SNAP-2

Schedule for Nonadaptive and Adaptive Personality—2nd Edition

Manual for Administration, Scoring, and Interpretation

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CHAPTER 1
INTRODUCTION

The Schedule for Nonadaptive and Adaptive Personality (SNAP) is a factor analytically derived, self-report instrument designed to assess trait dimensions important in the domain of personality disorders (PDs). The core of the SNAP is composed of 15 scales: 12 "trait" scales that assess specific or primary traits and 3 "temperament" scales that measure the core of more general affective traits. All of these scales are internally consistent, have acceptable retest reliabilities, and are appropriately independent. The instrument also provides six validity scales plus an overall invalidity index to identify profiles that may be invalid owing to carelessness; to the response sets of defensiveness, social desirability, and acquiescence; or to deviance (two scales, one each for the earlier and later part of the test). Finally, the test contains items to assess the PD criteria in the fourth edition of the *Diagnostic and Statistical Manual* (*DSM-IV*; American Psychiatric Association, 1994, 2000). Table 1.1 lists the full array of SNAP scales.

Although the primary emphasis of the SNAP is the assessment of basic, lower order maladaptive personality traits and temperament dimensions, the instrument also can be used in the investigation of broad, higher order personality factors. In factor analyses of the instrument as a whole, the first three factors broadly replicate the structure often found in normal-range personality (e.g., Eysenck Personality Questionnaire [Eysenck & Eysenck, 1975]; California Psychological Inventory [Gough, 1987, 1996]; Multidimensional Personality Questionnaire [Tellegen, in press]). These factors have been given a variety of names and theoretical interpretations, but perhaps are known best as neuroticism or negative affectivity, extraversion or positive affectivity, and disinhibition versus constraint or conscientiousness.

The three SNAP temperament scales represent the core of these three dimensions,

respectively, rather than the full breadth of the factors, which may assessed more completely using factor scores. Thus, the distinction between these trait and temperament scales is more conceptual than functional, and is made to highlight relations between the SNAP and the "Big Three" tradition in personality psychology. Throughout this manual, therefore, except when the temperament scales are specifically being contrasted with the trait scales, the terms "trait(s)" and "trait dimension(s)" are used to refer to constructs assessed by the trait and temperament scales alike.

Further, analyses of the SNAP with measures of the influential five-factor model (FFM) of personality, whose dimensions often are referred to as the "Big Five" (Costa & McCrae, 1989, 1992, 2005; Goldberg, 1990, 1993, 2001; McCrae & Costa, 1987, 1997, 1999, 2003; Noller, Law, & Comrey, 1987; Widiger, 2005; Widiger, Costa, & McCrae, 2002), suggest that the general domain of agreeableness also is tapped by the SNAP, as well as a few aspects of openness (see Clark & Livesley, 2002; Clark, Vorhies, & McEwen, 1994; Reynolds & Clark, 2001), which is consistent with the literature that has found that Openness has a lesser role in personality pathology than the other higher order dimensions (Clark, 2005).

Table 1.1

The SNAP Scales

Type of Scale	Specific Scale	Abbreviation
Validity Scales (7)	Variable Response Inconsistency	VRIN
	True Response Inconsistency	TRIN
	Desirable Response Inconsistency	DRIN
	Rare Virtues	RV
	Deviance	DEV
	Invalidity Index	II
	Back Deviance	BDEV
Trait and Temperament Scales (15)	**Negative Temperament**	NT
	Mistrust	MST
	Manipulativeness	MAN
	Aggression	AGG
	Self-harm	SFH
	Eccentric Perceptions	EP
	Dependency	DEP
	Positive Temperament	PT
	Exhibitionism	EXH
	Entitlement	ENT
	Detachment	DET
	Disinhibition	DIS
	Impulsivity	IMP
	Propriety	PRO
	Workaholism	WRK

Table 1.1 (cont.)

Type of Scale	Specific Scale	Abbreviation
Diagnostic Scales (12)	Paranoid	PAR
	Schizoid	SZD
	Schizotypal	STP
	Antisocial	ANT
	Borderline	BDL
	Histrionic	HIS
	Narcissistic	NAR
	Avoidant	AVD
	Dependent	DPN
	Obsessive-Compulsive	OBC
	Depressive	DPR
	Passive-Aggressive	PAG

Note. Temperament scales shown in **boldface.** These scales also comprise the General

Temperament Survey (GTS; Clark & Watson, 1990).

CHAPTER 2
DEVELOPMENT

RATIONALE

The SNAP was developed for three primary reasons: (1) To provide a means of assessing Axis II pathology in terms of trait dimensions, an important alternative to the *DSM*'s categorical assessment of PD; (2) To provide a means of exploring relations between personality traits and PD diagnoses. Research using the SNAP may provide information for improving diagnostic criteria, may support or question the validity of specific PD diagnoses, and may help to confirm or to challenge the basic notion of the existence of categorical diagnoses. (3) To provide a means of investigating whether personality traits are continuous from the normal into the pathological range.

The SNAP's Dimensional Approach as an Alternative to Personality Disorder Diagnosis

Inclusion of PD on Axis II as an independent domain of psychopathology in *DSM-III* (American Psychiatric Association, 1980) was a major conceptual advance. Of particular importance was the recognition that personality traits are qualitatively different from clinical symptoms and therefore need to be assessed and treated in their own right. Although the acknowledgement of this distinction was significant per se, there were notable problems in the specific way(s) that PD was operationalized in *DSM*. Among the more critical decisions made by the APA Task Force was to use a categorical system of diagnosis for Axis II akin to that used for Axis I.

A primary problem with this choice is that categorical systems typically imply the existence of relatively discrete entities, whereas the PDs contain many overlapping criteria and are not clearly distinct from each other or from Axis I disorders (Clark, 2005; Clark, Livesley, &

Morey, 1997; Marinangeli et al., 2000; Morey, Gunderson, Quigley, & Lyons, 2000; Widiger,

2003; Widiger & Kelso, 1983). Particularly when structured assessment procedures are used, it

is more common for patients to receive multiple PD diagnoses or a PD-Not Otherwise Specified

(PD-NOS) diagnosis than a single diagnosis (Clark, Watson, & Reynolds, 1995; Clark et al.,

1997; Dolan, Evans, & Norton, 1995; Fossati et al., 2000; Stuart et al., 1998; Watson & Sinha,

1998; Widiger, 1993; Widiger & Rogers, 1989; Verhuel & Widiger, 2004). Thus, many writers

have expressed concern that a categorical system may be inappropriate for these disorders (Clark

et al., 1995; Clark et al., 1997; Fossati et al., 2000; Lynam & Widiger, 2001; Trull, 2005; Trull

& Durrett, 2005; Tyrer, 2000; Ullrich, Borkenau, & Marneros, 2001; Widiger & Clark, 2000;

Widiger & Samuel, 2005; Widiger & Simonsen, 2005; Zanarini et al., 2000).

Some specific undesirable consequences of the current categorical system are: (1) the large

percentage of patients receiving "mixed," "atypical," or multiple diagnoses, (2) the loss of

information that occurs when patients just fail to meet criteria for a disorder, (3) the high degree

of heterogeneity found within diagnostic groups, and (4) the absence of data establishing a clear

cutting point between normal and disordered functioning, so that this decision is left to the

individual clinician (Clark, 1992; Clark et al., 1997; Verheul & Widiger, 2004; Widiger & Clark,

2000). Significant revisions were made in the structure and criteria of the Axis II disorders in the

DSM-III-R (American Psychiatric Association [APA], 1987) and subsequent *DSM-IV* (APA,

1994, 2000), which ameliorated some difficulties; nevertheless, the overall situation remains

problematic.

Therefore, a number of writers have proposed using a trait dimensional approach as a

viable alternative to the current categorical system (Clark, in press; Clark et al., 1997; Haslam,

2003; Livesley & Jang, 2005; Trull, 2005; Trull & Durrett, 2005; Verheul, 2005; Widiger &

Samuel, 2005; Widiger & Simonsen, 2005). In a trait dimensional system, such as that embodied in the SNAP, the primary descriptive units are the basic traits that characterize the PD domain. Patients are rated on a number of distinct trait dimensions that are relevant to personality dysfunction, rather than being placed in one (or more) diagnostic categories. Thus, a SNAP trait profile provides a characterization of the person's functional style across a wide range of dimensions associated with personality dysfunction. The distinction between normal and abnormal functioning then can be determined on the basis of empirical criteria.

The SNAP's Dimensional Approach as a Tool to Investigate Personality Disorder Diagnoses

Although categorical and dimensional systems often are viewed as mutually exclusive alternatives, it is more accurate to view dimensional approaches as necessary precursors to the investigation of categorical entities. Two issues are of paramount importance: The first is whether or not PDs are actual diagnostic categories. Despite the frequent clinical use of PD diagnoses and the upsurge of research interest in Axis II, with the possible exceptions of antisocial and schizotypal PDs, there is little empirical evidence to support the existence of PD diagnoses as categories (Fossati et al., 2000; Haslam, 2003; Morey et al., 2000; Rothschild, Cleland, Haslam, & Zimmerman, 2003; Widiger & Samuels, 2005).

A second important issue is whether the current *DSM* Axis II diagnoses represent the optimal combinations of personality traits into PDs. The current *DSM* diagnoses were compiled largely on the basis of clinical wisdom, and the validity of only a few specific categories have been researched widely (Blashfield & Intoccia, 2000). Those that have been studied have received mixed support. Thus, certain diagnoses may represent coherent categories whereas others may not, and even those that are categories may benefit from revision of their criteria.

What is important to emphasize is that adopting a dimensional approach is not

incompatible with examination of these issues. On the contrary, an investigation of the

maladaptive traits that constitute PD is an important first step in examining them empirically.

That is, investigation of whether and how personality traits combine to form discrete diagnostic

categories will be most efficient when the component traits are understood well and can be

assessed reliably and validly. Several authors (Carver, 1989; Gangestad & Snyder, 1985;

Haslam 2003; Hull, Lehn, & Tedlie, 1991) have articulated measurement issues in assessing

multifaceted constructs that are relevant to examining relations between personality traits and

disorders. The SNAP provides a measure of maladaptive traits that can be used to investigate

these issues.

The SNAP's Dimensional Approach as a Bridge Between Personality Disorder and Normal-range Personality

A third reason for adopting a dimensional approach in the development of the SNAP is that

much research in normal-range personality has been conducted in this tradition. In the *DSM*,

PDs are defined explicitly in terms of personality traits which are, in turn, defined as "enduring

patterns of perceiving, relating to, and thinking about the environment and oneself that are

exhibited in a wide range of social and personal contexts" (APA, 2000, p. 686). This *DSM*

definition of traits is congruent with both classic and currently prevailing views of normal-range

personality dispositions (e.g., Allport, 1937; Janis, Mahl, Kagan, & Holt, 1969; Myers, 1998;

Pervin, 1989; Widiger, Costa, & McCrae, 2002). The fact that a comparable definition of traits

is used to define both PDs and normal-range personality creates a theoretical bridge between

these two domains and provides a basis for a more complete integration of disordered and

normal-range personality than has been achieved to date.

In an attempt to find a trait-based instrument that might be used to investigate both normal

and abnormal personality, shortly after *DSM-III* was published the first author reviewed existing instruments that had been designed to assess personality and its disorders. The search revealed that most measures for assessing personality pathology provided scores for the *DSM-III* Axis II diagnoses rather than personality trait scores, whereas tests measuring personality traits typically did not assess the range and severity of personality pathology seen in clinical settings. That is, there appeared to be no instrument designed to assess personality traits extending from the normal into the pathological range, suggesting the need for an instrument such as the SNAP for this purpose.

In summary, the SNAP was developed to provide an instrument: (1) for the clinical assessment of maladaptive traits that comprise the PDs; (2) for examining the trait structure of PD, that is, whether and how personality traits combine to form discrete diagnostic categories; and (3) to facilitate investigation of personality trait dimensions across the normal-abnormal, or adaptive-nonadaptive, personality boundary.

CONCEPTUAL ORIGINS

In developing the SNAP, it was important first to investigate the set of personality characteristics that comprised the PD domain. To this end, 29 raters sorted 167 personality-relevant criteria into synonym categories (Clark, 1990). Three types of criteria were included: (1) all *DSM-III* personality-disorder criteria; (2) criteria from other conceptualizations of PD, including psychopathy (Cleckley, 1964), hysteroid dysphoria (Liebowitz & Klein, 1981), and other criterion sets for borderline PD (Perry & Klerman, 1978); and (3) criteria from selected Axis I disorders (dysthymia, cyclothymia, and generalized anxiety disorder) that resemble PD in important respects (Akiskal, Hirschfeld, & Yerevanian, 1983; Frances, 1980).

The groupings of each rater then were combined into a single 167 x 167 co-occurrence matrix that represented the percentage of raters who placed each pair of criteria into the same group. The values in such a matrix can range from 0 to 1, and thus can be treated as values in a correlation matrix and factor analyzed. This matrix was subjected to a principal components analysis and a range of (varimax-rotated) solutions were investigated. A 23-factor solution, which represented a consensual set of 22 criterion clusters with one residual factor, was considered to represent the data most accurately. These 22 clusters are listed in the first column of Table 2.1 (see Clark, 1990, for details concerning this procedure and a list of the criteria comprising each cluster).

Three important characteristics of the clusters were observed: (1) Most of the clusters included criteria from two or more PD diagnoses, which reflects the criteria overlap problem noted previously. (2) The criteria comprising each diagnosis split among two or more dimensions. That is, every PD category was characterized by at least two criterion clusters, which is consistent with the *DSM* definition of PDs as sets of traits. (3) The *DSM* Axis II criteria combined with the additional criteria (i.e., from Axis I and other conceptualizations of PD) to form the clusters, which suggested that the PD domain was broader than defined in the *DSM* (see Clark, 2005; Clark, McEwen, Collard, & Hickok, 1993, for discussions of this issue). These results suggested that a dimensional approach could prove useful in understanding and assessing PD. Therefore, the identified structure was used to provide a framework for developing scales to assess the important criterion domains or traits relevant to PD.

ORIGINAL SCALE CREATION

Summary

Table 2.2 summarizes the process of scale creation and development. A broad range of items was written or selected to assess 18 of the 22 identified symptom clusters, which then were administered to a large sample of university students. For the remaining four clusters, existing scales were identified that assessed their content, so initially scale development was not undertaken for these clusters. Following the method outlined by Tellegen and Waller (in press), factor-analytic techniques were used to evaluate both items and constructs. Items were revised or eliminated with the goal of clarifying the emerging constructs by enhancing both the internal consistency of the scales and their independence from each other. Based on these results, additional items then were written either to solidify and refine the constructs assessed by the scales or to expand them in directions suggested by the factor analyses. This process was repeated through additional rounds of data collection, scale revision, and cross-validation using community-adult, university-student, and medical/psychiatric out- and inpatient samples. At one stage, new items were written to incorporate the revisions made in *DSM-III-R* and to assess the four remaining symptom clusters. At another, items were added for the purpose of developing validity and diagnostic scales. The resulting instrument, the original SNAP, had 12 primary trait scales, 3 temperament scales, and 6 validity scales; it also encompassed 13 *DSM-III-R* PD diagnostic scales. The current revision, SNAP-2, assesses instead the *DSM-IV* PDs and also has an additional validity scale. See the end of this chapter and Chapter 3 for details.

Stage 1

Initial Item Pool. Items were written to measure 18 of the 22 identified criterion clusters. At this stage, no new items were written for the four clusters Tension/Anxiety, Pessimism,

Anhedonia, or High Energy because the constructs they represented appeared to correspond to the affective core of two dominant higher order factors frequently identified in normal-range personality—neuroticism or negative affectivity and extraversion or positive affectivity, respectively—and several existing scales already measured these dimensions (Tellegen, 1985; Watson & Clark, 1984). Initially, the Positive and Negative Emotionality scales (PEM and NEM, respectively) from the Multidimensional Personality Questionnaire (MPQ; Tellegen, in press) were chosen to represent these clusters. Although items tapping criteria of the Maladaptive Sexuality cluster were included, this cluster was not expected to form an independent dimension because it reflected a set of highly specific behaviors rather than a general personality trait. Rather, it was hypothesized that these items would be relevant to the Exploitation and/or Antisocial Behavior clusters.

Following Loevinger (1957), items were written with a broad view of the constructs in mind. For example, items were included that represented both the high and low ends of the identified dimensions (e.g., *I often act without thinking* vs. *I am a cautious person* tap opposite ends of an Impulsivity dimension). Moreover, both obvious, face valid items and those that addressed the dimensions somewhat more subtly were included (e.g., both *I go out of my way to meet people* and *I don't mind sharing my things with others* assess the low end of the dimension of Detachment, but the former is more direct).

Approximately half the items were based on the *DSM* or other personality criteria. In addition, a number of traditional personality questionnaires were consulted as sources of ideas for items. This was done because it was thought—given the notion that normal and abnormal personality form continuous dimensions—that the criterion-based items would covary with items reflecting concepts advanced in existing instruments, including such well-known

questionnaires as the Minnesota Multiphasic Personality Inventory (MMPI; Butcher et al., 2001; Hathaway & McKinley, 1943), the California Psychological Inventory (Gough, 1988, 1996), the Personality Research Form (Jackson, 1967, 1974), and Tellegen's MPQ. Regardless of their source, all items were required to be associated clearly with one or more of the criterion clusters. The total number of items in the initial pool was 550, with an average of 32 items per cluster, ranging from 17 (Self-destructive Behavior) to 50 (Conventionality).

Research Participants and Procedure. Research participants were 168 students (76 men, 92 women) enrolled in various psychology courses at Southern Methodist University (SMU), who participated in exchange for extra credit points. Their average age was 20.5 years (*SD* = 3.2; range = 17-42). Participants were informed of the purpose of the testing and were told that they were not to be concerned if some of the statements appeared to be very similar. Rather, they were asked to answer each item independently.

Analysis and Results. Four different types of information were considered with regard to retaining or eliminating items. First, 14 items with extreme response rates (i.e., answered in the same direction by 95% or more of the participants) were identified and considered for exclusion. Two of these items were retained because they referred to self-destructive behaviors that were judged to have overriding clinical relevance.

Second, items were examined for their correlation with the trait of Neuroticism or Negative Affectivity as measured by NEM (Tellegen, 1982, in press). This trait—a chronic and pervasive tendency to experience a wide variety of negative emotions—is a major component of most measures of psychopathology (Watson & Clark, 1984; Watson, Clark, & Harkness, 1994). Therefore, it is important to ensure that new measures of psychopathology are not simply variants of this construct. Accordingly, items correlating .40 or higher with NEM were

eliminated.

Third, the items selected to represent each dimension were factor analyzed separately to determine whether they tapped a single dimension (as intended), or instead measured more than one trait. In the majority of cases, a single factor solution was clearly indicated. In these cases, items with loadings of .35 or higher on the first principal component were retained for further analyses (all negatively keyed items were reversed for these analyses). The inter-item correlation matrices were examined and any items with negative correlations were eliminated. Similarly, one from each pair of redundant items (defined as an inter-item correlation of .50 or greater) was dropped. In the few cases where the factor analysis suggested two factors (e.g., Conventionality), the same procedure was followed, except that the varimax-rotated factors were used to form two new scales.

Fourth, after scales were constructed on the basis of these analyses, the scale intercorrelations were examined. One of the development goals was for the scales to be reasonably independent, so interscale correlations greater than .50 were considered unacceptably high. Items from scales that were correlated at this level were factor analyzed together. In some cases (e.g., Emotional Coldness and Social Isolation), a large general factor emerged, so the items were pooled and the strongest items were selected for the combined scale. In other cases, the majority of items from the different scales formed separate factors, with a number of items splitting more-or-less equally across factors. Elimination of these items increased the scale independence. In yet other instances (e.g., Passive-aggression, Self-centered Exploitation, and Grandiose Egocentrism), the factor analysis did not support the original conceptualization; rather, it suggested that a different organization of the items might better reflect their empirical covariation. In these cases, new scales were created based on the factor analyses; these, in turn,

were scored and examined for independence.

These analyses yielded 182 items comprising 13 scales; 11 of these scales were developed subsequently into primary trait scales of the SNAP, whereas two scales (Low Self-esteem and Suicide Proneness) that were found repeatedly to correlate highly were kept as separate scales initially because of their clearly distinct content, but were combined later to form the twelfth primary scale, with two subscales reflecting the distinct content areas. All items in each scale clearly loaded on a single factor, respectively. Moreover, each item correlated most highly with its own scale (with the effect of that item removed), and all scale intercorrelations were below .50. However, scale lengths ranged from 5 to 21 items, and approximately half of the scales clearly required further development. Also, the items written to assess Antisocial Behavior had not formed a coherent scale, so this cluster required additional work. With the core of items that had emerged for each scale providing the target construct, additional items were written for scales that needed a further round of data collection and analyses. Finally, even those scales that appeared adequate required cross-validation.

Stage 2

Research Participants. A second-stage instrument of 300 items was administered to three groups: Group 1 was 151 students (79 women, 72 men) enrolled in various psychology courses at SMU who participated in exchange for extra credit points; M_{age}= 19.5 years (range = 17-34). Group 2 was 50 students (36 women, 14 men) seeking counseling at the SMU Counseling and Testing Center; M_{age}= 20 years (range = 18-30). The third group was 62 inpatients from Texas' Terrell State Hospital's substance-abuse unit (8 women, 27 men) and personality disorders unit (18 women, 9 men); M_{age}= 31.5 years (range = 19-57). All groups were primarily Caucasian (88-89%).

Diagnostic information was not collected on the hospitalized participants, but subsequent research on the same units (see Stage 3b) indicated that the most common diagnoses on the substance-abuse unit were alcohol and/or various substance-abuse/dependence disorders and antisocial PD, whereas patients on the PD unit most often were diagnosed with borderline PD, major depressive disorder, and mixed or atypical PD (technically, PD-NOS) (Clark et al., 1993).

Analysis and Results. The procedures followed at this stage were similar to those for Stage 1. At the item level, items were eliminated or reworded if they showed extreme endorsement rates or high correlations with NEM. In addition, feedback from patients regarding the understandability of the items was used to modify items. This feedback consisted of (a) spontaneous comments to the examiners about the items; (b) the observation that patients questioned the examiners regarding the meaning of certain items more frequently; and (c) data on the frequency with which items were not answered. Finally, internal consistency analyses were run for each scale to identify items whose correlations with other items indicated redundancy (r = .50 or higher) or lack of relation (near-zero correlations), and to determine whether the items of each scale tapped a single dimension. Items were eliminated if they did not show consistently acceptable psychometric characteristics across all samples.

Scale intercorrelations also were examined for redundancy and, as mentioned earlier, a high correlation was found between Low Self-esteem and Suicide Proneness. However, because the item content was not obviously overlapping, they were retained as separate scales at that time. The results of this developmental stage were: (1) refinement of scales that showed adequate psychometric properties after Stage 1 and (2) strengthening of scales for which only a core of items had been selected previously. Also, a provisional Antisocial Behavior scale was identified at this stage.

Addition of Items Tapping DSM-III-R Criteria. At this point, the *DSM-III-R* (American

Psychiatric Association, 1987) was published. Because one of the primary goals of developing

this instrument was to assess trait dimensions underlying the whole PD domain, an analysis of

the new criteria was undertaken to determine whether the new criteria could be subsumed by the

22 criterion clusters identified previously or whether they contained new clusters. The results of

these analyses suggested that the *DSM-III-R* PD criteria could be characterized, for the most part,

by the existing 22 clusters (see Clark, 1990). Nevertheless, additional items were written to

assess new criteria that were not represented conceptually in the original item pool. Also,

additional items were written for scales whose alpha reliabilities suggested they could benefit

from greater length.

Stage 3

Stage 3a—College Student Sample. A 315-item version of the SNAP was administered to

256 college students (188 women, 68 men) enrolled in various psychology courses at SMU who

participated for extra credit. Participants also completed the MPQ (Tellegen, in press) and a

preliminary version of the General Temperament Survey (GTS; Clark & Watson, 1990; see

Addition of Temperament Scales below).

Item-scale correlations were examined for all newly written items, and any item that

correlated highly with a single scale was added provisionally to that scale, subject to cross-

validation (see Stage 3b). As before, analyses were conducted to ensure the internal consistency

and independence of the scales. The result of these procedures was that the additional *DSM-III-

R* item content served to lengthen several of the scales, but did not lead to any conceptual

changes. In addition, all items that were not added to existing scales were factor analyzed to

determine whether they formed a coherent dimension among themselves. They did not, so these

items were eliminated in subsequent versions.

As before, scale intercorrelations were examined. Low Self-esteem and Suicide Proneness again were found to be correlated strongly. Furthermore, a joint factor analysis of the items indicated a single factor. Therefore, these two item sets were combined into a single scale (Self-harm) by selecting the items loading most highly on this general factor. To preserve the content information in the component scales, two subscales—each a subset of the prior Low Self-esteem and Suicide Proneness scales—were created.

Stage 3b—Clinical Sample. The 315-item instrument also was administered to 55 inpatients on the substance-abuse unit (10 women, 21 men) and personality-disorders unit (15 women, 9 men) at Terrell State Hospital; M_{age}= 30 (range = 17-63). The modal patient had a high school education (range = 7th grade to college graduate). The sample was primarily Caucasian (80%); the remainder were mostly African-American (18%). As mentioned earlier, the most common diagnoses on the substance-abuse unit were substance abuse/dependence disorders and antisocial PD, whereas patients on the personality-disorders unit most often were diagnosed with major depression and borderline or mixed/atypical PD (PD-NOS).

This sample was used primarily to begin validation of the scales against non-test variables (see Chapter 4, Validation), but also was used to cross-validate items newly identified in Stage 3a. Items added provisionally that did not show acceptable psychometric properties in this sample were eliminated, whereas cross-validated items were retained. The question of whether Low Self-esteem and Suicide Proneness should be combined also was examined in this sample. As in previous samples, the scales were correlated strongly and a factor analysis indicated a single factor, which supported their merger into a single Self-harm scale. In fact, the correlation between the two new subscales was slightly stronger in this patient sample (r = .63) than in the

student sample ($r = .51$).

   Addition of Temperament Scales. Until this time, the NEM and PEM scales from the

MPQ (Tellegen, in press) had been used to assess the four criterion clusters of Tension/Anxiety

and Pessimism (assessed with NEM) and Anhedonia versus High Energy (assessed with PEM).

As mentioned, the constructs represented by these four clusters correspond to the affective core

of two dominant higher order factors frequently identified in normal-range personality. The

Tension/Anxiety and Pessimism clusters represent the basic affective component of neuroticism

or negative affectivity, whereas the Anhedonia versus High Energy clusters represent the

affective core of the dimension of extraversion or positive affectivity. Although existing scales

assess these dimensions, it seemed desirable to include scales measuring all the traits identified

as relevant to PD in the SNAP. At this time another instrument, the General Temperament

Survey (GTS), was being developed together with David Watson, following similar procedures

to those used with the SNAP. The GTS was designed specifically to assess the basic affective

component of negative and positive affectivity, plus a third dominant personality dimension of

disinhibition (Eysenck's psychoticism) versus constraint or conscientiousness. Therefore, rather

than undertake separate development of a parallel set of scales, these scales were incorporated

into the SNAP.

   The GTS scale of Negative Temperament associated with neuroticism or negative

affectivity was used to assess the Tension/Anxiety and Pessimism clusters, whereas the GTS

Positive Temperament scale associated with extraversion or positive affectivity was used to

assess the Anhedonia versus High Energy clusters. Moreover, the criterion clusters of both

Antisocial Behavior and Maladaptive Sexual Behavior, for which scale development was still

preliminary or not undertaken, respectively, appeared to be related to the third dimension of

disinhibition versus constraint or conscientiousness, assessed by the GTS Disinhibition scale. Analyses of items from the preliminary Antisocial Behavior scale indicated that many of them correlated well with the Disinhibition scale in both samples 3a and 3b. Therefore, Disinhibition was selected to assess these criterion clusters.

Although these three scales now are contained fully within the SNAP, they also are available separately as the General Temperament Survey (GTS; Clark & Watson, 1990). Data on these temperament scales are included in this manual, but additional information about their development and relations with other variables also is available elsewhere (Clark & Watson, 1999; Elliot & Thrash, 2002; Gray & Watson, 2002; Watson & Clark, 1992, 1993, 1997).

Stage 4

At this point, the primary SNAP scales were considered complete. However, a final round of data collection was needed to help refine the newly added temperament scales. Also, it was thought that the instrument would be enhanced by the inclusion of validity and diagnostic scales, so their development was undertaken.

Validity Scale Development. First, items were written to assess a naïve "fake-good" response set (Rare Virtues; RV). Second, to assess the response sets of acquiescence, social desirability, and inconsistency, a procedure similar to that described by Tellegen (1982, 1988, in press) was followed. Specifically, item pairs were selected from among the existing SNAP items on the basis of similar content. To ensure that the items' conceptual similarity was supported empirically, item pairs that did not have relatively strong correlations (<.35) in previously collected samples were eliminated. Scales then were created by selecting item pairs with specific additional properties for each scale. Care was taken to ensure that no trait scale was represented disproportionately among the selected pairs for any validity scale.

Requirements for inclusion on the Variable Response Inconsistency (VRIN) scale were content similarity and strong positive correlations in previous samples. Pairs of items are keyed in the same direction (e.g., *People say I drive myself hard* and *I've been told that I work too hard*), so that a T-F or a F-T response pattern indicates inconsistency. A high score on this scale may result from carelessness, random responding, poor reading ability, marking errors, uncooperative test behavior, and so forth.

For the True Response Inconsistency (TRIN) scale, all pairs of selected items are content-consistent if endorsed in opposite directions, so that both-True (or both-False) responding suggests an acquiescent (or denial) response set. For example, a test-taker who answers True to the pair of items *I am a very special person* and *I'm nobody special* may be responding on the basis of acquiescence rather than content.

For the Desirable Response Inconsistency (DRIN) scale, a sample of 63 university students rated the SNAP items for social desirability, and item pairs were selected for this scale only if their social desirability ratings were significantly different. Content-consistent responding thus requires that the test-taker endorse both the more desirable (e.g., *I deserve to be admired*) and the less desirable (e.g., *I deserve special privileges*) of the content-similar items. Socially desirable responding would be seen if the test-taker consistently endorsed only the more desirable of each pair, whereas socially undesirable responding would be seen if the test-taker consistently endorsed only the less desirable of each pair.

Finally, a Deviance (DEV) scale was created from items with relatively extreme endorsement rates across several samples (e.g., *I have tried to commit suicide*). High scores may suggest severe psychopathology, a "Fake Bad" set, a cry for help, malingering, and so forth.

Diagnostic Scale Development. Because the items used in developing the SNAP trait

scales were based conceptually on PD criteria, it seemed reasonable that scales could be developed also to assess the *DSM* criteria for each PD. The original versions of these scales were keyed to *DSM-III-R* and were created using the following procedures. Six psychology graduate students and the first author independently nominated SNAP items that they thought tapped each of the *DSM-III-R* criteria. In addition to items selected from the SNAP item pool, 77 items were added specifically for the diagnostic scales to assess *DSM-III-R* criterion content that was not adequately represented in the trait scale item pool. Items identified by several judges as tapping a given criterion were selected initially. To avoid the over-identification of PD that is common in self-report instruments, multiple items were selected to assess most criteria. The endorsement rates of the selected items and item sets then were examined in the Stage 3 clinical-sample data. If the endorsement rate for a given criterion was excessively high (i.e., too many participants endorsed the item or set of items assessing the criterion), then items tapping related content were added to the item set until a reasonable endorsement rate was obtained.

   Research Participants and Procedures. The resulting 375-item version of the SNAP was administered to 225 university students (140 women, 85 men) enrolled in various psychology courses at SMU, who participated for extra credit. Mean age was 18.8 years (range = 17-23).

   Analyses and Results. The endorsement frequencies of Rare Virtues items were examined and items with excessively high base rates were eliminated or reworded. Psychometric aspects of the other validity scales also were examined in Stage 4, and no changes were made.

   Temperament Scale Development. Item writing for Negative and Positive Temperament was guided by the affective content of the constructs and by an examination of related scales; except for one Positive Temperament item that inadvertently was retained in error, these scales contain no items that overlap with the primary trait scales. By contrast, initial items for

Disinhibition were selected from existing SNAP items (rather than written anew) on the basis of their (negative) correlation with the higher order Constraint factor as assessed by the MPQ. The scale then was developed further through the addition of items related conceptually to this initial core set. Consequently, the final Disinhibition scale shares a number of items with the primary trait scales. However, subscales formed from the independent and overlapping items of Disinhibition, respectively, are correlated strongly (e.g., $r = .70$ in the Stage 4 university sample), permitting the creation of a "pure" Disinhibition scale for use in correlational analyses in which the inclusion of overlapping items would confound the results. In this manual, this pure Disinhibition scale is used for all such analyses, whereas descriptive and other psychometric data are given for the full Disinhibition scale.

Stage 5

Diagnostic Scale Refinement. The original *DSM-III-R* diagnostic scales were, for the most part, rationally derived, so it was important to ascertain their concurrent validity with respect to clinical ratings and revise them accordingly, if necessary. Therefore, the scales were administered to two patient samples who also were interviewed using the Structured Interview for *DSM-III-R* Personality (*SIDP-R*; Pfohl, Blum, Zimmerman, & Stangl, 1989) for diagnosing PD.

The first sample used for these analyses was a heterogeneous psychiatric patient sample (*N* = 107), including both inpatients and outpatients. Each *SIDP-R* criterion initially was rated by a primary interviewer. The interviewer then reviewed the patient's chart records and interviewed someone who knew the patient well, after which the interview was rescored as necessary to reflect the additional information obtained. An independent rater then reviewed all the information, including an audiotape or videotape of the original patient interview, and scored the

SIDP-R, blind to the primary interviewer's ratings. Finally, the primary interviewer and second rater conferred over any discrepancies to reach a final consensus rating for each *DSM-III-R* PD criterion. Criterion ratings then were summed to produce an overall score for each diagnosis. Data on the second patient sample (*N*=40 outpatients from the University of Iowa outpatient clinic) were collected by Bruce Pfohl and Nancy Blum, *SIDP-R* authors. In this sample, each *DSM-III-R* criterion was rated after an interview with both the patient and an informant. As before, criterion ratings were then summed to produce an overall score for each diagnosis.

The convergent validity of the diagnostic scale items was examined in relation to the corresponding clinical criterion ratings in the first of the two samples. Scale content was improved by the addition and deletion of items with good or poor convergent validity, respectively. The scales then were cross-validated in the second sample, and results from the two samples were compared. A final version of each scale was constructed, taking into consideration the internal consistency of the scales as well as their patterns of convergent and discriminant validity.

The Original Completed Instrument

The first complete version of the SNAP consisted of 12 primary trait scales, 3 temperament scales (also available separately as the GTS; Clark & Watson, 1990), 6 validity scales, and 13 diagnostic scales for *DSM-III-R* PDs. Except for the diagnostic scales—which subsequently have been updated to assess *DSM-IV* PDs—and the addition of one new validity scale, the original SNAP scales remain unchanged in the SNAP-2.

SNAP-2 REVISIONS

New Community-Dwelling Adult Norms

Whereas normative data for the original version of the SNAP were provided by college students, updated norms for the SNAP-2 were derived from data provided by 561 adults from three metropolitan sites: Iowa City, IA; Minneapolis, MN; Dallas, TX. Research participants were solicited by random-selection calling of households in the Iowa City, Dallas, and Minneapolis metropolitan areas by the Iowa Social Science Institute. Data collection, which was conducted on a University campus in each site (University of Iowa, Southern Methodist University, and the University of Minnesota-Twin Cities, respectively), had two components. All research participants first attended an initial session of approximately 2 hours, during which they completed the SNAP, a demographic information questionnaire, and several short measures selected to provide additional validity data for the SNAP. Second, approximately half the original participants elected to participate in a retest session at intervals ranging from one week to several months.

A total of 576 participants completed the first part of the study, but 15 cases were deleted due to large amounts of missing data. The remaining 561 participants were drawn equally from the three sites: 199 (35%) participated in Iowa, 177 in Minneapolis (32%), and 185 (33%) in Texas. Demographic characteristics of the normative sample are presented in Table 2.3. Individual participants accounted for slightly less than two-thirds ($n = 359$) of the sample, with the remaining one-third participating as part of a couple ($n = 202$). Women comprised 58% of the sample, varying by site from 52% (Minneapolis) to 64% (Texas). The majority (83%) were Caucasian, with 7.3% Black, 3.4% Hispanic, 3.6% Asian, 1% Native American, and 2% other or multi-ethnic. Ethnicity also varied by site, with most Black and Hispanic participants from

Dallas (61% and 63% , respectively) or Minneapolis (37% and 32%, respectively), and most

Asian participants from Iowa City (50%) and Dallas (35%). The total sample served as the basis

for the calculation of T-scores and, as is evident from Table 2.3, represents substantial diversity

in terms of other important demographic variables besides race/ethnicity and gender, including

education level, religious affiliation, occupation, marital status, and urban-rural distribution. At

the retest, 278 participants (48%) elected to return; 8 of these cases were deleted due to excessive

missing data. Of the remaining 270 participants, a slightly greater percentage were from

Minneapolis (38%) and a somewhat smaller percentage from Dallas (26%); however, the

demographic featureswere not statistically different from those of the full sample. Descriptive

statistics and reliability data on the SNAP from this study are presented in Chapter 3, and

validity data appear in Chapter 4.

   Switch to Unisex Norms. A notable change from the original SNAP to the SNAP-2 is the

switch from gender-specific to unisex norms. The issue of gender-specific versus unisex norms

recently has been considered by test developers, researchers, and test users, with the result that

the long-held assumption that gendered norms provide a more valid basis for assessment has

been challenged (e.g., Brown, 1994; Sackett & Wilk, 1994). A primary argument for using

unisex norms is that significant gender-based mean differences may result from real differences

in trait *level* rather than from gender-based differences in trait *expression*, as often has been

argued in the past. According to this view, unisex normative scores reveal true gender-related

differences, whereas gender-specific norms mask them. As a result, many new tests provide

only unisex norms, and unisex norms also are being developed for established instruments.

   In this manual, we provide unisex norms for all SNAP scales. Nonetheless, the empirical

validity of gender-specific versus unisex norms is a continued research priority for the SNAP.

The new normative sample included more women than men, so the normative means and

standard deviations presented in the next chapter were calculated by statistically weighting

SNAP-2 raw scores such that each gender contributed to the normative means equivalently.

Diagnostic Scales Updated for DSM-IV

Since the original SNAP was published in 1993, the American Psychiatric Association has

completed a moderate revision of the *DSM*, *DSM-IV* (APA, 1994, 2000), which includes

revisions of the Axis II PDs. Thus, the SNAP-2's diagnostic scales have been updated to reflect

the PD diagnoses as they are currently set forth in the *DSM*. Preliminary scales for each PD

initially were created by rationally mapping the original *DSM-III-R* scale items onto the new

DSM-IV PD criteria. Additionally, other items from the existing item pool were selected and a

pool of 50 experimental items were written to cover new content. To construct the new scales,

the SNAP plus all experimental items were then administered to a group of mixed psychiatric

patients, along with the Structured Interview for *DSM-IV* Personality (*SIDP-IV*; Pfohl, Blum, &

Zimmerman, 1997) and additional measures to examine the SNAP scales' validity (see Reynolds

& Clark, 2001, for a published account of this study).

For this study, a total of 108 patient participants were recruited from several inpatient and

outpatient settings in the Iowa City area. Of these, 93 completed the SNAP, all experimental

items, and the *SIDP-IV*. The modal participant was female (71%), unmarried (71%), and

employed (72%); M_{age} = 34.6 years (*SD* = 10.5).   Mean of self-reported age at first psychiatric

contact was 24 years, and 55% of the sample had had at least one prior psychiatric

hospitalization. Clinical ratings of *DSM-IV* PD features based on the *SIDP-IV* indicated that

56.4% received at least one PD diagnosis. One of three interviewers administered the *SIDP-IV*s

and each cross-rated a subset of the other's interviews based on reviewing the audiotaped

interviews; 18% of the interviews were cross-rated. Interrater reliability was assessed by

computing intraclass correlation coefficients (ICCs) for each PD scale using dimensional scores.

The mean ICC across diagnostic categories was .90, ranging from .77 (schizotypal PD) to .96

(borderline PD), indicating high reliability.

A series of iterative correlational analyses was then conducted by (1) examining the

convergence, at both the criterion- and PD-level, between the rationally constructed SNAP *DSM-*

IV scales and the *SIDP-IV* interview ratings, (2) adding and deleting items to maximize

convergent and discriminant validity, and (3) examining various criterion decision rules in order

to maintain roughly equivalent sample base rates for each criterion and PD. This process was

repeated for each of the 10 standard PDs, as well as the two *DSM-IV* appendix PD diagnoses—

Depressive PD and Passive-Aggressive PD. Using dimensional scoring for both the SNAP and

SIDP-IV scales, the convergent correlations were generally strong (median r = .61) compared to

previous studies of PD scale convergence. However, this was on the development sample and so

requires cross-validation. Complete descriptive and validity data for the updated diagnostic

scales appear in Chapters 3 and 4, respectively.

New Validity Scale—Back Deviance

Anecdotal evidence, as well as statistical analyses of thousands of SNAPs, led us to the

conclusion that, given the SNAP's length, inconsistency due to carelessness may be a problem

toward the end of the measure. Previous Monte Carlo studies (Clark, 1993a) indicated that

whereas the original validity scales—in particular Deviance and the Invalidity Index—were very

sensitive to carelessness on the first half of the test, none of the original scales was particularly

effective at detecting careless responding on the second half of the instrument because the items

were drawn primarily from the first-half items. To address this concern, we developed a new

scale from the original item pool and the group of experimental items that were considered for the revised diagnostic scales.

One of the most economical ways to detect carelessness on a psychological test is through the use of an infrequency scale such as the F scale on the MMPI-2 or the SNAP's Deviance scale. Thus, looking only at items on the second half of the measure, we identified all items with extremely low or high endorsement frequencies (i.e., less than 10% or greater than 90%, respectively) in the normative sample of community-dwelling adults. To ensure that any single content domain did not overly influence the new scale, we selected items such that no single SNAP scale contributed more than three items. The final scale, entitled Back Deviance, includes a total of 20 items that were subjected to an updated Monte Carlo study designed to test its ability to detect carelessness on the second half of the instrument. The results—which indicate that Back Deviance succeeds in this goal—are presented more fully in Chapter 3.

SNAP-Y Development and Validation

A parallel form of the SNAP designed for use with adolescents—entitled the Schedule for Nonadaptive and Adaptive Personality, Youth Version (SNAP-Y)—was developed by altering items as needed to make them more appropriate for younger people (Linde, 2002). Descriptive, reliability, and validity data for the SNAP-Y were provided by a large group of junior-high and high school students. These data will be published in a future supplement to this manual.

Table 2.1

Conceptual Correspondences of the Trait and Temperament Scales with Personality Disorder Criterion Clusters and DSM Axis II Diagnoses

Criterion Clusters	SNAP Scales	DSM-III-R Diagnoses
Tension/Anxiety Pessimism	**Negative Temperament**[a]	Borderline
Suspiciousness Hypersensitivity	Mistrust	Paranoid, Schizotypal
Passive-aggression	Manipulativeness Self-centered Exploitation	Passive-Aggressive, Antisocial, Narcissistic
Anger/Aggression	Aggression[b]	Antisocial, Borderline
Suicide Proneness Low Self-esteem	Self-harm	Borderline
Eccentric Thought	Eccentric Perceptions	Schizotypal
Dependency	Dependency	Dependent
High Energy Anhedonia (-)	**Positive Temperament**[a]	(none)[c]
Dramatic Exhibitionism	Exhibitionism	Histrionic, Narcissistic
Grandiose Egocentrism	Entitlement	Narcissistic, Histrionic
Emotional Coldness Social Isolation	Detachment	Schizoid, Avoidant, Schizotypal
Antisocial Behavior	**Disinhibition**[a]	Antisocial
Impulsivity	Impulsivity	Antisocial, Borderline

table continues

Table 2.1 (cont.)

Criterion Clusters	SNAP Scales	DSM-III-R Diagnoses
Conventionality	Propriety Workaholism	Obsessive-Compulsive

Note. Correspondences are based on data from 28 to 32 raters (Allen, 1993). The criterion clusters Maladaptive Sexuality and Instability are omitted because they were not matched consistently with any SNAP scale. See text for details.

[a]Included in the General Temperament Survey (GTS; Clark & Watson, 1990). [b]Aggression also had a rating of 4.1 for Sadistic PD, but it is not included here because it is no longer a *DSM* PD. [c]Histrionic PD had the highest rating (2.5), but it fell below the 2.6 cutoff.

Table 2.2

Scale Creation and Development

Stage	Description	Participants	Method
Conceptual origin	Sorting of personality disorder criteria into synonym groups; Identification of 22 consensual criterion clusters	Clinicians and graduate students in psychology	Sorting task Factor analysis
Stage 1			
Initial item writing	Items written for 18 clusters and scales identified for 4 clusters	Research staff	Concepts from DSM and existing tests
Scale development Item writing	Development of 13 primary scales Additional items written to increase reliability and to develop an Antisocial Behavior scale	168 college students Research staff	Itemmetric analyses Guided by core set of items for each scale
Stage 2			
Scale development	Refinement of 13 primary scales and identification of preliminary Antisocial Behavior scale	151 college students 50 counseling center clients 62 state hospital inpatients	Itemmetric, internal consistency, and structural analyses
Item writing	Additional items written to assess DSM-III-R criteria and to further increase reliability	Research staff	Included concepts new in DSM-III-R

(table continues)

Table 2.2 (cont.)

Stage	Description	Participants	Method
Stage 3			
Scale development and cross-validation	Finalized 12 primary trait scales by combining 2 highly correlated scales;	256 college students 55 state hospital inpatients	Itemmetric, internal consistency, and
	Eliminated poor items;		
	Incorporated 3 GTS scales into SNAP;		
	Dropped Antisocial Behavior scale (failed to cross-validate)		
Stage 4			
	Validity scales		
Pretesting	Assessed item social desirability	63 college students	Item ratings
Selection	Selected items or pairs of items with desired psychometric properties		Correlational analyses
Item writing	Items written for Rare Virtues	Research staff	
Scale development	Items selected for Rare Virtues	225 college students	Itemmetric analyses
	DSM-III-R Diagnostic scales		
Item selection	Items to assess DSM-III-R criteria selected from SNAP item pool	Research staff	Guided by DSM-III-R content

(table continues)

Table 2.2 (cont.)

Stage	Description	Participants	Method
Refinement	Preliminary evaluation of items	Stage 3 paricipants	Base-rate analyses
Item writing	Items written to assess criteria not already included in SNAP	Research staff	Guided by *DSM-III-R* content
GTS Scales	Finalized	[a]	Factor analyses
Final cross-validation	Psychometric properties of all 15 scales examined	225 college students	Descriptive statistics and internal consistency analyses
Stage 5			
DSM-III-R diagnostic scales	Psychometric properties and correlations with interview-based ratings examined	2 patient samples (N = 128)	Descriptive statistics, internal consistency, and correlational analysis
Original Validity scales	Tested for power to identify invalid protocols Item base rates examined	107 patients 181 college students	Monte carlo analyses, itemmetric analyses

[a] Additional college student samples were used to develop the GTS (General Temperament Survey) scales (Clark & Watson, 1990).

Table 2.3

Demographic Characteristics of the Normative Sample

Variable	%
Age [a]	
18-24	19.6
25-34	27.6
35-44	21.4
45-54	15.0
55-64	7.1
65-85	9.1
Gender	
Men	41.5
Women	58.5
Ethnicity	
Asian	3.6
Black	7.3
Hispanic	3.4
Native American	1.1
White	82.6
Other / Multi	2.0
Marital Status	
Married	43.0
Widowed	4.6
Divorced	13.6
Separated	1.4
Never	37.3

Table 2.3 (cont.)

Variable	%
Urban-Rural Status	
City or Urban Area	70.4
Small or Medium Town	24.6
Rural Area	5.0
Highest Education	
Grade 12	14.4
1 to 3 years college	34.2
4-year college degree	30.5
Graduate degree	20.9
Employment Type	
Full-time	55.6
Part-time	18.5
Unemployed	7.5
Retired	9.8
Student	21.9
Homemaker	10.3
Self-employed	11.1
Disabled	3.4
Occupation	
Laborer	12.1
Clerical Worker	19.3
Skilled Labor	9.5
Manager	10.1
Professional	49.0

Table 2.3 (cont.)

Variable	%
Family Income	
< $10K	7.8
$10 - 29K	21.9
$30 - 49K	30.5
$50 - 69K	16.4
$70 - 89K	10.1
> $90K	13.4
Native Language	
English	93.4
Other	6.6
Type of Dwelling	
Own Home	43.3
Condominium	5.0
Rent Apt. or House	48.1
Rooming House	1.6
Dormitory	0.4
Other	1.6
Religion	
Protestant	37.1
Roman Catholic	21.7
Other—Not Specified	22.6
Other—Specified (Ba'hai, Buddhist, Hindu, Jewish, Mormon, or Muslim)	4.3
None	14.3

Note. $N = 561$. [a] one participant missing.

CHAPTER 3
THE SNAP-2 SCALES

The SNAP-2 provides three types of scales: validity, trait and temperament, and diagnostic. The seven validity scales assist in identifying protocols that may be invalid owing to such factors as response biases or carelessness. They also provide information about the test-taker's attitude toward the test or his/her test-taking style or approach. The 15 trait and temperament scales provide information about the test-taker's personality traits and basic temperament. Finally, the 12 diagnostic scales provide scores for each of the *DSM-IV* Axis II PD diagnoses.

VALIDITY SCALES

The SNAP-2 includes seven validity scales: VRIN, TRIN, DRIN, Rare Virtues, Deviance, an overall Invalidity Index, and a new scale entitled Back Deviance. These scales indicate the extent to which test scores may be invalid due to the influence of response sets, carelessness, deviance, or defensive responding. VRIN, TRIN, and DRIN represent a relatively new type of validity scale developed by Tellegen (1988) and used in the MMPI-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) and the MMPI-A (Butcher et al., 1992). Whereas scores on many traditional validity scales are confounded by item content, these scales control for item content by using pairs of similar items so that scores reflect only the target response set. Rare Virtues and Deviance are similar, respectively, to the L and F scales of the MMPI; the Invalidity Index provides a composite invalidity score for the five indicators. Back Deviance, which is conceptually similar to Deviance and the F scale from the MMPI, was added to detect careless or inconsistent responding on the second half on the instrument.

Validity Scale Descriptions

Variable Response Inconsistency (VRIN). This scale indicates the extent to which the test-taker generally provided inconsistent responses to the test items. It is composed of content-matched items that are keyed in the same direction (e.g., *People say I drive myself hard* and *I've been told that I work too hard*), so that it is inconsistent to answer True to one item and False to the other. Random responses resulting from factors such as carelessness, poor reading ability, and uncooperativeness will yield a high score on this scale.

True Response Inconsistency (TRIN). This scale assesses the tendency to admit to items (i.e., respond "True") or deny items (i.e., respond "False"), regardless of the content. These response sets are sometimes called "Yea-saying versus Nay-saying" or "Acquiescence versus Denial." For example, test-takers who answer True to both *I am a special person* and *I am nobody special* may be responding on the basis of acquiescence or yea-saying. Alternatively, test-takers who answer False to both of these items may be responding on the basis of denial or nay-saying. Inconsistent responses on a few such pairs of items could result from such factors as carelessness or poor reading ability. However, test-takers who consistently choose the True response throughout the test may have an acquiescent response set (yea-saying), and they will obtain a high score on the TRIN scale. Alternatively, test-takers who consistently choose the False response throughout the test may have a denial response set (nay-saying), and they will obtain a low score on the TRIN scale. By contrast, if test-takers respond either according to content or somewhat randomly across the test, they will obtain a mid-range score on TRIN, indicating that their responses were not based systematically on either acquiescence or denial.

Desirable Response Inconsistency (DRIN). This scale was designed to assess the tendency to respond to items on the basis of their social-desirability level rather than on the basis

of their content. Content-consistent responding requires that the test-taker endorse both the more desirable (e.g., *I deserve to be admired*) and the less desirable (e.g., *I deserve special privileges*) items of content-similar pairs. Responding biased by a social-desirability set occurs if a test-taker consistently endorses only the more desirable of each pair, in which case, the test-taker would receive a high score on the DRIN scale. Conversely, individuals who consistently endorse only the less desirable of each content-matched pair would receive a low score on the scale, indicating the influence of socially undesirable responding. A study of the SNAP validity scales (Simms & Clark, 2001) yielded equivocal support for DRIN, so users are urged to look for corroborating evidence when interpreting DRIN scores.

Rare Virtues (RV). This scale identifies test-takers who are presenting themselves in a very favorable light. It consists of highly socially desirable behaviors that are rarely seen (e.g., *I have never made a promise that I didn't keep*). It is similar to the "Lie" scales of other instruments, such as the L scale of the MMPI, with low scores indicating that the test-taker admitted to common faults.

Deviance (DEV). This scale is designed to identify test-takers who are presenting themselves as deviant. The scale is composed of "extreme items" that are endorsed rarely in normal samples (e.g., *I have tried to commit suicide; I consider it very important to have a good reputation in the community*—reverse keyed). High scorers on this scale may, in fact, exhibit socially deviant thoughts, feelings, and behaviors, or they simply may be trying to portray themselves in this way. High scores also may result from carelessness, poor reading skills, or other random responding. Low scores indicate straightforward or conventional responding.

Invalidity Index (II). This scale is a combination of the five original validity scores and provides an overall index of the degree of profile invalidity. For VRIN, Rare Virtues, and

Deviance, higher scores always indicate greater invalidity, so their raw scores are used in computing the index. For TRIN and DRIN, invalidity is measured by the degree of deviation from each scale's midpoint. That is, high scores indicate acquiescent or socially desirable responding, respectively, whereas low scores suggest denial or socially undesirable responding, respectively. Therefore, for the Invalidity Index, a difference score from each scale's midpoint is computed, and the absolute value of each difference score is added to the sum of the other three validity scale raw scores. For example, both the TRIN score of a test-taker who responded "True" to 15 of the 40 TRIN items and that of another test-taker who responded "True" to 25 of the 40 TRIN items would deviate by 5 from the scale's midpoint of 20. Therefore a score of 5 would be used in computing each test-taker's Invalidity Index, one scoring in the direction of "yea-saying," the other in the direction of "nay-saying." Thus, for the overall *Invalidity Index, high scores indicate invalid responding.*

   Back Deviance (BD). This scale was developed after the original SNAP was published in 1993, using both original and experimental items, in order to detect careless or inconsistent responding on the second half of the instrument. It was constructed in a manner similar to Deviance. That is, items with extremely low endorsement probabilities (e.g., *I set a number of fires when I was young* or *I can't stand being alone for any length of time*) were culled from the second half of the measure. Similar to Deviance, high scorers on this scale may exhibit socially deviant thoughts, feelings, and behaviors, or they simply may be trying to paint an overly negative self-portrait. However, high scores also may result from random responding, poor reading skills, or other careless responding (e.g., accidentally getting off by an item late in the test). Low scores indicate straightforward or consistent responding. Back Deviance is not included in the Invalidity Index and can be scored only with the SNAP-2.

Psychometric Data

Normal Samples

  Descriptive statistics in the Normative Sample. Descriptive statistics for the validity

scales in the normative sample described in Chapter 2 (see Table 2.3) are found in Tables 3.1

(complete sample) and 3.2 (retest subsample). Significant gender differences in scale scores

(using Bonferroni-corrected t-tests, *p* < .05) are shown for each. In the full normative sample,

men scored significantly higher than women on Deviance and Back Deviance. Upon retest,

these differences were replicated and women also scored significantly higher on Rare Virtues.

  Descriptive Statistics in a Large College-Student Sample. Descriptive statistics are

provided also in Table 3.2 for a large college-student sample. Demographic characteristics of

this college sample are provided in Table 3.3. Most (97%) of the college students were between

17 and 24 years of age and most (93%) identified their race/ethnicity as Caucasian.

  College men produced significantly higher scores than the college women on all validity

scores (including the overall Invalidity Index) except DRIN (women higher) and RV (no gender

difference). However, none of the means were clinically elevated, although Back Deviance

approached that level in the college men, suggesting that college men may have been somewhat

careless when completing the latter half of the SNAP. Thus, across these community-dwelling

adults and college students, the only consistent finding was that men scored higher than women

on Deviance and Back Deviance.

  Patient SamplesData were collected on several patient samples. Demographic information

for (a) a mixed patient sample collected in Texas (included in the original SNAP Manual as

patient Sample 3; *N* = 107) and at the University of Iowa Hospitals and Clinics and the Seashore

Psychology Clinic (*N*=504; see Ready & Clark, 2002; Reynolds & Clark, 2001; Simms, Casillas,

Clark, Watson, & Doebbling, 2005), (b) back pain patients ($N = 125$; see Vittengl, Clark, Owen-Salters, 1999), and (c) recurrent depressed patients ($N=147$; see Clark, Vittengl, Kraft, & Jarrett, 2003) is given in Table 3.4. Descriptive statistics for the validity scales in these samples are provided in Table 3.5, and differences between the samples are noted. The Back Pain sample scored significantly higher on Rare Virtues and lower on Deviance than the other two samples, and also scored higher than the Recurrent Depressed sample on the overall Invalidity Index. However, all of the validity scales means in these samples were within normal limits.

To test for scale-level differences due to gender and patient status (i.e., outpatient vs. inpatient), a two-way MANOVA was run on the Mixed Patient Sample. These results are shown in Table 3.6. Only main effects were found, with the exception of TRIN for which there was a significant difference for patient status for men (outpatient mean = 54.4; inpatient mean = 59.4) but not for women (out- and inpatient means, respectively, were 52.5 and 53.2).   Conversely, there was a larger gender difference in inpatients (male mean = 59.4; female mean = 53.3), than outpatients (male mean = 54.4; female mean = 52.5), although both gender differences were significant. (Note, however, that all means were within normal limits, although the inpatient male mean was almost 1 standard deviation above the mean.) Therefore, the data are presented first for men and women (averaged over patient status) and then for outpatients and inpatients (averaged over gender). Significant scale-level differences related to gender and/or patient status (using Bonferroni-corrected t-tests, $p < .05$) are noted in the table. Men obtained higher invalidity scores only on TRIN and VRIN although, again, all means were within normal range.

Not surprisingly, inpatients' scores generally indicated greater invalidity than outpatients'. Specifically, inpatients yielded significantly higher scores on TRIN, Deviance, and the Invalidity Index, and significantly lower scores on DRIN. However, only Deviance reached clinically

significant levels in the psychiatric inpatients, suggesting that most patients yielded valid SNAP profiles and that clinically elevated Deviance scores are common in patient samples, particularly highly distressed inpatient samples.

Intercorrelations among the validity scales appear in Table 3.7 for both community-dwelling adults (Normative Sample) and psychiatric patients (Mixed Patient Sample). These data generally reveal a consistent pattern across samples. VRIN, TRIN, DRIN, Rare Virtues, and Deviance are not highly intercorrelated (ignoring sign, M_r, = .14 in the normative sample and .19 in the patients), and thus provide relatively independent pieces of information about a person's test-taking style. The one exception is that Back Deviance correlates moderately strongly with Deviance, which is expected, given their parallel nature. Finally, the Invalidity Index was moderately correlated with each of the original validity scales, which also is expected given that these represent part-whole correlations. However, Back Deviance, which does not contribute to the Invalidity Index, was only weakly related to it.

Invalidity analyses

A series of analyses were conducted to investigate the ability of the validity scales to identify invalid protocols. T-score cutoffs of 65 and 35 (based on community-dwelling adult normative data) were used to indicate invalidity. First, Table 3.8 shows the validity scale profiles (expressed in T-scores) of eight common invalid protocols: all-True responses, all-False responses, and alternating True-False or False-True responses by (a) single items, (b) blocks of 15 items, or (c) blocks of 30 items (the latter two types were selected for testing because they correspond to half or full columns on many answer sheets). As can be seen in the table, each type of invalid protocol is identified by at least one validity scale. Deviance and the overall Invalidity Index reflect the invalidity of these protocols especially clearly, and Back Deviance

detected all but the all-False profile.

These types of invalid profiles do not necessarily require invalidity scales for identification because they are easily identified by a visual inspection of the answer sheet itself. More difficult or impossible to detect by visual inspection of answer sheets are profiles that are invalid due to carelessness, getting off an item on the answer sheet, or random responding. Therefore, a series of Monte Carlo analyses also were conducted to investigate whether the validity scales are able to identify more subtly invalid protocols. The results of these analyses appear in Table 3.9. First, based on the responses of three actual samples—community-dwelling adults ($N = 561$), psychiatric patients ($N = 883$) and college students ($N = 1,888$)—three series (one per sample) of 10 random data sets were produced to model random responding. Each random data set in the series was produced by shifting each participant's responses by a specified number of items, thus maintaining each participant's ratio of True and False responses. This operation was performed 10 times for each data set, using a different random value for the degree of shift each time. For example, the first random shift number was 17; thus, to produce the first random data set, each participant's response to Item 1 was assigned as her/his response to Item 17, the response to Item 2 was assigned to Item 18, and so forth. For a second random data set, the random shift number was 25; thus, each participant's response to Item 25 was assigned as the response to Item 61, the response to Item 2 was assigned to Item 26, and so forth. In this way, 10 different random data sets were produced for each of the community, patient, and college samples. These 10 data sets were then compiled (separately for each sample), validity scale scores were calculated for the combined data (Ns = 5,610; 8,830; and 18,800 for the community-adult, patient, and college samples, respectively), and the percentage of cases identified as invalid was computed for each validity scale.

A second, similar type of analysis was designed to mimic response data of participants who accidentally get off an item on the answer sheet at some point while completing the inventory. Using the same three data sets, participants' responses were left intact for items 1 to 100 in one analysis, items 1 to 200 in another, and items 1 to 300 for a third analysis. Thereafter, participants' responses were shifted by one item, as if they had accidentally skipped an item. Thus, in the first analysis, a participant's response to item 102 was assigned to item 101, the response to 103 was assigned to item 102, and so forth. Then, validity scale scores were calculated in each case and the percentage of cases identified as invalid was computed for each validity scale.

The results are presented in Table 3.9, which also includes the percentage of cases identified as invalid under standard conditions (i.e., without any data shifting) as a basis for comparison. As can be seen in the table, the SNAP validity scales clearly distinguish between the actual and random data sets. Relatively few protocols were identified as invalid under standard conditions in the three actual datasets by any given validity scale. Not surprisingly, more patients than students and community adults obtained Deviance and Back Deviance scale scores above a T-score of 65. By contrast, the Monte Carlo analyses yielded a large percentage of invalid protocols. Most notably, the overall Invalidity Index detected 85.4% to 98.0% of invalid protocols across samples; Deviance identified 92.6% to 99.9% of invalid protocols; and Back Deviance revealed 96.8% to 99.1% of invalid protocols.

When participants' item responses were left intact for portions of the protocol (the final three columns of the table), the original validity scales identified fewer invalid profiles than in the random data sets, but more than under standard conditions. Remarkably though, even when 200 items were left intact, approximately 75% of all protocols had at least one validity scale

elevated over a T score of 65. By contrast, when the first 300 items were left intact, the original validity scales identified the protocols no more often than under standard conditions. However, the new Back Deviance scale effectively identified approximately 95% of protocols in which an item was skipped after items 100 or 200, and approximately half of protocols that were left intact until item 300. Taken together, these data indicate that the SNAP-2 validity scales are quite sensitive to a variety of invalidating conditions, and scores above a T-score of 65 can be used with confidence to identify questionable protocols. The overall Invalidity Index is an especially good indicator for invalid protocols, as it has consistently both a low False Positive rate (i.e., is low in normal data sets) and a high True Positive rate (i.e., is high in invalid data sets). Likewise, Back Deviance appears to be particularly effective at detecting protocols in which the participant accidentally gets off an item relatively late in the test.

TRAIT AND TEMPERAMENT SCALES

Following are brief descriptions of the SNAP-2 scales as well as a summary of their item content (see Table 3.10 for fuller descriptions). It should be stressed that these content descriptions do not represent empirically validated behavioral correlates; rather, they exemplify the content endorsed by test-takers receiving high or low scale scores.

Negative Temperament (NT) taps individual differences in the tendency to experience a wide range of negative emotions and to overreact to the minor stresses of daily life. High scorers report feeling discomfort in a wide range of situations, tend to be dissatisfied with themselves and their lives, and have a negative view of the world in general.

Mistrust (MST) measures a pervasive suspicious and cynical versus a trustful, even naïvely positive, attitude toward other people. The dimension also taps feelings of injustice and

alienation versus security and belonging in relation to the social environment. High scorers are alert for signs of threat and betrayal in interpersonal relationships and close themselves off from others in a self-protective manner.

Manipulativeness (MAN) reflects an egocentric willingness to use people and to manipulate systems for personal gain without regard for the rights or feelings of others or for abstract ideals such as fairness. The scale also measures the extent to which a person enjoys his/her exploitation of others and views this behavior as a skill. On the low end, the scale taps a moralistic posture of selflessness, hyperresponsibility, and rigid honesty.

Aggression (AGG) measures individual differences in the frequency and intensity of the experience of anger and its behavioral expression in aggression. High scorers anger easily with slight provocation, have difficulty controlling their anger both internally and externally, stay angry longer, to the point of holding grudges and seeking revenge, and derive pleasure from violence.

Self-harm (SFH) has two highly related components: low self-esteem and self-destructive tendencies. Self-destructive thoughts and behaviors increase as self-esteem decreases, so the overall dimension assesses the tendency to self-harm in the context of self-loathing. High scorers express strong self-dissatisfaction to the point of self-destructiveness. Although the subscales of Low Self-esteem and Suicide Proneness are strongly correlated, subscale scores should be examined in the case of moderately high scores because such elevations can be obtained by endorsing some items from both subscales or, less commonly, most of the items from only one subscale.

Eccentric Perceptions (EP) measures a dimension of unusualness in somatosensory perceptions, cognitions, and beliefs. High scorers report having special perceptual abilities,

unusual experiences, and an atypical view of the world. Low scorers deny these characteristics and are down-to-earth, concrete thinkers.

Dependency (DEP) reflects individual differences in self-reliance, locus of control, and self-confidence in decision-making. High scorers look for external direction and approval for their actions and decisions, and are hesitant to act when this is lacking. By contrast, low scorers are self-directed, self-reliant, and self-confident; they are fiercely independent and do not consider others' opinions when making decisions.

Positive Temperament (PT) reflects the tendency to experience a wide variety of positive emotions and to be pleasurably, actively, and effectively involved in one's life. High scorers are enthusiastic, optimistic, energetic, and cheerful individuals who are interested in—and keep busy with—many things. By contrast, the low end of the dimension reflects the absence of pleasurable experiences, a depressive anhedonia, and a lack of energy, interest, and motivation.

Exhibitionism (EXH) is a dimension of overt attention-seeking versus withdrawal from the attention of others. High scorers like to perform and be the center of attention. They dress, act, and speak in ways that call attention to themselves. Low scorers do not enjoy being the focus of attention and try to avoid being noticed. They shun the limelight and behave in ways that will not draw the attention of others.

Entitlement (ENT) measures unrealistically positive self-regard and the feeling that one should be treated as a special person versus having a humble, self-effacing attitude. High scorers feel that they are knowledgeable, talented people with such admirable and enviable qualities that they deserve special recognition and privileges. Low scorers feel that they have no special talents or admirable qualities and do not feel that they deserve even what they do have.

Detachment (DET) is a dimension of emotional and interpersonal distance. At the high

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end it indicates aloofness from others, emotional reserve, and a preference for being alone. Low scorers, by contrast, enjoy and seek out interpersonal relationships, and openly express warm feelings for others.

Disinhibition (DIS) reflects broad individual differences in the tendency to behave in an undercontrolled versus an overcontrolled manner. The dimension measures a behavioral style of pursuing stimulating experiences or acting on immediate thoughts and feelings with little regard for safety, social responsibility, or legality versus a behavioral style that emphasizes order and rules, conservative and conventional behavior, responsibility and respect for others, and taking action only after consideration of the broad consequences for oneself and others.

Impulsivity (IMP) measures the tendency to act on a momentary basis without an overall plan versus the tendency to stop and think things over before acting. High scorers are reckless; they enjoy risky activities, and they spend money and time according to their immediate needs and desires. Low scorers are cautious, careful, "sensible" individuals who prefer a safe and well-planned existence.

Propriety (PRO) taps a dimension of preference for traditional, conservative morality versus rejection of social rules and convention. High scorers are quite concerned with proper conduct, reputation, and social appearances, and they find violation of social standards offensive. The low end of the dimension taps rebellion against what are perceived as old-fashioned values or rigid notions of "right" and "wrong," as well as tolerance of unconventional or socially inappropriate behavior.

Workaholism (WRK) reflects individual differences in attitudes toward work versus leisure time, a tendency to perfectionism and self-imposed demands for excellence versus a more relaxed attitude toward accomplishments. Work and achievement play a more central role in the

lives of high scorers than do family and friends, whereas low scorers prefer leisure time over work and are tolerant of low quality in tasks that they undertake.

For all SNAP-2 scales, these descriptions will best fit subjects whose scores fall on the extremes of each dimension. Subjects with moderately high scores (i.e., T-scores between 55 and 65 or between 35 and 45) will exhibit the described characteristics more moderately or in fewer situations. See Chapter 5 for further discussion.

Comparisons to Personality Disorder Criterion Clusters and Diagnoses

Although the scales had their origins in clusters of personality-relevant criteria, their subsequent development was independent of the initial groupings, so relations between them are subject to empirical validation. Similarly, it is interesting to examine both conceptual and empirical relations between the SNAP scales and personality diagnoses. As a first step in this process, 32 judges (15 advanced clinical psychology graduate students, 11 MA-level psychologists, and 6 PhD-level psychologists) were asked to rate the conceptual correspondence of the SNAP scales with the criterion clusters and *DSM-III-R* descriptions of Axis II diagnoses, respectively.[1] Consensual correspondences are shown in Table 2.1. To match the scales and symptom clusters (columns 1 and 2), raters were given the items for each trait scale and asked to nominate up to four criterion clusters that tapped the same construct; they then rated their degree of correspondence on a scale of +5 (*exactly the same*) to -5 (*exactly opposite*). Twenty-eight of the 32 judges completed this task. Table 2.1 shows the one or two scales most frequently nominated for each cluster, provided that the correspondence was noted by at least half the raters

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[1] These data were collected for an MA thesis (Allen, 1993), under the supervision of L. A. Clark.

and had an average rating greater than |3.5|. Except for a few minor details, raters' matches completely replicated the correspondences between criterion clusters and SNAP scales predicted on the basis of the original item groupings. These data indicate that the development of the SNAP scales from criterion clusters is quite clear and straightforward. Although items tapping the criterion clusters of Maladaptive Sexual Behavior and Instability are contained in one or more SNAP scales, these clusters were not matched with any SNAP scale, which suggests that the instrument does not provide one specific score that primarily represents this item content.

A comparison of the first two columns of Table 2.1 indicates that the number of conceptual distinctions made in this domain was greater than than the number that were obtained empirically. That is, in several cases, two or more conceptually distinct clusters had strong empirical correlations when assessed by self-report; therefore, they were combined to form a single SNAP scale. For example, the criterion clusters of both Suspiciousness and Hypersensitivity correspond to self-reported Mistrust. In only one case (Conventionality) did a criterion cluster contain sufficiently heterogeneous content that it empirically yielded two self-report scales (Propriety and Workaholism).

To investigate which *DSM-III-R* Axis II diagnoses were related to each SNAP scale, judges were given the items for each scale and asked to rate how likely a person with each personality disorder would be to show each trait, using a scale from 1 (*would not be expected to show this trait*) to 5 (*would almost always show this trait*). The last column of Table 2.1 lists all personality disorders that received an average rating of 2.6 or higher. The scales varied in the extent of their relevance to the personality disorders. For example, each of six scales (Eccentric Perceptions, Dependency, Positive Temperament, Disinhibition, Propriety, and Workaholism) was judged to be salient for only one disorder, whereas each of five other scales

(Manipulativeness, Aggression, Entitlement, Detachment, and Impulsivity) was strongly related to three diagnoses.

Similarly, the various diagnoses were related to a varying number of scales. Manipulativeness, Aggression, Disinhibition, and Impulsivity all were judged to be important in Antisocial Personality Disorder, whereas only Mistrust was rated as relevant to Paranoid Personality Disorder. These data suggest there may be important configural patterns of scale elevation related to particular diagnoses. For example, both Exhibitionism and Entitlement were judged to be relevant to Histrionic and Narcissistic personality disorders, but Histrionic Personality Disorder additionally was related to Positive Temperament, whereas Narcissistic Personality Disorder also was related to Manipulativeness. If these conceptual relations are replicated in actual patient data, then patterns of scale elevation will provide the basis for differential diagnosis of closely related personality disorders. Recent empirical data, in fact, support this argument: Using the trait-disorder matches found in Table 2.1, Clark (1993b) and Reynolds and Clark (2001) found that the selected SNAP scales significantly predicted clinician-rated personality disorders. In the latter study, SNAP scales not only predicted PDs in a sample of 94 patients as measured by the Structured Interview for *DSM-IV* Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997), but multiple regression analyses indicated that, for most of the *DSM-IV* PDs, the SNAP scales contributed significant predictive variance even after five-factor model (FFM) domain scores from the NEO-PI-R (Costa & McCrae, 1992) had been controlled. When selected SNAP and FFM *facet* scales were compared, each scale set had approximately equal predictive power. These and other relevant data are described further in Chapter 4, Validation.

Psychometric Data for the SNAP-2 Trait and Temperament Scales

Normal Samples

   Descriptive Statistics in Adult Community Residents. Descriptive statistics (means and standard deviations) for the full adult community-dwelling sample are presented in Table 3.11, both separately for men and women, as well as for the combined group. The statistics for the combined group are weighted so that each sex is represented equally. Descriptive statistics for the retest sample using T-scores derived from these combined "unisex" means and standard deviations are presented in Table 3.12.

   Significant gender differences in scale level found using Bonferroni-corrected *t*-tests ($p <$ .05) are noted for both the full adult sample and the retest sample, respectively. Consistent across both groups, men scored significantly higher on Manipulativeness, Exhibitionism, Disinhibition, and Impulsivity. Women scored significantly higher on Negative Temperament and Propriety. The only gender difference that did not replicate across time was on Entitlement. Men in the retest sample scored significantly higher than women on this scale, but this difference was not significant in the larger Time 1 sample, suggesting a possible difference on this dimension between the full sample and retest subset.

   Descriptive Statistics in a Student Sample. Descriptive statistics are provided in Table 3.13 for the large college-student sample whose demographics were presented in Table 3.3. Most (97%) of the college students were between 17 and 24 years of age and most (93%) identified their race/ethnicity as Caucasian. Means and standard deviations are presented separately for men and women. All but one of the statistically significant gender differences found in the full adult sample was replicated in the student sample. The exception was Exhibitionism, on which there was no significant difference in the college student sample. By

contrast, several other scales showed significant ($p < .05$) gender differences not found in the adult sample: Aggression, Entitlement, Detachment, and Workaholism (on which men scored higher than women), and Dependency and Positive Temperament (on which women scored higher). With the lone exception of Workaholism, each of these scales showed the same trends in both samples. Thus, it is likely that, at least to some degree, the fact that students showed significant gender differences on a broader array of SNAP-2 scales than did the adults is accounted for by the greater statistical power afforded by the larger student sample size (ns = 1,888 and 561, respectively).

Patient Samples

Descriptive Statistics. Descriptive statistics are given in Table 3.14 for each of the three patient samples whose demographic information was presented in Table 3.4. To test for scale-level differences due to gender and patient status (i.e., outpatient vs. inpatient), a two-way MANOVA was run on the Mixed Patient Sample. Only main effects were found, with the exception of Aggression, for which there was a significant difference for patient status for men (outpatient mean = 54.0; inpatient mean = 63.1) but not for women (out- and inpatient means, respectively, were 54.2 and 55.6). Conversely, there was a significant gender difference in inpatients (male mean = 63.1; female means = 55.6) but not in outpatients (male mean = 54.0; female mean = 54.2).

Therefore, descriptive statistics are presented for men versus women (averaged over patient status) and then for inpatients versus outpatients (averaged over gender) in Table 3.15, with scale-level differences due to patient status and/or gender (using Bonferroni-corrected t-tests, $p < .05$) noted. The general pattern of gender differences shows many similarities but also some differences compared to the nonpatient groups. The most consistent findings are that Negative

Temperament and Propriety are higher in women, whereas Manipulativeness and Disinhibition are higher in men, and no gender differences are found in any sample for either Mistrust or Eccentric Perceptions. Further, men were higher than women on Entitlement in the patient, student, and normative retest samples. There also were two differences that were the same in the students and patients, but not the normative adults: Dependency higher in women and Detachment higher in men. Finally, three findings were somewhat surprising: (1) There was a gender difference on Aggression (men higher) only in the student sample, (2) only the patient sample did not show a gender difference on Impulsivity (men scored higher in the other samples), and (3) the results for Workaholism were opposite in students and patients, with men scoring higher among students and women scoring higher among patients.

Not surprisingly, 11 of the 15 scales showed significant differences between inpatients and outpatients (inpatients scoring higher on all scales except Entitlement), suggesting that the scales assess a general "severity" dimension of maladaptive personality that is manifested in multiple specific traits.

Reliability

Table 3.16 presents internal consistency reliability coefficients (Cronbach's alpha) for five samples: community-resident adults, university students, the mixed patient sample, the back pain patients, and the recurrent depressed sample. Generally speaking, the scales showed good (.80+) internal consistency across all five samples, and although a few individual values fall below .75, in no case does a full scale have more than one such value.[2] Patient and non-patient alphas are

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[2] For subscale Suicide Proneness (9 items), two of the five coefficients are below .75 and all are for the 16-item non-overlapping version of Disinhibition (Disinhibition-Pure).

highly similar, although the patient alpha were slightly higher for Suicide Proneness and Dependency.

Retest reliabilities for the adult sample are shown in Table 3.17, presented separately for four temporal categories: (a) overall, (b) 1 week to 1 month, (c) 1 month to 2 months, and (d) 2 months to 4 months. Not unexpectedly, 2-4 month stability is somewhat to slightly lower than shorter term stability for most scales and subscales and, interestingly, is the same or slightly higher than 1-2 month stability for six scales. In sum, stability is consistently high for all short- and moderate-term time frames (median range = .85 to .88) and across all scales (median range = .81-.91) with only the subscale Low Self-esteem having somewhat lower stability (range = .67 [1 week—1 month] to .79 [1-2 months]; overall = .75; median =.72).

Pre-post treatment retest reliabilities in two patient samples are shown in Table 3.18. The back-pain patients were enrolled in a functional restoration treatment program and the recurrent-depressed patients were participants in a clinical trial of cognitive-behavioral treatment. For the recurrent depressed patients, coefficients also are shown controlling for change in depression over the course of treatment. Naturally, the retest reliabilities in these samples are lower than in the normative sample, ranging from .49 to .82 (median = .70) in the back-pain sample and from .48 to .82 in the recurrent depressed sample (median = .68). However, even with intervening treatment, trait levels were moderately to strongly stable, more so when controlling for depression change (range = .55 to .83; median = .71).

Internal Structure

Scale intercorrelations are presented for adults ($N = 561$) and college students ($N = 1,888$) in Table 3.19 and for the mixed patient sample ($N = 611$) in Table 3.20. For Disinhibition, both the complete and non-overlapping (Disinhibition-Pure) versions are included. Consistent with

the goal of scale independence, few (< 5%; 2, 4, and 7 in the college, adult, and patient samples,

respectively) of the correlations among the scales (excluding the non-overlapping) scales exceed

|.50| in any of the three samples, and only four scale-pairs correlations exceed |.50| in all three

samples[3]. The median scale correlation is |.17| in the two nonpatient samples and |.25| in the

mixed patient sample. Thus the primary scale intercorrelations are considerably lower than

typically is seen in symptom or criterion measures and many personality inventories.

By contrast, and consistent with their conceptualization as assessing the core of broad

higher order factors, there are several strong and consistent correlations between the trait and

temperament scales. Specifically, Disinhibition (non-overlapping) correlated from .62 to .69

with Impulsivity and Manipulativeness across all three samples, whereas Negative Temperament

correlated approximately .50 with Mistrust across all three samples and approximately .60 with

Self-harm in the mixed patient sample. However, Positive Temperament had no correlations that

consistently were greater than | .50|.

To examine further the internal structure of the instrument, the scales were submitted to a

principal factors analysis. The scree indicated a clear three-factor solution in all samples, so

three factors were rotated using varimax; the resulting factor loadings are shown in Table 3.21

(adults and college students) and Table 3.22 (three patient samples). The convergence among

the adult and college student solutions was quite strong. By contrast, a somewhat different

pattern of scale loadings was found in two of the three patient samples. As can be seen in Table

3.22, the difference was that in the mixed and back pain patient samples, the first general factor

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[3] Negative Temperament and Self-harm, Mistrust and Eccentric Perceptions, Disinhibition-

Pure with Manipulativeness and Impulsivity.

was a very broad Negative Temperament plus Disinhibition factor with strong loadings by both Disinhibition and Impulsivity whereas the third factor was much smaller, reflecting a combination of Propriety and Workaholism with Negative Temperament and Mistrust.

The three factors that emerged in the majority of samples are identified readily as those found repeatedly in factor analyses of "three-factor model" (e.g., Eysenck, Tellegen) normal-range personality inventories: (1) negative affectivity (or negative temperament, negative emotionality, neuroticism, general maladjustment, general psychopathology, etc.), (2) positive affectivity (or positive temperament, positive emotionality, extraversion, social orientation, etc.), and (3) disinhibition versus constraint (or conscientiousness).

DIAGNOSTIC SCALES

The SNAP-2 provides 12 scales to assess each PD listed on Axis II of the *DSM-IV* (i.e., representing the ten primary PDs plus Depressive and Passive-Aggressive PD, the two appendix diagnoses included for further study). These have been modified substantially from the original SNAP's *DSM-III-R* diagnostic scales to account for the differences between *DSM-III-R* and *DSM-IV* personality disorder categories and criteria. Table 3.23 details the SNAP-2 diagnostic scale changes associated with the changes made in the PD criteria from *DSM-III-R to DSM-IV*. Many of the items for these scales are found within the SNAP-2 trait scales; most of the remaining items are appended after the trait scale items, but a few are interspersed earlier in the inventory. As described earlier, the diagnostic scales were derived using a combination of rational and empirical methods. For each PD criterion, items were selected rationally initially, but then were refined on the basis of their convergent and discriminant validity in relation to structured interview-based clinical ratings.

At least two items were selected to represent most criteria. For example, the items *I like to turn heads when I walk into a room* and *I wear clothes that draw attention* were selected to represent the Histrionic PD criterion "consistently uses physical appearance to draw attention to oneself." To be scored as meeting this criterion, a subject must endorse both SNAP-2 items. However, in some cases, the use of only two items yielded too high a frequency of subjects meeting the criterion. For example, no two items could be identified for the Paranoid PD criterion "preoccupied with unjustified doubts about the loyalty or trustworthiness of friends or associates" that yielded a base rate comparable with that obtained using a structured interview. Thus, five items—*Most people make friends because they expect friends to be useful*; *I wonder if the people I know can really be trusted*; *Most people stay friends only as long as it is to their advantage*; *My "friends" have often betrayed me*; and *I have often been lied to*—must be endorsed to satisfy the criterion, which yielded a more acceptable criterion base rate. For some criteria, rules were specified that require a certain fraction of the items to be endorsed (e.g., four out of five, five out of seven, etc.). In summary, all criteria are assessed by up to nine items, and for each criterion, subjects are required to endorse either all or a subset of the items representing the criterion.

Three scoring methods are provided for the diagnostic scales. The first is *criterion scoring*, which is calculated by determining whether a subject endorsed the requisite SNAP-2 items to meet each criterion for each PD diagnosis. Then, within eachPD diagnosis, the total number of criteria met is computed. A second scoring method—*categorical diagnostic scoring*—determines whether a sufficient number of criteria are met according to the established *DSM-IV* cutoffs for each PD. For example, suppose an individual endorses of the requisite SNAP-2 items to meet criteria for six of the Dependent PD criteria. Using the criterion scoring method, the

individual's score for Dependent PD would be 6. Then, the *DSM-IV* requires five (of eight)

criteria for this disorder, so a diagnosis of Dependent PD can be assigned. The third scoring

method—*dimensional scoring*—yields a score for each PD diagnosis by simply counting the

total number of items endorsed for each diagnostic scale (regardless of which criteria the items

represent).

Relations between the original SNAP *DSM-III-R* PD diagnostic scales and those keyed to

DSM-IV are presented in Table 3.24, using each of the aforementioned scoring methods.

Convergence was highest for dimensional scoring, and criterion scoring also generated high

convergence for many of the PDs. Categorical convergence varied widely, generally as a

function of the number of changes made to the scales in the transition to *DSM-IV*. For example,

the Paranoid PD scale, to which only one item was added, yielded very high categorical

convergence. At other end of the continuum, the Passive-Aggressive PD scale, which was

changed substantially to account for changes in *DSM-IV*, was far less related to its original *DSM-III-R* counterpart when scored categorically.

Data from the normative sample and a mixed psychiatric sample indicate that

dimensional scores are considerably more reliable than the criterion-based scores. Specifically,

the median alpha coefficients for the scales using the dimensional versus criterion scoring

methods were .81 versus .56, respectively, for the normative sample ($N = 540$). Similarly, in a

psychiatric sample ($N = 106$), the median alpha coefficient using dimensional scoring methods

was .82, versus .57 for the criterion-based scoring method. Moreover, the dimensional scores

correlated more strongly and systematically with interview-based diagnostic ratings of the

patients than did either the criterion-based scores or categorical diagnoses. Given these data, we

recommend dimensional scoring over the criterion and categorical scoring methods. Validity

data using the dimensional scoring method are presented in the next chapter.

Psychometric Data

Descriptive statistics for the dimensionally scored diagnostic scales in the normative sample are provided in Table 3.25. As with the validity, trait, and temperament scales, the descriptive statistics are presented both overall and by gender, and the overall statistics were weighted to adjust for unequal gender representation. Gender differences were assessed using a series of Bonferroni-corrected t-tests (p < .05). Results revealed that men scored significantly higher than women on three scales: Antisocial, Borderline, and Narcissistic PDs. Dimensional T-scores for the normative retest sample appear in Table 3.26. Consistent with the first testing, significant gender differences were identified for the Antisocial and Narcissistic PD scales; however, the difference for Borderline PD, although in the same direction as the full sample, was not statistically significant in the smaller retest sample.

Table 3.27 presents descriptive statistics for the diagnostic scales in a heterogeneous psychiatric sample of 106 patients, first by gender (averaged over patient status), and then separately for inpatients and outpatients (averaged over gender). As before, a two-way MANOVA was conducted to test gender and patient status main effects and interactions; these tests were uniformly non-significant, which reveals that no reliable gender or patient status differences were identified in this sample. However, follow-up Bonferroni-corrected t-tests suggested several interesting trends ($p < .10$):, Men scored higher than women on the Antisocial and Narcissistic PD scales, and inpatients produced higher scores than outpatients on the Depressive PD scale.

Alpha coefficients for the diagnostic scales scored dimensionally are presented in Table 3.28 for the normative sample (N = 540) and a sample of psychiatric patients (N = 106). The

internal consistency reliabilities of the scales are generally good to excellent, with median alpha

values of .81 (range = .65 to .85) and .82 (range = .69 to .89) in the normative and patient

samples, respectively. The Obsessive-Compulsive PD scale yielded consistently low internal

consistency values (alphas = .65 and .69, respectively). In general, however, the DSM-IV

diagnostic scales were only slightly less internally consistent than the trait and temperament

scales, which is an improvement over the original SNAP diagnostic scales. The temporal

stabilities of the dimensional diagnostic scales in the normative sample are presented in Table

3.29. All retest coefficients were quite strong. Median retest correlations were .88 (range = .75

to .91), .85 (range = .77 to .88), and .83 (range = .78 to .87) over short, medium, and long

intervals, respectively. These findings suggest that the diagnostic scales are tapping into trait-

like individual differences that are reasonably resistant to change at least over relatively short

time intervals.

Table 3.1

Descriptive Statistics (Raw Scores) for the Validity Scales by Gender in the Normative Sample

Scale (# of items)	Men (n = 233)		Women (n = 328)			Combined[a] (N = 561)	
	M	*SD*	*M*	*SD*		*M*	*SD*
VRIN (22 pairs)	5.3	2.1	5.1	2.3		5.2	2.2
TRIN (20 pairs)	17.2	2.7	17.2	2.5		17.2	2.6
DRIN (17 pairs)	18.9	2.1	19.0	1.8		19.0	1.9
Rare Virtues (12)	2.9	2.3	3.3	2.2		3.2	2.4
Deviance (20)	**2.8**	2.3	2.2	1.9	*	2.5	2.1
Invalidity Index	16.5	5.2	16.0	4.8		16.2	5.0
Back Deviance[b] (20)	**1.9**	2.3	1.1	1.7	*	1.5	2.1

Note. *$p < .05$ by Bonferroni-corrected *t*-tests. Significantly greater means shown in **boldface**. [a]Combined *M* and *SD* weighted by proportion of each gender. [b]Male and female *n*s = 223 and 317, respectively.

Table 3.2

Descriptive Statistics (T-scores) for the Validity Scales by Gender in the Normative Retest and College Student Samples

	Normative Sample Retest					College Students				
	Men (*n* = 108)		Women (*n* = 162)			Men (*n* = 699)		Women (*n* = 1189)		
Scale	*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*	
VRIN	48.0	8.9	47.0	9.8		53.3	11.3	51.6	10.6	*
TRIN	50.0	11.0	51.8	9.1		**54.2**	10.4	52.3	9.6	*
DRIN	50.1	10.3	49.5	9.9		48.0	10.9	**51.4**	10.0	*
Rare Virtues	49.4	9.9	**52.2**	10.5	*	47.7	8.6	48.3	8.3	
Deviance	**51.4**	9.3	48.2	8.0	*	**54.1**	12.1	49.6	9.5	*
Invalidity Index	49.8	10.4	48.2	9.4		**50.6**	11.0	49.1	9.7	*
Back Deviance[ab]	**50.7**	10.0	47.3	6.9	*	**61.8**	15.7	54.5	12.2	*

Note. *p < .05, Bonferroni-corrected *t*-tests. Significantly greater means shown in **boldface**.

[a]*n* = 266 for Back Deviance (*n*s = 107 men and 159 women) in normative sample.

[b]*n* = 418 for Back Deviance (*n*s = 150 men and 267 women; gender information missing for one participant) in the college student sample.

Table 3.3

Demographic Characteristics of the College Sample

Variable	Percent
Age	
17-24	96.9
25 and older	3.1
Gender	
Men	37.0
Women	63.0
Ethnicity[a]	
White	92.6
Black	3.1
Other	4.3

Note. $N = 1,888$. [a]*n* for ethnicity $= 1,200$.

Table 3.4

Demographic Characteristics of Three Patient Samples

	Patient Sample (%)		
Variable	Mixed ($N = 611$)	Back Pain ($N = 125$)	Recurrent Depressed ($N = 147$)
Age			
18-24 years	21.4	6.4	5.4
25-34 years	36.7	25.6	24.5
35-44 years	25.7	37.6	25.6
45-54 years	13.6	29.6	31.3
55-64 years	1.5	0.8	12.9
65 and older	1.1	0.0	0.0
Gender			
Men	36.0	58.4	25.2
Women	64.0	41.6	74.8
Ethnicity			
White	92.3	64.8	88.4
Black	3.4	24.0	5.4
Other	4.3	11.2	6.1
Evaluation Setting			
Outpatient mental health	76.6	100.0	100.0
Inpatient mental health	23.4	0.0	0.0
Education[a]			
Less than high school	5.5	36.8	2.0
Completed high school	36.8	36.8	12.2
Some college	37.0	22.4	36.1
Completed college	17.5	4.0	22.5
Graduate work	8.2	0.0	27.2

Table 3.4—continued

Variable	Patient Sample (%)		
	Mixed ($N = 611$)	Back Pain ($N = 125$)	Recurrent Depressed ($N = 147$)
Marital Status			
Never married	46.4	22.4	28.6
Married	28.2	57.6	46.3
Divorced/separated/widowed	25.4	20.0	25.2

Note. [a]*n* for education in the Mixed group = 374.

Table 3.5

Descriptive Statistics (T-scores) for the Validity Scales in Three Patient Samples

| | Patient Sample (%) | | | | | |
| | Mixed | | Back Pain | | Recurrent Depressed | |
Variable	($N = 611$)		($N = 125$)		($N = 147$)	
VRIN	50.4	10.5	52.6	11.2	50.0	11.2
TRIN	53.7	10.6	52.6	11.8	54.6	11.8
DRIN	48.0	10.0	49.0	9.8	47.9	9.8
Rare Virtues	51.8[a]	10.1	55.8[b]	10.1	50.9[a]	10.1
Deviance	60.1[a]	13.8	55.3[b]	12.7	59.2[a]	12.7
Invalidity Index	53.8[ab]	9.4	55.6[a]	10.9	52.6[b]	10.9
Back Deviance[c]	59.3	13.3	--	--	--	--

Note. Means with different superscripts are significantly different ($p < .05$, Bonferroni corrected). [c]Back Deviance available only in the Mixed patient sample.

Table 3.6

Descriptive Statistics (T-scores) for the Validity Scales by Gender and Patient Status in a Mixed Patient Sample

Scale	Men (*n* = 220)			Women (*n* = 391)				Outpatients (*n* = 468)			Inpatients (*n* = 143)		
	M	*SD*		*M*	*SD*			*M*	*SD*		*M*	*SD*	
VRIN	**51.8**	10.7		49.6	10.3	*		50.2	10.3		51.0	11.1	
TRIN	**55.5**	11.3		52.7	10.0	*		53.2	10.1		**55.3**	12.0	*
DRIN	47.1	10.2		48.4	9.9			**48.6**	9.7		45.8	10.6	*
Rare Virtues	50.8	10.0		52.3	10.1			51.5	10.1		52.5	10.1	
Deviance	59.1	13.3		60.7	14.0			57.9	12.7		**67.5**	14.6	*
Invalidity Index	53.4	9.6		54.0	9.3			52.7	8.8		**57.3**	10.4	*
Back Deviance [a]	60.0	13.1		59.0	13.4			57.8	12.5		61.4	14.2	

Note. *p < .05 by Bonferroni-corrected *t*-tests. Significantly greater means shown in **boldface**.
[a] *N* = 106 for Back Deviance (*n*s = 25 men, 81 women, 63 outpatients, and 43 inpatients).

Table 3.7

Validity Scale Intercorrelations in Normative and Patient Samples

Scale	1	2	3	4	5	6	7
1. VRIN	–	-.05	.21	-.11	-.14	**.47**	-.12
2. TRIN	-.04	–	-.26	.09	.15	-.21	.29
3. DRIN	.18	-.23	–	-.07	-.26	.23	-.22
4. Rare Virtues	-.09	.05	-.06	–	-.07	**.37**	-.10
5. Deviance	.17	-.02	-.16	-.06	–	**.43**	**.49**
6. Invalidity index	**.57**	**-.44**	**.36**	**.39**	**.45**	–	.11
7. Back Deviance	.21	.17	-.13	-.01	**.49**	.26	–

Note. Normative sample $N = 561$ and patient sample $N = 611$ intercorrelations are presented below and above the diagonal, respectively. Ns = 540 and 106, respectively, for rs involving Back Deviance. Correlations $\geq |.11|$ are significant, $p < .01$, except for Back Deviance in the patient sample, for which the corresponding value is $|.25|$. Correlations $\geq |.35|$ shown in **boldface**.

Table 3.8

Validity Scale T-scores under Eight Common Invalidating Conditions

| | | | Alternating Responses | | | | | |
| | | | Single items | | Blocks of 15 | | Blocks of 30 | |
Scale	All True	All False	T-F	F-T	T-F	F-T	T-F	F-T
VRIN	**26**	**26**	**90**	**90**	**81**	**81**	63	63
TRIN	**138**	**-16**	**80**	42	**80**	42	53	**68**
DRIN	**25**	55	**25**	55	40	40	45	**35**
Rare Virtues	62	62	**70**	54	**66**	58	62	62
Deviance	**76**	**95**	**86**	**86**	**90**	**81**	**81**	**90**
Invalidity Index [a]	**92**	**100**	**98**	**90**	**88**	**80**	**70**	**74**
Back Deviance	**126**	57	**96**	**87**	**77**	**106**	**106**	**77**

Note. T-scores < 35 and > 65 shown in **boldface**.

[a] Combined index of preceding five scales (see text for explanation).

Table 3.9

Percentage of Cases Identified as Invalid by the Validity Scales under Various Conditions in Community, Patient, and College Samples

| | | | Invalidating Conditions | | |
| | | | Off by One Item After: | | |
Scale	Standard Conditions	*M* of 10 Randomly Generated Data Sets[a]	100	200	300
Normative Sample (N = 561)					
VRIN	8.0	67.3	58.7	11.3	8.0
TRIN	4.4	6.9	6.3	5.2	4.4
DRIN	10.0	10.4	35.9	15.9	10.0
Rare Virtues	9.4	23.4	46.5	46.5	10.9
Deviance	7.8	98.9	13.1	7.8	7.8
Any of above 5 scales	32.8	99.8	88.7	63.7	34.4
Invalidity Index	5.9	98.0	81.3	25.9	10.7
Back Deviance[b]	8.5	96.8	90.6	90.6	34.6
Patient Sample (N = 883)					
VRIN	8.5	66.1	70.1	15.3	8.5
TRIN	9.7	15.9	27.3	16.2	9.7
DRIN	7.7	4.5	18.2	9.7	7.7
Rare Virtues	12.5	8.0	61.9	61.9	18.6
Deviance	32.4	92.6	35.4	32.4	32.4
Any of above 5 scales	54.4	98.6	95.4	81.5	57.4
Invalidity Index	12.2	85.4	81.7	38.7	15.6
Back Deviance[c]	30.2	99.1	99.1	99.1	67.9

Table 3.9 (cont.)

Scale	Standard Conditions	M of 10 Randomly Generated Data Sets[a]	Invalidating Conditions		
			Off by One Item After:		
			100	200	300
College Sample (N = 1,888)					
VRIN	12.4	81.5	63.4	15.8	12.4
TRIN	8.3	19.8	9.6	10.2	8.3
DRIN	10.8	10.3	28.6	15.9	10.8
Rare Virtues	5.5	25.8	57.5	57.5	6.9
Deviance	11.5	97.6	19.9	11.5	11.5
Any of above 5 scales	37.9	99.9	90.9	73.7	38.3
Invalidity Index	7.4	96.4	98.7	32.8	12.0
Back Deviance d	24.2	97.7	92.8	92.8	54.8

Note. T-scores above 65 were considered invalid.
[a] See text for explanation of how data sets were generated. [b] $n = 540$. [c] $n = 106$. [d] $n = 418$.

Table 3.10

Content Descriptions of the Trait and Temperament Scales

Negative Temperament (NT)	*High* scorers are prone to negative emotional experiences. They are moody, and feel chronically nervous and stressed. They are easily annoyed or irritated, and with little provocation may feel even stronger emotions, such as anxiety or anger. They worry a great deal and have difficulty concentrating and sleeping as a result. *Low* scorers are not at all nervous or anxious. They take life's difficulties in stride and remain calm in most situations. They are not easily upset and recover quickly from negative experiences.
Mistrust (MST)	*High* scorers are suspicious and mistrustful of others, and are generally cynical about interpersonal relationships. They feel that they have often been betrayed or disappointed by those close to them, and that others take unfair advantage of them. They are self-protective and believe it is best to keep others from getting to know them too well. *Low* scorers are trustful, even naïve, about interpersonal relationships. They feel stable and secure in their friendships, and do not feel the need to hide their feelings from others. They feel they are treated fairly and honestly by others.
Manipulativeness (MAN)	*High* scorers admit not only to manipulating others, but also to enjoying the many ways—both direct and indirect—that they take advantage of others' weaknesses. They have little regard for the rights and feelings of others, and will bend the rules as far as they can get away with it. They consider themselves quite clever and skillful in pulling off their various con games. *Low* scorers do not enjoy trying to beat the system. They respect the property of others and would not hurt others to get what they want. They do not try to avoid work or to bend the truth to their advantage. They view those who do so as lazy.
Aggression (AGG)	*High* scorers are easily angered and have difficulty controlling their anger. They frequently get into quarrels and admit that their violent temper often gets them into trouble. They enjoy physical fights and are readily provoked by perceived insults. They hold grudges and seek revenge when they feel wronged. *Low* scorers do not readily become angry and easily control their temper when they do. They do not enjoy fighting and would go out of their way to avoid a fight. When insulted, they prefer to forgive and forget.

Table 3.7 (cont.)

Self-harm (SFH)	*High* scorers have very low self-esteem—they feel they have made a mess of their lives and do not like themselves. They deal with tension or frustration by hurting themselves. They often feel that suicide is the only way out of their troubles and may have tried to commit suicide.
	Low scorers are satisfied with the way they are handling their lives. They like themselves, are not self-abusers, and do not seriously consider suicide as a solution to their problems.
Eccentric Perceptions (EP)	*High* scorers have depersonalization and derealization experiences. They feel they have ESP or other special abilities such as clairvoyance. They claim to have unusual experiences, such as out-of-body episodes, or synesthetic experiences (e.g., sensing odors as colors).
	Low scorers do not admit to either depersonalization or derealization experiences. They do not feel they have any "special" abilities or that their way of viewing the world is at all unusual. They deny any odd perceptual experiences.
Dependency (DEP)	*High* scorers depend on others for direction and approval. They do not like to make decisions and prefer to have others choose for them, even in important matters. They do not have confidence in their decisions, have difficulty making up their minds, and base their decisions on what others think. They are concerned with pleasing others and frequently check with others for approval.
	Low scorers are self-reliant. They enjoying handling their own problems and making their own decisions. They are confident in their choices and decide things easily.
Positive Temperament (PT)	*High* scorers enjoy their active and exciting lives. They have a good deal of energy, work hard, and undertake projects with enthusiasm. They are lively and cheerful, alert and interested in many things, and optimistic about the future.
	Low scorers do not find their lives interesting or exciting. They are easily fatigued, rarely feel enthusiastic or inspired, have few interests, and are not excited by the thought of starting something new.

Table 3.10 (cont.)

Exhibitionism (EXH)	*High* scorers love the limelight. They like to perform and do so whenever they have the chance. They like being the center of attention, and the life of the party. They dress so that people will notice them, and especially to attract sexual attention; they enjoy flirting. *Low* scorers do not enjoy being the focus of attention. They prefer not to be noticed, and they dress and act accordingly. They avoid public performance of any sort and do not attempt to attract sexual attention.
Entitlement (ENT)	*High* scorers view themselves as very special and extraordinary people. They feel they are knowledgeable and talented, and have many admirable and enviable qualities. They believe they deserve special recognition and privileges beyond what they are currently getting. *Low* scorers are self-effacing and humble. They do not feel they are special, unusually talented, or particularly admirable. They do not believe they deserve special privileges or recognition.
Detachment (DET)	*High* scorers are loners. They are aloof and distant from others and have few friends. They keep to themselves even when around others and prefer to spend their time alone. They do not have warm feelings toward others and claim not to experience many strong emotions at all. *Low* scorers are "people people." They go out of their way to meet people and enjoy the feeling of being with friends. They view themselves as warm and open with others.
Disinhibition (DIS)	*High* scorers act spontaneously with little regard for the consequences of their behavior for themselves or others. They pursue stimulating experiences without regard to social or legal norms or to potential risks. They are disorganized and often fail to honor their commitments to others. *Low* scorers are not impulsive, nor do they manipulate others for their own ends. They hold conventional, conservative views regarding social, legal, ethical, and moral issues. They are serious people who believe in doing things in proper order and in following rules of all kinds.

Table 3.7 (cont.)

Impulsivity (IMP)	*High* scorers are reckless individuals who prefer to do the first thing that comes to mind rather than stop and think things over. They live moment-to-moment and day-to-day, without plans for the immediate or long-term future. They like to take chances and to spend both their money and their time on impulse.
	Low scorers are cautious individuals who live a safe, quiet life. They prefer a level-headed, "sensible" approach to things, in which decisions are thought through and everything is planned out slowly and carefully. They keep track of their money, rationally plan their daily activities, and prepare for their future.
Propriety (PRO)	*High* scorers are greatly concerned with proper standards of conduct, not just for themselves, but for the community at large. They value their reputation highly and place appearances over personal comfort or convenience. They emphasize the importance of following social conventions to the letter and are offended when others violate social rules.
	Low scorers are not concerned with social standards. They are comfortable with rude or boorish behavior and do not care about protecting their reputation. They are not strict about "right" and "wrong," and place little importance on social rules or conventions.
Workaholism (WRK)	*High* scorers enjoy work more than play. They place work above all else, and neglect their friends and family to do so. They are perfectionists who feel they must finish everything they start and do not consider a job finished until it is perfect. They drive themselves hard, continuing to work on a problem even when exhausted, long after others have given up.
	Low scorers do not enjoy hard work. They never get so caught up in their work that they neglect other aspects of their lives, and they find time to have fun no matter how busy they are. They do not push themselves and even enjoy being lazy. They do not feel the need to finish everything they start and will give up on a project when they are tired.

Table 3.11

Descriptive Statistics (Raw Scores) for the Trait and Temperament Scales by Gender in the Normative Sample

Scale (# of items)	Men (*n* = 233)		Women (*n* = 328)			Combined [a] (*N* = 561)	
	M	*SD*	*M*	*SD*		*M*	*SD*
Negative Temperament (28)	9.4	6.9	**11.4**	7.3	*	10.6	7.2
Mistrust (19)	4.7	3.9	4.6	4.3		4.6	4.1
Manipulativeness (20)	**4.6**	3.3	3.4	3.0	*	3.9	3.2
Aggression (20)	3.5	3.7	3.1	3.4		3.3	3.5
Self-harm (16)	1.9	2.5	1.8	2.6		1.9	2.6
Low Self-esteem (7)	0.9	1.4	0.8	1.5		0.8	1.5
Suicide Proneness (9)	1.1	1.6	1.0	1.5		1.0	1.5
Eccentric Perceptions (15)	3.9	3.3	3.7	3.2		3.8	3.2
Dependency (18)	3.8	2.8	4.2	3.3		4.0	3.1
Positive Temperament (27)	18.7	5.6	18.7	5.6		18.7	5.6
Exhibitionism (16)	7.0	3.7	6.3	3.7	*	6.6	3.7
Entitlement (16)	8.1	3.4	7.7	3.3		7.8	3.3
Detachment (18)	5.8	4.2	5.2	4.0		5.4	4.1
Disinhibition (35)	**10.4**	6.1	7.6	5.2	*	8.8	5.8
Impulsivity (19)	**6.1**	4.1	5.0	3. 7	*	5.5	3.9
Propriety (20)	11.0	4.7	**12.2**	4.4	*	11.7	4.5
Workaholism (18)	7.3	3.8	7.5	3.6		7.4	3.7

Note. *p < .05 by Bonferroni-corrected *t*-tests. Significantly greater means shown in **boldface**.

[a] Combined *M* and *SD* weighted by proportion of each gender.

Table 3.12

Descriptive Statistics (T-scores) for the Trait and Temperament Scales by Gender in the Normative Retest Sample

Scale	Men (*n* = 108) M	SD	Women (*n* = 162) M	SD	
Negative Temperament	46.5	9.1	**49.0**	10.7	*
Mistrust	50.8	11.0	49.0	10.4	
Manipulativeness	**49.8**	9.4	46.2	9.0	*
Aggression	49.0	9.1	48.4	8.7	
Self-harm	49.7	9.3	48.6	9.7	
Low Self-esteem	49.7	10.0	49.4	9.4	
Suicide Proneness	50.4	10.0	48.9	9.3	
Eccentric Perceptions	48.1	10.4	48.0	10.2	
Dependency	47.4	8.3	49.7	10.8	
Positive Temperament	49.3	11.7	50.0	10.4	
Exhibitionism	**50.9**	11.1	46.3	9.5	*
Entitlement	**52.7**	11.0	49.5	10.2	*
Detachment	51.2	11.4	9.9	9.9	
Disinhibition	**50.1**	9.4	45.4	7.7	*
Impulsivity	**49.3**	10.4	47.0	8.6	*
Propriety	48.5	9.9	**51.9**	10.2	*
Workaholism	50.3	11.4	51.01	11.6	

Note. *p < .05 by Bonferroni-corrected *t*-tests. Significantly greater means shown in **boldface**.

Table 3.13

Descriptive Statistics (T-scores) for the Trait and Temperament Scales by Gender in a College Sample

Scale	Men (*n* = 699) M	SD	Women (*n* = 1,189) M	SD	
Negative Temperament	52.6	9.6	**56.2**	9.8	*
Mistrust	54.7	10.3	54.2	10.8	
Manipulativeness	**61.5**	13.0	54.2	11.6	*
Aggression	**57.1**	13.0	52.4	11.4	*
Self-harm	53.0	11.0	52.0	11.1	
Low Self-esteem	**52.7**	10.9	50.7	10.3	*
Suicide Proneness	53.1	11.7	53.5	12.5	
Eccentric Perceptions	53.9	10.7	53.4	10.8	
Dependency	52.5	10.6	**55.6**	11.7	*
Positive Temperament	48.8	11.0	**50.8**	10.3	*
Exhibitionism	55.1	10.4	54.9	10.3	
Entitlement	**52.9**	10.5	50.2	9.8	*
Detachment	**50.6**	9.9	47.2	8.9	*
Disinhibition	**61.3**	10.9	56.0	10.9	*
Impulsivity	**55.9**	10.7	53.6	10.9	*
Propriety	47.8	9.2	**49.5**	9.0	*
Workaholism	**48.8**	10.6	47.7	10.2	*

Note. *p <.05 by Bonferroni-corrected t-tests. Significantly greater means shown in boldface.

Table 3.14

Descriptive Statistics (T-scores) for the Trait and Temperament Scales in Three Patient Samples

Variable	Mixed (N = 611)		Back Pain (N = 125)		Recurrent Depressed (N = 147)	
			Patient Sample (%)			
Negative Temperament	**59.9**[a]	**10.7**	**56.4**[b]	**10.6**	**63.6**[c]	**7.5**
Mistrust	58.7	13.0	57.3	12.0	59.7	12.3
Manipulativeness	51.5[a]	11.2	46.4[b]	8.7	51.6[a]	10.3
Aggression	55.0	13.1	56.8	13.1	55.4	11.5
Self-harm	68.8[a]	18.9	56.3[b]	12.7	70.5[a]	12.1
Low Self-esteem	68.2[a]	16.9	59.1[b]	13.1	76.9[c]	13.0
Suicide Proneness	64.6[a]	19.9	52.0[b]	12.8	58.8[c]	13.1
Eccentric Perceptions	52.2[a]	11.6	51.5[a]	11.4	47.0[b]	7.1
Dependency	57.4[a]	13.7	49.8[b]	10.3	59.5[a]	13.4
Positive Temperament	**42.7**[a]	**11.6**	**44.4**[a]	**10.6**	**34.9**[b]	**9.9**
Exhibitionism	46.6	10.5	44.7	8.3	45.5	9.4
Entitlement	44.6[a]	10.6	48.0[b]	10.7	43.4[a]	9.3
Detachment	56.7[ab]	11.8	55.5[a]	10.5	59.1[b]	10.7
Disinhibition	**51.4**[a]	**10.4**	**46.2**[b]	**7.6**	**50.4**[a]	**9.3**
Impulsivity	52.8[a]	11.0	47.8[b]	7.3	52.6[a]	10.1
Propriety	50.5[a]	9.0	54.4[b]	8.3	53.3[b]	8.1
Workaholism	53.7[a]	11.8	58.8[b]	10.2	53.2[a]	12.2

Note. Temperament scales shown in bold. Means with different superscripts are significantly different (*p* < .05, Bonferroni corrected).

Table 3.15

Descriptive Statistics (T-scores) for the Trait and Temperament Scales by Gender and Patient Status in a Mixed Patient Sample

Scale	Men (n = 220)		Women (n = 391)			Outpatients (n = 468)		Inpatients (n = 143)		
	M	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*	
Negative Temperament	56.9	11.6	**61.5**	9.8	*	58.6	10.9	**64.1**	9.0	*
Mistrust	57.8	13.4	59.2	12.7		57.7	12.8	**61.9**	13.2	*
Manipulativeness	**53.6**	12.2	50.3	10.4	*	51.0	10.7	53.0	12.6	
Aggression[a]	56.0	14.5	54.5	12.3		54.1	12.7	**58.2**	13.9	*
Self-harm	66.1	17.9	**70.4**	19.3	*	64.8	17.5	**81.9**	17.4	*
Low Self-esteem	67.3	16.5	68.8	17.2		65.5	16.6	**77.2**	14.8	*
Suicide Proneness	60.8	18.6	**66.7**	20.3	*	60.4	17.8	**78.3**	20.3	*
Eccentric Perceptions	52.3	11.9	52.2	11.4		51.6	11.6	**54.2**	11.4	*
Dependency	54.5	12.7	**59.0**	14.0	*	56.0	13.4	**61.9**	13.7	*
Positive Temperament	43.8	11.8	42.1	11.5		43.0	11.5	42.0	12.0	
Exhibitionism	**48.5**	10.4	45.6	10.3	*	46.9	10.4	45.8	10.8	
Entitlement	**46.1**	10.3	43.7	10.7	*	**45.2**	10.6	42.3	10.6	*
Detachment	55.9	11.2	**57.2**	12.1	*	56.0	11.6	**59.0**	11.9	*
Disinhibition	**54.1**	10.8	49.9	9.9	*	50.7	9.8	**53.7**	11.7	*
Impulsivity	53.7	11.0	52.3	11.0		52.1	10.6	**55.2**	11.9	*
Propriety	49.0	9.2	**51.3**	8.8	*	50.2	8.9	51.5	9.2	
Workaholism	52.2	11.6	**54.6**	11.8	*	52.7	11.4	**56.9**	12.5	*

Note. *p < .05 by Bonferroni-corrected *t*-tests. Significantly greater means shown in **boldface**.

[a]Patient Status * Gender interaction significant (*p*<.05). See text for details.

Table 3.16

Internal Consistency Reliabilities (Cronbach's Coefficient Alpha) for the Trait and Temperament Scales in Five Samples

Scale (# of items)	Normative Adults (N = 561)	College Students (N = 1888)	Mixed Patients (N = 611)	Back Pain Patients (N = 125)	Recurrent Depressed Patients (N = 147)	Median
Negative Temperament (28)	.92	.91	.93	.92	.86	.92
Mistrust (19)	.85	.83	.89	.87	.88	.87
Manipulativeness (20)	.76	.80	.80	.75	.75	.76
Aggression (20)	.84	.85	.88	.86	.83	.85
Self-Harm (16)	.83	.81	.91	.83	.78	.83
Low Self Esteem (7)	.77	.78	.86	.74	.76	.77
Suicide Proneness (9)	.74	.74	.89	.81	.73	.74
Eccentric Perceptions (15)	.81	.80	.84	.83	.65	.81
Dependency (18)	.77	.79	.85	.78	.84	.79
Positive Temperament (27)	.86	.88	.89	.86	.86	.86
Exhibitionism (16)	.82	.81	.84	.74	.80	.81
Entitlement (16)	.76	.76	.79	.80	.74	.76
Detachment (18)	.85	.83	.88	.83	.84	.84
Disinhibition (35)	.84	.84	.84	.76	.82	.84
Disinhibition - Pure (16)	.72	.74	.70	.63	.66	.70
Impulsivity (19)	.79	.80	.82	.63	.78	.79
Propriety (20)	.83	.79	.78	.78	.75	.78
Workaholism (18)	.78	.81	.84	.78	.84	.81
Median (15 full scales)	.83	.81	.85	.80	.80	.81

Table 3.17

Retest Reliabilities of the Trait and Temperament Scales in the Normative Sample

		Retest Interval		
Scale	All a (N = 270)	7-30 days (n = 67)	31-60 days (n = 142)	61-131 days (n = 61)
Negative Temperament	.87	.89	.89	.81
Mistrust	.84	.89	.85	.80
Manipulativeness	.81	.85	.80	.80
Aggression	.87	.82	.88	.86
Self-Harm	.86	.88	.88	.76
Low Self-esteem	.75	.67	.79	.68
Suicide Proneness	.86	.93	.82	.87
Eccentric Perceptions	.85	.81	.88	.85
Dependency	.83	.86	.84	.79
Positive Temperament	.90	.93	.91	.86
Exhibitionism	.90	.93	.90	.89
Entitlement	.82	.84	.82	.82
Detachment	.88	.87	.90	.86
Disinhibition	.88	.90	.87	.89
Impulsivity	.87	.88	.87	.87
Propriety	.87	.89	.87	.85
Workaholism	.86	.88	.83	.88
Median (15 full scales)	.87	.88	.87	.85

Note. [a] Mean retest interval = 49.3 days.

Table 3.18

Pre-Post-Treatment Retest Reliabilities of the Trait and Temperament Scales in Two Patient Samples

Scale	Back Pain[a] (N = 56)	Recurrent Depressed[b] (N = 108)
Negative Temperament	.70	.48
Mistrust	.73	.62
Manipulativeness	.60	.73
Aggression	.57	.78
Self-Harm	.78	.48
Eccentric Perceptions	.82	.68
Dependency	.61	.70
Positive Temperament	.52	.64
Exhibitionism	.78	.82
Entitlement	.69	.57
Detachment	.74	.66
Disinhibition	.70	.82
Impulsivity	.49	.78
Propriety	.60	.61
Workaholism	.71	.75
Median (15 full scales)	.70	.68

Note. [a]Originally reported in Vittengl, Clark, Owen-Salters, & Gatchel (1999); mean retest interval = 6 months. [b]Originally reported in Clark, Vittengl, Kraft, & Jarrett (2003); mean retest interval = 3 months.

Table 3.19

Intercorrelations of the Trait and Temperament Scales for College Students and the Normative Sample

SNAP Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Negative Temperament	–	**.48**	.33	**.48**	**.52**	**.44**	**.38**	-.17	.01	.02	.29	.21	.11	.13	.22	.24
2. Mistrust	**.49**	–	**.35**	**.42**	**.45**	**.53**	.16	-.11	-.01	.20	**.36**	.24	.17	.14	.29	.28
3. Manipulativeness	.27	**.42**	–	**.39**	**.42**	**.45**	.21	-.08	.29	.15	.11	**.72**	**.47**	-.24	-.01	**.62**
4. Aggression	**.35**	**.40**	**.47**	–	**.39**	.30	.06	-.10	.10	.13	.22	**.36**	.25	-.05	.09	.31
5. Self-Harm	**.35**	**.49**	**.37**	**.44**	–	**.38**	.28	**-.39**	-.04	-.13	**.36**	**.36**	.26	-.12	.04	.34
6. Eccentric Perceptions	**.35**	**.43**	**.37**	.26	**.40**	–	.16	.06	.12	.29	.19	.30	.19	.04	.24	.32
7. Dependency	.29	.25	.26	.27	**.41**	.11	–	-.17	-.01	-.16	-.03	.14	.08	.16	-.02	.19
8. Positive Temperament	-.13	-.14	-.06	-.02	-.23	.06	-.05	–	**.40**	**.40**	**-.47**	-.09	-.04	.16	**.35**	-.06
9. Exhibitionism	.03	.04	.22	.07	-.15	.08	.07	.30	–	**.38**	**-.39**	**.40**	.30	-.16	-.01	**.38**
10. Entitlement	-.02	.17	.28	.17	-.08	.20	.00	.30	.34	–	-.06	.07	.02	.10	.21	.07
11. Detachment	.19	**.41**	.24	**.37**	**.50**	.24	-.28	-.29	**-.38**	.01	–	-.01	-.01	.01	.13	-.01
12. Disinhibition	.12	.27	**.75**	**.43**	.30	.31	.11	-.10	.28	.16	.02	–	**.80**	**-.50**	-.21	**.91**
13. Impulsivity	.11	.24	**.47**	**.40**	**.40**	.27	.32	.03	.10	.13	.23	**.80**	–	**-.43**	-.15	**.68**
14. Propriety	.12	.11	-.12	-.01	-.02	-.07	.26	.21	.03	.15	.06	**-.40**	-.17	–	.31	-.33
15. Workaholism	.15	.21	-.05	.19	.16	.15	.11	**.39**	-.02	.16	.22	-.31	-.01	.32	–	-.16
16. Disinhibition (Pure)	.12	.25	**.62**	.31	.26	.29	.10	-.07	.22	.13	.03	**.91**	**.69**	**-.35**	-.23	–

Note. Correlations for the College (*N* = 1,888) and Normative (*N* = 561) samples are featured below and above the diagonal, respectively; correlations >.06 and >.11 are significant, *p*<.01. Correlations ≥ |.35| shown in **boldface**.

Table 3.20

Intercorrelations of the Trait and Temperament Scales in a Mixed Patient Sample

SNAP Scale	**1**	2	3	4	5	6	7	**8**	9	10	11	**12**	13	14	15	16
1. Negative Temperament	–															
2. Mistrust	**.56**	–														
3. Manipulativeness	.33	.32	–													
4. Aggression	**.50**	**.49**	**.45**	–												
5. Self-Harm	**.64**	**.58**	.34	**.41**	–											
6. Eccentric Perceptions	**.47**	**.52**	**.36**	.30	**.45**	–										
7. Dependency	**.52**	**.35**	.27	.19	**.46**	.28	–									
8. **Positive Temperament**	-.31	-.17	-.02	-.07	**-.38**	.03	-.29	–								
9. Exhibitionism	-.03	-.08	.31	.11	-.15	.07	-.01	**.40**	–							
10. Entitlement	-.14	-.02	.17	.07	-.34	.06	-.24	**.44**	**.48**	–						
11. Detachment	**.39**	**.42**	.13	.26	**.46**	.18	.14	**-.49**	**-.46**	-.25	–					
12. **Disinhibition**	.29	.27	**.76**	**.45**	.33	.32	.25	-.04	**.38**	.09	.06	–				
13. Impulsivity	.32	.24	**.50**	**.38**	.34	.33	.22	-.03	.25	.00	.08	**.79**	–			
14. Propriety	.18	.29	-.08	.05	.12	.13	.17	.04	-.14	.06	.10	-.33	-.29	–		
15. Workaholism	.32	**.37**	.04	.18	.27	.28	.05	.25	-.06	.06	.25	-.16	-.04	.31	–	
16. Disinhibition (Pure)	.27	.30	**.66**	**.42**	.31	**.36**	.24	.00	.33	.12	.03	**.91**	**.66**	-.17	-.15	–

Note. N = 611. Correlations ≥ |.35| shown in boldface. Significance level?

Table 3.21

Varimax Factor Loadings of the Trait and Temperament Scales on Three Principal Factors in the Normative and College Samples

Scale	Negative Temperament		Positive Temperament		Disinhibition vs. Constraint	
	NS	CS	NS	CS	NS	CS
Negative Temperament	**.72**	**.62**	-.03	.03	-.03	-.12
Mistrust	**.74**	**.76**	.08	.00	-.05	-.05
Aggression	**.56**	**.56**	.05	.13	.16	.18
Self-harm	**.66**	**.62**	-.27	-.28	.21	.16
Eccentric Perceptions	**.63**	**.55**	.25	.17	.06	.09
Dependency	.31	.24	-.12	-.09	.07	.06
Positive Temperament	-.21	-.22	**.76**	**.69**	-.13	-.22
Exhibitionism	-.01	.02	**.58**	**.67**	**.40**	.15
Entitlement	.14	.13	**.59**	**.58**	-.05	-.06
Detachment	**.46**	**.48**	**-.42**	**-.46**	-.19	-.11
Disinhibition	**.38**	**.35**	.14	.21	**.72**	**.70**
Impulsivity	.22	.26	.10	.18	**.71**	**.70**
Manipulativeness	**.53**	**.55**	.14	.26	**.51**	**.48**
Propriety	.10	.04	.14	.18	**-.58**	**-.54**
Workaholism	.30	.22	.34	.22	**-.42**	**-.56**
Percent of common variance	*46*	*49*	*26*	*23*	*31*	*28*

Note. NS = Normative Sample (*N* = 561). CS = College Sample (*N* = 1,888). The non-overlapping version of Disinhibition was used in these analyses. All loadings ≥ |.35| shown in **boldface**.

Table 3.22

Varimax Factor Loadings of the Trait and Temperament Scales on Three Principal Factors in Three Patient Samples

Scale	Negative Temperament			Positive Temperament			Disinhibition vs. Constraint		
	M	B	R	M	B	R	M	B	R
Negative Temperament	**.57**	**.42**	**.60**	**-.35**	**-.49**	-.13	**.43**	**.51**	.25
Mistrust	**.51**	**.43**	**.69**	-.23	-.32	-.20	**.55**	**.54**	.13
Manipulativeness	**.74**	**.67**	**.58**	.11	.19	.11	-.02	-.08	**-.45**
Aggression	**.59**	**.60**	**.65**	-.05	-.07	-.02	.24	.22	.01
Self-harm	**.55**	**.39**	**.55**	**-.50**	**-.64**	-.34	.34	.27	-.09
Eccentric Perceptions	**.52**	**.60**	**.38**	-.01	-.04	.03	**.38**	.28	-.05
Dependency	**.40**	.30	**.44**	-.32	**-.41**	-.06	.15	.28	-.01
Positive Temperament	-.10	.03	-.10	**.76**	**.71**	**.63**	.14	.18	**.39**
Exhibitionism	.32	.20	.14	**.63**	**.66**	**.61**	-.14	-.08	-.24
Entitlement	.08	.20	-.03	**.64**	**.59**	**.54**	.09	.17	-.03
Detachment	.18	.31	.28	**-.59**	**-.61**	**-.54**	.30	.19	.12
Disinhibition	**.80**	**.74**	**.57**	.12	.01	.12	-.21	.06	**-.63**
Impulsivity	**.72**	**.65**	**.43**	.02	-.09	.15	-.19	-.14	**-.41**
Propriety	-.11	-.31	.16	-.04	.06	-.13	**.53**	**.57**	**.40**
Workaholism	.04	.10	.06	.06	.05	.11	**.69**	**.57**	**.70**
Percent of common variance	*54*	*52*	*50*	*29*	*29*	*29*	*17*	*16*	*19*

Note. M = Mixed Patient Sample (*N* = 611), B = Back Pain Patient Sample (*N* = 125), R = Recurrent Depressed Patient Sample (*N* = 147). Loadings ≥ |.35| shown in **boldface**. The non-overlapping version of Disinhibition was used in these analyses.

Table 3.23

Summary of Diagnostic Scale Changes from DSM-III-R to DSM-IV

| | No. of SNAP Items | | | | DSM Criteria | |
| | # in | # in | Changes | | Moderately | Completely |
Scale	*III-R*	*IV*	#s	New	Changed	New
Paranoid PD	23	24	+1/-0	0	1	0
Schizoid PD	16	21	+5/-0	1	2	1
Schizotypal PD	23	25	+5/-3	1	1	0
Antisocial PD	34	34	+11/-11	4	4	0[d]
Borderline PD	27	33	+8/-2	2	1	1
Histrionic PD	20	23	+8/-5	3	3	2[d]
Narcissistic PD	22	25	+13/-10	3	3	1[e]
Avoidant PD	19	19	+11/-11	8	4	2
Dependent PD	22	20	+9/-11	7	7	0
Obsessive-Compulsive PD	23	25	+10/-8	2	2	1
Depressive PD[a]	0	23	+23	2	0	7
Passive-Aggressive PD[b]	19	20	+13/-12	7	6	3
Sadistic PD[c]	17	0	-17	NA	NA	NA
Self-defeating PD[c]	19	0	-19	NA	NA	NA

Note. PD = Personality Disorder; *III-R* = *DSM-III-R* PD scales; *IV* = *DSM-IV* PD scales.
[a] New PD in the appendix of *DSM-IV*. [b] Passive-Aggressive PD (Negativistic PD) in *DSM-IV*.
[c] Removed from *DSM-IV* and thus from SNAP-2. [d] Also, two criteria dropped. [e] Also, one criterion dropped.

Table 3.24

Convergence between DSM-III-R *and* DSM-IV *Scoring for SNAP Diagnostic Scales*

| | Dimensional Scoring (*r*) | | Criterion Scoring (*r*) | | Categorical Scoring | | | |
| | | | | | φ | | κ | |
Scale	NS	PS	NS	PS	NS	PS	NS	PS
Paranoid PD	1.00	1.00	.97	.99	.88	.84	.87	.82
Schizoid PD	.96	.96	.93	.96	.82	.90	.82	.89
Schizotypal PD	.97	.96	.88	.90	.59	.48	.57	.37
Antisocial PD[a]	.95	.96	.94	.94	.40	.37	.31	.24
Borderline PD	.96	.97	.81	.89	.47	.67	.47	.67
Histrionic PD	.93	.91	.86	.83	.48	.34	.38	.21
Narcissistic PD	.84	.82	.65	.68	.56	.59	.51	.58
Avoidant PD	.84	.85	.65	.73	.45	.59	.42	.59
Dependent PD	.86	.94	.74	.89	.26	.70	.13	.66
Obsessive-Compulsive PD	.86	.88	.78	.83	.49	.65	.43	.64
Passive-Aggressive PD[b]	.74	.66	.59	.53	.21	.19	.20	.17

Note. PD = Personality disorder; NS = Normative sample (*N* = 540); PS = Patient sample (*N* = 106); *r* = Pearson product-moment correlation; φ = phi coefficient; κ = kappa.
[a]Criterion scoring correlations shown only for adult criteria. Child criteria correlations were .74 and .75 in the normative and patient samples, respectively. [b]Passive-Aggressive PD (Negativistic PD) in *DSM-IV*.

Table 3.25

Descriptive Statistics (Dimensional Raw Scores) for the Diagnostic Scales in the Normative Sample

Scale (# of items)	Men (n = 223)		Women (n = 317)			Combined[a] (N = 540)	
	M	*SD*	*M*	*SD*		*M*	*SD*
Paranoid PD (24)	6.0	4.3	5.7	4.8		5.9	4.6
Schizoid PD (21)	5.5	3.6	4.9	3.3		5.2	3.5
Schizotypal PD (25)	7.0	4.5	6.4	4.5		6.7	4.5
Antisocial PD (34)	**8.6**	5.4	5.6	4.2	*	7.1	5.0
Borderline PD (33)	**6.9**	4.7	5.9	4.9	*	6.4	4.8
Histrionic PD (23)	8.7	4.0	8.8	4.2		8.7	4.1
Narcissistic PD (25)	**10.0**	3.9	9.0	3.7	*	9.5	3.8
Avoidant PD (19)	5.0	4.1	5.4	4.0		5.2	4.0
Dependent PD (20)	2.8	2.7	3.0	3.0		2.9	2.8
Obsessive-Compulsive PD (25)	11.2	3.9	11.8	3.8		11.5	3.9
Depressive PD (23)	6.6	4.7	7.1	4.6		6.9	4.7
Passive-Aggressive PD[b] (20)	4.4	3.6	4.3	3.8		4.4	3.7

Note. PD = Personality Disorder. [a]Combined *M* and *SD* weighted by proportion of each gender. [b] Passive-Aggressive PD (Negativistic PD) in the *DSM-IV*. *Difference in scale means by gender: $p < .05$, Bonferroni-corrected. Significantly greater means shown in **boldface**.

Table 3.26

*Descriptive Statistics (Dimensional T-scores) for the Diagnostic Scales
in the Normative Retest Sample*

Scale	Men (n = 107)		Women (n = 159)		
	M	*SD*	*M*	*SD*	
Paranoid PD	50.2	10.1	48.8	10.6	
Schizoid PD	51.9	11.7	49.2	9.8	
Schizotypal PD	49.8	9.9	48.2	9.8	
Antisocial PD	**50.9**	9.5	45.0	7.5	*
Borderline PD	49.1	9.0	47.4	9.5	
Histrionic PD	49.5	10.4	47.4	10.0	
Narcissistic PD	**50.9**	10.0	47.7	9.6	*
Avoidant PD	48.5	10.6	50.6	10.5	
Dependent PD	48.1	9.0	49.7	11.0	
Obsessive-Compulsive PD	50.3	10.1	51.0	10.6	
Depressive PD	48.0	10.0	48.8	10.4	
Passive-Aggressive PD[b]	48.5	9.3	48.7	10.1	

Note. PD = Personality Disorder. *Difference in scale means by gender: $p < .05$, Bonferroni-corrected. Significantly greater means shown in **boldface**.

[b] Passive-Aggressive PD (Negativistic PD) in the *DSM-IV*.

Table 3.27

Descriptive Statistics (Dimensional T-scores) for the Diagnostic Scales for Patient Samples by Gender and Patient Status

Scale	Men (*n* = 25)		Women (*n* = 81)		Inpatients (*n* = 43)		Outpatients (*n* = 63)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Paranoid PD	61.0	14.6	60.4	11.8	61.1	13.7	60.1	11.7
Schizoid PD	57.2	12.1	60.5	12.8	61.3	13.9	58.7	11.7
Schizotypal PD	57.6	11.1	58.6	11.0	58.1	11.8	58.5	10.4
Antisocial PD	56.4	11.8	49.9	9.5	51.4	11.0	51.5	10.1
Borderline PD	63.4	14.7	62.7	13.7	65.1	14.7	61.3	13.1
Histrionic PD	53.6	11.0	51.3	9.2	50.7	10.7	52.6	8.9
Narcissistic PD	51.8	9.9	46.0	10.7	46.6	11.6	47.9	10.2
Avoidant PD	59.5	12.7	63.5	12.8	64.9	13.5	60.9	12.2
Dependent PD	61.3	16.3	67.4	18.0	68.1	18.4	64.5	17.2
Obsessive-Compulsive PD	54.9	10.9	53.6	10.7	55.1	10.2	53.1	11.1
Depressive PD	65.1	11.9	66.9	10.9	69.9	9.9	64.1	11.4
Passive-Aggressive PD[b]	61.8	12.8	60.6	11.9	62.8	13.7	59.6	10.7

Note. PD = Personality Disorder. No men--women or inpatient—outpatient differences were statistically significant (*p* < .05, Bonferroni-corrected).

[b] Passive-Aggressive PD (Negativistic PD) in the *DSM-IV*.

Table 3.28

*Internal Consistency Reliabilities (Cronbach's Coefficient Alpha) of the Diagnostic
Scales (Dimensional Scoring) in the Normative Sample and a Patient Sample*

Scale (items)	Normative Sample (N = 540)	Patient Sample (N = 106)
Paranoid PD (24)	.84	.87
Schizoid PD (21)	.75	.81
Schizotypal PD (25)	.81	.81
Antisocial PD (34)	.83	.82
Borderline PD (33)	.83	.87
Histrionic PD (23)	.74	.71
Narcissistic PD (25)	.71	.75
Avoidant PD (19)	.84	.89
Dependent PD (20)	.76	.87
Obsessive-Compulsive PD (25)	.65	.69
Depressive PD (23)	.85	.86
Passive-Aggressive PD[a] (20)	.81	.80
Median	**.81**	**.82**

Note. PD = Personality Disorder.

[a] Passive-Aggressive PD (Negativistic PD) in the *DSM-IV*.

Table 3.29

Temporal Stabilities of the Personality Disorder Scales (Dimensional Scoring) at Varying Time Intervals

	Retest Correlation			
Scale	All[a] $M = 49.3$	7-30 days[b] $M = 22.3$	31-60 days[c] $M = 46.2$	61-131 days[d] $M = 86.2$
Paranoid PD	.84	.88	.85	.80
Schizoid PD	.85	.85	.88	.79
Schizotypal PD	.88	.89	.88	.87
Antisocial PD	.88	.90	.87	.87
Borderline PD	.86	.91	.85	.83
Histrionic PD	.86	.88	.84	.86
Narcissistic PD	.82	.87	.77	.84
Avoidant PD	.84	.86	.85	.80
Dependent PD	.84	.86	.85	.82
Obsessive-Compulsive PD	.81	.75	.84	.82
Passive-Aggressive PD[e]	.82	.77	.85	.78
Depressive PD	.86	.86	.88	.81
Median	**.85**	**.88**	**.85**	**.83**

Note. PD = Personality Disorder. [a]$N = 261$. [b]$n = 65$. [c]$n = 137$. [d]$n = 59$

[e]Passive-Aggressive PD refers to the *DSM-IV* Passive-Aggressive PD (Negativistic PD).

CHAPTER 4

VALIDATION

The SNAP-2 provides three types of scales: validity, trait and temperament, and diagnostic. The seven validity scales assist in identifying protocols that may be invalid owing to such factors as response biases or carelessness. They also provide information about the test-taker's attitude toward the test or his/her test-taking style or approach. The 15 trait and temperament scales provide information about the test-taker's personality traits and basic temperament. Finally, the 12 diagnostic scales provide scores for each of the *DSM-IV* Axis II PD diagnoses.

VALIDITY SCALES

Relations with Other Measures of Invalid Responding

The SNAP-2 validity scales were investigated in relation to the primary validity scales of the MMPI-2 in two samples, 155 undergraduates and 236 mixed psychiatric patients from a psychology training clinic who completed both the SNAP-2 and MMPI-2 as part of a standard assessment battery. Correlations among these scales appear in Table 4.1. Notably, the SNAP-2 validity scales correlated in predictable ways with those of the MMPI-2. In particular, Rare Virtues and Deviance consistently yielded specific relations with the L and F scales of the MMPI-2, respectively. VRIN and TRIN demonstrated lower but still reasonable convergence with their identically named and conceptually similar MMPI-2 counterparts. That these correlations were somewhat lower than those for Rare Virtues and Deviance suggests that VRIN and TRIN do not tap trait-like individual differences, but rather appear to be more state-dependent measures of inconsistency. DRIN did not yield meaningful MMPI-2 correlates. As described earlier, DRIN was designed as a bipolar scale of desirable responding; however, these

data suggest that it does not assess either end of the desirability continuum very well when measured against standard validity indices.

Distortion Simulation Study

Simms & Clark (2001) further investigated the validity of SNAP-2 validity scales in a simulation study. Undergraduates ($N = 192$) were randomly assigned to a positive distortion group ($n = 76$), negative distortion group ($n = 79$), or control group ($n = 37$). All groups completed the SNAP, scales L, F, and K of the MMPI-2, and several other measures of socially desirable responding. The positive distortion group was a given character description to follow that involved an attempt to win a child custody case, whereas the negative distortion group was a given character description instructing them to respond as a person attempting to convince a judge to award disability benefits. The control participants were asked to respond normally. As an incentive, participants were told that they would be entered into a drawing for $50 if they responded in character without elevating the validity scales, which were described to them briefly.

Multivariate and univariate ANOVAs revealed predictable differences across groups with regard to the SNAP-2 validity scales. Specifically, the positive distortion group scored significantly higher than the control group on Rare Virtues and the negative distortion group scored significantly higher than the control group on Deviance. VRIN and TRIN were not expected to be affected by the manipulation; TRIN scores were all close to the normative mean, but VRIN scores suggested overly consistent responding in both distortion groups. On DRIN, the negative distortion group scored significantly lower than the control group, but the positive distortion group did not differ significantly from the controls. The differences among the three groups on all SNAP-2 validity, trait, and temperament scales are presented graphically in Figure

4.1. It is clear from this figure that the positive and negative distortion groups yielded profiles that differed from the control group profile not only on the validity scales: The trait and temperament scales reflected group membership in predictable ways as well. In particular, scales comprising the first two higher order factors (e.g., Self-harm and Detachment) showed marked deviations from control-group levels in the negative distortion group and those on the first (Negative Temperament) factor also showed slight decreases in the positive distortion group, whereas third-factor (Disinhibition) scales showed deviation in both groups, with the exception of Workaholism.

To assess the predictive validity of the SNAP-2 validity scales, classification accuracy and discriminant function analyses were conducted. These results are summarized in Table 4.2. Predicting positive distortion profiles, Rare Virtues (with T-scores above 65 considered invalid) correctly classified identified 70% of participants (kappa = .44), whereas a discriminant function of both Rare Virtues and Deviance improved the overall classification accuracy to 81% (kappa = .56). The SNAP more easily detected negative distortion profiles; Deviance correctly classified 97% of the participants (kappa = .94), whereas a discriminant function of both Rare Virtues and Deviance correctly classified 95% of the profiles (kappa = .88). Thus, interestingly, Deviance alone performed slightly better than Rare Virtues and Deviance used in combination. Overall, these data suggest that the SNAP-2 can accurately identify most simulated positive distortion profiles and nearly all simulated negative distortion profiles.

TRAIT & TEMPERAMENT SCALES

The tradition of self-report questionnaires developed to study normal personality, especially as embodied by Tellegen's MPQ, is one of the two conceptual parents of the SNAP

and SNAP-2. Not only did the higher order theoretical structure of the MPQ guide the development of the three temperament scales, but the scale development techniques described by Tellegen (e.g., Tellegen & Waller, in press) were applied in the SNAP's creation. Further, the original SNAP item pool was shaped by the MPQ because many of the concepts expressed by the MPQ items were found to be relevant to the traits of personality disorder.

The SNAP and SNAP-2's other conceptual parent is the domain of personality disorder symptoms as set forth in the *DSM* and elsewhere. It was described earlier how consensual clusters of these criteria provided the initial basis for defining the original SNAP scales. In establishing the validity of the SNAP-2, therefore, it is reasonable to emphasize relations with these two traditions, and the following sections present two main types of validity evidence:

(1)   Relations between the SNAP-2 scales and relevant self-report measures, including (a) the MPQ, (b) the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975); (c) the Five-Factor Model of personality, (d) state and trait mood, (e) symptoms of depression and anxiety, and (e) the MMPI-2.

(2)   Relations between the SNAP-2 scales and relevant clinical assessments, including (a) chart-based ratings of personality disorder criteria and (b) interview-based ratings of personality disorder criteria.

RELATIONS WITH OTHER SELF-REPORT MEASURES

Multidimensional Personality Questionnaire (MPQ). The SNAP-2 and the MPQ focus on the assessment of abnormal and normal-range personality, respectively, and yet they clearly assess some overlapping constructs. A complete correlation matrix between the original SNAP and MPQ scales in the Stage 3 college student sample is presented in Table 4.3. Although correlations between some scale pairs are due to item overlap, this cannot account for all the

covariation between the two instruments. Most important, because items were considered for

inclusion in the SNAP only if they could be associated with a personality disorder criterion, these

SNAP-MPQ overlap data provide support for the thesis that maladaptive and adaptive

personality lie on a continuum (see O'Connor, 2002, for a review of the literature documenting

the strong similarity between normal and abnormal personality structure). In this view,

instruments developed to assess the two spheres of normal and abnormal personality should

show strong correlations between corresponding scales, which is precisely what is found

between the SNAP and the MPQ.

What then do the SNAP and SNAP-2 contribute to the assessment of personality disorder

that is not already contained in the MPQ? First, although several MPQ scales contain content

relevant to abnormal personality (e.g., Alienation, Aggression, Stress Reaction), the item content

of the SNAP taps domains of personality pathology not included in the MPQ, such as

dependency and self-harm. Second, the SNAP provides a more precise assessment of certain

content areas. For example, although the Manipulativeness scale is correlated with several MPQ

scales such as Aggression and Alienation, it also taps specific content that is not contained in

these scales. Finally, even for those scales that tap the same dimension, the range of relevance

for the scales may differ, with the SNAP scales extending further into the pathological domain.

For example, a comparison of the SNAP Workaholism and MPQ Achievement scales indicates

that both scales include content relevant to persistence and challenge, but the SNAP scale items

additionally address the degree to which this orientation to work interferes with aspects of the

person's life.

Eysenck Personality Questionnaire (EPQ). Eysenck's three-factor model has played an

important role in the history of personality assessment, and we have seen already that factor

analyses of the SNAP-2 scales yield a three-factor structure. Therefore, it is instructive to examine the correspondence of these two sets of scales. College students (N = 187) enrolled in introductory psychology completed the original SNAP, the EPQ, and several other self-report measures as part of a larger study on personality and dissociative tendencies. Correlations between the two instruments (see Table 4.4) were very consistent with theoretical predictions. First of all, the strongest correlates of the three primary EPQ scales were the corresponding temperament scales from the SNAP. That is, EPQ-Neuroticism correlated most strongly with Negative Temperament, EPQ-Extraversion with Positive Temperament, and EPQ-Psychoticism (which researchers now view as a measure of psychopathy) with Disinhibition. Moreover, each EPQ scale correlated above .30 with relevant primary scales. Thus, EPQ-N was correlated with Mistrust, Self-harm, Eccentric Perceptions, and Dependency; EPQ-E was correlated with (low) Detachment, Exhibitionism, and Entitlement; and EPQ-P was correlated most strongly with Manipulativeness, Aggression, and Impulsivity. Only two SNAP scales—Propriety and Workaholism—were not strongly related (rs < .20) to any EPQ scale, suggesting they tap more specific traits that are not well assessed by the higher order scales of the EPQ. Finally, the EPQ-Lie scale showed a pattern of correlations that was similar to—but weaker than—that of EPQ-P.

   Five-Factor Model of Personality. In the development of the SNAP/SNAP-2 scales, the emphasis was on identifying the primary trait dimensions that may be said to constitute personality disorder when exhibited to a maladaptive degree. Thus, the primary scales were not designed to reflect a particular theoretical structure of personality. Nevertheless, as described, temperament scales assessing the core elements of three higher order dimensions now are included in the instrument, and the data presented in Tables 3.19 and 3.20 indicated that a three-factor structure emerges when the trait and temperament scales are analyzed together.

However, the Five-Factor Model of personality (FFM) is prominent among researchers of both normal and abnormal personality (e.g., Costa & Widiger, 1994, 2002; Digman, 1990; Widiger, Costa, & McCrae, 2002; Wiggins & Pincus, 1989). Four of the so-called "Big Five" dimensions largely overlap with those of the prominent three-factor models: Negative Affectivity with Neuroticism, Positive Affectivity with Extraversion, and Disinhibition with Conscientiousness/Constraint and Agreeableness (Watson et al., 1994). The remaining dimension, Openness to Experience (also, Intellectance or Culture), is smaller than the others and may represent more a major primary trait than a higher order factor. In any case, to the extent that the primary SNAP scales contain variance relevant to the FFM, analyses of the SNAP with FFM measures should reveal a five-factor structure, and may help to illuminate the basic structure of the maladaptive traits that constitute personality disorder.

SNAP-FFM Relations in Three Samples. The relevance of the FFM to the maladaptive traits of personality disorder is apparent from an examination of three data sets relating the SNAP with two different scales assessing Big Five personality dimensions, in which the SNAP scales are found to be related strongly and systematically to the trait dimensions of the FFM. A complete correlation matrix between the SNAP trait and temperament scales and FFM factor scores based on the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992) and the Big Five Inventory (BFI; John & Srivastava, 1999) is provided for three samples in Table 4.5. Several convergent correlations are consistent across the different samples and are noteworthy. First, the association of Positive Affectivity with Extraversion that commonly is observed is seen here as well. Second, the typical association of Negative Affectivity with Neuroticism also is clear, although the addition of the Agreeableness dimension effects some structural changes when factor analyses are performed on the SNAP and Big Five scales. Specifically, in the adult

sample, the traits of Aggression, Eccentric Perceptions, and Mistrust split off from Negative

Affectivity to load on the low end of Agreeableness when five-factor measures are included, and

Manipulativeness loaded on both (low) Agreeableness and (low) Conscientiousness. Third, the

associations between Disinhibition and (low) Conscientiousness and, to a lesser extent, (low)

Agreeableness, also are represented in these data. Finally, the dimension of Openness generally

is not well represented in the SNAP. However, modest correlations between Openness and both

Eccentric Perceptions and Propriety suggest that these SNAP scales might be used to assess

extreme high and low Openness, respectively.

   SNAP-FFM Facet Relations in a Patient Sample. Reynolds and Clark (2001) investigated

relations between the SNAP and lower order facets of the FFM. Specifically, they used the 30

facets of the NEO-PI-R (Costa & McCrae, 1992) to predict each of the 15 SNAP trait and

temperament scales in a clinical sample ($N = 94$). For most of the SNAP scales, multiple

regression analyses indicated that the NEO-PI-R facets predicted a substantial proportion of the

SNAP variance (mean R^2 was .54 and ranged from .17 to .75). For example, three NEO facets

(Anxiety, Angry Hostility, and Depression) combined to predict Negative Temperament ($R^2 =$

.75). Similarly, three different facets (Activity, Positive Emotions, and Feelings) combined to

predict Positive Temperament ($R^2 = .72$). Of note, the SNAP scale least predicted by the NEO

facets was Eccentric Perceptions ($R^2 = .17$). This finding is consistent with the correlational data

reported previously for the three samples and suggests that this particular SNAP scale contains

variance not well represented in the NEO-PI-R.

   Reynolds and Clark (2001) also investigated SNAP-FFM relations by comparing the utility

of both the SNAP and the NEO-PI-R in predicting personality disorder ratings derived from the

SIDP-IV (Pfohl, Blum, & Zimmerman, 1997). First, using hierarchical multiple regression, they

showed that the SNAP added significant incremental validity to PD prediction after composite

FFM domain scores had been entered for nine of the ten core *DSM-IV* PDs. Conversely, when

the SNAP scales were entered first into the model, the FFM significantly improved the

prediction of only Avoidant PD. Earlier, Clark (1993b) reported data similar to these in a

parallel investigation of earlier versions of the NEO (NEO-FFI; Costa & McCrae, 1989) and

SIDP (SIDP-R; Pfohl, Blum, Zimmerman, & Stangl, 1989). Taken together, these studies

suggest that the SNAP scales show (a) strong convergence with FFM domain scores and (b)

greater empirical relevance to PD variance than do the FFM domains.

Second, parallel analyses were conducted to compare the SNAP and the NEO-PI-R facets

for predicting the interview-based PD ratings. Predictors were selected according to conceptual

matches made by Widiger, Trull, Clarkin, Sanderson, and Costa (1994) and Clark (1993b). As

was the case with the FFM domain scores, adding SNAP scales to the regression equation

improved prediction for most PDs. In contrast to the domain scores, however, when the SNAP

scales were entered first, the NEO facet scores significantly improved prediction for four of the

ten core PDs. Reynolds and Clark (2001) concluded that "examination at a lower order level

seems to be a particularly useful way to map associations between normal and disordered

personality" (p. 217) and suggest that SNAP-FFM relations should target not only domain scores

but also should assess facet-level scores. Finally, it is important to note that these findings derive

from a single measure of the FFM; further research using additional measures of the Big Five is

needed to establish the generalizability of the observed SNAP-FFM relations to other FFM

measures.

State and Trait Mood. Relations between personality and mood have been and continue

to be of theoretical interest (e.g., Clark, Watson, & Mineka, 1994; Costa & McCrae, 1980; Gray

& Watson, 2001; Meyer & Shack, 1989; Watson, 2000; Watson & Clark, 1992). The very labels

for two of the higher order dimensions of personality—Negative and Positive Affectivity or

Negative and Positive Emotionality—derive from the fact that there is a strong affective

component in each of these dimensions. Following the seminal work of Tellegen (e.g., Tellegen,

1982, 1985; Zevon & Tellegen, 1982), additional research has examined relations between mood

and personality both more broadly and in more detail (e.g., McCrae & Costa, 1991; Watson,

2000; Watson & Clark, 1992). In this context it is interesting to examine correlations between

the SNAP scales and both general and specific measures of affect.

   SNAP-PANAS-X Relations. Several large college student samples and one sample each of

medical/psychiatric patients and community adults completed the SNAP and the Positive and

Negative Affect Schedule-Expanded Form (PANAS-X, Watson & Clark, 1991), which has

scales that assess specific negative affects (fear, hostility, guilt, and sadness) and specific

positive affects (joviality, self-assurance, and attentiveness), as well as global positive and

negative affect. Various temporal instructions were used in the different samples. Specifically,

one college student sample and the patient sample were asked to rate how they "generally" feel,

whereas the adult sample rated how they had felt during the "past week, including today," and

the other student samples rated how they had felt over the "past month," "past few weeks," or

"today," respectively. The "generally" instructions thus assess "trait" mood, whereas the other

instructions assess increasingly shorter time periods or "state" mood. Tables 4.6 through 4.10

present the complete correlation matrices between the SNAP scales and 13 mood scales of the

PANAS-X.

   The results are noteworthy in several respects. First, there is a clear and robust pattern for

both global negative and positive affect and the specific negative and positive emotions to relate,

respectively, to the SNAP scales comprising the broad negative and positive affectivity factors. This pattern confirms that these personality dimensions are based in affective temperament. In contrast, the higher order dimension of Disinhibition is unrelated to either trait or state mood in any sample. Moreover, the other emotions that are not clear markers of negative or positive affect (i.e., fatigue, serenity, shyness, and surprise) are relatively unrelated to personality.

A second important finding is that relations between mood and personality are both stronger and more prevalent in patients than in college students. For example, among patients, *all* of the negative emotions correlated strongly with Negative Temperament, Mistrust, Self-harm, and Dependency, and *all* of the positive emotions correlated strongly with Positive Temperament, Entitlement, and Self-harm; in college students this same pattern is observed but it is less strong and consistent. Similarly, many more of the relations between the SNAP primary scales and specific emotions are significant in the patient versus college samples. Turning to the adult sample, relations between mood and personality are more similar to the patient data, but fall in between those of the patients and college students. That is, correlations are strong and specific between negative emotions and *some* of the personality traits. Thus, while these data are very supportive of the general view that many self-reported personality traits contain a strong affective component (e.g., Tellegen, 1985), they also suggest that affective temperament may play an especially important role in extreme maladaptive manifestations of these traits.

SNAP-MASQ Relations. Relations between personality and symptoms of mood and anxiety disorder also have been investigated using the SNAP. A subset of the adult normative sample completed the Mood and Anxiety Symptom Questionnaire (MASQ; Watson & Clark, 1991), a symptom rating form that was developed to assess the tripartite model of anxiety and depression (Clark & Watson, 1991). The original tripartite model posited that the overlap

(comorbidity) of anxiety and depression is based in a common factor of general distress (negative affect) whereas their distinctiveness lies in specific factors that are unique to each type of psychopathology—physiological hyperarousal for anxiety and low positive affect for depression (see Mineka, Watson, & Clark, 1998 for an updated version of this model). The 62-item MASQ, which was completed by the adult sample, contains four scales: General Distress: Depression (GD:D), General Distress:Anxiety (GD:A), Anhedonic Depression (AD; specific depression), and Anxious Arousal (AA; specific anxiety). Several studies with college students and psychiatric patients have provided reliability and validity evidence for the MASQ scales (e.g., Watson et al., 1995a, 1995b).

Table 4.11 presents the complete correlation matrix between the SNAP and MASQ scales in the normative sample. As predicted by the tripartite model, both of the general distress scales and the AA scale correlated strongly with virtually all of the SNAP Negative Affectivity factor scales, but generally failed to correlate with any of the SNAP Positive Affectivity factor scales. Alternatively, the AD scale correlated more modestly in general with the Negative Affectivity factor scales but showed a strong negative correlation with SNAP Positive Temperament. This finding is consistent with the tripartite model in that low Positive Affect is relatively specific to depression. Of note, SNAP Self-harm correlated strongly with both the general and specific MASQ depression scales (rs = .72 with GD:D and .60 with AD). Moreover, both of the Self-harm subscales (Low Self-esteem and Suicide Proneness) correlated strongly with the MASQ scales. These findings are consistent with research showing that global self-esteem is best understood as the bipolar opposite of trait indicators of depression (Watson, Suls, & Haig, 2002). Finally, none of the MASQ scales correlated significantly with any of the scales comprising the SNAP Disinhibition factor, providing further support for the finding that this factor generally is

unrelated to either normal-range or disordered mood and anxiety.

Minnesota Multiphasic Personality Inventory—2nd Edition (MMPI-2). The MMPI has been a staple of clinical assessment for many years. When presenting a new test, it is important to examine its relation to the MMPI in order to understand its points of overlap as well as to establish that its scales are not simply redundant with those of the MMPI but assess additional constructs. To investigate these relations, a sample of adult psychiatric outpatients and a sample of college students completed both the SNAP and the MMPI-2. Complete correlation matrices between the SNAP and MMPI-2 standard validity and clinical scales in these samples are presented in Tables 4.12 and 4.13, for college and patient samples, respectively.

If one compares the SNAP and MMPI-2 standard scales in each of the two samples, the correlations in the patient sample are higher overall. This finding is particularly salient for correlations between SNAP Negative Temperament factor scales and MMPI-2 standard scales, and suggests that many of the MMPI-2 scales assess content relevant to the construct of negative affectivity. Moreover, a number of substantial and consistent correlations can be seen in both the patient and student samples. For example, Negative Temperament correlated strongly with scale 7 (Pt); Positive Temperament correlated strongly (negatively) with scales 2 (Dep) and 0 (Si); and Self-harm correlated with scales 4 (Pd) and 8 (Sc). In fact, considering both samples, nearly every standard MMPI-2 scale correlated .30 or higher with one or more SNAP scales, indicating that the target construct of the standard MMPI-2 scales is assessed at least partially by one or more SNAP scales. Alternatively, there were several SNAP scales—most notably, Propriety and Workaholism—that had no clear MMPI-2 counterparts in either sample. Thus, these scales tap trait dimensions not assessed by the MMPI-2 standard scales, indicating that the SNAP and MMPI-2 cover somewhat distinctive domains within psychopathology. Although differentiation

of Axis I and Axis II is a complex issue (Clark, Livesley, & Morey, 1997; Clark, Watson, & Reynolds, 1995; Pfohl, 1999; Trull & McCrae, 2002; Widiger & Shea, 1991; NEW REFS), the MMPI-2 and SNAP may be differentially focused on these two axes, respectively. That is, the MMPI-2 may provide more information about various Axis I clinical syndromes such as schizophrenia or somatization disorder, whereas the SNAP specifically targets the maladaptive traits that characterize the Axis II personality disorders.

RELATIONS WITH CLINICAL RATINGS OF PERSONALITY DISORDER

Chart-based Ratings of Personality Disorder Criteria. Clark et al. (1993) examined relations between the SNAP scales and ratings of the 22 symptom clusters that had formed the basis for the item groups from which the SNAP scales were subsequently developed (see Chapter 2, Development). Broad-based relations emerged between the scales and cluster ratings, with all but two of the SNAP scales correlating significantly with one or more symptom clusters. Moreover, the observed relations generally were systematic and easily interpretable. For example, Self-harm correlated with rated Suicide Proneness, Hypersensitivity, and Low Self-esteem, whereas Detachment correlated with ratings of Social Isolation. However, the SNAP—symptom cluster correlations tended to be modest (few exceeded |.40|), some expected correlations did not emerge, and some anomalous findings appeared. These less-than-optimal results are explained, at least in part, by methodological limitations in ratings based on hospital chart information. Therefore, further research was conducted to examine relations between the SNAP and ratings made directly from patient interviews.

Interview-Based Ratings of Personality Disorder Criteria. Analysis of relations between the SNAP scales and scaled ratings of the Axis II personality disorders in a sample of 94 psychiatric outpatients indicates that the SNAP scales—especially those relating to the higher

order factors of negative affectivity—are related strongly and systematically to clinical ratings of

personality disorder. A complete correlation matrix between the SNAP scales and scores for

Axis II diagnoses is presented in Table 4.14. When specifically hypothesized relations (see

Table 2.1 and accompanying text) were considered, most were confirmed empirically.

Specifically, over half had correlations of .40 or higher and only two had correlations less than

.30 (Entitlement with Histrionic PD and Propriety with Obsessive-Compulsive PD). Further, for

8 of the 10 PDs in the main text (i.e., not in the Appendix), there was a strong and specific

diagnosis-scale match: paranoid PD with mistrust, schizoid and avoidant PDs with detachment,

antisocial PD with disinhibition, borderline PD with self-harm, narcissistic PD and

exhibitionism, dependent PD and dependency, and obsessive-compulsive PD and workaholism.

Thus, these data suggest that SNAP scale profiles will provide meaningful information regarding

the types of personality disorder criteria exhibited by clients and the specific Axis II diagnoses

they are likely to receive.START HERE

DIAGNOSTIC SCALES

Relations with Clinical Ratings of Personality Disorder

Data regarding the specific validity of self-report scores in relation to clinical ratings

generally have produced modest results (e.g., Clark, Livesley, & Morey, 1997). For example,

median criterion validity correlations between scores obtained on self-report questionnaires

versus structured interviews ranged from .29 to .52 in two studies (Reich, Noyes, & Troughton,

1987; Trull, 1991), while a third (Hyler, Skodol, Kellman, Oldham, & Rosnick, 1990) reported a

median kappa coefficient of .40. Although these data may seem somewhat discouraging

regarding the validity of self-report scales in relation to interview measures, it is important to

note that agreement between two different diagnostic interviews or between two different self-report questionnaires appears to be of the same magnitude. For example, Hyler et al. (1990) reported an average kappa coefficient of .46 in comparing two different interviews, and Reich et al. (1987) reported a median convergent correlation of .39 across pairs of self-report questionnaires. Thus, there currently appears to be no gold standard in personality disorder assessment.

In light of these data, the criterion validity of the SNAP-2 diagnostic scales is remarkably strong. Table 4.15 presents relations between SNAP-2 diagnostic scales and interview-based ratings of personality disorder collected using the SIDP-IV (Pfohl et al., 1997) in a sample of 93 mixed psychiatric patients. As described earlier, a subset of all interviews was cross-rated by two independent interviewers, and the mean intraclass correlation between raters was .90 across all disorders, suggesting high overall reliability.

Convergent correlations were calculated for each of the three diagnostic scoring methods: categorical, criterion, and dimensional scoring. Consistent with previous studies (e.g., Clark, 1993a; Clark et al., 1997), convergence between SNAP-2 diagnostic scales and interview ratings was greatest when both were scored dimensionally (median r = .61). Criterion-based scores were slightly less convergent (median r = .54), and categorical scoring yielded the weakest convergence (median ϕ = 36; median κ = .27). In general, categorical convergence varied widely as a function of the PD base rate, whereas dimensional scores were far less sensitive to the problems associated with low base rates. Given these data, we recommend scoring the SNAP-2 diagnostic scales dimensionally, and all subsequent validity data presented in this manual were calculated only with dimensional scores.

Table 4.16 presents a complete correlation matrix between the SNAP-2 diagnostic scales

and SIDP-IV interview-based diagnostic ratings (both scored dimensionally). Correlations

between corresponding diagnostic scores were .40 or greater for all 12 scales, with 10 scales

showing an optimal correlational pattern (i.e., the strongest correlation for both the scale and the

diagnosis converged). As described above, the median convergent validity coefficient between

the SNAP-2 and SIDP-IV was .61, which is considerably higher than that found in previous

studies using other self-report instruments and/or interviews. Many of the discriminant

correlations also were strong, reflecting the serious problem of diagnostic overlap among the

personality disorders, but they tended to be significantly lower than the convergent correlations

(the median off-diagonal correlation was .24).

Relations with Other Self-Report Measures

Over the past decade, evidence has mounted suggesting that personality pathology can be

adequately modeled using the Five-Factor Model (FFM) of personality (e.g., Ball, Tennen,

Poling, Kranzler, & Rounsaville, 1997; Reynolds & Clark, 2001; Soldz, Budman, Demby, &

Merry, 1993). Thus, to provide evidence of construct validity, Table 4.17 presents correlations

between the SNAP-2 diagnostic scales and measures of the FFM in a portion of the normative

sample ($N = 245$) and a group of mixed psychiatric patients ($N = 105$). Consistent with the

literature, these relations reflect a meaningful and interpretable pattern between personality

disorders and the FFM. For example, high scores on the Borderline and Antisocial PD scales

both were related to low scores on the agreeableness and conscientious dimensions of FFM, but

high scores on the Borderline PD scale also were related to high scores on the FFM neuroticism

dimension. Likewise, Avoidant and Schizoid PD scores both were associated with low

extraversion scores; however, whereas Avoidant PD was characterized by high neuroticism

scores, Schizoid PD was related to low agreeableness scores. These examples are consistent

with the PD literature and support the construct validity of the SNAP diagnostic scales.

The relationship between Axis I and II symptomatology also is a topic that has generated substantial interest in recent years (Bank & Silk, 2001; Cacciola, Alterman, McKay, & Rutherford, 2001; Grilo, McGlashan, & Skodol, 2000; McGlashan et al., 2000; Pfohl, 1999; Trull & McCrae, 2002). Thus, to further examine construct validity, relations between the SNAP diagnostic scales and anxious and depressive symptomatology were investigated. Table 4.18 includes correlations between the diagnostic scales and the Mood and Anxiety Symptom Questionnaire (MASQ) in a portion of the normative sample ($N = 238$). As described earlier, the MASQ includes two *General Distress* scales that include non-specific markers of anxiety and depression, as well as two scales—*Anxious Arousal* and *Anhedonic Depression*—which were designed to tap dimensions thought to be specific to anxiety and depression, respectively. Not surprisingly given the comorbidity generally observed between PDs and Axis I disorders, many SNAP diagnostic scales—including the Paranoid, Schizotypal, Borderline, Avoidant, Dependent, Depressive, and Passive-Aggressive PD scales—were broadly related to all four MASQ scales. Schizoid PD was more specifically related to high Anhedonic Depression scores, which is consistent with the absence of positive emotionality often observed in Schizoid individuals. Antisocial, Histrionic, Narcissistic, and Obsessive-Compulsive PDs were much less related to the MASQ, perhaps reflecting the relatively non-affective bases of these pathological personality patterns.

Relations between the SNAP diagnostic scales and state mood suggest a highly similar pattern. Table 4.19 presents correlations between the SNAP and the Positive and Negative Affect Schedule—Expanded Form (PANAS-X) in a portion of the normative sample ($N = 253$). The results suggest that individuals who generate high scores on the Paranoid, Schizotypal,

Borderline, Avoidant, Dependent, Depressive, and Passive-Aggressive PD scales also reported higher levels of a variety of negative emotions such as fear, hostility, guilt, and sadness. In addition, those high on the Schizoid, Avoidant, and Depressive PD scales reported lower levels of positive emotions such as joviality, self-assurance, and attentiveness. In summary, the MASQ and PANAS-X yielded meaningful and predictable relations with the SNAP diagnostic scales, providing further evidence of their construct validity.

In conclusion, the SNAP diagnostic scales appear to be superior to those of existing instruments, but there remains room for improvement. Although the primary intent of the SNAP as an instrument is to provide an alternative, trait-dimensional method for personality disorder assessment, the diagnostic scales may provide useful information for those who wish to compare this method to the traditional diagnostic approach.

Table 4.1

Correlations Between SNAP and MMPI-2 Validity Scales in College and Outpatient Samples

	MMPI-2 Scale									
	L		F		K		TRIN		VRIN	
SNAP Scale	CS	PS	CS	PS	CS	PS	CS	PS	CS	PS
VRIN	.03	-.12	.18	.05	-.08	-.20	.11	-.06	*.29*	*.29*
TRIN	-.15	-.07	.24	**.38**	-.27	-.28	***.36***	*.27*	.07	.15
DRIN	-.12	.00	-.16	-.16	-.01	.04	-.11	-.02	-.13	.09
Rare Virtues	***.48***	***.55***	.07	-.04	.13	.19	.08	.06	.01	.01
Deviance	-.03	-.14	***.40***	***.55***	-.17	**-.36**	-.02	-.01	.22	.04
Invalidity Index	.26	.16	.25	.18	-.01	-.12	-.01	-.09	.15	.19

Note. Sample CS = 155 college students. Sample PS = 236 outpatients. Correlations ≥ |.15| significant, *p* < .05. Correlations ≥ |.35| shown in **boldface**. Expected convergent correlations are *italicized*.

Table 4.2

Classification Accuracy of Cut Scores and Discriminant Functions

Scale/Discriminant Function [a]	Sp	Sn	PPP	NPP	HR	κ
Predicting Positive Distortion						
Rare Virtues (T score > 65)	.95	.58	.96	.52	.70	.44
Rare Virtues (.98) + Deviance (-.30)	.73	.84	.86	.69	.81	.56
Predicting Negative Distortion						
Deviance (T score > 65)	.92	1.00	.96	1.00	.97	.94
Rare Virtues (.29) + Deviance (2.03)	.95	.95	.97	.90	.95	.88

Note. Sp = specificity, Sn = sensitivity, PPP = positive predictive power, NPP = negative predictive power, HR = hit rate, κ = Cohen's kappa.
[a]Coefficients are standardized canonical discriminant function coefficients.

Table 4.3

Correlations Between the SNAP and Multidimensional Personality Questionnaire (MPQ) Scales in a College Student Sample

	MPQ Scale										
SNAP Scale	SR	AL	AG	AB	WB	SP	SC	CON	HA	TR	AC
Negative Temperament	**.88*†**	**.53**	.34	.24	-.29	-.06	-.02	-.14	.10	.09	-.09
Mistrust	**.44**	**.78*†**	**.46**	.18	-.24	.10	-.33	-.12	-.08	.08	-.00
Manipulativeness	.24	**.37**	**.62***	.26	-.13	.24	-.22	**-.35**	-.22	-.13	-.20
Aggression	.28	.30	**.74*†**	.06	-.18	.25	-.12	-.14	-.19	-.07	-.01
Self-harm	**.40**	**.42**	.21	.08	**-.50***	-.17	-.18	-.12	-.08	-.28	-.23
Eccentric Perceptions	.29	.29	.31	**.65*†**	.07	.18	-.16	-.30	-.23	-.05	.03
Dependency	**.37***	.24	-.00	.00	-.15	-.25	.25	-.02	.25	.15	-.28
Positive Temperament	-.18	-.04	.02	.30	**.73*†**	**.53**	.27	-.17	-.14	.21	**.50**
Exhibitionism	-.05	.09	.15	.32	**.38**	**.68*†**	.28	-.27	-.13	.11	.11
Entitlement	-.02	.21	**.38**	.33	**.36**	**.52***	-.03	-.19	-.08	.15	.16
Detachment	.10	.12	.13	-.02	**-.43**	-.34	**-.84*†**	.08	-.19	-.18	-.11
Disinhibition	.13	.20	**.49**	.29	-.04	.28	-.16	**-.71***	**-.50†**	**-.40**	-.29
Impulsivity	.05	.11	.21	.26	.10	.32	.01	**-.84*†**	**-.45**	-.27	-.14
Propriety	.21	.21	.03	.05	.19	.16	.16	.15	.19	**.73*†**	.09
Workaholism	.08	.23	.18	.15	.14	.21	-.14	.13	-.16	.17	**.79*†**

Note. $N = 251$. SR = Stress Reaction; AL = Alienation; AG = Aggression; AB = Absorption; WB = Wellbeing; SP = Social Potency; SC = Social Closeness; CON = Control; HA = Harm Avoidance; TR = Traditionalism; AC = Achievement. Correlations $\geq |.35|$ shown in **boldface**. Correlations $\geq |.17|$ significant, $p < .01$. *Strongest correlation for each SNAP scale. †Strongest correlation for each MPQ scale.

Table 4.4

Correlations Between the SNAP and the Eysenck Personality Questionnaire (EPQ) Scales in a College Student Sample

Scale	Neuroticism	Extraversion	Psychoticism	Lie
Negative Temperament	**.79†**	-.08	.02	-.20
Mistrust	**.51**	.00	.34	-.16
Manipulativeness	.23	.16	**.56**	-.53†
Aggression	.25	.05	**.35**	-.35
Self-harm	**.45**	-.16	.24	-.10
Low Self-esteem	**.34**	-.21	.16	-.08
Suicide Proneness	**.43**	-.08	.25	-.19
Eccentric Perceptions	**.40**	.10	.30	-.12
Dependency	**.32**	.00	.06	-.10
Positive Temperament	-.16	**.65†**	.02	-.01
Exhibitionism	-.02	**.58**	.26	-.27
Entitlement	-.02	**.35**	.21	-.21
Detachment	.24	**-.62**	.11	.08
Disinhibition	-.00	.26	**.59†**	-.45
Impulsivity	-.03	.23	**.43**	-.28
Propriety	.13	.14	-.19	**.20**
Workaholism	**.18**	.04	-.09	.08

Note. $N = 187$. Correlations $\geq |.19|$ significant, $p < .01$. Strongest correlation for each SNAP scale shown in **boldface**. †Strongest correlation for each EPQ scale.

Table 4.5

Correlations Between the SNAP Trait and Temperament Scales and FFM Factor Scores in Three Samples

SNAP Scale	Neuroticism			Extraversion			Conscientiousness			Agreeableness			Openness		
	NS	CS	PS	NS	CS	PS	NS	CS	PS	NS	CS	PS	NS	CS	PS
Negative Temperament	**.79†**	**.74†**	**.64†**	-.02	-.08	-.06	-.16	-.07	-.05	-.17	-.16	-.21	.02	-.04	-.09
Mistrust	.26	.34	.32	.01	-.12	-.10	-.01	-.11	.04	**-.39**	-.31	**-.39**	-.06	-.01	-.12
Manipulativeness	.13	.02	.04	.10	.07	.08	-.31	**-.39**	-.29	**-.35**	**-.39**	-.30	.18	.02	-.06
Aggression	.24	.26	.21	.00	.05	.04	-.06	-.11	-.08	**-.40†**	**-.54†**	**-.56†**	-.02	-.03	.00
Self-harm	**.48**	**.37**	**.44**	-.22	-.21	-.18	-.10	-.26	-.12	-.13	-.14	-.18	.09	.05	-.11
Eccentric Perceptions	.24	.20	.15	.09	-.01	.08	-.04	-.17	-.08	-.24	-.10	-.16	.24	**.27†**	.12
Dependency	**.40**	**.35**	**.45**	.10	-.04	-.04	-.24	-.19	-.19	.11	.19	.20	-.09	-.19	**-.21†**
Positive Temperament	-.23	-.14	-.14	**.58**	**.49**	**.45**	.21	.26	.21	-.08	.13	-.03	.15	.19	.18
Exhibitionism	-.13	-.06	-.05	**.59**	**.55**	**.54**	-.07	-.05	-.12	-.18	-.09	-.20	.26	.14	.15
Entitlement	-.19	-.10	-.14	.33	.22	.25	.18	.13	.04	-.25	-.14	-.26	.15	.15	.19
Detachment	.17	.09	.17	**-.61†**	**-.60†**	**-.60†**	.10	-.03	-.02	-.27	-.34	-.26	.02	.04	-.09
Disinhibition	.07	-.05	.02	.24	.18	.17	**-.50†**	**-.58†**	**-.43**	-.25	-.26	-.32	.19	.04	-.02
Impulsivity	.03	-.05	.06	.24	.24	.12	**-.47**	**-.56**	**-.49†**	-.13	-.12	-.26	.11	.07	.06
Propriety	.03	.13	.09	.00	-.01	.03	.30	.33	.22	.09	.13	.08	**-.37†**	-.14	-.18
Workaholism	.11	.13	.15	-.01	.04	-.03	**.38**	**.47**	**.35**	-.19	-.09	-.18	.00	.09	.09

Note. NS = normative sample (*N* = 245); CS = college sample (*N* = 1,237); PS = patient sample (*N* = 370). Correlations ≥ |.35| shown in **boldface**. †Strongest correlation for each FFM scale in each sample. **Significance level?**

Table 4.6

Correlations Between the SNAP Trait and Temperament Scales and PANAS-X "Past Week" Mood Scales in the Normative Sample

| | Positive and Negative Affect Schedule—Expanded Form | | | | | | | | | | | | |
| | Negative Emotions | | | | | Positive Emotions | | | | Other Emotions | | | |
SNAP Scale	NA	Fear	Hos	Guilt	Sad	PA	Jov	Assur	Atten	Fatig	Seren	Shy	Surp
Negative Temperament	**.61*†**	**.57†**	**.52†**	**.52**	**.48**	-.24	-.27	-.21	-.18	**.36†**	**-.50†**	**.34†**	.01
Mistrust	**.43**	**.38**	**.47***	.34	**.40**	-.10	-.18	.00	-.07	.20	-.33	.24	.10
Manipulativeness	**.37**	.33	**.38***	**.38***	.25	-.05	-.01	.05	-.11	.19	-.09	.21	.14
Aggression	**.38**	.30	**.44***	.32	.28	-.19	-.22	-.04	-.18	.12	-.34	.23	.03
Self-harm	**.55***	**.50**	**.39**	**.56†**	**.55**	**-.36**	**-.38**	-.26	-.30	.33	**-.46**	.32	-.04
Eccentric Perceptions	**.43***	**.41**	**.42**	**.37**	.34	.01	-.01	.14	-.03	.22	-.19	.28	.28†
Dependency	.25	.29*	.13	.21	.16	-.12	-.04	-.18	-.15	.15	-.14	.24	.07
Positive Temperament	-.24	-.17	-.18	-.22	-.30	**.61*†**	**.52†**	**.53†**	**.51†**	-.33	.27	-.30	.23
Exhibitionism	-.03	-.02	-.02	-.02	-.09	**.35**	**.35**	**.36***	.22	-.11	.10	-.14	.13
Entitlement	-.01	.02	.08	-.04	-.02	**.39**	.29	**.43***	.34	-.17	.12	.02	.25
Detachment	.31	.24	.25	.24	**.39**	**-.41**	**-.48***	-.33	-.29	.23	**-.36**	.27	-.19
Disinhibition	.28*	.22	.27	.33	.21	-.06	.01	.07	-.17	.12	.00	.13	.14
Impulsivity	.23	.19	.22	.28*	.20	-.05	-.01	.08	-.13	.04	.00	.09	.12
Propriety	-.03	.01	-.03	-.04	-.02	.09	.07	-.02	.16	-.11*	-.07	-.02	.00
Workaholism	.09	.12	.07	.04	.10	.18	.05	.17	.19	.00	-.23*	.00	.07

Note. $N = 257$. NA = Negative Affect; Hos = Hostility; Sad = Sadness; PA = Positive Affect; Jov = Joviality; Assur = Self-assurance; Atten = Attentiveness; Fatig = Fatigue; Seren = Serenity; Shy = Shyness; Surp = Surprise. Correlations $\geq |.35|$ shown in **boldface**; rs $\geq |.20|$ significant, $p < .01$. *Strongest correlation for each SNAP scale. †Strongest correlation for each PANAS-X scale.

Table 4.7

Correlations Between the SNAP and the PANAS-X Trait ("Generally Feel") Mood Scales in a Mixed Patient Sample

| SNAP Scale | Positive and Negative Affect Schedule—Expanded Form | | | | | | | | | | | | |
| | Negative Emotions | | | | | Positive Emotions | | | | Other Emotions | | | |
	NA	Fear	Hos	Guilt	Sad	PA	Jov	Assur	Atten	Fatig	Seren	Shy	Surp
Negative Temperament	**.67**	**.55**	**.53**	**.56**	**.63**	-.26	**-.38**	-.31	-.23	**.39**	**-.60**	.32	-.10
Mistrust	**.49**	**.42**	**.50**	**.43**	**.54**	-.14	-.28	-.10	-.10	.30	-.33	.20	-.11
Manipulativeness	.00	-.05	.03	.05	.11	-.06	-.06	.17	-.06	.08	.00	-.07	-.19
Aggression	.29	.20	**.40**	.16	.30	-.03	-.13	.20	.00	.07	-.08	.10	-.09
Self-harm	**.54**	**.43**	**.48**	**.60**	**.56**	**-.39**	**-.45**	-.29	-.30	**.38**	**-.40**	.29	-.24
Eccentric Perceptions	.34	.32	.26	.22	**.38**	-.06	-.11	-.01	-.10	.27	-.20	.06	-.06
Dependency	**.47**	**.42**	.33	**.47**	.42	**-.48**	**-.42**	**-.56**	**-.44**	**.37**	**-.42**	.31	-.10
Positive Temperament	-.20	-.20	-.21	-.23	-.19	**.65**	**.54**	**.60**	**.47**	-.25	.31	-.19	.17
Exhibitionism	-.15	-.22	-.05	-.10	-.06	**.35**	.30	**.36**	.21	-.23	.24	**-.38**	.00
Entitlement	-.20	-.20	-.23	-.27	-.12	**.46**	.34	**.44**	**.39**	-.25	.23	-.23	-.01
Detachment	**.43**	**.39**	.33	**.44**	.45	**-.40**	**-.49**	-.33	-.22	.28	**-.37**	**.41**	-.19
Disinhibition	.06	-.03	.15	.14	.10	-.03	-.03	.18	-.03	-.04	.07	-.05	-.11
Impulsivity	.13	.03	.21	.17	.13	-.12	-.11	.02	-.16	-.01	-.03	-.09	-.06
Propriety	.22	.24	.10	.14	.13	.09	.08	-.07	.06	.09	-.11	.20	.24
Workaholism	.28	.28	.17	.16	.28	.21	-.03	.15	.12	.09	-.21	.10	-.00

Note. *N* = 106 inpatients and outpatients. NA = Negative Affect; Hos = Hostility; Sad = Sadness; PA = Positive Affect; Jov = Joviality; Assur = Self-assurance; Atten = Attentiveness; Fatig = Fatigue; Seren = Serenity; Shy = Shyness; Surp = Surprise. Correlations ≥ |.35| shown in **boldface**; *r*s ≥ |.25| significant, *p* < .01. *Strongest *r* for each SNAP scale. †Strongest *r* for each PANAS-X scale.

Table 4.8

Correlations Between the SNAP and the PANAS-X Trait Mood Scales in a College Student Sample

| | Positive and Negative Affect Schedule—Expanded Form | | | | | | | | | | | | |
| | Negative Emotions | | | | | Positive Emotions | | | | Other Emotions | | | |
SNAP Scale	NA	Fear	Hos	Guilt	Sad	PA	Jov	Assur	Atten	Fatig	Seren	Shy	Surp
Negative Temperament	**.44**	.32	**.41**	**.37**	.34	-.13	-.15	-.20	-.09	.19	**-.41**	.16	.10
Mistrust	.29	.25	.30	.30	.31	-.11	-.12	-.12	-.06	.17	-.29	.20	.03
Manipulativeness	.15	.05	.27	.20	.13	-.06	-.05	.12	-.11	.12	-.08	.02	.00
Aggression	.24	.16	**.44**	.11	.14	-.01	-.15	.19	-.06	.06	-.26	.01	.01
Self-harm	**.35**	.25	**.35**	**.45**	**.44**	-.17	-.16	-.21	-.13	.18	-.24	.26	.04
Eccentric Perceptions	.15	.13	.17	.20	.25	.12	.12	.09	.07	.03	-.06	.05	.19
Dependency	.23	.20	.07	.26	.22	-.22	-.04	-.34	-.19	.18	-.22	.10	.04
Positive Temperament	-.03	-.01	-.01	-.14	-.15	**.47**	**.46**	**.37**	.31	-.15	.10	-.31	.19
Exhibitionism	-.03	-.03	.02	-.08	-.13	.34	.30	**.39**	.19	-.10	-.03	**-.40**	.18
Entitlement	-.10	-.07	.02	-.16	-.09	.29	.21	.31	.19	-.13	.02	-.26	.10
Detachment	.03	-.00	.08	.09	.19	-.23	**-.37**	-.12	-.15	-.01	-.07	.30	-.17
Disinhibition	.11	.09	.20	.10	.08	-.07	.04	.14	-.17	.16	.00	.00	.09
Impulsivity	.06	.07	.13	.06	.04	-.00	.12	.16	-.11	.13	.05	-.10	.07
Propriety	.05	.04	.00	.07	-.00	.16	.14	.03	.17	-.05	.01	.06	.05
Workaholism	.05	-.02	.10	-.00	.01	.24	.00	.11	.33	-.10	-.07	-.05	.05

Note. $N = 225$. Used "Generally Feel" instructions. NA = Negative Affect; Hos = Hostility; Sad = Sadness; PA = Positive Affect; Jov = Joviality; Assur = Self-assurance; Atten = Attentiveness; Fatig = Fatigue; Seren = Serenity; Shy = Shyness; Surp = Surprise. Correlations $\geq |.35|$ shown in **boldface**. Correlations $\geq |.15|$ are significant ($p < .01$).

Table 4.9

Correlations Between the SNAP and the PANAS-X State Mood Scales ("Past 3-4 Weeks" Instructions) in a College Student Sample

| SNAP Scale | Positive and Negative Affect Schedule—Expanded Form | | | | | | | | | | | | |
| | Negative Emotions | | | | | Positive Emotions | | | | Other Emotions | | | |
	NA	Fear	Hos	Guilt	Sad	PA	Jov	Assur	Atten	Fatig	Seren	Shy	Surp
Negative Temperament	**.46**	**.38**	**.38**	**.43**	**.39**	-.31	**-.39**	-.30	-.19	.24	**-.44**	.16	.03
Mistrust	.30	.21	**.36**	**.35**	.31	-.14	-.25	-.09	-.10	.14	-.28	.16	.01
Manipulativeness	.17	.09	.27	.17	.09	-.01	-.02	.17	-.06	.05	.00	.01	.16
Aggression	.20	.07	.33	.14	.09	-.01	-.06	.17	-.05	.07	-.10	-.03	.16
Self-harm	.34	.31	.30	**.42**	.34	-.25	-.30	-.16	-.20	.14	-.20	.20	.05
Eccentric Perceptions	.25	.20	.22	.22	.20	.04	-.05	.14	.04	.05	-.13	.10	.17
Dependency	.21	.18	.13	.29	.18	-.17	-.10	-.20	-.15	.06	-.16	.19	-.06
Positive Temperament	-.22	-.14	-.29	-.32	-.30	**.41**	**.44**	.33	.30	-.19	.13	-.22	.14
Exhibitionism	-.06	-.08	-.03	-.12	-.03	.29	.29	.33	.18	-.10	.09	-.17	.10
Entitlement	-.04	-.03	.00	-.11	.00	.18	.13	.26	.07	-.04	.01	-.11	.12
Detachment	.20	.17	.28	.25	.18	-.29	**-.39**	-.20	-.23	.15	-.17	.22	-.03
Disinhibition	.10	.03	.19	.11	.07	.03	.06	.20	-.05	-.05	.09	-.00	.10
Impulsivity	.01	-.05	.07	.03	.01	.01	.06	.18	-.07	-.10	.07	-.03	.08
Propriety	-.00	.04	-.05	.02	-.02	.01	.03	-.10	.03	.09	-.16	.05	-.06
Workaholism	.03	.16	-.05	.00	.03	.09	-.05	.05	.14	.00	-.19	.08	.06

Note. $N = 314$ college students. Used "Past Few Weeks" or "Past Month" instructions. NA = Negative Affect; Hos = Hostility; Sad = Sadness; PA = Positive Affect; Jov = Joviality; Assur = Self-assurance; Atten = Attentiveness; Fatig = Fatigue; Seren = Serenity; Shy = Shyness; Surp = Surprise. Correlations $\geq |.35|$ shown in **boldface**. Correlations $\geq |.15|$ are significant ($p < .01$).

Table 4.10

Correlations Between the SNAP and the PANAS-X State Mood Scales ("Today" Instructions) in a College Student Sample

SNAP Scale	Positive and Negative Affect Schedule—Expanded Form												
	Negative Emotions					Positive Emotions				Other Emotions			
	NA	Fear	Hos	Guilt	Sad	PA	Jov	Assur	Atten	Fatig	Seren	Shy	Surp
Negative Temperament	.31	**.36**	.11	.27	.21	-.16	-.13	-.21	-.10	.16	-.28	.26	-.03
Mistrust	.30	.23	.30	.26	.26	-.18	-.21	-.14	-.11	.24	-.20	.24	.05
Manipulativeness	.20	.12	.28	.20	.22	-.17	-.17	.02	-.21	.24	-.10	.20	.14
Aggression	.29	.21	.32	.22	.18	-.07	-.16	-.01	.01	.20	-.17	.14	.20
Self-harm	.24	.19	.20	**.37**	.30	-.22	-.19	-.18	-.23	.16	-.18	.12	.00
Eccentric Perceptions	.14	.16	.07	.17	.12	.04	.06	.09	.02	.03	-.04	.09	.10
Dependency	.25	.20	.16	.27	.18	-.07	.02	-.15	-.15	.06	-.13	.20	.08
Positive Temperament	-.11	.00	-.17	-.25	-.27	**.40**	**.35**	**.39**	.34	-.15	.13	-.23	.16
Exhibitionism	-.06	-.06	-.05	-.08	-.08	.20	.23	.26	.13	-.03	.10	-.15	.12
Entitlement	.04	.05	.02	-.08	-.13	.08	.06	.15	.07	.04	.05	-.08	.08
Detachment	.21	.16	.23	.24	.18	-.28	-.31	-.25	-.16	.10	-.14	.34	-.02
Disinhibition	.20	.12	.25	.19	.16	-.11	-.11	.04	-.24	.18	-.10	.17	.16
Impulsivity	.10	.02	.12	.10	.06	-.08	-.07	.04	-.22	.10	-.09	.03	.03
Propriety	-.01	-.05	-.01	-.04	-.08	.07	.10	.02	.12	.06	.06	-.09	-.01
Workaholism	.18	.22	.09	.03	.02	.07	-.02	.01	.18	.04	-.15	.00	.14

Note. $N = 178$. Used "Today" instructions. NA = Negative Affect; Hos = Hostility; Sad = Sadness; PA = Positive Affect; Jov = Joviality; Assur = Self-assurance; Atten = Attentiveness; Fatig = Fatigue; Seren = Serenity; Shy = Shyness; Surp = Surprise. Correlations ≥ |.35| shown in **boldface**. Correlations ≥ |.19| are significant ($p < .01$).

Table 4.11

Correlations Between the SNAP Trait and Temperament Scales and the Mood and Anxiety Symptom Questionnaire (MASQ)

SNAP Scale	MASQ Scale			
	GDA	GDD	AA	AD
Negative Temperament	**.63**	**.63**	**.41**	**.47**
Mistrust	**.51**	**.47**	**.46**	**.35**
Manipulativeness	**.40**	**.37**	**.37**	.25
Aggression	**.35**	**.35**	.26	.28
Self-harm	**.47**	**.72**	**.41**	**.60**
Low Self-esteem	**.36**	**.66**	.33	**.63**
Suicide Proneness	**.47**	**.60**	**.39**	**.44**
Eccentric Perceptions	**.50**	**.42**	**.48**	.24
Dependency	.26	.27	.19	.16
Positive Temperament	-.09	-.32	-.15	**-.56**
Exhibitionism	.04	-.08	.00	-.30
Entitlement	.17	-.04	.05	-.23
Detachment	.22	**.37**	.20	**.55**
Disinhibition	.23	.26	.22	.14
Impulsivity	.16	.21	.18	.12
Propriety	.09	.04	.07	-.06
Workaholism	.20	.10	.07	.02

Note. $N = 241$. GDA = General Distress Anxiety; GDD = General Distress Depression; AA = Anxious Arousal; AD = Anhedonic Depression.

Correlations ≥ |.35| shown in **boldface**. Correlations ≥ |.21| are significant ($p < .01$).

Table 4.12

Correlations Between SNAP Trait and Temperament Scales and MMPI-2 Standard Scales in a College Sample

SNAP Scales	MMPI-2 Scales												
	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
Negative Temperament	-.33	.11	**-.59†**	**.35**	**.40**	.00	.32	.14	.22	**.62*†**	**.37**	.19	**.35**
Mistrust	-.20	.33	**-.40**	**.39**	.28	-.04	**.46**	-.12	.21	**.47**	**.54***	**.35**	.34
Manipulativeness	-.32	**.40**	-.31	.14	-.03	-.15	.32	**-.37†**	.05	.28	**.44**	**.49*†**	.11
Aggression	-.20	.30	-.28	.07	-.01	-.08	**.36**	**-.37*†**	.22	.21	.31	.33	.05
Self-harm	-.13	**.45†**	-.31	**.43†**	**.45**	.31	**.56†**	.17	**.38†**	**.53**	**.58*†**	.07	**.40**
Eccentric Perceptions	-.09	**.35**	-.37	.33	.10	.11	**.35**	.04	.30	**.37**	**.52***	.46	.04
Dependency	-.22	.18	-.20	.28	**.36**	.10	.09	.29	.08	**.37***	.24	-.18	**.37***
Positive Temperament	.12	-.18	.19	-.25	**-.49†**	-.12	-.31	.05	-.10	**-.35**	-.27	.31	**-.60*†**
Exhibitionism	-.21	.00	.07	-.13	-.29	-.08	.09	-.04	-.01	-.12	-.01	.38	**-.53***
Entitlement	-.11	.10	-.07	-.07	-.21	-.15	.09	-.15	.06	.00	.09	**.39***	-.30
Detachment	.00	.29	-.30	.25	.34	.01	.33	-.16	.23	.32	**.36**	-.01	**.57***
Disinhibition	**-.38†**	.33	-.26	.13	-.08	-.04	**.41**	**-.36**	.06	.27	**.39**	**.42***	-.07
Impulsivity	-.18	.25	-.15	.13	-.03	.11	.31*	-.14	.07	.19	.27	.23	-.12
Propriety	.10	-.03	-.04	-.02	-.03	-.12	-.23*	.03	-.01	-.03	-.06	.04	-.06
Workaholism	.13	.01	-.14	.03	-.13	-.10	-.06	-.04	.12	-.07	.01	.23*	-.12

Note. $N = 155$. Correlations $\geq |.35|$ shown in **boldface**. Correlations $\geq |.20|$ are significant ($p < .01$).
*Denotes highest row correlation. †Denotes highest column correlation.

Table 4.13

Correlations Between SNAP Trait and Temperament Scales and MMPI-2 Standard Scales in an Outpatient Sample

SNAP Scales	MMPI-2 Scales												
	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
Negative Temperament	**-.42**	**.56**	**-.67†**	**.62†**	**.67**	**.40**	**.62**	.09	**.57†**	**.84*†**	**.75†**	**.37**	**.56**
Mistrust	-.19	**.61**	**-.64**	**.46**	**.43**	.14	**.62**	-.06	**.52**	**.60**	**.67***	**.45**	**.48**
Manipulativeness	**-.43†**	**.53**	**-.50**	.29	.25	.13	**.54**	-.06	**.39**	**.53**	**.57**	**.58*†**	.21
Aggression	-.26	**.48**	**-.55***	**.36**	.26	.13	**.51**	-.06	**.38**	**.47**	**.53**	**.44**	.30
Self-harm	-.24	**.67†**	**-.50**	**.58**	**.68†**	**.44†**	**.68†**	-.07	**.57†**	**.74***	**.74***	.27	**.60**
Eccentric Perceptions	-.23	**.57**	**-.48**	**.45**	.30	.25	**.45**	-.04	**.47**	**.57**	**.67***	**.55**	.30
Dependency	-.27	**.38**	**-.35**	**.36**	**.43**	.23	**.40**	.02	**.38**	**.54***	**.47**	.23	**.35**
Positive Temperament	.06	-.26	.17	**-.42**	**-.63***	-.34	-.33	.04	-.20	**-.44**	-.34	.22	**-.59**
Exhibitionism	-.23	.00	-.02	-.01	-.14	.03	.15	-.01	.07	.03	.03	.34	**-.44***
Entitlement	-.17	-.01	-.11	-.08	-.19	-.15	-.01	-.09	.01	-.01	.04	**.35***	-.23
Detachment	-.13	**.43**	**-.41**	.31	**.49**	.08	.33	-.02	.26	**.46**	**.48**	.02	**.68*†**
Disinhibition	**-.35**	**.42**	**-.39**	.22	.15	.16	**.49**	.01	.28	**.43**	**.44**	**.53***	.04
Impulsivity	-.28	.28	-.31	.23	.17	.23	**.43**	.11	.26	**.39**	**.38**	**.45***	-.01
Propriety	.04	.06	-.17	.05	.06	-.12	-.01	**-.19*†**	.09	.09	.10	.06	.17
Workaholism	-.10	.24	**-.32***	.21	.14	.05	.21	.02	.26	.26	.30	.26	.17

Note. *N* = 236. Correlations ≥ |.35| shown in **boldface**. Correlations ≥ |.18| are significant (*p* < .01).
*Denotes highest row correlation. †Denotes highest column correlation.

Table 4.14

Correlations Between the SNAP Scales and Interview-Based Ratings of Personality Disorder in a Mixed Patient Sample

SNAP Scale	Interview-based Personality Disorder Ratings [a]											
	PAR	SZD	STP	ANT	BDL	HIS	NAR	AVD	DPN	OBC	NEG	DPR
Negative Temperament	**.41**	.13	.21	.11	**.59***	.31	.13	.23	.33	.23	.34†	**.58**
Mistrust	**.52*†**	.17	**.36†**	.23	**.52***	.34	.15	.31	**.39**	.12	.33	**.37**
Manipulativeness	.12	-.32	.03	**.43***	.18	.17	.34	-.12	.23	.16	.14[b]	.00
Aggression	**.43***	.10	.15	.30	**.37**	.21	.25	-.06	.12	.15	.31	.10
Self-harm	**.38**	.17	.31	.18	**.65*†**	.25	.05	**.41**	**.48**	.22	.31	**.56**
Eccentric Perceptions	.04	.12	.32*	.03	.20	.24	.19	-.02	.10	.07	.14	.04
Dependency	.24	.01	.18	.09	**.50**	.22	-.08	**.43**	**.59*†**	.00	.23	**.48**
Positive Temperament	-.23	**-.35**	-.09	.04	-.21	.26	.24	**-.52***	-.27	.11	-.22	**-.35**
Exhibitionism	.06	**-.42**	-.13	.33	-.03	**.42†**	**.50*†**	**-.45**	-.12	-.04	.03	-.18
Entitlement	-.12	-.26	-.15	.08	-.23	.14	**.40***	**-.40***	**-.35**	.06	-.06	**-.35**
Detachment	.34	**.56*†**	.32	-.06	.23	-.21	-.18	**.56*†**	.24	.18	.18	.30
Disinhibition	.07	-.26	-.05	**.56*†**	.23	.23	.26	-.14	.18	-.07	.11	-.01
Impulsivity	.07	-.10	.01	**.39***	.30	.20	.09	-.03	.18	-.09	.11	.05
Propriety	.20	.13	.14	-.04	.20	.10	.17	.10	.09	.19	.25*	.12
Workaholism	.11	.22	.19	-.07	.16	.13	.14	.05	.07	**.45*†**	.08	.16

Note. N = 94 in- and outpatients. Correlations ≥ |.35| shown in **boldface**. Correlations ≥ |.25| are significant, *p* < .01.

Hypothesized correlations (see Table 2.1) are underlined. PAR = paranoid; SZD = schizoid; STP = schizotypal; ANT =

antisocial; BDL = borderline; HIS = histrionic; NAR = narcissistic; AVD = avoidant; DPN = dependent; OBC = obsessive-

compulsive; NEG = negativistic; DPR = depressive.

[a] Based on the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl et al., 1997).   [b] Manipulativeness was matched conceptually to *DSM-III-R* passive-aggressive PD, but the correlation is not underlined here because extensive changes in the criterion set in *DSM-IV*.

*Highest correlation of a SNAP scale.   †Highest correlation of a SIDP-IV PD dimension.

Table 4.15

Convergence Between SNAP Diagnostic Scales and Semi-structured Interviews, Using Categorical, Criterion, and Dimensional Scoring Methods in a Mixed Patient Sample

PD Scale	Base Rate[a]	Dimens'l Scoring (r)	Criterion Scoring (r)	Categorical Scoring			
				Sn	Sp	φ	κ
Paranoid PD	.05	.56	.33	.20	.93	.16	.11
Schizoid PD [b]	.00	.61	.55	—	.88	—	.00
Schizotypal PD [b]	.00	.42	.35	—	.92	—	.00
Antisocial PD	.02	.61	.63	1.00	.95	.45	.43
Borderline PD	.23	.67	.57	.55	.90	.50	.47
Histrionic PD	.02	.55	.48	.00	.98	.34	-.02
Narcissistic PD	.03	.57	.46	.33	.97	.26	.26
Avoidant PD	.23	.76	.80	.77	.86	.65	.59
Dependent PD	.11	.64	.68	.40	.94	.38	.36
Obsessive-Compulsive PD	.08	.62	.52	.50	.87	.30	.27
Depressive PD	.31	.63	.62	.55	.82	.41	.37
Passive-Aggressive PD	.06	.45	.31	.33	.88	.16	.14
Median	.06	.61	.54	.45	.91	.36	.27

Note. $N = 93$. PD = personality disorder; r = Pearson product-moment correlation; Sn = sensitivity; Sp = specificity; φ = phi coefficient; κ = kappa. Semi-structured interview ratings collected using the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997).

[a] Base rates were calculated from SIDP-IV categorical PD ratings.

[b] Categorical scoring failed to yield any positive cases using the SIDP-IV.

Table 4.16

Correlations between SNAP Diagnostic Scales (Dimensional Scores) and Interview-Based PD Ratings in a Mixed Patient Sample

	Interview-based Personality Disorder Ratings [a]											
SNAP Scale	PAR	SZD	STP	ASP	BDL	HIS	NAR	AVD	DPN	OC	DPR	PAG
Paranoid PD	.58*†	.21	.31	.22	.49	.26	.10	.41	.43	.15	.41	.35
Schizoid PD	.40	.61*†	.39	.03	.35	-.13	-.13	.52	.32	.10	.34	.25
Schizotypal PD	.40	.34	.43†	.10	.44*	.19	.07	.36	.35	.12	.36	.29
Antisocial PD	.19	-.13	.07	.61*†	.34	.22	.26	-.03	.24	.05	.06	.16
Borderline PD	.41	.08	.32	.34	.67*†	.34	.26	.18	.43	.21	.44	.33
Histrionic PD	.21	-.35	.00	.37	.25	.58*†	.49	-.30	.10	.07	.06	.14
Narcissistic PD	.09	-.21	-.01	.25	-.04	.33	.58*†	-.34	-.14	.07	-.18	.06
Avoidant PD	.39	.42	.30	-.03	.45	-.08	-.11	.76*†	.48	.26	.58	.29
Dependent PD	.30	.04	.20	.13	.54	.23	.01	.43	.64*†	.06	.52	.28
Obsessive-Compulsive PD	.19	.06	.15	-.08	.27	.11	.24	.07	.14	.63*†	.24	.25
Depressive PD	.43	.22	.21	.18	.58	.26	.06	.44	.46	.21	.63*†	.35
Passive-Aggressive PD	.44	-.02	.21	.26	.55*	.31	.31	.10	.31	.28	.38	.45†

Note. $N = 93$. PD = Personality disorder. Correlations $\geq |.35|$ shown in boldface. Correlations $\geq |.27|$ are significant (p < .01).
   [a] Based on the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997).
   *Highest correlation of a SNAP scale. †Highest correlation of a SIDP-IV PD dimension.

Table 4.17

Correlations between the SNAP Diagnostic Scales (Dimensional Scores) and Measures of the Five-Factor Model of Personality

PD Scale	Neuroticism		Extraversion		Conscientiousness		Agreeableness		Openness	
	N	P	N	P	N	P	N	P	N	P
Paranoid PD	**.40**	**.46**	-.22	-.19	-.18	-.13	**-.52**	**-.42**	-.11	-.12
Schizoid PD	.27	.33	**-.61**	**-.73**	-.12	-.09	-.32	-.30	-.22	**-.37**
Schizotypal PD	**.42**	**.47**	-.24	-.29	-.13	-.17	**-.46**	-.33	.01	-.09
Antisocial PD	.03	.26	.06	.21	-.34	**-.52**	**-.37**	**-.49**	.10	.01
Borderline PD	**.51**	**.63**	-.14	.02	-.33	**-.37**	**-.47**	**-.56**	.05	-.07
Histrionic PD	.15	.11	**.49**	**.65**	-.16	-.19	-.18	-.26	.24	.17
Narcissistic PD	-.10	-.12	**.45**	**.50**	.04	-.01	-.28	**-.44**	.29	.26
Avoidant PD	**.60**	**.59**	**-.57**	**-.61**	-.21	-.18	-.29	-.13	-.14	-.38
Dependent PD	**.50**	**.62**	-.09	-.12	-.29	**-.45**	-.09	-.06	-.09	-.29
Obsessive-Compulsive PD	.14	.23	-.05	-.01	.23	.19	-.25	-.31	-.09	.02
Depressive PD	.73	.73	-.39	-.34	-.36	-.31	-.34	-.34	-.14	-.33
Passive-Aggressive PD	.54	.56	-.11	.06	-.27	-.38	-.39	-.58	-.05	-.14

Note. N = Normative Sample (N = 245; based on standardized and summed NEO-FFI and BFI scores; $r \geq |.17|$ significant, $p < .01$);

P = Patient Sample (N = 105; based on standardized and summed NEO PI-R and BFI scores; $r \geq |.25|$ significant, $p < .01$).

Correlations $\geq |.35|$ shown in **boldface**.

Table 4.18

Correlations Between the SNAP Diagnostic Scales (Dimensional Scores) and the Mood and Anxiety Symptom Questionnaire (MASQ)

SNAP Scale	Mood and Anxiety Symptom Questionnaire			
	GDA	GDD	AA	AD
Paranoid PD	.53	.52	.42	.44
Schizoid PD	.20	**.38**	.22	**.57**
Schizotypal PD	**.59**	**.56**	**.52**	**.43**
Antisocial PD	.20	.27	.25	.20
Borderline PD	.59	.62	.52	.44
Histrionic PD	**.37**	.23	.25	-.10
Narcissistic PD	.28	.10	.16	-.15
Avoidant PD	**.42**	**.52**	.33	**.53**
Dependent PD	**.46**	**.51**	**.38**	.30
Obsessive-Compulsive PD	.30	.21	.14	.11
Depressive PD	.57	.73	.42	.64
Passive-Aggressive PD	**.63**	**.62**	**.54**	**.47**

Note. $N = 238$. PD = Personality Disorder. GDA = General Distress: Anxiety; GDD = General Distress: Depression; AA = Anxious Arousal; AD = Anhedonic Depression. Correlations $\geq |.21|$ significant at $p < .001$. Correlations $\geq |.35|$ shown in **boldface**.

Table 4.19

Correlations of SNAP Diagnostic Scales (Dimensional Scores) with the Positive & Negative Affect Schedule–Expanded (PANAS-X)

SNAP Scale	Negative Emotions					Positive Emotions				Other Emotions			
	NA	Fear	Hos	Guilt	Sad	PA	Jov	Assur	Atten	Fatig	Seren	Shy	Surp
Paranoid PD	**.49**	**.42**	**.51**	**.38**	**.44**	-.20	-.27	-.09	-.16	.23	**-.42**	.29	.06
Schizoid PD	.32	.24	.30	.26	**.42**	**-.47**	**-.50**	**-.36**	**-.37**	.25	**-.38**	.26	-.18
Schizotypal PD	**.55**	**.49**	**.55**	**.44**	**.48**	-.17	-.22	-.03	-.15	.32	**-.37**	.43	.15
Antisocial PD	.25	.19	.28	.32	.25	-.11	-.08	.06	-.19	.09	-.09	.10	.08
Borderline PD	**.58**	**.52**	**.56**	**.54**	**.49**	-.19	-.19	-.03	-.21	.29	**-.38**	.33	.14
Histrionic PD	.26	.26	.25	.21	.15	.27	.27	.29	.18	.06	-.03	.04	.19
Narcissistic PD	.13	.18	.17	.14	.06	**.35**	.32	**.41**	.24	-.07	.00	.07	.31
Avoidant PD	.42	.40	.30	.39	.42	-.37	-.36	-.37	-.28	.27	-.40	.49	-.08
Dependent PD	**.47**	**.50**	.34	**.42**	**.37**	-.17	-.11	-.20	-.18	.26	-.27	**.41**	.09
Obsessive-Compulsive PD	.17	.17	.18	.11	.11	.05	-.04	.06	.10	.07	-.32	.04	.02
Depressive PD	.59	.54	.48	.55	.57	-.41	-.43	-.34	-.33	.38	-.54	.35	-.05
Passive-Aggressive PD	**.57**	**.53**	**.59**	**.53**	**.48**	-.19	-.24	-.10	-.18	**.36**	**-.42**	.33	.08

Note. PD = Personality Disorder. $N = 253$. Used "Past Week" instructions. NA = Negative Affect; Hos = Hostility; Sad = Sadness; PA = Positive Affect; Jov = Joviality; Assur = Self-assurance; Atten = Attentiveness; Fatig = Fatigue; Seren = Serenity; Shy = Shyness; Surp = Surprise. Correlations $\geq |.20|$ are significant, $p < .001$. Correlations $\geq |.35|$ shown in **boldface**.

Figure 4.1

Simulation Study Group Means

Simulation Study Group Means
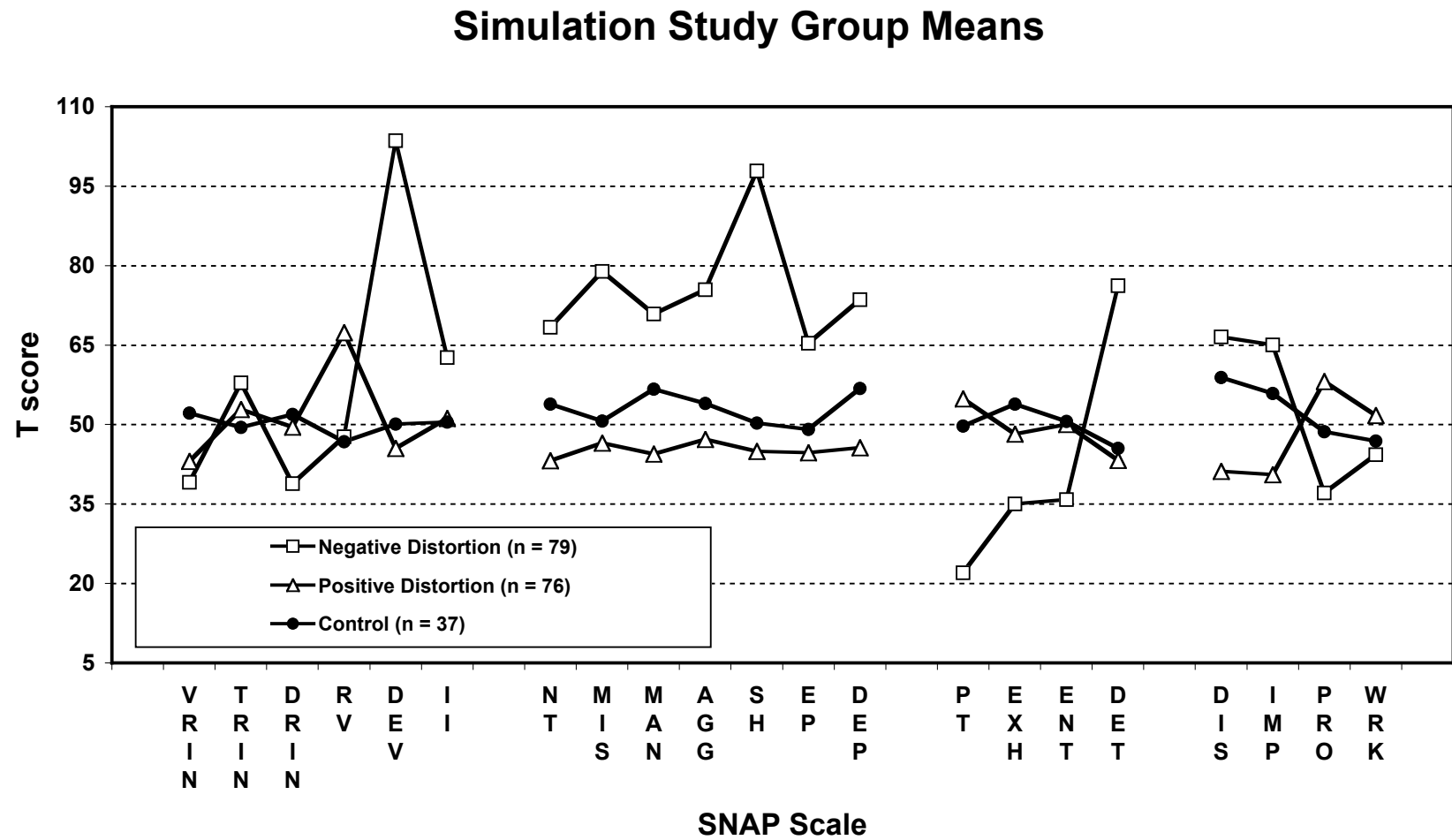
Note. VRIN = Variable Response Inconsistency; TRIN = True Response Inconsistency; DRIN = Desirable Response Inconsistency; RV = Rare Virtues; DEV = Deviance; II = Invalidity Index; NT = Negative Temperament; MIS = Mistrust; MAN = Manipulativeness; AGG = Aggression; SH = Self-harm; EP = Eccentric Perceptions; DEP = Dependency; PT = Positive Temperament; EXH = Exhibitionism; ENT = Entitlement; DET = Detachment; DIS = Disinhibition; IMP = Impulsivity; PRO = Propriety; WRK = Workaholism.

CHAPTER 5
ADMINISTRATION, SCORING, AND INTERPRETATION

ADMINISTRATION

The SNAP-2 is a self-administered inventory that can be used individually or in group settings. Its 390 items are printed in a reusable test booklet, with responses recorded on a separate answer sheet. Respondents first are asked to complete the demographic information requested on the answer sheet, including name or identification number, date of testing, gender, and age; space is provided for the examiner to request other desired information (e.g., race, education level). Respondents then are read or asked to read the instructions printed on the booklet cover and to proceed at their own pace in completing the inventory. The inventory may be read to respondents if required, with subjects either recording their own responses or otherwise indicating their responses to the examiner.

Subjects' questions about a particular word or phrase should be answered, but if the question concerns the meaning or interpretation of the item as a whole, respondents should be encouraged to answer as they think best. Items may be left blank if the subject is unsure how to respond or finds the content of an item objectionable, but because omission of more than a few items will compromise the validity of the testing, the test instructions read: "Please answer every statement, even if you are not completely sure of your answer." Therefore, it is the responsibility of the test administrator to determine whether the SNAP-2 is appropriate for the test subject in terms of reading ability, current emotional state or physical condition, cultural background, and so forth. The ideal testing situation is a setting free from distractions, with adequate lighting and sufficient room to accommodate the test booklet and answer sheet. The most significant factor in obtaining an acceptable protocol may be the willingness of the subject to cooperate in taking the

test. Because this largely is a function of the rapport established with the subject, it is important

to take as much time as needed to develop a good working relationship with the subject.

SCORING

Both raw scores and T-scores are available for all scales (validity, trait and temperament,

and diagnostic). The T-score values are simple linear scores and are based on a large sample of

adult community residents from three metropolitan areas: Iowa City, Dallas, and Minneapolis.

The participants (233 men and 328 women) represent collectively a diverse sample on the basis

of region, ethnicity, education level, socioeconomic status, religious affiliation, history of

medical and psychological health, as well as a host of other variables (see Table 3.10).

Scoring instructions for and item composition of all scales are provided in Appendix X.

Computer scoring disks and hand-scoring templates are available for all scales. For computer

scoring, instructions are provided with the disk and throughout the program. Technical help is

available from the University of Minnesota Press and also from the instrument's authors. In the

handscoring method, the template for each scale is placed in turn over the answer sheet, taking

care to align the two forms. Following the indications on the template, the number of items

endorsed for each scale is counted, which yields the raw score for each scale. Entering these

numbers on the appropriate profile sheet according to the gender of the subject produces a profile

of T-scores for the inventory.

SCALE AND PROFILE INTERPRETATION

As discussed in Chapter 2, the issue of gender-specific versus unisex norms has been

considered by test developers, researchers, and test users. Within this manual, we provide unisex

norms for all SNAP-2 scales.

Validity Scales

Profile interpretation begins with the validity scales, which provide indications of the test-taking attitude of the subject. Extreme scores (T-scores < 30-35 or > 65-70) on at least one validity scale, especially the overall Invalidity Index, suggest the possibility that biased or random responding must be taken into account in interpreting the profile or in deciding whether or not to include the protocol in a research sample. Scores on specific validity scales indicate that the profile interpretation should consider the influence of one or more response sets. For example, the trait scores of a subject with a high DRIN scale score may be influenced by how the person thinks s/he should respond or how the person would like to appear, as well as how s/he actually behaves, thinks, and feels; the profile interpretation should reflect this response set. Similarly, a high Deviance score indicates that the person endorsed a large number of unusual behaviors. S/he may deliberately be attempting to appear deviant as a cry for help, or may in fact have had a number of atypical experiences.

Trait and Temperament Scales

It is fruitful to consider the test responses as a form of communication, and to interpret scale scores as representing subjects' self-presentations. The more elevated a scale score, the more that individuals are presenting themselves as having the characteristics or exhibiting the behaviors described in the scale items. Conversely, extremely low scale scores indicate that individuals are presenting themselves as possessing an opposite set of characteristics (e.g., Disinhibition assesses undercontrolled vs. overcontrolled behavior), or as not possessing the assessed trait. Validation research suggests that many of the scales are bipolar in nature; that is, both low and high scores are interpretable. As a general rule, scales comprising the higher order

factors of positive affectivity and disinhibition appear to be more strongly bipolar than those tapping negative affectivity, but the extent to which bipolarity is characteristic of all SNAP-2 scales is being researched further.

A general guideline for interpreting the SNAP-2 scales (until further research establishes scale-specific cutoffs) is that the descriptors (see Table 3.9) apply to individuals whose scores fall above a T score of 65 or below a T score of 35, whereas those who score in the T-score range of 55 to 65 or 35 to 45 likely will exhibit the described characteristics more moderately or in fewer situations. Through further research it will be possible both to specify more precisely the score ranges for different levels of scale interpretation and to supplement this self-presentation approach to interpretation with empirical data on the external behavioral correlates of the scales (e.g., Wu & Clark, in press).

As has been described, the scales were developed to assess distinct traits, and yet they also form broad, higher order factors. Therefore, one interpretive strategy is to consider first the person's general elevation on each of these broad factors, which provides an overview of his/her personality. This is followed by a consideration of the individual scales within each factor, which indicate how each specific trait is manifest in the person. Following is a characterization of the three higher order factors, including consideration of their component scales.

Negative affectivity represents a predisposition to experience a wide variety of strong negative emotions, including anxiety and depression, hostility, disgust, guilt, and confusion. Persons high in negative affectivity typically hold a negative view of themselves, of other people, and of life in general (Watson & Clark, 1984). Thus, they tend to have low self-esteem, to be scornful, blaming, and resentful of others, and to view their environment as hostile and threatening. High negative affectivity is associated with emotional dysfunction, whereas persons

low in negative affectivity report being relatively content, secure, and satisfied with themselves and their lives (Clark, Watson, & Mineka, 1994). In the SNAP-2, Negative Temperament, Mistrust, Eccentric Perceptions, Self-harm, Manipulativeness, Aggression, and, to a lesser extent, Dependency are associated with this higher order factor. Many individuals with personality disorders will be high in negative affectivity, and the Axis II diagnoses for which this factor is particularly salient include Borderline, Avoidant, Dependent, Schizotypal, and Paranoid personality disorders.

Positive affectivity reflects a generalized sense of active and pleasurable engagement in one's life and activities through both interpersonal interactions and mastery experiences (Tellegen et al., 1988). High positive affectivity is related to extraversion, with features of social dominance, affiliativeness, and energetic enthusiasm for life (Watson & Clark, 1997). Low positive affectivity, by contrast, is characterized by anhedonia, and is associated with depressed mood and symptoms (Clark & Watson, 1991; Mineka et al., 1998; Watson, Clark, & Carey, 1988). The SNAP-2 scales of Positive Temperament, Exhibitionism, and Entitlement load on the high end of positive affectivity, with Detachment loading on the low end. This factor is related to the Axis II diagnoses of Histrionic and Narcissistic versus Schizoid and Avoidant personality disorders.

Disinhibition reflects the extent to which a person is predisposed to respond to emotion-related situations boldly and impulsively versus conservatively and cautiously. Disinhibition includes a rejection of conventional restraints on behavior and a fearless seeking out of sensational experiences, whereas lack of disinhibition (i.e., constraint) is associated with timidity and avoidance of new or stimulating experiences, and with strongly conscientious and conventional behavior patterns. Disinhibition is associated with the SNAP-2 Disinhibition,

Impulsivity, and Manipulativeness scales on the high end versus Propriety and Workaholism on the low (constrained) end. Thus, this factor is relevant primarily to the Axis II diagnoses of Antisocial, Borderline, and Histrionic versus Obsessive-Compulsive personality disorders.

Preliminary research indicates that certain configural relations are common and have clinical importance. For example, high Self-harm coupled with low Entitlement greatly increases the likelihood of suicidal behavior. High Dependency together with high Mistrust and/or high Detachment indicates conflict over interpersonal relations, as the person frequently seeks approval and guidance from others while remaining suspicious and emotionally distant from them. Further research is needed to explore the implications of these and other scale configurations.

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