STAI, or

the Cheek Shyness scale. These facets may be a more unique

component of the derived scales, and such constructs may not

be well represented in existing adjustment inventories (e.g.,

Costa et al, 1986). Derived openness facets demonstrated

small and meaningful relations with dependency, lack of

social self-confidence, shyness, and trait anxiety. As with

the facets of unconscientiousness, openness problems may

represent relatively unique constructs not well represented

in available self-report inventories.

Structural Fidelity. Loevinger's (1957) concept of

"structural fidelity" proposes that items be selected from a

large pool on the basis of empirical properties that indicate

which items best conform to an appropriate structural model.

In the present research, items were selected to conform to

the Dyadic-Interactional perspective on the FFM (Pincus &

Wiggins, in press; Trapnell & Wiggins, 1990, Wiggins &

Pincus, 1992, in press). To assess the structural fidelity

of the derived problems scales, the IIP-B5 domain scales
(including the interpersonal problems circumplex axes) and
the IASR-B5 were subjected to a conjoint principal components
analysis. A clear five factor solution was extracted that
showed the two instruments demonstrate homologous structure
(see Table 29). No off-diagonal factor loadings of
significance emerged. At the facet and octant level, a
principal components analysis of the full IIP-B5 also
generated a clear five factor solution (see Table 30). Facet
factor loadings on nontarget dimensions are comparable to
such loadings reported for full factor analyses of the
revised NEO-PI (NEO-PIR; Costa, McCrae, & Dye, 1991) and the
Standard Markers of the Big Five Factor Structure (Goldberg,
1992).

General Conclusion. The results of Study 1 support the
expectations that the problems construct can be expanded
beyond the interpersonal domain of personality. An initial
five-factor problems inventory (IIP-B5) was developed which
showed structural fidelity with the Dyadic-Interactional
perspective on the FFM. Additionally, the derived facet
scales appear to assess constructs which may be interpreted
as maladaptive trait representatives of the dimensions of the
FFM, rather than redundant constructs found in other FFM
inventories. Facet scale reliability requires improvement;
and validation of the inventory at both the facet and domain
level of the construct hierarchy in an independent sample is

required. The results of the scale validation study can be found in Chapter 3.

CHAPTER 3

Study 2: Scale Validation

Methods

Overview

The major goal of Study 2 was to validate the IIP-B5 scales derived in Study 1.

Sample. The derived IIP-B5 (including additional new items), along with a variety of FFM inventories, and additional clinical, adjustment, and personality questionnaires was administered to a sample of 572 university students. This sample consisted of 201 men (35%) with an average age of 19.9 years, and 371 women (65%) with an average age of 20.0 years. This sample was used to validate the IIP-B5 derived in Study 1.

Instruments. The initial version of the IIP-B5 derived in Study 1 with item modifications to clarify substantive interpretation of derived factors and to improve internal consistency was included in a large assessment battery. In this study, the IIP-C (Alden et al, 1990; described in Chapter 2) was embedded within the test booklet. A variety of adjustment and personality inventories were included in the battery. Some of these pertained to independent research projects and are not be discussed.

The IASR-B5 (Trapnell & Wiggins, 1990) and the FFI (Costa & McCrae, 1989) will again be included to provide independent and method-different markers of the FFM. These inventories have been described in Chapter 2.

The Brief Symptom Inventory (BSI; Derogatis &
Melisaratos, 1983) is a self-report symptom scale that was
designed to measure levels of psychopathology. It is a
shortened form of the revised version of the Symptom
Checklist-90 (SCL-R-90; Derogatis, 1977). The BSI consists
of 53 items describing a variety of difficulties and
complaints. The items are rated on a 5-point scale (0 to 4),
reflecting degrees of distress ranging from "not at all" to
"extremely." Scores are obtained on the following nine
dimensions: Somatization, Obsessive-Compulsive,
Interpersonal Sensitivity, Depression, Anxiety, Hostility,
Phobic Anxiety, Paranoid Ideation, and Psychoticism. Three
global indexes can be calculated from raw scores.

The Weinberger Adjustment Inventory (WAI; Weinberger &
Schwartz, 1990) is an 84 item inventory designed to assess
long term functioning rather than short term symptoms. The
two primary dimensions are "Distress" (as assessed by
subscales measuring anxiety, depression, low self-esteem, and
low well-being) and "Restraint" (as assessed by subscales
measuring impulse control, suppression of aggression,
consideration of others, and responsibility). There are two
validity indicators consisting of a "Denial of Distress"
scale, which refers to defensiveness about normative
experiences of distress, and a "Repression" scale which
refers to claims of nearly absolute restraint. Subjects
endorse items on a 5-point scale ranging from completely
false to completely true. Alpha reliabilities range from .72

for the Impulse Control scale to .92 for the composite Distress scale.

The Private and Public Self-Consciousness scales (PRSC/PUSC; Fenigstein, Scheier, & Buss, 1975) are 10 and 7-item scales which assess a) the tendency to attend to one's inner thoughts and feelings and b) the awareness of the self as a social object having an effect on others, respectively. Subjects respond to each item on a 5-point scale from "Extremely Uncharacteristic" to "Extremely Characteristic." Test-retest reliability for these scales was greater than .7 (Fenigstein et al, 1975).

Procedures. Data collection procedures proceeded as described in Study 1.

Analyses

Data Transformation. The ipsatization procedure described in Study 1 was again used to transform the data. In this study, both ipsatized and unipsatized versions of the scales were scored and saved for further analyses.

Cross Validation. Each of the problems domains of neuroticism, conscientiousness, and openness were subjected to independent principal components analyses at the item level to demonstrate scale stability across samples.

Structural Validation. The initial IIP-B5 facets derived from Study 1 were subjected to a conjoint principal components analysis with markers of neuroticism, conscientiousness, and openness from the IASR-B5. Following the same step-wise procedure detailed in Study 1, the facets

were then conjointly factored with the IIP-C octant scales. Following confirmation of the lower-level structural stability of the IIP-B5 facets, the domain scales were conjointly factored with the IASR-B5.

Reliability and Validity. Alpha coefficients and item-total correlations for derived facets and domain scales were determined to assess internal consistency. Convergent validity correlations for the three new problems dimensions were obtained by examining the relations between derived problems scales and the neuroticism, conscientiousness, and openness scales of the IASR-B5 and the FFI concurrently assessed in the sample. Additional validity correlations were obtained by examining the relations between the derived IIP-B5 scales and the BSI, WAI, and Self-consciousness scales.

Gender differences in normative endorsement rates were examined. Normative data were used to generate standardized scores for purposes of clinical assessment and research.

Expectations

1. Both the lower order and superordinate structure of the IIP-B5 will be validated on a second large sample.

2. The reliability, convergent validity, and discrimininant validity of the IIP-B5 will be supported.

3. Significant gender differences will emerge in endorsement rates of problems.

Results

Item modifications. Based on a review of alpha reliabilities, item loadings, and the thematic content of facets, a limited number of additional items or item modifications were introduced into the IIP-B5 validation item pool. Item changes and additions are presented in Table 33.

Table 33. Summary of item modifications and additions to derived IIP-B5 facets.

Facet	Item Modification
Lazy	"Hard to set clear goals and work efficiently towards them"
	MODIFIED TO
	"Hard to work systematically toward my goals"
Unimaginative	"Hard to feel captivated when looking at a work of art"
	MODIFIED TO
	"Hard to be moved by a work of art"
Urge Control	"I think about my health too much" (reversed)
	MODIFIED TO
	"Hard to act responsibly towards my health"

Table 33 continued

Item Addition

Unimaginative   "Hard to be absorbed when listening to music"

"Hard to reflect seriously about things"

"I get bored too often when conversations turn to deep topics"

Nonconformity   "I want to stay with the usual way of doing things too much" (reversed)

Egocentric   "Hard to accept customs different from my own"

"I get too upset by others' unconventional behavior"

Facet Validation. The 20 unipsatized neurotic problems items were subjected to a principal components analysis. Both oblique and varimax rotations were performed. As these were virtually identical, only the varimax rotation will be presented here. A four component solution accounting for 49.2% of the item variance was extracted. This solution is presented in Table 34.

All items had their highest loadings on the original derived problems facets. Facets were again identified as Anxiety, Depression (sad affect), Anger Control, and Low

Table 34. Principal components of selected neuroticism items.

Factors

Item	1	2	3	4
X94	.73			
X146	.69			
X85	.67			
X137	.65			
X128	.61			
X104		.76		
X136		.73		
X144	.37	.72		
X125	.38	.44		
X29		.44		
X69			.82	
X87			.75	
X12			.63	
X61			.61	
X50			.49	
X19				.73
X10				.70
X99				.57
X62				.48
X71		.36		.40

Note. N = 572. Loadings < .33 deleted.

Self-esteem. Two depression items ("I feel depressed too much" and "I feel discouraged too much") had secondary loadings on the Anxiety facet. A decision was made to retain these items on the Depression facet. One low self-esteem item ("Hard for me to feel ambitious") split its loading between its target facet (.40) and the Depression facet (.36). A decision was made to retain the item on the Low Self-esteem facet.

The 25 ipsatized openness problems items were subjected to a principal components analysis. Both oblique and varimax rotations were performed. As these were extremely similar, only the varimax rotation is presented here. A four component solution accounting for 41.8% of the item variance was obtained. This solution is presented in Table 35.

Table 35. Principal components of selected openness items.

	Factors			
	1	2	3	4
Item				
X143	.84			
X130	.82			
X31	.76			
X2	.73			
X27	.59			
X55	.24[a]			
X46		.70		
X58		.70		

Table 35 continued

X47	.62		
X18	.57		
X51	.56		
X138	.46		
X22	.38		
X25		.79	
X49		.77	
X7		.68	
X52		.62	
X54		.41	
X134		.37	
X141		.24[a]	
X88			.72
X135			.67
X101			.66
X89			.65
X147			.40

Note. N = 572. [a]All other loadings < .33 deleted.

All items had their highest loadings on the original derived problems facets. New items' highest loadings also fell on expected facets. Facets were again identified as Nonconformity, Unimaginative, Egocentric, and Lack of focus. Two items had low loadings (.24) on their target facets. However, these items showed significantly lower loadings,

ranging from .02 to .09 on other facets. Thus, a decision
was made to retain these items.

The 26 ipsatized unconscientious problems items were
subjected to a principal components analysis. Both oblique
and varimax rotations were performed. Only the varimax
rotation is presented here. A five component solution
accounting for 42.7% of the item variance was obtained. This
solution is presented in Table 36.

Table 36. Principal components of selected unconscientious
           items.

	Factors				
	1	2	3	4	5
Item					
X81	.70				
X84	.68				
X9	.68				
X42	.65				
X39	.55				
X102		.75			
X122		.70			
X93		.69			
X97	-.40	.44			
X126		.42			
X20		.41			
X124			.72		
X129			.68		

Table 36 continued

X91		.53		
X100		.49		
X82	.38	.45		
X53			.71	
X79			.68	
X24			.60	
X4			.48	
X43			.43	
X77				.76
X113				.68
X40				.53
X105				.50
X127				.50

Note. N = 572. All loadings < .33 deleted.

All items had their highest loadings on the original derived problems facets. New items' highest loadings also fell on expected facets. Facets were again identified as Lazy, Compulsive, Impulsive, Urge Control, and Unreliable. Item X97 ("I constantly strive for perfection too much") split its loading on Lazy (-.40) and Compulsive (.44). A decision was made to retain the item in the Compulsive facet. Item X82 ("I overlook important details too much") split its loading on Impulsive (.45) and Lazy (.38). A decision was made to retain the item in the Impulsive facet.

Structural Validation. In order to demonstrate structural stability of the IIP-B5 across samples, the 13 derived problems facets were subjected to a conjoint principal components analysis with domain scales from the IASR-B5. Examination of the Scree Plot indicated a three factor solution accounting for 51.2% of the variance which was rotated to a varimax criterion. The final superordinate structure of the derived problems facets can be seen in Table 37. The three component solution replicates the solution of the same analysis conducted in Study 1.

The only facet with a significantly split loading was Nonconformity (.43 on openness and .40 on neuroticism). This facet demonstrated a similar pattern of factor loadings in Study 1. In a recent study of the structure of self-report schizotypy (psychosis proneness) scales, Kendler and Hewitt (1992) conjointly factored ten scales including Chapman's Impulsive Nonconformity scale (Chapman, Chapman, Numbers, Edell, Carpenter, & Blackfield, 1984) with Eysenck's revised Neuroticism and Extraversion scales (Eysenck, Eysenck, & Barrett, 1985). Nonconformity demonstrated a similar pattern of loadings to the present study. The Impulsive Nonconformity scale loaded most highly on a factor interpreted as "nonconformity", and had a moderate secondary loading on a dimension strongly marked by Eysenck's Neuroticism scale. Thus, the Nonconformity facet was retained in the openness problems domain.

Table 37. Three component solution of conjoint principal components analysis of IIP-B5 facets and domain scales of the IASR-B5.

	Factor		
Scale	I	II	III
Anxiety[a]	.88	-.02	.07
Depression[a]	.83	.13	.14
Neuroticism (IASR-B5)	.81	-.05	.15
Low Self-esteem[a]	.79	.22	-.09
Anger[a]	.52	.03	-.02
Conscientious (IASR-B5)	-.24	-.79	-.04
Compulsive	.02	-.77	.06
Lazy	-.04	.69	-.10
Unreliable	-.15	.53	.21
Urge Control	.03	.50	.14
Impulsive	.19	.43	-.05
Openness (IASR-B5)	-.10	-.04	.87
Unimaginative	-.27	-.14	-.77
Egocentrism	-.16	-.21	-.50
Lack of Focus	-.04	-.20	.46
Nonconformity[a]	-.40	.27	.43

Note. N = 572. [a]Unipsatized facet scales.

As a second test of the superordinate facet structure of
the derived IIP-B5 scales, they were combined with the IIP-C
octant scales and conjointly factored with markers of
neuroticism, conscientiousness, and openness from the IASR-
B5. A principal components analysis indicated a clear five
factor solution emerged that accounted for 60.1% of the
variance. The solution was rotated to a varimax criterion
and can be seen in Table 38. The full facet/octant structure
of the IIP-B5 from Study 1 was replicated in this analysis.
While all facet scales load most highly on the target
dimension, a number of facets show moderate secondary
loadings. Both the Anger Control facet (neuroticism) and the
Egocentric facet (openness) have moderate secondary loadings
on an interpersonal dimension marked by the IIP-C Domineering
and IIP-C Vindictive scales. Both the Lack of Focus facet
(openness) and the Impulsive facet (unconscientious) have
secondary loadings on an interpersonal dimension marked by
the IIP-C Intrusive scale. The Nonconformity facet has a
secondary loading on the neuroticism dimension (as expected)
and a moderate secondary loading on the unconscientiousness
dimension.

To validate the structural fidelity of the IIP-B5 with
the Dyadic-Interactional perspective on the FFM, a conjoint
principal components analysis of the IIP-B5 domain scales
with adjectival domain scales for the same dimensions from
the IASR-B5 was conducted. A clear five factor solution

Table 38. Full facet and circumplex octant principal

components analysis of the IIP-B5.

	Factors				
	I	II	III	IV	V
Scales					
Anxiety[a]	.88	-.08	-.03	-.03	.04
Depression[a]	.82	-.06	-.12	.10	.15
Neuroticism (IASR-B5)	.82	-.03	.03	-.05	.12
Low Self-esteem[a]	.76	-.23	-.17	.18	-.05
Anger[a]	.57	.42	.11	.05	-.10
IIP-C (JK)	.01	-.83	.03	-.06	-.02
IIP-C (HI)	.10	-.72	-.45	.03	-.06
IIP-C (PA)	-.25	.70	.22	-.12	.16
IIP-C (BC)	-.02	.69	-.41	-.08	-.03
IIP-C (LM)	-.05	-.59	.46	-.28	.13
IIP-C (FG)	.20	-.20	-.77	-.01	-.07
IIP-C (NO)	-.02	-.01	.74	-.02	-.03
IIP-C (DE)	.02	.23	-.71	-.06	.05
Conscientious (IASR-B5)	-.25	.06	.07	-.76	-.05
Compulsive	.04	.18	.25	-.73	.00
Lazy	-.03	-.12	.09	.70	-.12
Unreliable	-.11	.11	-.04	.54	.18
Urge Control	.05	.12	-.04	.51	.14
Impulsive	.24	.10	.40	.46	-.16

Table 38 continued

Openness (IASR-B5)	-.08	.10	.02	-.04	.88
Unimaginative	-.29	-.02	-.01	-.14	-.76
Egocentric	-.13	.36	-.04	-.17	-.52
Lack of Focus	.01	.10	.34	-.16	.49
Nonconformity[a]	-.38	.27	.02	.31	.40

Note. N = 572. [a]unipsatized scales.

Table 39. Conjoint principal components analysis of IASR-B5
domain scales and IIP-B5 domain scales.

Factors

Scales	I	II	III	IV	V
Neuroticism (IASR-B5)	.92	-.09	-.02	.07	.01
Neuroticism (IIP-B5)	.88	-.18	.14	-.02	-.13
Dominance (IIP-B5)	-.03	.93	-.05	.08	-.15
Dominance (IASR-B5)	-.32	.85	-.12	.16	-.11
Unconscientious (IIP-B5)	-.05	-.01	.91	.03	.04
Conscientious (IASR-B5)	-.19	.15	-.87	-.06	.14
Openness (IASR-B5)	-.03	.08	-.10	.92	.00
Openness (IIP-B5)	.09	.11	.22	.87	.08
Nurturance (IIP-B5)	.05	.10	.02	.02	.92
Nurturance (IASR-B5)	-.18	-.19	-.12	.05	.85

Note. N = 572.

accounting for 85.2% of the variance was rotated to varimax criterion. This solution is presented in Table 39.

Examination of Table 39 indicates a clear homologous five factor structure between the IIP-B5 and the IASR-B5. The only moderate off-diagonal loading is found for IASR-B5 Dominance which has a secondary negative loading on the neuroticism dimension. This is consistent with the results of Trapnell and Wiggins (1990) who found that the IASR-B5 dominance dimension correlated negatively with the NEO-PI Neuroticism scale ($r = -.35$) and positively with the HPI Adjustment scale ($r = .42$).

Reliability. Cronbach's alpha was calculated for all IIP-B5 facet and domain scales for neuroticism, conscientiousness, and openness. Reliability coefficients are presented in Table 40. Alpha coefficients for all scales remained stable across derivation and validation samples, and scales which were modified specifically to improve internal consistency demonstrated modest gains. Neuroticism problem facets' and domain alpha coefficients are virtually identical across samples. The Lazy facet included one item modification and the facet alpha rose from .70 to .75 across samples. The remaining unconscientiousness facets' and domain alpha coefficients remained stable across samples. The Unimaginative and Egocentric facets of openness included additional items which produced modest increases in internal consistency. The alpha for the Unimaginative facet rose from .74 in Study 1 to .81 in Study 2. The alpha for the

Table 40. Alpha coefficients for derived facet and domain scales.

Alpha

Scale

Depression	.87
Anxiety	.87
Low Self-esteem	.80
Anger	.80
Neuroticism (IIP-B5)	.92
Lazy	.75
Unreliable	.53
Impulsive	.70
Urge Control	.55
Compulsive	.82
Unconscientiousness (IIP-B5)	.68
Unimaginative	.81
Egocentric	.84
Lack of Focus	.65
Nonconformity	.60
Openness (IIP-B5)	.79
Reckless	.71

Note. N = 572

Egocentric facet rose from .78 in Study 1 to .84 in Study 2. The Nonconformity and Lack of Focus facets exhibited stable alphas across the samples. Increases in openness facet

alphas contributed to a modest increase in internal consistency for the IIP-B5 Openness domain scale, which rose from .73 in Study 1 to .79 in Study 2.

Convergent Validity. The IIP-B5 domain scales were correlated with the domain scales of the FFI and IASR-B5 to assess convergent validity. These correlations can be found in Table 41. Additional validity correlations between IIP-B5 facets and the Brief Symptom Inventory (Derogatis & Melisaratos, 1983), the Weinberger Adjustment Inventory (Weinberger & Schwartz, 1990), and the Private and Public Self-Consciousness scales (Fenigstein, Scheier, & Buss, 1975) can be found in Tables 42 to 44.

Table 41. Correlations between IIP-B5 domain scales and domain scales of the FFI and IASR-B5.

	FFI			IASR-B5		
	N	O	C	N	O	C
IIP-B5 Scales						
Neuroticism	.76	-.02*	-.31	.70	-.08*	-.31
Openness	.01*	.62	-.18	.09*	.63	-.22
Unconscientious	.09*	.04*	-.72	-.02*	-.04*	-.63

Note. N = 572. *r is not significant.

Examination of Table 41 indicates significant convergent validity between the domain scales of the IIP-B5 and those of the FFI and IASR-B5. The IIP-B5 Unconscientiousness domain

scale correlates significantly with only its FFI and IASR-B5
counterparts. The IIP-B5 Neuroticism domain scale converges
significantly with its FFI and IASR-B5 counterparts, is
unrelated to trait openness, and exhibits a modest negative
secondary correlation with trait conscientiousness. The IIP-
B5 Openness domain scale also converges significantly with
its FFI and IASR-B5 counterparts, is unrelated to trait
neuroticism, and exhibits a modest negative secondary
correlation with trait conscientiousness.

When examining external validity correlations for the
IIP-B5 facets and the Brief Symptom Inventory (Derogatis &
Melisaratos, 1983), statistical power of the large sample
size allows for correlations as low as .12 to be significant
at p < .01. As scales were constructed to conform to a
specific dimensional model I felt it was important to focus
on the important relations between the two instruments.
Therefore, a cut-off doubling the significance value (r =
.25) was chosen as an indication of correlation magnitudes of
relative significance. When this value was selected, the
only IIP-B5 facets to demonstrate relatively significant
relations with the BSI scales were the facets of neuroticism.
Only one other facet (Nonconformity) exhibited a single
correlation greater than .24 with a BSI scale. The
Nonconformity facet correlated with the BSI Obsessive-
compulsive scale (r = .28). The correlations between the BSI
and the IIP-B5 neuroticism facets are presented in Table 42.

The IIP-B5 Depression facet correlated most highly with the BSI Depression scale (r = .64) and exhibited an average correlation with the remaining BSI scales of .46. This facet also correlated .59 with the global severity index (GSI).

Table 42. External validity correlations between IIP-B5 neuroticism facets and the Brief Symptom Inventory.

	IIP-B5 Neuroticism Facets			
	DEP	ANX	LSE	ANG
BSI Scales				
SOM	.36	.36	.30	.25
OBS	.51	.56	.45	.36
INT	.55	.55	.59	
BSI DEP	.64	.53	.53	.29
BSI ANX	.49	.58	.42	.34
HOS	.38	.36	.25	.45
PHO	.43	.49	.48	
PAR	.45	.43	.41	.29
PSY	.53	.47	.45	.30
GSI	.59	.58	.52	.37

Note. N = 572. All r's p < .01. r < .25 deleted.
Abbreviations: BSI=Brief Symptom Inventory;
SOM=somatization; OBS=obsessive-compulsive; INT=interpersonal
sensitivity; BSI DEP=depression; BSI ANX=anxiety;
HOS=hositility; PHO=phobic anxiety; PAR=paranoid ideation;
PSY=psychoticism; GSI=global severity index; DEP=depression
(IIP-B5); ANX=anxiety (IIP-B5); LSE=low self-esteem;
ANG=anger control.

The IIP-B5 Anxiety facet correlated most highly with the BSI Anxiety scale (r = .58) and exhibited an average correlation with the remaining BSI scales of .47. This facet also correlated .58 with the GSI. The IIP-B5 Low Self-esteem facet correlated most highly with the BSI Interpersonal Sensitivity scale (r = .59) and exhibited an average correlation with the remaining BSI scales of .41. This facet also correlated with .52 with the GSI. The IIP-B5 Anger Control facet correlated most highly with the BSI Hostility scale (r = .45) and exhibited an average correlation with the remaining BSI scales of .29. This facet also correlated .37 with the GSI. The relationship between self-reported symptoms and neuroticism is supported by the consistent moderate correlations among IIP-B5 neuroticism facets and the BSI scales. Additionally, the moderate to high correlations found between IIP-B5 Neuroticism facets and all BSI scales suggest that the general distress factor runs through the self-report BSI scales and creates scale interdependencies which blur substantive discriminability. The lack of relations among IIP-B5 unconscientious and openness facets and BSI scales suggests that these facets assess problems rather than psychiatric symptoms (e.g., Horowitz, 1979) and support the use of the ipsatization procedure to control for the general factor.

The same correlation magnitude cut-off (r = .25) was adopted when examining the correlations between the IIP-B5 facets and the Private and Public Self-Consciousness scales

(Fenigstein et al, 1975). Correlations greater than .24 are presented in Table 43. Only three IIP-B5 facets exhibited correlations greater than .24 with the self-consciousness scales. The IIP-B5 depression facet correlated .32 with the Private Self-Consciousness scale (PRSC) and .25 with the Public Self-Consciousness scale (PUSC). The IIP-B5 anxiety facet correlated .30 with both the PRSC and PUSC scales. The only other IIP-B5 facet to correlate with these scales was Unimaginative, which correlated -.39 with PRSC. This

Table 43. External validity correlations between IIP-B5 facets and the Fenigstein Public and Private Self-Consciousness scales.

| | Self-Consciousness Scales | |
	Private	Public
IIP-B5 Facets		
Depression	.32	.25
Anxiety	.30	.30
Unimaginative	-.39	

Note. N = 572. Correlations < .25 deleted.

negative correlation suggests that a concrete thinking style may interfere with the ability for self-reflection.

A subset of 307 of the 572 subjects in Study 2 completed the Weinberger Adjustment Inventory (WAI). When examining the external validity correlations among IIP-B5 facets and WAI scales, the statistical power of the sample size allows

for correlations as low as .15 to be significant at p < .01. A cut-off doubling this value (r = .30) was chosen as an indication of correlation magnitudes of relative significance. IIP-B5 facets correlating greater than or equal to .30 with WAI scales are presented in Table 44.

Table 44. External validity correlations between IIP-B5 facets and the Weinberger Adjustment Inventory.

IIP-B5 Facets

WAI Scales	DEP	ANX	LSE	ANG	IMP	NONC	RECK
WAI ANX	.59	.77	.53	.30			
WAI DEP	.79	.65	.65				
WAI LSE	.64	.61	.75				
LWB	.58	.48	.47				-.35
DISTRESS	.78	.76	.72	.31		-.33	
SUPRESS AGG				-.57			
IMPL CON				-.39	-.43		-.47
CONSID				-.31			
RESPONS				-.38			
RESTRAINT				-.56	-.37		-.31

Note. N = 307. All r's p < .01. r < .30 deleted. Abbreviations: DEP=depression; ANX=anxiety; LSE=low self-esteem; ANG=anger control; IMP=impulsivity; NONC=nonconformity; RECK=reckless; WAI=Weinberger Adjustment Inventory; WAI ANX=WAI anxiety; WAI DEP=WAI depression; WAI LSE=WAI low self-esteem; LWB=low well-being; SUPRESS AGG=suppression of aggression; IMPL CON=impulse control; CONSID=consideration of others; RESPONS=responsibility.

Examination of Table 44 indicates significant relations among the WAI Distress subscales and domain scale and the IIP-B5 neuroticism facets of Depression, Anxiety, and Low Self-Esteem. IIP-B5 Depression correlates most highly with WAI Depression (r = .79). IIP-B5 Anxiety correlates most highly with WAI anxiety (r = .77). IIP-B5 Low Self-Esteem correlates most highly with WAI Low Self-Esteem (r = .75). Each of these three IIP-B5 facets correlates highly with the WAI domain of Distress.

The IIP-B5 neuroticism facet of Anger Control demonstrates moderate relations with the subscales of the WAI Restraint dimension. This facet correlates most highly with WAI Suppression of Aggression (r = -.57) and the WAI domain Restraint scale (r = -.56). IIP-B5 Anger Control also demonstrates small but relatively significant relations with WAI Anxiety (r = .30) and WAI domain Distress (r = .31).

Only three other IIP-B5 facets (excluding circumplex octant scales) exhibited relatively significant correlations with WAI scales. IIP-B5 Impulsivity exhibited moderate negative correlations with WAI Impulse Control (r = -.43) and WAI domain Restraint (r = -.37). IIP-B5 Nonconformity exhibited a modest negative correlation with WAI domain Distress (r = -.33). IIP-B5 Reckless exhibited a moderate negative correlation with WAI Impulse Control (r = -.47), and modest negative correlations with WAI Low Well-Being (r = -.35) and WAI domain Restraint (r = -.31).

Table 45. Means and standard deviations of IIP-B5 facet and
            domain scales.

Scale	Male M	Male SD	Female M	Female SD	Total M	Total SD	Gender T ratio
DEP[a]	5.83	4.90	6.54	4.88	6.29	4.89	-1.62
ANX[a]	6.16	4.65	7.19	4.84	6.82	4.80	-2.41*
LSE[a]	5.31	3.95	6.51	4.35	6.09	4.25	-3.08**
ANG[a]	6.22	4.40	6.42	3.91	6.35	4.07	-0.54
NEUR[a]	23.25	14.43	26.77	14.27	25.55	14.39	-2.65**
UNIM	-1.65	4.08	-1.91	3.79	-1.80	3.90	0.71
EGOC	-1.56	3.33	-2.72	2.88	-2.33	3.09	4.12***
UNFO	0.29	2.84	0.08	2.89	0.14	2.87	0.82
NONC[a]	13.71	3.54	12.92	3.88	13.18	3.78	2.24*
OPEN[b]	17.26	7.70	17.60	8.43	17.44	8.21	-0.44
COMP	0.07	3.53	0.86	3.88	0.58	3.78	-2.36*
LAZY	2.71	3.28	2.85	3.26	2.81	3.27	-0.48
URGE	0.56	2.54	0.73	2.56	0.66	2.55	-0.70
IMPL	0.02	2.29	-0.16	2.46	-0.09	2.40	0.89
UNRE	-2.31	2.28	-2.60	2.15	-2.50	2.19	1.50
UNCON	0.76	8.59	0.02	9.15	0.29	8.95	0.89
RECK	-0.83	2.88	-1.70	2.81	-1.40	2.86	3.41***
n	201		371		572		

Abbreviations: DEP=depression; ANX=anxiety; LSE=Low Self-
Esteem; ANG=anger control; NEUR=neuroticism; EGOC=egocentric
UNIM=unimaginative; UNFO=lack of focus; NONC=nonconformity;
OPEN=openness; COMP=compulsive; URGE=urge control;
IMPL=impulsive; UNRE=unreliable; UNCON=unconscientious;
RECK=reckless.
[a]unipsatized
[b]scored with nonconformity unipsatized
* p < .05   ** p < .01   *** p < .001

Figure 5. IIP-B5 domain scale profile.
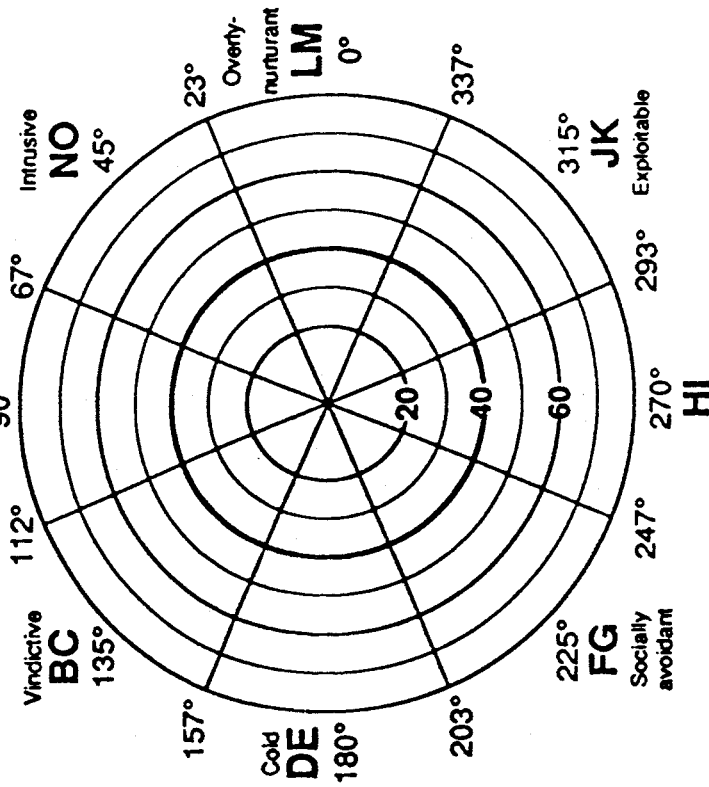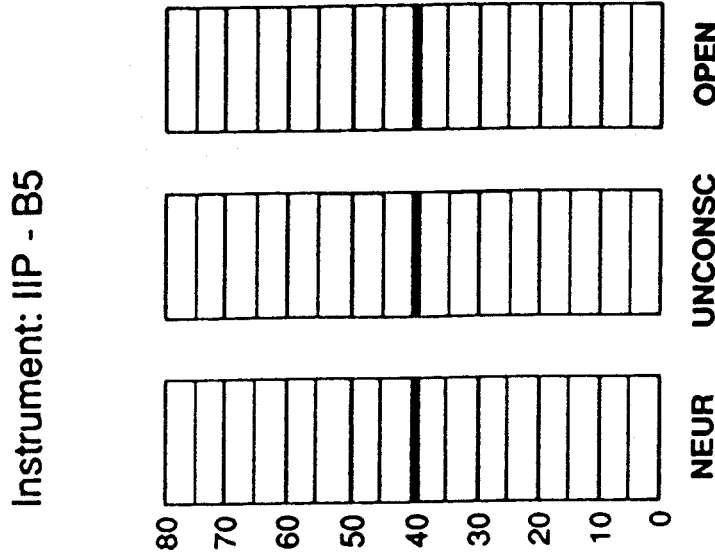
Figure 6. IIP-B5 facet profile.

UNCONSCIENTIOUS

Lazy   Urges   Unreliable Impulsive Compulsive   (Reckless)

80
70
60
50
40
30
20
10

OPENNESS TO EXPERIENCE

Nonconformity   Unfocused   Unimaginative   Egocentric

80
70
60
50
40
30
20
10

NEUROTICISM

Depression   Anger   Anxiety   Low self-esteem

80
70
60
50
40
30
20
10
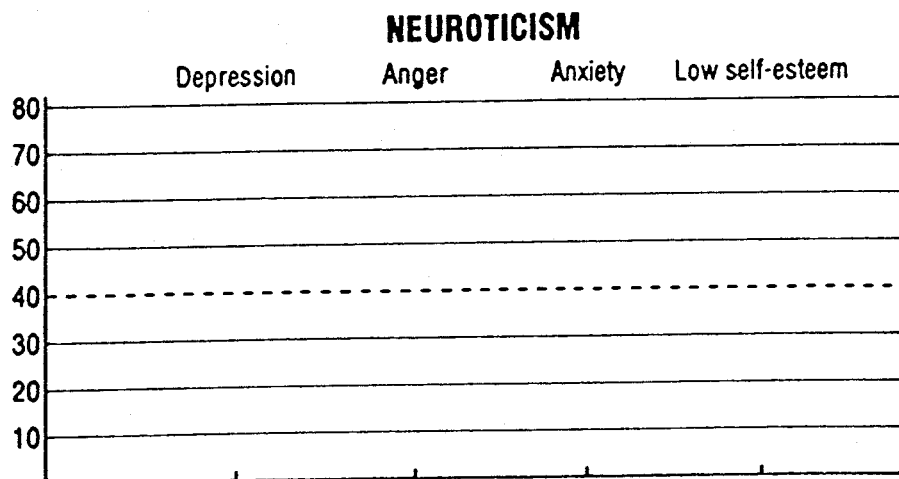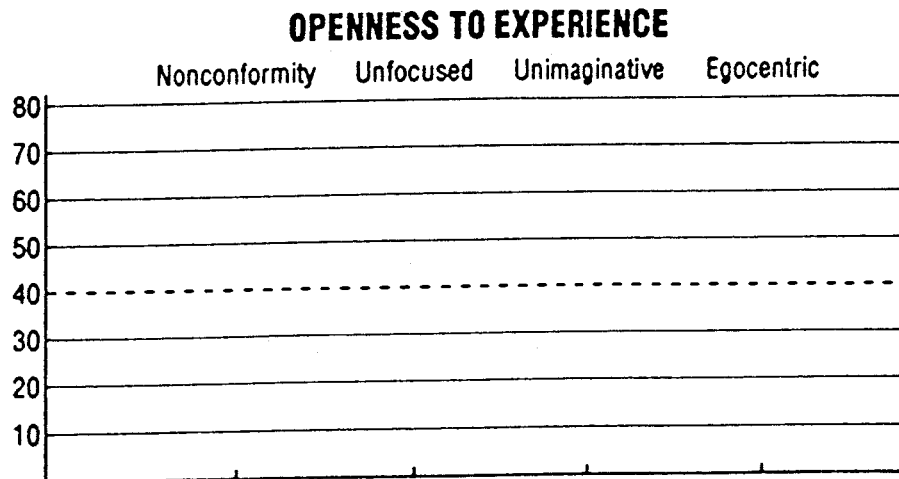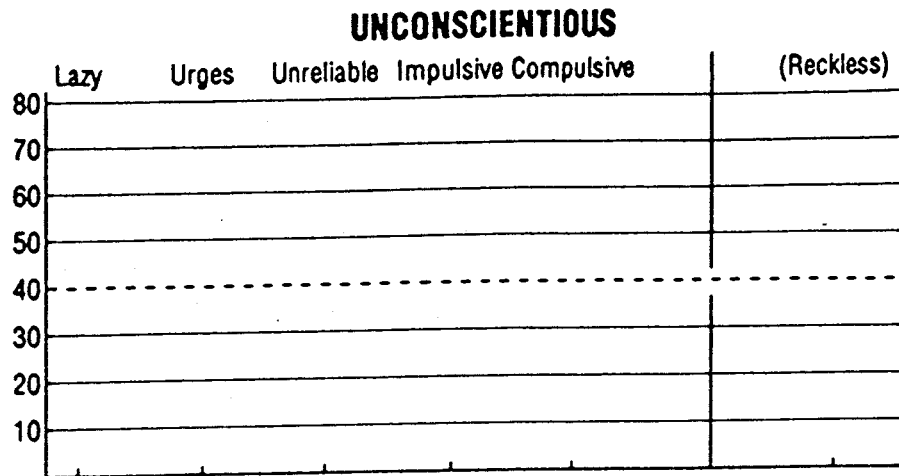
IIP-B5 Scale Norms. Based on the results from Study 2, scale norms were calculated in order to provide standardized scores for clinical assessment and research purposes. Gender differences in endorsement rates were assessed through the T-test. The IIP-B5 norms for this sample can be found in Table 45. Only seven IIP-B5 facet and domain scales exhibited significant gender differences in endorsement rates. Women reported significantly greater rates of anxiety, low self-esteem, and compulsive problems; and they exhibited a significantly higher mean for the domain Neuroticism scale. Males reported significantly greater rates of egocentric, nonconformity, and reckless problems. There were not significant gender differences for the domain scales for openness and unconscientious problems. These normative data can be used to generate standardized scores for clinical assessment and research purposes. Standard profile sheets for the IIP-B5 are available and examples can be found in Figures 5 and 6. A standardized score with a mean of 40 and a standard deviation of 10 was selected. This selection was based on the readability of the circumplex graph. A mean of 40 rather than 50 reduces the number of concentric circles, making the profile easier to read and use.

Discussion

The results of Study 2 support the conclusion that operationalization of rigid and maladaptive trait expression through assessment of chronic behavioral inhibitions and chronic behavioral excesses (problems) can be extended from

the interpersonal domain of personality to a more comprehensive five-factor model of personality trait organization. The three additional domains of neuroticism, conscientiousness, and openness to experience appear to include maladaptive traits and trait-behaviors assessed via the problems construct.

A valid and reliable 140-item inventory, the IIP-B5, was constructed to assess rigid and maladaptive trait expression from a FFM framework (64 items assess the interpersonal problems circumplex; 71 items assess problems related to neuroticism, unconscientiousness, and openness; and 5 items assess problems of recklessness). The IIP-B5 demonstrated cross sample stability at the item, facet, and domain level. Additionally, the inventory was constructed using methods to ensure its structural fidelity (Loevinger, 1957; Wiggins, 1973) with a particular measurement model: The Dyadic-Interactional perspective on the FFM (Pincus & Wiggins, in press; Trapnell & Wiggins, 1990; Wiggins & Pincus, 1992, in press; Wiggins & Trapnell, in press). In so doing, the inventory makes use of circumplex assessment methodology in addition to identifying maladaptive trait expression associated with the five major personality dimensions.

Convergent validity with existing FFM assessment inventories supports the conclusion that the IIP-B5 assesses the same FFM dimensions; however, use of the IIP-B5 may provide additional advantages for clinical assessment. In addition to assessing the major personality dimensions, the

utility of the problems format for both self-report and observer ratings includes the identification of dysfunctional behaviors at the item level which can be targeted for psychotherapy (Alden & Capreol, 1992; Horowitz, 1991; Horowitz et al, 1989). This directly improves upon the NEO-PI and the adjectival IASR-B5 as clinical assessment instruments. Assessment of the FFM with these latter instruments requires the therapist or clinical researcher to infer from scale scores the types of dysfunctional trait-behaivors the patient may manifest (Butcher, 1992; Costa & McCrae, 1992b). If a therapist chooses to provide feedback to the patient regarding his/her assessment (i.e., client-centered assessment; McReynolds, 1989), reviewing highly endorsed items, as well as dimensional results, may improve rapport and empathy as well as providing insight. Providing patient feedback for the MMPI-2 is a complex, multistep task (Butcher, 1990; Lewak, Marks, & Nelson, 1990). Providing patient feedback for the NEO-PI using the standardized "Your NEO Summary" still requires that the therapist and patient infer from scale scores, the relations between personality dimensions and presenting problems.

One of the original motives for assessing interpersonal problems was to provide an instrument to detect patient change in psychotherapy research that was congruent with treatment focus (Horowitz, 1979). The IIP and the IIP-C have been used to predict positive and negative treatment response and have demonstrated sensitivity to patient change (Alden &

Capreol, 1992; Horowitz, 1991; Horowitz et al, 1988, 1989; Mohr et al, 1990). The sensitivity to patient change of the additional facets of the IIP-B5 has yet to be demonstrated, however little evidence exists to contraindicate such potential. The IIP-B5 may provide a tool for treatment evaluation that allows for the efficacy of a broader range of treatment foci to be assessed.

An additional goal in extending the problems construct to the FFM was to develop a taxonomy of maladaptive traits which may have significant utility for understanding and investigating diagnosis, psychopathology, and psychotherapy. With the exception of problems facets for neuroticism, the new facets of the IIP-B5 unconcscientiousness, and openness domains appear both nonredundant with the facets of the NEO-PI and the HIC's of the HPI, and unique with regard to constructs assessed by typical clinical and adjustment inventories such as the BSI and WAI. External correlations between the majority of unconscientious and openness facets and these inventories were low or nonsignificant. New problems constructs from these domains may be of significant utility for clinical assessment and research. A summary of the IIP-B5 facets for neuroticism, unconscientiousness, and openness can be found in Table 46.

The potential for the taxonomy of problems assessed by the IIP-B5 to provide significant and useful information for clinical assessment requires further empirical investigation.

Table 46. IIP-B5 facet scales for neuroticism, openness, and unconscientiousness.

Neuroticism Facet

Depression. High scorers report problems of feeling chronically sad, empty, and discouraged, as well as being unable to experience positive affect.

Anxiety. High scorers report problems of chronic worry, panic, and fearfulness, and indicate chronic symptoms of autonomic arousal.

Low Self-Esteem. High scorers report chronic difficulties feeling ambitious, feeling deserving of affection, believing in their abilities, and liking themselves. High scorers chronically perceive themselves as inferior to others.

Anger Control. High scorers report chronic feelings of rage, difficulty controlling their temper, and an inability to tolerate disappointment without becoming angry.

Openness Facet

Unimaginative. High scorers report chronic inability to experience vivid mental imagery, to think abstractly or theoretically, to feel creative, and to cathect strongly to aesthetic stimuli.

Table 46 continued

Egocentric. High scorers report chronic difficulties

tolerating customs, philosophies, ideas, actions, and

people seen as very different from themselves and their

own beliefs.

Lack of Focus. High scorers report chronic novelty-seeking

behaviors, inability to adopt a specific belief system

or philosophy of life, and see themselves as too

open-minded.

Nonconformity. High scorers report chronic rebellion against

traditions, authority, and standard practices. High

scorers report difficulty tolerating routines and

predictable activities.

Unconscientious Facet

Lazy. High scorers report chronic difficulties working

efficiently and persistently, inability to engage in

necessary tasks that are of little personal interest to

them, and chronic problems with procrastination.

Unreliable. High scorers report chronic difficulty being

punctual for appointments, paying bills, and returning

phone calls, an inability to meet their obligations, and

a chronic tendency to break previous commitments.

Table 46 continued

Impulsive. High scorers report difficulties planning ahead, thinking things through thoroughly, and considering the consequences of their actions.

Urge Control. High scorers report chronic engagement in self-defeating and self harmful activities, and an inability to act responsibly toward their personal well-being.

Compulsive. High scorers report chronic problems with perfectionism, expending too much energy organizing, overconcern with others' organization and punctuality, and an inability to tolerate disorder or uncleanliness.

Additional Clinical Facet

Reckless. High scorers report chronic sensation seeking behaviors, chronic involvement in dangerous activities, and a tendency to "get out of control."

With regard to psychotherapy, Miller (1991) proposes a number of possible characteristics of patients' presentation and engagement in psychotherapy with regard to their standings on the dimensions of the FFM. It appears that neuroticism relates to distressed presentations (e.g., Costa & McCrae, 1987; Watson & Pennebaker, 1989). Miller suggests high N

patients present with a variety of painful feelings which motivate them to seek relief. Clearly the IIP-B5 neurotic problem facets assess aspects psychological distress common to many patients' presentations.

Of interest, Miller's (1991) theoretical proposals regarding the effects of conscientiousness and openness on patient presentation and treatment mention a number of characteristics which are assessed directly by the IIP-B5. He suggests that low openness patients may seem "unable to fantasize or symbolize, their speech seems boring, pedantic, and overly-conventional; and they do not easily understand or accept elementary psychodynamic interpretations" (p. 425). Miller (1991) also suggests that high openness patients may have more vivid and emotional recollections of past events, are more capable of vivid internal imagery, use more metaphorical and analogical speech, lead more varied and unconventional life styles, and are more willing to try new ways of thinking or relating to others. He suggests that high openness patients will prefer imaginative approaches, but their "excessive curiosity can scatter resources" (p. 418). Low openness patients will respond well to practical approaches like education, support, and behavior therapy. The qualities of openness Miller suggests are relevant to psychotherapy seem well represented by the IIP-B5 Openness facets of Unimaginative, Egocentric, Nonconformity, and Lack of Focus.

Miller (1991) proposes that conscientiousness influences patients' willingness to do the work of psychotherapy. He is clearly convinced that low conscientiousness (unconscientiousness) "might represent one of the absolute limits to the power of psychotherapy" (p. 430). Miller suggests that the key problems of unconscientious patients are low achievement, impulsivity, and half-hearted problem solving. Miller suggests there may be no treatment opportunities with very unconscientious patients and predicts they are "unlikely to do homework, and are likely to reject interventions that require hard work or toleration of discomfort" (p. 419). He presents a brief description of a patient: "A woman who has hated herself for years because she is overweight is encouraged to keep an eating diary and calculate her daily caloric intake. Despite continuing encouragement, she never buys a calorie counter and never records any of her meals. Her explanation is she is afraid she will be upset if she learns how much she really eats. We agree that it might be a good thing if she got upset about her eating habits. She continues to claim that low self-esteem due to obesity is her main problem, and she never complies with the plan" (p. 430). The qualities of this psychotherapy patient appear quite similar to the IIP-B5 unconscientious problems facets of Lazy, Impulsive, Urge Control, and Unreliable.

With regard to psychopathology, research regarding the influence of personality traits on Axis I disorders is in its

infancy (see Widiger & Trull, in press). The majority of the investigations involving the FFM have focussed on the personality disorders (e.g., Costa & McCrae, 1990; Widiger, in press; Wiggins & Pincus, 1989, in press). For example, the problem domain of unconscientiousness may be particularly relevant to a number of personality disorders including the compulsive, passive-aggressive, sadistic, and antisocial disorders (Hyler & Lyons, 1988; Shapiro, 1989; Widiger, in press, Widiger & Trull, in press; Wiggins & Pincus, 1989, in press).

While the current work in the field of personality structure appears to attest to the comprehensiveness of the FFM for descriptions of normal personality (e.g., Wiggins & Pincus, 1992), the potential that a FFM of even maladaptive personality traits (problems) may not be a comprehensive taxonomy for abnormal personality is of serious concern. Butcher (1992) suggests that clinical personality assessment also deals with behavioral extremities that may be a class in themselves, widely separated from behaviors in the normal range. This claim is not arguable. Many behaviors and characteristics of patients presenting with severe psychopathology may fall outside the FFM and are not related to normal personality traits. One can simply imagine the undifferentiated schizophrenic patient exhibiting significant confusion and positive psychotic symptoms. What dimensions of personality shall his/her delusions, hallucinations, catatonic postures, and cognitive disorganization be subsumed

by? The fact is that <u>all psychopathology is not pathology of personality</u> and no claim should be made that this be the case.

However, there is a more direct challenge to the comprehensiveness of the FFM to account for all the manifestations of abnormal <u>personality</u> seen in clinical assessment. A research program which focussed on the dimensions of personality pathology (Livesley, 1986, 1987; Livesley, Jackson, & Schroeder, 1989) rather than normal personality could provide support or challenge to the comprehensiveness of the FFM for clinical personality assessment.

Livesley and his colleagues developed the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ) based on descriptive features of the DSM-III personality disorders. The basic dimensions of personality pathology which emerged from their research program were: Affective Lability, Anxiousness, Cognitive Distortion, Compulsivity, Conduct Problems, Diffidence, Identity Problems, Insecure Attachment, Interpersonal Disesteem, Intimacy Problems, Narcissism, Passive Oppositionality, Rejection, Restricted Expression, Self-Harm, Social Avoidance, Stimulus Seeking, and Suspiciousness. Each of these broad dimensions is assessed by multiple subscales of the DAPP-BQ.

Schroeder et al (1992) conjointly factored 16 of the 18 DAPP-BQ dimensions and the NEO-PI. Additionally, they

multiply regressed the NEO-PI domain scales onto each of the DAPP-BQ dimensions. The results of their principal components analysis indicated that four dimensions of the FFM (neuroticism, conscientiousness, agreeableness, and extraversion) marked components on which DAPP-BQ dimensions strongly loaded. Openness was not strongly related to dimensions of personality pathology. Additionally, multiple-correlation analyses showed that four DAPP-BQ dimensions (Intimacy Problems, Conduct Problems, Restricted Expression, and Insecure Attachment) had little shared variance with NEO-PI factors. The majority of results suggest relative convergence between the DAPP-BQ and the NEO-PI. The authors conclude, "The results of this study largely confirm our expectations that these dimensions of personality disorder are closely related to the Big Five factors of normal personality" (p. 52).

It appears that even when the dimensions of personality pathology are derived and their relations with the FFM assessed, the comprehensiveness of the FFM is supported. It is also clear that at a lower level of the construct hierarchy, many of the 18 DAPP-BQ dimensions and 100 subscales do not have construct counterparts in any FFM assessment instrument. Two DAPP-BQ dimensions, Self-Harm and Cognitive Distortion, were deleted from the Schroeder et al (1992) analyses. These two dimensions may not relate strongly to the FFM. Additionally, the IIP-B5 facets

assessing problems may have different relations with dimensions of personality pathology than the NEO-PI.

However, the IIP-B5 was constructed specifically to assess maladaptive and rigid expression of traits subsumed by the FFM. It was not constructed to necessarily assess all dimensions of personality pathology, nor was it constructed to assess all classes of behavior found in clinical personality assessment. The IIP-B5 does show convergence with many aspects of these domains. It is an inventory which may be useful as a component of clinical assessment for all classes of psychopathology and all individuals' who seek psychotherapy (many of whom do not meet criteria for a DSM diagnosis). Assessment of a FFM of problems with the IIP-B5 may be useful for client-centered assessment, diagnosis, treatment formulation, and clinical research focussing on both psychopathology and psychotherapy.

CHAPTER 4

Study 3: Psychiatric Validation

Methods

Overview

In order to determine the full applicability of the IIP-B5 for psychological assessment of clinical populations, it is necessary to determine the psychometric and structural characteristics of the instrument in an initial psychiatric sample. The major goal of Study 3 was to assess these characteristics in a diverse sample of psychiatric outpatients.

Sample. The IIP-B5 and the NEO-PI were administered to a sample of 72 consecutive psychiatric outpatients assessed at University Hospital-University of British Columbia Site as part of a more detailed clinical assessment. The goal of this assessment was to determine which of the variety of outpatient psychiatric programs was most suitable for a particular patient. The present sample consisted of 41 women (58.5%) with an average age of 33.69 years and 31 (42.5%) men with an average age of 28.25 years. The diagnostic breakdown of the sample can be found in Table 47.

Table 47. Diagnostic breakdown of psychiatric sample.

Primary Diagnosis	Percent (%)
Dysthymic Disorder	34.7%
Major Depression	19.4%
Adjustment Disorder	9.7%

Table 46 continued

Panic Disorder	5.5%
Dependent Personality Disorder	5.5%
Borderline Personality Disorder	5.5%
Obsessive-Compulsive Disorder	4.2%
Narcissistic Personality Disorder	2.7%
Mixed Personality Disorder	2.7%
Avoidant Personality Disorder	1.4%
Social Phobia	1.4%
Post Traumatic Stress Disorder	1.4%
Generalized Anxiety Disorder	1.4%
No DSM-III-R Diagnosis	4.2%

Note. N = 72.

Instruments. The final version of the IIP-B5 as detailed in the previous chapters was administered as part of a large self-report battery. Some instruments pertained to independent research projects and are not discussed here.

The NEO-PI (Costa & McCrae, 1985) is a 181-item inventory that yields measures of the Big Five factors of normal personality. The instrument's Neuroticism, Extraversion, and Openness factor items can also be summed to yield six facet measures for each factor, thus providing a more detailed representation of the dimensions.

Procedures. All patients referred to outpatient psychiatry services are assessed with clinical interviews

carried out by psychiatric residents under supervision. Additional self-report instruments are completed and all information is used to determine the appropriate outpatient service for the referred patient. The NEO-PI is a standard component of the assessment battery. The IIP-B5 was included for a period of two months. During this period, 72 outpatients completed both self-report instruments and a clinical interview. These patients were assigned to various outpatient services.

Analyses

Data Transformation. The ipsatization procedure described in Study 1 was again used to transform the data.

Structural Validation. The final IIP-B5 facets validated in Study 2 were subjected to a conjoint principal components analysis with markers of neuroticism, conscientiousness, and openness from the NEO-PI. Following the same step-wise procedure detailed in Studies 1 and 2, the facets were then conjointly factored with the IIP-C octant scales. Following confirmation of the lower-level structural stability of the IIP-B5 facets, the domain scales were conjointly factored with the NEO-PI domain scales.

Reliability and Validity. Alpha coefficients and item-total correlations for derived facets and domain scales were determined to assess internal consistency. Convergent validity correlations for the three new problems dimensions were obtained by examining the relations between derived problems scales and the neuroticism, conscientiousness, and

openness scales of the NEO-PI concurrently assessed in the sample. Additional validity correlations were obtained by examining the relations between the IIP-B5 facets and the NEO-PI facets.

Expectations

1. The structure of the IIP-B5 will replicate in a sample of psychiatric outpatients.

2. The reliability of some problems facets will improve due to greater variance in the psychiatric sample.

3. The convergent validity of the IIP-B5 will be supported.

Results

Structural Validation. In order to demonstrate structural stability of the IIP-B5 across samples, the 13 derived problems facets were subjected to a conjoint principal components analysis with domain scales from the NEO-PI. Examination of the Scree Plot indicated a three factor solution accounting for 53.2% of the variance which was rotated to varimax criterion. The final superordinate structure of the derived problems facets can be seen in Table 48. Only one IIP-B5 facet (Lack of Focus) departed from the expected pattern of factor loadings. This facet loaded most highly on the Neuroticism dimension (-.39) rather than on the Openness dimension. Examination of the Pearson correlations between this facet and the NEO-PI domain scores indicated that in this sample of 72 psychiatric outpatients, Lack of Focus correlated ($r = -.30$, $p < .01$) with Neuroticism and

Table 48. Three component solution of conjoint principal components analysis of IIP-B5 facets and domain scales of the IASR-B5.

Factor

Scale	I	II	III
Neuroticism (NEO-PI)	.92	.13	-.01
Depression[a]	.88	-.08	.04
Anxiety[a]	.84	-.12	-.08
Low Self-esteem[a]	.83	.04	.07
Anger[a]	.60	.13	-.09
Lack of Focus[b]	-.39	-.25	.17
Conscientious (NEO-PI)	-.09	-.89	.05
Unreliable	-.04	.64	.21
Lazy	-.16	.60	.05
Compulsive	-.13	-.59	-.09
Impulsive	.06	.54	-.22
Urge Control	.19	.40	.29
Openness (NEO-PI)	-.24	-.01	.85
Unimaginative	-.02	.12	-.75
Egocentrism	-.06	-.15	-.54
Nonconformity[a]	-.42	.25	.50

Note. N = 72. [a]unipsatized facet scales. [b]unexpected loading on nontarget dimension.

(r = .17, ns) with Openness.

In the validation sample described in Study 2, Lack of Focus exhibited nonsignificant correlations with IASR-B5 Neuroticism (r = .02) and Conscientiousness (r = .06) while correlating significantly with IASR-B5 Openness (r = .22, p < .001). A similar pattern of correlations was exhibited when neuroticism, conscientiousness, and openness were assessed by the FFI. This unexpected factor loading suggests the Lack of Focus facet is a less robust component of the IIP-B5 structure. The facet may require further development to improve its relation with trait openness. However, the substantial difference in sample size between the derivation sample (n = 706), validation sample (n = 572), and the psychiatric sample (n = 72) was considered and the Lack of Focus facet was retained on Openness in the remaining analyses. The remaining pattern of factor loadings seen in Table 48 support the structural stability of the IIP-B5 across samples.

As a second test of the superordinate facet structure of the IIP-B5 scales, they were combined with the IIP-C octant scales and conjointly factored with markers of neuroticism, conscientiousness, and openness from the NEO-PI. A principal components analysis indicated a clear five factor solution emerged that accounted for 61.5% of the variance. The solution was rotated to varimax criterion and can be seen in Table 49. The full facet/octant structure of the IIP-B5 from

Table 49. Full facet and circumplex octant principal
components analysis of the IIP-B5.

	Factors				
	I	II	III	IV	V
Scales					
Neuroticism (NEO-PI)	.91	.19	.14	-.02	-.03
Depression[a]	.87	-.02	-.04	-.16	-.01
Anxiety[a]	.84	.11	-.08	-.05	-.11
Low Self-esteem[a]	.81	-.10	.09	-.27	.03
Anger[a]	.58	.51	.09	.10	-.07
IIP-C (JK)	-.09	-.86	-.14	.07	.02
IIP-C (HI)	.02	-.77	.01	-.30	-.07
IIP-C (PA)	.04	.70	-.11	.34	.16
IIP-C (LM)	-.20	-.64	-.37	.27	.06
IIP-C (BC)	.19	.48	.03	-.36	-.35
Conscientious (NEO-PI)	-.06	.00	-.88	-.04	.11
Lazy	-.20	.05	.65	.02	.03
Unreliable	.03	-.33	.62	.29	.07
Compulsive	-.06	-.09	-.59	.25	-.13
Impulsive	.09	.17	.45	.29	-.24
Urge Control	.18	.12	.43	.03	.31
IIP-C (FG)	.14	-.08	-.07	-.82	.03
IIP-C (DE)	.01	.17	-.05	-.76	.00
IIP-C (NO)	-.11	.25	.09	.63	.12
Lack of Focus[b]	-.29	.03	-.29	.44	.18

Table 48 continued

Openness (NEO-PI)	-.19	-.15	.01	.10	<u>.84</u>
Unimaginative	-.05	-.05	.07	.02	<u>-.77</u>
Nonconformity[a]	-.42	.20	.27	.06	<u>.53</u>
Egocentric	-.16	.40	-.16	-.12	<u>.49</u>

Note. N = 72. [a]unipsatized scales. [b]unexpected loading on nontarget dimension.

Studies 1 and 2 were replicated in this analysis, with the exception of the Lack of Focus facet, which loaded anomalously on the dimension marked by IIP-C octants. While the anomalous loading is not unexpected given the results of the first analysis in Table 48; the highest loading of the facet is on an interpersonal dimension marked by the Intrusive scale (.44) rather than neuroticism (-.29). The robustness of the structural relations of the Lack of Focus facet is challenged by this result and further work is required.

The remaining facet scales loaded most highly on their target dimensions, although a number of facets show moderate secondary loadings. Both the Anger Control facet (neuroticism) and the Egocentric facet (openness) have moderate secondary loadings on an interpersonal dimension marked by the IIP-C Domineering and IIP-C Vindictive scales. The Nonconformity facet has a secondary loading on the neuroticism dimension (as expected).

Table 50. Conjoint principal components analysis of NEO-PI
           domain scales and IIP-B5 domain scales.

| | Factors | | | | |
Scales	I	II	III	IV	V
Neuroticism (NEO-PI)	<u>.94</u>	-.11	.12	-.13	.09
Neuroticism (IIP-B5)	<u>.93</u>	-.16	.00	-.19	.02
Openness (NEO-PI)	-.08	<u>.88</u>	.02	.16	-.13
Openness (IIP-B5)	-.15	<u>.87</u>	.03	.08	.08
Conscientious (NEO-PI)	-.04	.09	<u>-.94</u>	.09	-.02
Unconscientious (IIP-B5)	.07	.13	<u>.93</u>	.03	.06
Nurturance (IIP-B5)	-.17	.14	-.01	<u>.92</u>	-.07
Agreeableness (NEO-PI)	-.36	.11	-.13	<u>.61</u>	-.57
Extraversion (NEO-PI)	-.16	.55	-.05	<u>.61</u>	.40
Dominance (IIP-B5)	.05	.01	.05	-.01	<u>.95</u>

Note. N = 72.

It is not possible to directly validate the structural fidelity of the IIP-B5 with the Dyadic-Interactional perspective on the FFM using a conjoint principal components analysis of the IIP-B5 domain scales with the FFM domain scales from the NEO-PI. These two instruments operationalize different structural perspectives on the FFM. Because of the structural relationships between NEO-PI Extraversion and Agreeableness and the interpersonal circumplex, split loadings for these conjointly factored interpersonal scales was expected. A clear five factor solution accounting for

88.4% of the variance was rotated to a varimax criterion. This solution is presented in Table 50.

Examination of Table 50 indicates excellent convergent structure for the new IIP-B5 scales assessing problems related to neuroticism, unconscientiousness, and openness. As expected the NEO-PI Extraversion and Agreeableness scales exhibited split loadings on the interpersonal dimensions marked by dominance and nurturance. Extraversion exhibited a moderate loading on the openness dimension. In light of the anomalous results of the IIP-B5 Lack of Focus facet, the Pearson correlations among the IIP-B5 openness facets and domain scale and the NEO-PI domain scales were examined. These correlations can be found in Table 51.

Table 51. Intercorrelations among IIP-B5 openness facets and domain scales and domain scales of the NEO-PI in a psychiatric sample.

NEO-PI Scale

	E	O	N	C	A
IIP-B5 OPENNESS					
Unimaginative	-.26	-.58*	.03	-.09	-.03
Nonconformity	.43*	.43*	-.31*	-.08	.00
Egocentric	-.19	-.36*	-.05	.05	-.21
Lack of Focus	.37*	.17	-.30*	.17	.12
Openness	.53*	.62*	-.26	.06	.14

Note. N = 72. *p < .01.

Examination of Table 51 indicates that in this small psychiatric sample, the convergent validity of the IIP-B5 openness problems domain is only moderately supported. The Nonconformity and Lack of Focus facets exhibit significant correlations with trait extraversion and trait neuroticism. The IIP-B5 Openness domain is significantly correlated with trait extraversion. These results are congruent with the moderate secondary loading exhibited by NEO-PI Extraversion on the Openness dimension in Table 50.

Reliability. Cronbach's alpha was calculated for all IIP-B5 facet and domain scales for neuroticism, conscientiousness, and openness. Reliability coefficients are presented in Table 52. Alpha coefficients for all scales remained stable in this psychiatric sample, and a number of scales internal consistency demonstrated modest gains. Neuroticism problem facets and domain alpha coefficients are virtually identical across samples. The Unreliable facet alpha rose from .53 to .74, as was predicted. The variance in endorsement of unreliable problems increases in a psychiatric sample relative to a university sample. Similarly, the Urge Control facet alpha rose from .55 to .82, indicating significant improvement in a psychiatric sample. The Impulsivity facet alpha unexpectedly dropped from .70 to .64 in this sample. It is possible that the overrepresentative proportion of dysthymic and depressed patients in the sample reduced the variance in endorsement of the facet items. The remaining unconscientiousness facets'

and domain alpha coefficients remained stable across samples.

All Openness facets demonstrated moderate increases in alpha

Table 52. Alpha coefficients for IIP-B5 facet and domain
scales in a psychiatric sample.

Scale	Alpha
Depression	.84
Anxiety	.89
Low Self-esteem	.84
Anger	.86
Neuroticism (IIP-B5)	.92
Lazy	.70
Unreliable	.74
Impulsive	.64
Urge Control	.82
Compulsive	.84
Unconscientiousness (IIP-B5)	.70
Unimaginative	.86
Egocentric	.88
Lack of Focus	.82
Nonconformity	.68
Openness (IIP-B5)	.89
Reckless	.78

Note. N = 72.

in this psychiatric sample, contributing to a significant improvement in internal consistency for the Openness domain from .79 in a university sample to .89 in this sample. The Lack of Focus facet alpha increased from .65 in a university sample to .82 in this sample. While the structural relations of this facet were called into question, the internal consistency of the facet is excellent, as is the Openness domain when, in fact, the Lack of Focus facet is included. The Reckless facet also exhibited an increased alpha coefficient, rising from .71 in a university sample to .78 in this sample.

Convergent Validity. The IIP-B5 domain scales were correlated with the domain scales of the NEO-PI to assess convergent validity. These correlations can be found in Table 53. Additional validity correlations between IIP-B5 facets and the NEO-PI facets for neuroticism and openness can be found in Tables 54 and 55.

Table 53. Correlations between IIP-B5 domain scales and domain scales of the NEO-PI.

NEO-PI Domain Scales

	N	O	C	E	A
IIP-B5 Scales					
Neuroticism	.88*	-.27	-.09	-.36*	-.45*
Openness	-.26	.63*	.06	.53*	.14
Unconscientious	.16	.11	-.77*	.06	-.14

Note. N = 72. *r p < .01.

Table 54. Correlations between IIP-B5 neuroticism facets and NEO-PI neuroticism facets.

NEO-PI Neuroticism Facets

IIP-B5 Facets	ANX	HOS	DEP	SELFCON	IMPL	VUL
Anxiety	.81	.42	.73	.58		.66
Depression	.62	.47	.80	.60		.58
Low Self-esteem	.61	.33	.82	.58		.57
Anger Control	.50	.76	.46		.44	.59

Note. N = 72. p > .01 deleted. Abbreviations: ANX=anxiety; DEP=depression; HOS=hostility; SELFCON=self consciousness; IMPL=impulsive; VUL=vulnerability.

Table 55. Correlations between IIP-B5 openness facets and NEO-PI openness facets.

NEO-PI Openness Facets

IIP-B5 Facets	FAN	AES	FEEL	ACT	IDEAS	VALUES
Unimaginative	-.35	-.61	-.36		-.49	
Egocentric						-.47
Nonconformity		.40			.36	.34
Lack of Focus						

Note. N = 72. p > .01 deleted. Abbreviations: FAN=fantasy; AES=aesthetics; FEEL=feelings; ACT=actions.

Examination of Table 53 indicates that the domain scales of the IIP-B5 exhibit good convergent validity with domain

scales of the NEO-PI. IIP-B5 Unconscientiousness correlates significantly (r = -.77) only with NEO-PI Conscientiousness. IIP-B5 Neuroticism correlates significantly (r = .88) with NEO-PI Neuroticism and exhibits secondary significant correlations with NEO-PI Agreeableness (r = -.45) and NEO-PI Extraversion (r = -.36). IIP-B5 Openness correlates most highly with NEO-PI Openness (r = .63) and exhibits a second significant correlation with NEO-PI Extraversion (r = .53). This last result is most likely the result of the IIP-B5 Lack of Focus facet correlating significantly with trait extraversion in this sample.

Examination of Table 54 indicates good convergent validity between IIP-B5 neuroticism facets and NEO-PI neuroticism facets. IIP-B5 Anxiety and Depression correlate most highly with their NEO-PI counterparts. IIP-B5 Low Self-esteem correlates most highly with NEO-PI Depression. IIP-B5 Anger Control correlates most highly with NEO-PI Hostility and is the only neurotic problems facet to correlate significantly with NEO-PI Impulsivity.

Examination of Table 55 indicates good convergent validity between IIP-B5 openness facets and NEO-PI openness facets. IIP-B5 Unimaginative correlates most highly with NEO-PI Aesthetics (r = -.61) and exhibits moderate negative correlations with NEO-PI Fantasy, Feelings, and Ideas facets. IIP-B5 Egocentric correlates significantly with NEO-PI Values (r = -.47). IIP-B5 Nonconformity exhibits significant

positive correlations with NEO-PI Aesthetics, Ideas, and Values.

Ben-Porath and Waller (1992b) note that the FFM dimension of conscientiousness and Tellegen's (1985) constraint dimension of his three dimensional model both imply control. They are critical of the NEO-PI for including a facet for impulsivity (the opposite of control) in the domain of neuroticism. In the current sample, the only IIP-B5 neuroticism facet to correlate with NEO-PI Impulsivity was Anger Control. IIP-B5 Impulsivity (a facet located in the unconscientious problems domain) does correlate significantly with NEO-PI Impulsivity ($r = .40$). IIP-B5 Impulsivity exhibits no other significant correlations with any NEO-PI neuroticism facets. However, it does correlate significantly with the NEO-PI Conscientiousness scale ($r = -.35$). IIP-B5 Impulsivity exhibits no other significant correlations with dimensions of the FFM assessed by the NEO-PI. These results support the IIP-B5, Ben-Porath and Waller (1992b), and Tellegen (1985) in conceptualizing impulsivity as a facet of (un)conscientiousness.

Discussion

The psychometric and structural properties of the IIP-B5 were examined in a small ($n = 72$) sample of psychiatric outpatients. Results indicated that the general structure of the inventory at the facet and domain levels of the FFM construct hierarchy, derived and validated in university samples, was replicated in a psychiatric sample. Internal

consistency of problems facets and domain scales improved overall in the psychiatric sample as expected. In order to evaluate the structural stability of the IIP-B5, a number of lower and higher order principal components analyses were conducted. Those results, and examination of convergent and divergent validity, provide both support for the stable structure of the IIP-B5 and identify areas where structural and substantive improvement may be required. The overall support for structural stability of the IIP-B5 across both normal and psychiatric samples suggests that the dimensional taxonomy of normal personality traits referred to as the "Big Five" has important relations to the domain of maladaptive, abnormal, or psychopathological behavior. While not all behavior seen in clinical personality assessment is subsumed by the FFM (Ben-Porath & Waller, 1992a; Butcher, 1992), results of this research support a quantitative, dimensional relationship between normal and abnormal personality as a viable alternative to a categorical approach to clinical personality assessment which often assumes a qualitative difference between normal personality and pathological personality features (see Carson, 1991; Livesley, 1991; Millon, 1991; Gunderson, Links, & Reich, 1991; and Widiger, in press, for extended discussions of this issue).

Neuroticism. The IIP-B5 neuroticism facets demonstrate stable structure and excellent internal consistency across the derivation, validation, and psychiatric samples. Convergent validity with a number of personality and clinical

inventories suggests that problems of sad affect, low self-esteem, anxiety, and anger are important aspects of behavior to assess in both clinical and normal personality assessment. The IIP-B5 Anger facet is the only neuroticism facet to exhibit significant relations with other FFM dimensions. This valid and reliable facet demonstrates moderate relations to the interpersonal dimensions of the FFM. Costa, McCrae, and Dembroski (1989) distinguish between "neurotic hostility" which is an affective personality trait and "antagonistic hostility" which is an interpersonal personality trait. Substantive improvement in the IIP-B5 Anger facet could involve a reduction in interpersonal content by modifying or adding new items.

Unconscientiousness. The IIP-B5 unconscientious facets exhibit stable structure and good internal consistency across the derivation, validation, and psychiatric samples. Examination of convergent validity with typical clinical measures yielded few significant relations. It appears that both trait conscientiousness and problems of unconscientiousness are poorly represented in a number of clinical inventories, such as the BSI and WAI examined in this research program, and the MMPI (Ben-Porath & Waller, 1992b; Costa et al, 1986; Johnson, Butcher, Null, & Johnson, 1984). Given the significant relations between measures of conscientiousness and conceptions of personality disorders (e.g., Costa & McCrae, 1990; Schroeder, et al, 1992; Wiggins & Pincus, 1989) and the importance of individual differences

in conscientiousness for engagement and efficacy of psychotherapy (e.g., Miller, 1991; Shapiro, 1989), problems of compulsivity, unreliability, laziness, urge control, and impulsivity may be important aspects of behavior to assess in both clinical and normal personality assessment.

The facet of impulsivity assesses a lack of planfulness and attention to the consequences of one's behavior. It appears related to the domain of unconscientious problems as suggested by Ben-Porath and Waller (1992b) and Tellegen (1985). The psychometric and structural properties of the IIP-B5 impulsivity facet remained stable across three samples and the results clearly support its inclusion in the unconscientious domain, rather than the neuroticism domain as suggested by Costa and McCrae (1985). The assessment of problems of unconscientiousness are unique to the IIP-B5 and may provide substantial incremental gain in understanding and effectively treating individual patients.

Openness. The fifth factor of the FFM is Openness to Experience. This factor has demonstrated a long history of taxonomic debate among FFM investigators (e.g., Peabody & Goldberg, 1989; Wiggins & Trapnell, in press). It has been referred to as Openness (McCrae & Costa, 1985b), Intellectance (Hogan, 1986), Culture (Norman, 1963), and Intellect or Sophistication (Goldberg, 1992). It is most often the last factor extracted in structural investigations of the FFM (e.g., Goldberg, 1990; Trapnell & Wiggins, 1990; Wiggins & Pincus, 1989). Of all problems domains assessed by

the IIP-B5, openness has demonstrated the weakest structural stability across samples, although the internal consistency of the facets is stable and excellent.

The Unimaginative and Egocentric facets clearly assess problems of being too closed to experience and these facets remained structurally stable across the derivation, validation, and psychiatric samples. The convergent validity of these facets was also supported. The facets constructed to assess problems of being too open (Nonconformity and Lack of Focus) exhibit the weakest evidence for both structural stability and discriminant validity. Nonconformity consistently split component loadings across openness (+) and neuroticism (-). Lack of Focus deviated from a consistent loading on openness in the derivation and validation samples to a pattern indicative of a strong relation to trait extraversion in the psychiatric sample. A possible confound in the substantive interpretation of this facet is the difficulty discriminating between problems of being too curious and novelty-seeking (openness) and being too stimulus-seeking (recklessness, sensation-seeking). The full NEO-PI used in the psychiatric sample includes an Excitement-Seeking facet in assessing domain Extraversion; and, Schroeder et al (1992) demonstrated that the NEO-PI Extraversion scale "showed a strong positive relationship to Stimulus Seeking and played a lesser role in the prediction of nine other DAPP-BQ scales" (p. 52). The significant correlation between IIP-B5 Openness and NEO-PI Extraversion

suggests that the Lack of Focus facet (and to a lesser extent the Nonconformity facet) may require substantive fine tuning via item modifications and or additions to more accurately operationalize problems related to being too open. Miller (1991) suggests several potential openness problems effecting psychotherapy engagement and outcome. Further investigations to expand the taxonomy of maladaptive traits expressing openness is required.

CHAPTER 5

An application of the IIP-B5: The Weinberger adjustment

typology and the five-factor model of personality

INTRODUCTION

The Weinberger Adjustment Typology. Weinberger and his

colleagues (Weinberger, 1989; Weinberger, in press;

Weinberger, Feldman, & Ford, 1989; Weinberger & Schwartz,

1990; Weinberger, Tublin, Feldman, & Ford, in press) have

proposed a typological model of social-emotional adjustment

based on the superordinate dimensions of distress and

restraint. Weinberger and Schwartz (1990) define distress as

"a general measure of individuals' tendencies to feel

dissatisfied with themselves and their ability to achieve

desired outcomes. Proneness to anxiety, depression, low

self-esteem, and low well-being are operationally defined as

subtypes of distress" (p. 382). They define restraint as

"encompassing domains related to socialization and self-

control and refers to suppression of egoistic desires in the

interest of long-term goals and relations with others. Thus

restraint is superordinate to tendencies to inhibit

aggressive behavior, to exercise impulse control, to act

responsibly, and to be considerate of others" (p. 382).

These superordinate and lower order constructs can be

assessed by the Weinberger Adjustment Inventory (WAI;

Weinberger, 1989).

In their discussion of distress and restraint, Weinberger and Schwartz (1990) propose the following relations between the WAI and the FFM. Distress is most closely related to trait neuroticism but differs due to the inclusion of a Low Well-being subscale, which they suggest is most strongly related to trait extraversion. Restraint encompasses agreeableness (WAI subscales for Suppression of Aggression and Consideration of Others) and conscientiousness (WAI subscales for Impulse Control and Responsibility). All empirical investigations of these hypothesized relations have involved a piecemeal operationalization of FFM dimensions (e.g., Weinberger et al, 1989). The relations between the WAI and a fully operationalized FFM have not been reported. A summary of these hypotheses can be found in Table 56.

Weinberger and Schwartz (1990) propose a six cell typology of adjustment styles by crossing restraint (high/moderate/low) X Distress (high/low). They argue against the claim that typologies derived from the intersection of dimensions cannot claim to represent "distinct forms" unless significant interaction terms (e.g., A X B) emerge in the prediction of external variables (Hicks, 1984; Mendelsohn, Weiss, & Feimer, 1982). They argue that traditional analysis of variance interaction terms are most sensitive to complementary, disordinal patterns, such as cross-overs. Because such techniques are used to describe factors rather than groups, they do not identify nonadditive patterns among between-groups cells. Weinberger and Schwartz

Table 56. Weinberger and Schwartz' (1990) hypothesized relations between WAI scales and the Big Five.

	Big Five Dimensions				
WAI Scale	N	E	O	A	C
Anxiety	(+)				
Depression	(+)				
Low Self-esteem	(+)				
Low Well-being		(-)			
DISTRESS	(+)	(-)			
Suppression of Aggression				(+)	
Consideration				(+)	
Impulse Control					(+)
Responsibility					(+)
RESTRAINT				(+)	(+)

Note. Abbreviations: N = neuroticism; E = extraversion; O = openness; A = agreeableness; C = conscientiousness

(1990) argue that "asymmetrical variance is assigned to main effects, even when group differences are completely attributable to one cell" (p. 387). They argue that the validity of their adjustment typology can be supported by the identification of nonadditive group differences that depart from what could be predicted from a strictly dimensional analysis of distress and restraint or the use of traditional interaction terms.

To assess the validity of their typology, 28 dependent measures were assessed and oneway multivariate analyses of variance (MANOVA) were performed to ensure reliable group differences in each domain. Following this, the post-hoc Newman-Keuls procedure was employed to take into account the number of paired comparisons involved. If patterns of paired comparisons between adjustment style groups differed from linear contrasts indicating main effects for distress, restraint, or a combination of the two, Weinberger and Schwartz (1990) argue that these nonadditive differences identify distinctive features of individual groups, hence their typology would be validated.

Their results indicated that for 26 of their 28 dependent variables, main effects for distress, restraint, or both were significant. The Distress X Restraint interaction was not significant. The Newman-Keuls comparisons identified 21 out of 28 dependent variables where group differences were significant and nonadditive. The authors concluded, "prototypic members of each of the six adjustment groups have distinct personality structures that cannot be fully explicated by dimensional analyses" (p. 407). The adjustment typology consists of the following types: Reactive (high distress/low restraint), Sensitized (high distress/moderate restraint), Oversocialized (high distress/high restraint), Undersocialized (low distress/low restraint), Self-assured (low distress/moderate restraint), and Repressive (low distress/high restraint) (see Table 57).

Table 57. The Weinberger adjustment typology.

Restraint

	High	Moderate	Low
Distress			
High	Oversocialized	Sensitized	Reactive
Low	Repressive	Self-assured	Undersocialized

Adjustment and the Big Five. A major issue of importance can be discussed regarding the WAI typology. The relations between the WAI Distress and Restraint scales and subscales were proposed to subsume four of the five major dimensions of personality. In doing so, it is unclear whether Weinberger is asserting that distress and restraint are superordinate to the FFM or whether he has chosen to assess blends of the FFM dimensions. If the former is true, conjoint factor analytic investigations of the WAI and an instrument operationalizing the FFM would help determine the hierarchical relations between the dimensions of adjustment and the dimensions of the FFM. If the latter is true, Weinberger is open to the criticism that he has not demonstrated incremental gain in assessing a particular blend of dimensions which fifty years of personality structure research has cumulatively suggested are superordinate and basic (Costa & McCrae, in press; Digman, 1990; Wiggins, in press; Wiggins & Trapnell, in press).

Additionally, if the dimensions of distress and restraint are substantively different from the dimensions of the FFM and the typological classifications are valid, it should be possible to replicate significant adjustment group differences using the dimensions of the FFM as dependent variables.

Methods

Sample. A subset of 307 subjects from the sample of 572 university students described in Study 2 make up the sample for the following investigation.

Instruments. The Inventory of Interpersonal Problems-Big Five Version (IIP-B5) is a 140 item inventory constructed to assess rigid and maladaptive trait expression from a FFM framework. Two types of items are included: Behaviors one does too much (excesses) and behaviors one finds chronically hard to do (inhibitions). Subjects rate how much of a problem each statement has been for them on a 5-point Likert scale ranging from "not at all" to "extremely." The IIP-B5 assesses the interpersonal problems circumplex (Alden et al, 1990) and additional problems related to the trait domains of neuroticism, unconscientiousness, and openness. The IIP-B5 possesses good reliability and has demonstrated homologous structure with the IASR-B5 (Trapnell & Wiggins, 1990). This instrument operationalizes the Dyadic-Interactional perspective on the FFM.

The Weinberger Adjustment Inventory (WAI; Weinberger & Schwartz, 1990) is an 84 item inventory designed to assess

long term functioning rather than short term symptoms. The two primary dimensions are "Distress" (as assessed by subscales measuring anxiety, depression, low self-esteem, and low well-being) and "Restraint" (as assessed by subscales measuring impulse control, suppression of aggression, consideration of others, and responsibility). There are two validity indicators consisting of a "Denial of Distress" scale, which refers to defensiveness about normative experiences of distress, and a "Repression" scale which refers to claims of nearly absolute restraint. Subjects endorse items on a 5-point scale ranging from completely false to completely true. Alpha reliabilities range from .72 for the Impulse Control scale to .92 for the composite Distress scale.

Procedures. Data collection procedures proceeded as described in Studies 1 and 2.

Analyses. In order to assess the relations between the scales of the WAI and the dimensions of the FFM, zero order correlations between WAI and IIP-B5 scales were examined, and conjoint principal components analyses were performed at both the subscale/facet and superordinate levels. Additionally, cohorts falling into each of the six WAI adjustment style groups were partitioned and their IIP-B5 profiles examined using multivariate analysis of variance. A replication of the Weinberger and Schwartz (1990) methodology, examining pair-wise between group comparisons using the IIP-B5 domain scales as dependent variables was examined.

Hypotheses

It was hypothesized that the scales and constructs of the WAI could be subsumed by the dimensions of the FFM. The adjustment typology would not produce nonadditive effects on the dimensions of the FFM when paired comparisons among groups were examined.

Results

Correlations. The Pearson correlations among the scales of the WAI and the domain scales of the IIP-B5 are presented in Table 58. All WAI scales had significant correlations with neuroticism and dominance. All distress scales correlated most highly and positively with neuroticism. All restraint scales had small, but significant negative correlations with neuroticism. In examining the correlations of the restraint scales, the most evident pattern is a predominant relationship to the interpersonal dimensions of dominance (negatively) and nurturance (positively). Weinberger and Schwartz (1990) propose that the restraint dimension is a combination of agreeableness (nurturance) and conscientiousness. In particular, they suggest that Suppression of Aggression and Consideration are related to agreeableness. While Consideration's highest correlation is with nurturance (r = .54), Suppression of Aggression is most strongly related to dominance (r = -.60), suggesting assessment of nonassertiveness. Additionally they suggest that Impulse Control and Responsibility are related to

Table 58. Correlations between the WAI and the IIP-B5.

IIP-B5 Domain Scale

	NEUR	UNCON	OPEN	DOM	NUR
WAI Scale					
Anxiety	.69			-.17	
Depression	.75	.15		-.25	-.16
Low Self-esteem	.70	.21		-.38	
Low Well-being	.54		-.16	-.33	-.39
DISTRESS	.81			-.34	-.19
Supp. of Aggr.	-.17			-.60	.27
Impulse Control	-.23	-.29	-.28	-.27	
Consideration	-.14			-.26	.54
Responsibility	-.27	-.21		-.26	.27
RESTRAINT	-.27	-.23		-.48	.35

Note. N = 307. p > .01 deleted. Abbreviations:
WAI=Weinberger Adjustment Inventory; IIP-B5=Inventory of
Interpersonal Problems-Big Five Version; NEUR=neuroticism;
UCON=unconscientious; OPEN=openness; DOM=dominance;
NUR=nurturance; Supp of Aggr=supression of aggression.

consciousness. While both these scales correlate between
-.21 and -.29 with unconscientiousness, both exhibit
correlations of equal magnitude with four of the five domain
scales of the IIP-B5. Additionally, the Restraint scale
correlates most highly with dominance (r = -.48) rather than
with unconscientiousness or nurturance. Finally, Weinberger
and Schwartz claim that the Low Well-being scale is related
negatively to extraversion contributing to the distress

dimension's substantive difference from trait neuroticism.
Low Well-being does correlate significantly with the
dimensions of the interpersonal circumplex, however, its
highest correlation is with neuroticism (r = .54).

Structural Analyses. The Restraint and Distress
subscales of the WAI and the domain scales of the IIP-B5 were
subjected to a conjoint principal components analysis. A
clear five factor solution emerged which accounted for 77.2%
of the variance. The solution was rotated to a varimax
criterion and can be seen in Table 59.

Examination of Table 59 indicates that all WAI Distress
subscales are strongly related to neuroticism. The WAI Low
Well-being subscale splits its loading, positively on
neuroticism (.67) and negatively on nurturance (-.51). WAI
Suppression of Aggression loads solely on the
nonassertiveness factor (.85). WAI responsibility exhibits a
high positive loading on nonassertiveness (.67) and a
moderate negative correlation on the unconscientious factor
(-.35). WAI Impulse Control splits its loading, positively
on nonassertiveness (.58) and negatively on unconscientious
(-.53). WAI Consideration splits its loading, positively on
the nurturance factor (.68) and positively on the
nonassertiveness factor (.46). No WAI subscales exhibited
primary loadings on factors marked by IIP-B5 Unconscientious
or IIP-B5 Openness.

The WAI superordinate scales for Restraint and Distress
and the IIP-B5 domain scales were also subjected to a

Table 59. Conjoint principal components analysis of the WAI subscales and the IIP-B5 domain scales.

Scales	Factors				
	I	II	III	IV	V
Neuroticism (IIP-B5)	.90				
Depression (WAI)	.87				
Low Self-esteem (WAI)	.84				
Anxiety (WAI)	.83				
Low Well-being	.67		-.51		
Supp. of Aggr. (WAI)		.85			
Dominance (IIP-B5)		-.77			
Responsibility (WAI)		.67		-.35	
Impulse Control (WAI)		.58		-.53	
Nurturance (IIP-B5)			.89		
Consideration (WAI)		.46	.68		
Unconscientious (IIP-B5)				.87	
Openness (IIP-B5)					.97

Note. N = 307. Loadings < .33 deleted. Abbreviations: WAI=Weinberger Adjustment Inventory; IIP-B5=Inventory of Interpersonal Problems-Big Five Version; Supp. of Aggr.=suppression of aggression.

conjoint principal components analysis. A clear five factor

solution emerged which accounted for 93.3% of the variance.

The solution was rotated to varimax criterion and is

presented in Table 60.

Table 60. Conjoint principal components analysis of the WAI
Restraint and Distress scales and the IIP-B5 domain
scales.

	Factors				
	I	II	III	IV	V
Scales					
Neuroticism (IIP-B5)	.96				
Distress (WAI)	.93				
Dominance (IIP-B5)		.89			
Restraint (WAI)		-.80	.33		
Nurturance (IIP-B5)			.98		
Unconscientious (IIP-B5)				.99	
Openness (IIP-B5)					.99

Note. N = 307. Loadings < .33 deleted. Abbreviations:
WAI=Weinberger Adjustment Inventory; IIP-B5=Inventory of
Interpersonal Problems-Big Five Version.

Examination of Table 60 indicates that the WAI

dimensions of distress and restraint are subsumed by the

superordinate structure of the FFM. Distress loads singly and significantly on neuroticism (.93). Restraint exhibits a primary negative loading on dominance (-.80) and a small secondary loading on nurturance (.33).

Assessment of the WAI Adjustment Typology. The sample standard scores on Distress and Restraint were used to partition subjects into six adjustment groups. A 2 (high distress/low distress) by 3 (high restraint/moderate restraint/low restraint) MANOVA was conducted using the standardized IIP-B5 domain scale scores as dependent variables. The cell sizes were as follows: Reactive (45), Sensitized (57), Oversocialized (41), Undersocialized (35), Self-assured (65), and Repressive (51). The multivariate F for the Distress x Restraint interaction was not significant. The multivariate F for Restraint was significant and univariate tests revealed a main effect for Restraint on neuroticism F (2, 271) = 6.77, p = .001; unconscientiousness F (2, 271) = 6.15, p = .002; dominance F (2, 271) = 48.58, p < .001; and nurturance F (2, 271) = 23.46, p < .001. The multivariate F for Distress was significant and univariate tests revealed a main effect for Distress on neuroticism F (2, 271) = 245.19, p < .001; and dominance F (2, 271) = 55.79, p < .001.

In order to replicate the procedures employed by Weinberger and Schwartz (1990), the two by three factorial was reconceptualized as a oneway analysis of variance with adjustment type as the independent variable and the IIP-B5

scales as the dependent variables. When the univariate F for Adjustment Group was significant, Weinberger and Schwartz (1990) evaluated all possible pairwise comparisons using the Newman-Keuls test. In the present analysis, pairwise comparisons were evaluated using the Tukey test to control for family wise error at alpha = .05. The Tukey test was chosen rather than the Newman-Keuls on the recommendation of Keppel (1982), who reviewed Monte Carlo studies comparing the Tukey, Duncan, and Newman-Keuls tests and concluded "the collective evidence seems to support the conclusion that the Tukey test is preferred over the other two tests" (p. 157). The Newman-Keuls test does not adequately control for family wise error (Einot & Gabriel, 1975). The results of these comparisons are summarized in Table 61.

Significant group comparisons were found for neuroticism, dominance, nurturance, and unconscientiousness. However, only the group differences for unconscientiousness exhibited a distinct pattern not attributable to main effects for restraint, distress, or additive main effects for both restraint and distress. Univariate effects on openness were nonsignificant. To better understand the distinct pattern of group differences on unconscientiousness, the procedure was replicated using the standardized scores for IIP-B5 unconscientious facets as dependent variables. The results of this analysis can be found in Table 62.

Significant group comparisons were found only for the Impulsive facet. However, the pattern of group differences

Table 61. Tukey test comparisons of adjustment group differences on dimensions of the Big Five.

IIP-B5 Scale	High Distress			Low Distress			UNIV.	
	REAC	SENS	OVER-SOC	UNDER-SOC	ASS	REPR	F	PAT[a]
NEUR	1.01 (H)	.68 (H)	.60 (H)	-.35 (L)	-.58 (L)	-.86 (L)	59.03*	ND
DOM	.14	-.30	-.95 (L)	1.18 (H)	.15	-.22	28.26*	ND
NUR	-.53 (L)	.08	.21 (H)	-.48 (L)	.10	.63 (H)	10.04*	ND
UNC	.44 (H)	.19 (H)	-.08	.27 (H)	.06	-.34 (L)	3.28*	D
OPEN	-.06	-.01	-.19	.22	.19	-.02	1.08	

(no significant comparisons)

Note. Groups labeled with ("H") (i.e., High) are significantly different than those with ("L") (i.e., Low) according to the Tukey test.

Abbreviations: IIP-B5=Inventory of Interpersonal Problems-Big Five Version; REAC=reactive; SENS=sensitized; OVER-SOC=oversocialized; UNDER-SOC=undersocialized; ASS=self-assured; REPR=repressive; UNIV. F=univariate F; PAT=pattern; NEUR=neuroticism; DOM=dominance; NUR=nurturance; UNC=unconscientious; OPEN=openness; ND=non-distinct; D=distinct.

a. "Nondistinct" patterns completely match linear contrasts for distress and/or restraint. Pattern for neuroticism purely corresponds to main effects for distress. Pattern for dominance purely corresponds to additive main effects for both distress and restraint. Pattern for nurturance purely corresponds to main effects for restraint. Pattern for unconscientious provides distinct information.
*$p < .01$.

Table 62. Tukey test comparisons of adjustment group differences on facets of unconscientiousness.

	High Distress			Low Distress				
IIP-B5			OVER-	UNDER-			UNIV.	
Facet	REAC	SENS	SOC	SOC	ASS	REPR	F	PAT[a]
URGE	.30	.23	-.14	.25	-.07	-.15	2.06	
		(no significant comparisons)						
LAZY	.11	.29	.03	-.13	.02	-.16	1.50	
		(no significant comparisons)						
UNRE	.35	-.15	-.11	.41	.06	-.05	2.67	
		(no significant comparisons)						
CMPL	-.22	.00	-.10	-.04	-.09	.24	1.29	
		(no significant comparisons)						
IMPL	.66	.05	-.30	.37	.03	-.38	7.54*	ND
	(H)		(L)	(H)		(L)		

Note. Groups labeled with ("H") (i.e., High) are significantly different than those with ("L") (i.e., Low) according to the Tukey test.
    Abbreviations: IIP-B5=Inventory of Interpersonal Problems-Big Five Version; REAC=reactive; SENS=sensitized; OVER-SOC=oversocialized; UNDER-SOC=undersocialized; ASS=self-assured; REPR=repressive; UNIV. F=univariate F; PAT=pattern; ND=non-distinct; D=distinct; URGE=urge control; UNRE=unreliable; CMPL=compulsive; IMPL=impulsive.
a. "Nondistinct" patterns completely match linear contrasts for distress and/or restraint. Pattern for impulsive purely corresponds to main effects for restraint.
*p < .01.

is attributable to main effects for restraint. Thus, the

distinct pattern found for unconscientiousness may best be

explained as a statistical artifact. No evidence was found

that the distinct pattern of group means for

unconscientiousness could be due to nonlinear additive effects of the adjustment typology formed by intersecting the dimensions of distress and restraint.

Discussion

The results of this investigation clarify the relations between the WAI dimensions of distress and restraint and the dimensions of the FFM. Weinberger and Schwartz assert that distress is most strongly related to trait neuroticism, but differs slightly by the inclusion of a Low Well-being subscale which is a measure of negative affectivity (Tellegen, 1985) or low extraversion. Correlations between the IIP-B5 domain scales and the Low Well-being scale support the contention that this subscale is related to extraversion. The scale's negative correlations with dominance and nurturance place the scale in the lower left quadrant of the interpersonal circumplex, indicating a relation with trait introversion. However, the scale's highest correlation is with IIP-B5 neuroticism. Additionally, principal components analysis revealed a strong positive loading on neuroticism and a secondary negative loading on agreeableness. When the subscales of the WAI distress dimension are aggregated, and a conjoint principal components analysis is performed, WAI Distress loads strongly and solely on neuroticism. No evidence was found to conclude that this WAI dimension is substantively different from the neuroticism dimension of the FFM.

Weinberger and Schwartz (1990) propose that the dimension of restraint is a blend of conscientiousness and agreeableness. Specifically, WAI Impulse Control and WAI Responsibility subscales were hypothesized to be related to conscientiousness. While these two scales had negative correlations with IIP-B5 Unconscientiousness, they exhibited significant correlations of equal magnitude with three of the four remaining dimensions of the FFM. WAI Suppression of Aggression and WAI Consideration were hypothesized to be related to agreeableness. The former subscale correlated negatively with IIP-B5 Dominance ($r = -.60$), suggesting assessment of nonassertive problems. The latter subscale correlated most highly with IIP-B5 Nurturance, supporting Weinberger and Schwartz' hypothesis. However, conjoint principal components analysis indicated that three of the four restraint subscales loaded most strongly on dominance (negatively). Responsibility and Impulse Control exhibited secondary negative loadings on unconscientiousness and Consideration split its loading on nurturance and dominance (indicating the scale assesses an interpersonal construct). When the subscales of restraint are aggregated, WAI Restraint loads strongly on dominance (negatively) and demonstrates a minor secondary loading on nurturance. Hence, the restraint dimension of the WAI is primarily an interpersonal dimension assessing nonassertive and nurturant traits. It has little relation to conscientiousness.

The structural relations between the WAI and the IIP-B5 reveal that the dimensions of distress and restraint can be interpreted clearly within the framework of the FFM. As such, it is of questionable necessity to reformulate dimensions of social-emotional adjustment as distinct from the basic dimensions of personality. If the five dimensional space of the model is to be divided differently, evidence of the incremental gain in understanding of personality, predictive utility, or practical application should be demonstrated. The Dyadic-Interactional perspective indeed divides the five dimensional space differently than the simple structure representation assessed by the NEO-PI. In doing so, the advantages accrued in assessing the interpersonal circumplex and its associated methodology were demonstrated. In the case of the WAI, the only advantage could be the typological categories of adjustment style proposed by intersecting the dimensions of distress and restraint.

In discussing methods for identifying typological categories, Meehl (1992) suggests that "in constructing assessment devices, the psychometric strategy is different, the distinct technological aims being <u>assignment of individuals to a category</u> versus <u>location of individuals on a dimension</u>. For the latter task, item difficulties and correlations should be chosen so as to disperse scores widely and discriminate effectively in all regions of the dimension, a very different function from <u>sorting</u> at a best cut so as to

minimize in/out misclassifications" (p. 162). He concludes that "construction and selection of items to compose a quantitative indicator cannot optimize both dimensional and taxonic power" (p. 162). Therefore, given the common methods of personality assessment, Meehl (1992) endorses the requirement of consistency tests applied to such identification of typological categories that provide Popperian risk of strong discorroboration (Popper, 1959). The validity of the adjustment typology was investigated by replicating the methods used by Weinberger and Schwartz (1990) to determine if distinct forms could be identified using the FFM dimensions as dependent variables.

The results of the analyses of variance replicated the findings of Weinberger and Schwartz (1990) in that no multivariate or univariate Distress x Restraint interaction terms were significant, but main effects for both dimensions were significant. However, none of the between-group comparisons deviated from linear main effects for the dimensions, thus typological distinctions were not replicated.

In examining the results of Weinberger and Schwartz (1990), it is apparent that the Newman-Keuls procedure is a particularly lenient test of group differences. For example, Weinberger and Schwartz reported a distinct, nonadditive pattern of group means for the Capacity of Intimacy scale of Shostrom's (1974) Personal Orientation Inventory. The mean score for the entire sample on this scale was 46.28. The

Newman-Keul's procedure identified a scale score difference of 2.5 as significantly different. While the standard deviations of this scale were not reported, it is doubtful that individuals demonstrating a difference of 2.5 points on a self-report scale with a mean of 46.28 would be detectably different in their behaviors. The difference between statistically distinct scale scores and personological differences in kind is an issue not discussed by Weinberger and Schwartz (1990). This result seems to support Meehl's (1992) assertion that a good dimensional measure is an imperfect typological indicator because just such a result can be confused with "distinct features."

The replication attempted here thus used a more stringent test of between-group differences, the Tukey test. Standardized scores on the IIP-B5 domain scales were used as dependent variables. The smallest significant between-groups mean difference was equal to .53 of a standard deviation, a quantity suggestive of potentially unique personological characteristics differing between group members. However, even if the analysis had identified nonadditive between group differences, the proposed adjustment typology may not be supported. Taxometric methods (e.g., Meehl & Golden, 1982) to determine best cut points for distress and restraint would be significantly more compelling evidence for the validity of the typology. Therefore, the results reported here do not invalidate the adjustment typology. They do, however, call

into question the methodology used by Weinberger and Schwartz (1990) to suggest typological validity.

In conclusion, the results of this investigation suggest that the reconceptualization of dimensions of social-emotional adjustment as differing from the five basic dimensions of personality is premature. No evidence was found that the WAI Distress and WAI Restraint constructs were substantively different constructs than the dimensions of the FFM. The typological model of adjustment was not supported using the methods employed by Weinberger and Schwartz (1990) and weaknesses in the methodology were highlighted. Finally, the results also suggest the IIP-B5 can be used effectively to operationalize the FFM for personality assessment research.

CHAPTER 6

An application of the IIP-B5: Clinical personality

assessment in an intensive group psychotherapy program

Introduction

The utility of assessing individual patients with the

IIP-B5 can be demonstrated with a case presentation. Costa

and McCrae (1992a) proposed six uses of personality data in

clinical assessment: understanding the patient, aiding in

diagnosis, developing empathy and rapport, providing feedback

and insight, anticipating the course of treatment, and

matching treatments to patients. The following case

presentation briefly demonstrates the use of the IIP-B5 and

highlights how information from a Dyadic-Interactional FFM

assessment can aid in understanding the patient's

presentation, developing empathy and rapport in a dynamic-

interpersonal therapy group, providing feedback and insight,

and anticipating and understanding a patient's changes

through a course of psychotherapy.

Figure 7 presents the dyadic-interactional five-factor

model profile of interpersonal problems of a 32 year-old male

patient, selected at random, seen for short-term intensive

group therapy by the author. If information was restricted

to the interpersonal domain of maladaptive and rigid

behavior, it could be assumed (based on his location in the

DE octant of the interpersonal problems circumplex) that this

patient may exhibit an inability to express affection and

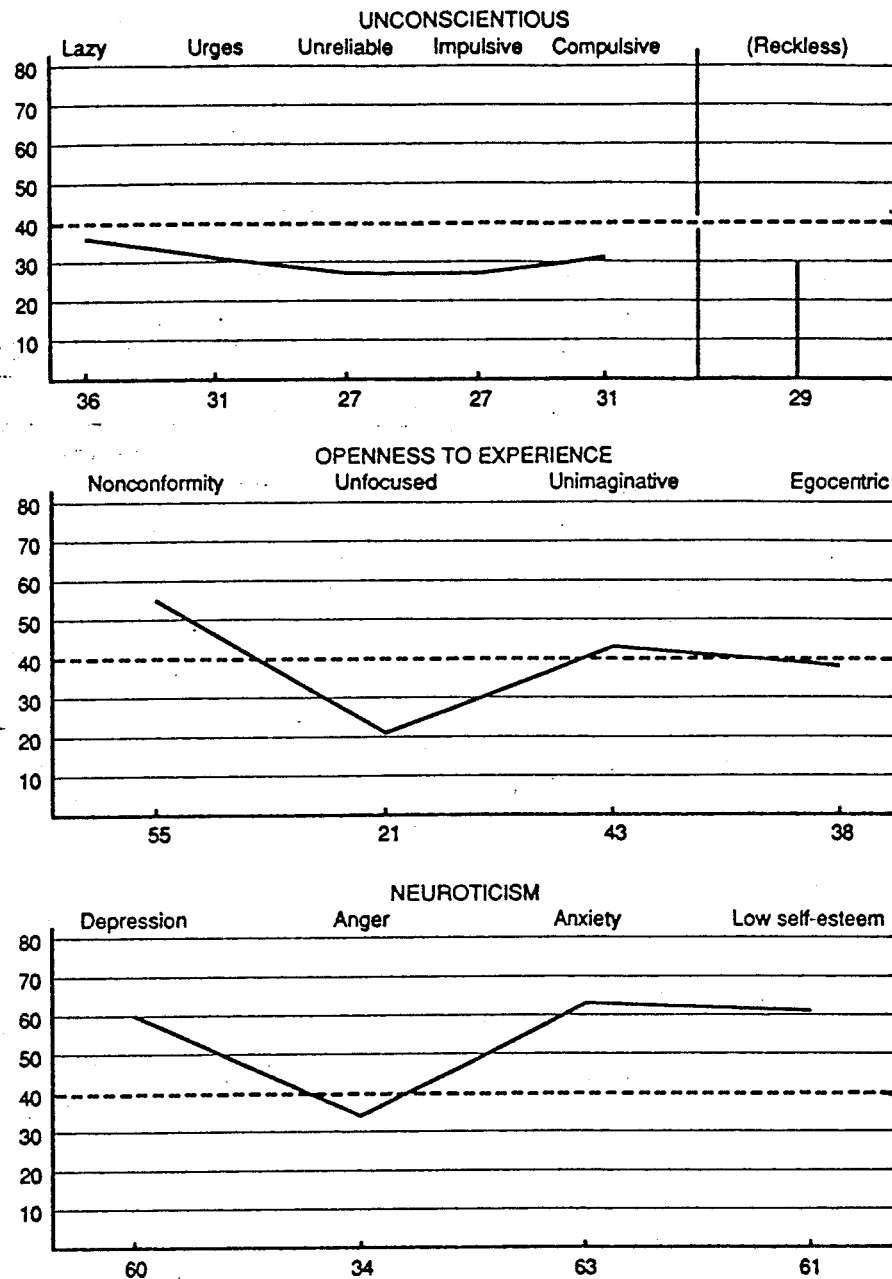Figure 7. IIP-B5 domain scale profile for S. C.
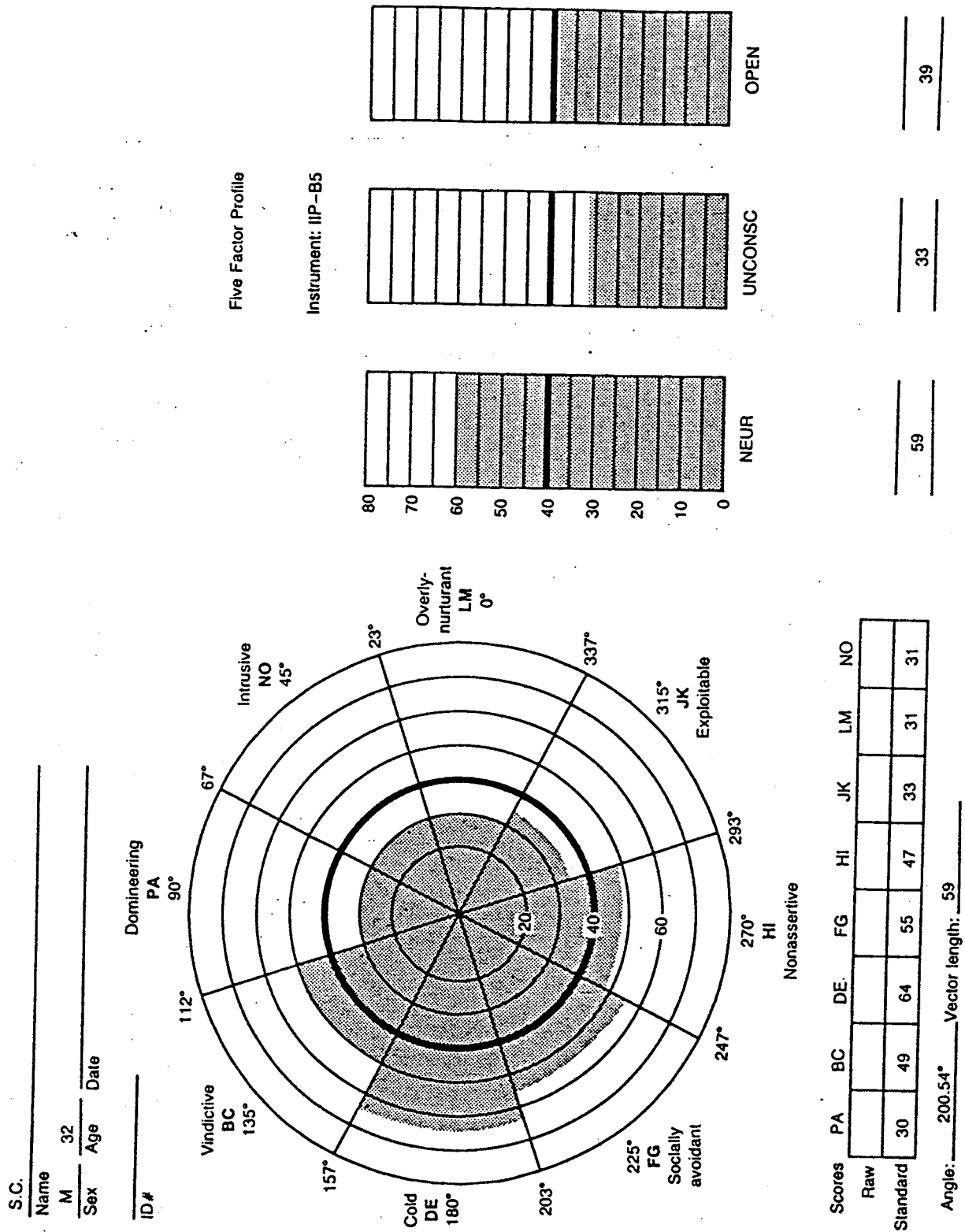
feel love for other people, have difficulty making long-term commitments to others, and demonstrate a rigid inability to be generous to, get along with, and forgive others (Alden et al, 1990, p. 528).

How would this interpersonal coldness manifest itself both in the therapy group this patient was entering and in his life functioning in general? If the patient were impulsive, unconscientious, and relatively free of emotional distress (i.e., low neuroticism), his interpersonal coldness would have manifested itself in insensitive, hostile, and possibly antisocial behavior that infringed on the rights of others for whom he cared little. In actuality, this was not the case. The patient was, in fact, over-controlled, emotionally distressed, and conscientious. He was referred to psychotherapy for anxiety and depression related to an obsessive preoccupation with everyday noises which disturbed him so intensely that he had relocated five times in five months. Additionally, because the patient had so little in the way of supportive relationships, his major method of coping with his distress was the chronic use of marijuana.

Figure 8 presents the patient's problem facet profile for the IIP-B5. The additional dimensions of neuroticism, unconscientiousness, and openness comprise problem facets which assess maladaptive and rigid behavior at a level of specificity similar to the IIP-C octant scales. From this problem facet profile, it is possible to describe how the

Figure 8. IIP-B5 facet profile for S. C.

UNCONSCIENTIOUS

Lazy	Urges	Unreliable	Impulsive	Compulsive	(Reckless)
36	31	27	27	31	29

OPENNESS TO EXPERIENCE

Nonconformity	Unfocused	Unimaginative	Egocentric
55	21	43	38

NEUROTICISM

Depression	Anger	Anxiety	Low self-esteem
60	34	63	61

patient's interpersonal coldness manifested itself within the therapy group. It can be seen that the patient was particularly inhibited and overcontrolled as indicated by his low scores on the Reckless, Impulsive, and Lack of Focus facets. Thus his coldness was manifested in a lack of interaction and joining, little spontaneity, and difficulty providing support for others. In the group, he initially spoke infrequently, and paused for long periods "to collect his thoughts" when speaking, inviting interruption from others due to evoked frustration and boredom. This maladaptive transaction cycle (Kiesler, 1988; Van Denburg et al, in press) furthered his feelings of disconnectedness by reinforcing his covert feelings that others did not care for him and would dominate and overwhelm him if he were to engage. He presented as distressed but emotionally constrained, hence he was neither attacking nor angry, which is compatible with his below average score on the Anger facet. Thus, when interrupted or encouraged to express emotion (as was the evoked group tendency), he would choose to withdraw and disengage rather than become angry, blaming, or assertive. Thus, his hostile-submissive behavior (withdrawal, silence) reinforced the complementary responses of hostile-dominance (interruptions, demands that he emote and be involved) that characterized his engagement with the group.

Consistent with his low scores on the Lazy and Unreliable facets, his interpersonal coldness did not

manifest itself though lateness, absences, or early termination (the group met 4 times a week for 6 weeks). However, his high score on Nonconformity indicated an additional component of his interpersonal coldness. He presented as an artistic recluse, with long hair and rather eccentric clothes. He saw himself as an outsider in society, a fringe person, and he did not wish to lose this component of his self-concept. In many areas of his life, he did indeed value being different. Again, his interpersonal coldness was maintained by a resistance to influence from authority, society, or other people.

Van Denburg et al (in press) describe patient's current problematic transactional patterns as stemming from internalized early interactions with significant others. Clearly, this patient's early years played a role in his presentation when therapy was initiated. Briefly, the group learned that his father was an angry, intrusive, and domineering lawyer who would not tolerate disagreement with his own views, rules, and desires. This description was corroborated when the patient's father attended a weekly guest night for the group. As a young boy, the patient witnessed frequent loud, aggressive, and frightening altercations between his older brother and his father. His response to this developmental experience was to withdraw and repress anger and emotion because of his fear of: (a) being similarly assaulted by his father and (b) becoming like his frightening and feared father. At the same time, however,

his coping strategy evoked feelings of inadequacy for being unable to stand up for himself as he saw his older brother do despite the frightening consequences. His feelings of inadequacy were detected by a high score on the Low Self-esteem facet.

As group treatment progressed, the interruptions and domineering complementary responses of the group shifted. They learned more about the patient's development and his covert responses to the group. They began to provide support and respectful suggestions, as well as displaying genuine affection for him. At the time of termination, the group typically provided acomplementary responses (Kiesler, 1983, 1988) of friendly-dominance which evoked increased engagement and emotional expression from the patient. His first steps toward breaking a maladaptive transaction cycle took place during an intensive period of group treatment. He then entered a continuing therapy group that met once a week.

Discussion

The case just presented is a brief demonstration of the utility of assessment with the five-factor model of interpersonal problems. One important point is that the additional dimensions of the five-factor model will likely influence the interpersonal presentation of individual patients. Two patients whose interpersonal profiles are similar (i.e., both locate in the same circumplex octant) are likely to present with distinctive patterns of maladaptive and rigid behavior (problems), depending on their relative

standings on emotional lability and distress (neuroticism),
impulsivity, persistence, and reliability
(unconscientiousness), and conformity, tolerance, and
imagination (openness). This useful information can be
obtained efficiently by administering a combined circumplex
and five-factor assessment battery such as the IIP-B5.

In reviewing his personality information, it was
possible to anticipate the patient's responses to the
interruptions and impatience which characterized early group
engagement. This aided in providing group process
interpretations which helped to establish rapport and
empathy. As treatment continued, the repetition of the
pattern and continued group process interpretations were
linked with developmental issues identified over the course
of psychotherapy, providing the patient with insight into his
maladaptive and rigid behavior. As behavioral shifts became
apparent, empathic feedback and process interpretations were
received with greater self understanding and a sense of
personal control over his engagement with others. While
other useful information was provided by the pretreatment
assessment (including a clinical interview and other self-
report measures), the personality information provided by the
IIP-B5 was particularly useful in understanding and treating
this patient in a group psychotherapy context.

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