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This study examined the relationships of the Schedule for Nonadaptive and Adaptive Personality (SNAP) model of personality to 4 targeted personality disorders (PDs) in a large multisite sample of patients. Data were examined from 529 patients, who were assigned 1 of 5 primary diagnoses: borderline, schizotypal, avoidant, and obsessive-compulsive PDs and major depression without PD. Patients were administered the SNAP questionnaire and results were compared among diagnostic groups and between patient groups and nonclinical norms. Results indicated that the dimensions of the model appear to have considerable promise in differentiating normal from abnormal personality, particularly in the propensity of individuals with PDs to manifest negative affects and interpersonal detachment. Furthermore, the model appeared to successfully distinguish specific PDs, a property that represents a particular challenge for dimensional models of personality.

A current source of debate in classification and diagnosis is whether dimensional models of personality disorder are more appropriate than the current *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM-V*; American Psychiatric Association, 1994) categorical system in representing Axis II psychopathology. Some have suggested that the categorical model is inappropriate because, although consistent with traditional concepts of disease in medicine, the assumption of presence or absence of a given diagnosis does not adequately describe the nature of Axis II pathology. The high rates of comorbidity across Axis II diagnoses as well as the symptom heterogeneity within the diag-

noses have been cited as evidence of this point (Clark, 1999; Widiger, 1993). Because the Axis II diagnoses are polythetic in nature, two individuals with the same diagnosis may in fact have very different symptom profiles (e.g., Clark, McEwen, Collard, & Hickok, 1993; Clarkin, Hull, & Hurt, 1993). Conversely, two individuals may look remarkably similar in their symptom profiles but may not receive the same diagnosis because of being on two sides of a potentially arbitrary criterion cutoff. Proponents of a dimensional model have suggested that trait profiles would reduce much of the ambiguity that results from using heterogeneous and overlapping categories.

Dimensional models have appeared in a variety of forms. One dimensional approach to personality pathology involves examining categorical concepts through the use of scaled severity ratings. Although this approach does seem to result in increased reliability (Heumann & Morey, 1990), Clark (1999) noted that “the validity of the diagnostic dimensional approach depends upon the validity of the PD [personality disorder] categories on which the dimensions are based” (p. 227). Clark also noted that the problem with symptom heterogeneity is not necessarily improved by this approach; even if diagnoses are considered dimensionally, two patients in the moderate range on the same diagnosis may appear drastically different. Assessment measures tailored to the categorical approach that merely report diagnostic scale scores are subject to the same problems with symptom overlap and heterogeneity as the Axis II diagnoses themselves (Clark et al., 1993).

A second dimensional view of personality disorders examines trait dimensions that may underlie categorical diagnoses. One dimensional model currently receiving a great deal of attention in the literature is the five-factor model (FFM; Watson, Clark, &

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Harkness, 1994; Widiger, 1993). Although many consider the FFM as an improved way to conceptualize Axis II, there are concerns that the use of normal trait terms underrepresents important aspects of personality pathology, in that significant aspects of personality pathology may not fit well within the structure of the five factors (Butcher & Rouse, 1996; Clark, 1993b; Harkness & McNulty, 1994). Although a number of studies have evaluated the relationships between the FFM and personality disorder, the results have been mixed; Clark (1993b) has suggested that "the data only inconsistently support the specific theoretical predictions . . . regarding relations between the model and personality disorder" (p. 101).

Clark (1993a, 1993b; Clark et al., 1993) has proposed another dimensional model that addresses some of the major concerns about assessing personality disorders using the FFM. This model attempts to identify those traits that are pertinent to both the normal range and the pathological range of personality. Whereas derivation of the FFM was a top-down approach (i.e., using factor analyses of trait adjectives), Clark's (1993a) model was based on a bottom-up approach. Twenty-two symptom clusters were developed by having clinicians sort personality-relevant symptoms into synonym groups. These clusters were reduced further by combining symptom clusters that were highly correlated with one another. The final model consists of 12 lower order trait dimensions and three higher order temperament dimensions, as shown in Table 1. Although considerable attention has been directed toward understanding the relationship between the FFM and personality disorders (Morey, Gunderson, Quigley, & Lyons, 2000; Trull, 1992; Widiger, 1993), relatively little research has explored Clark's (1993a) model and its relation to personality disorders. The purpose of the current study is to investigate these relationships in four specific personality disorders—borderline, schizotypal, obsessive–compulsive, and avoidant personality disorders—using a large sample of carefully diagnosed patients.

Clark (1993a) hypothesized that certain dimensions of the model would relate to different personality disorder diagnoses, and previous research involving the four target disorders has tended to demonstrate such relationships. Clark et al. (1993) reported a study of 56 inpatients who completed the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993a); 34 of these patients had chart diagnoses of personality disorders, 22 of whom were borderline. In a more recent study (Clark, 1999), two heterogeneous patient samples were interviewed using a semistructured diagnostic interview and given the SNAP. Focusing on our four target personality disorders, the results indicated that borderline personality disorder appeared related to multiple SNAP scales: Aggression, Self-Harm, Eccentric Perceptions, Dependency, Impulsivity, and Negative Temperament (Clark, 1999; Clark et al., 1993). The same studies demonstrated that Detachment appeared to relate to avoidant personality and that Detachment, Propriety, and Workaholism were related to obsessive–compulsive personality disorder. Finally, Mistrust and Eccentric Perceptions appeared to be related to schizotypal personality disorder (Clark, 1999; Clark et al. 1993).

Reynolds and Clark (2001) recently examined the predictive power of both the FFM and the SNAP in a group of 94 inpatients and outpatients (62% outpatient). The group was selected to represent a general clinical sample and was not limited to patients that had been diagnosed with a personality disorder. Reynolds and Clark found that SNAP scales could predict between 28%–57% of variance of interview-based personality disorder ratings, although no information about the relationship of specific traits to particular disorders was presented.

These earlier studies have provided important preliminary results suggesting the promise of Clark's (1993a) model but have certain limitations that leave many questions unanswered. Studies thus far have typically used college student samples and relatively small clinical samples, largely composed of borderline patients

Table 1
Mean Scores and Standard Deviations for Each Personality Disorder Group on the SNAP Trait Scales

SNAP trait scale	Schizotypal		Borderline		Avoidant		Obsessive–compulsive		Depressed		F
	M	SD									
Negative Temperament	61.69 _{a,b}	8.60	66.21 _c	7.07	63.94 _{b,c}	8.04	60.21 _a	9.35	56.14	9.44	22.34**
Mistrust	68.17 _a	9.46	64.12 _{a,b}	12.46	60.39 _{b,c}	11.29	57.85 _c	12.83	52.78	11.90	17.84**
Manipulativeness	56.72 _{a,b}	13.56	58.09 _a	12.16	52.38 _b	10.63	52.66 _b	10.97	52.06 _b	10.19	6.69**
Aggression	60.29 _{a,b}	12.94	65.31 _a	15.09	55.54 _{b,c}	12.23	56.89 _{b,c}	13.43	52.00 _c	9.94	17.03**
Self-Harm	72.58 _a	17.42	83.73	14.27	73.73 _a	13.77	61.81 _b	15.19	62.96 _b	14.92	44.73**
Eccentric Perceptions	64.41 _a	13.53	59.28 _a	12.25	52.03 _b	11.44	54.25 _b	12.28	51.00 _b	10.22	15.22**
Dependency	52.32 _a	10.32	59.45 _b	13.58	62.39 _b	12.81	53.55 _a	11.58	51.16 _a	11.45	15.98**
Positive Temperament	39.59 _{a,b}	12.25	39.84 _a	12.52	34.73 _b	10.34	47.05 _a	10.55	40.98 _a	11.14	18.52**
Exhibitionism	46.03 _a	10.54	48.30 _a	10.73	40.59 _b	8.16	50.32 _a	10.78	48.46 _a	9.22	17.40**
Entitlement	49.62 _{a,c}	11.41	45.71 _c	11.53	40.71	10.50	50.76 _{a,b}	11.74	47.35 _{b,c}	11.21	13.53**
Detachment	63.98 _a	9.78	58.59 _b	10.73	63.59 _a	9.29	57.15 _b	11.22	52.00	10.68	19.31**
Disinhibition	55.88 _{a,b}	9.22	57.95 _a	10.79	52.03 _{b,c}	8.14	49.97 _c	9.00	53.83 _b	9.19	13.35**
Impulsivity	53.92 _{a,b}	10.08	58.79 _b	10.46	52.77 _{a,c}	9.00	50.56 _a	10.38	55.36 _{b,c}	9.28	12.34**
Propriety	51.26 _a	8.67	48.00 _a	9.78	48.93 _a	9.46	49.52 _a	9.54	43.91	9.46	6.39**
Workaholism	53.97 _{a,c}	12.03	54.05 _{b,c}	12.59	50.08 _{a,b}	11.65	60.46	10.24	47.95 _a	10.32	19.65**

Note. Means that share subscripts are not significantly different. SNAP = Schedule for Nonadaptive and Adaptive Personality.
** $p < .01$.

(Clark, 1993a; Clark et al., 1993; Reynolds & Clark, 2001). Although the utility of Clark's (1993a) model in distinguishing disorder from no disorder (e.g., Clark et al., 1993) has been demonstrated, the limited sample sizes as well as the comorbidity within the samples have made it difficult to determine the utility of the model in distinguishing among the different personality disorders. It is in this latter area that the FFM, for example, has been found to have difficulty (Morey et al., 2000).

The purpose of the present study was to examine the relationships between the trait dimensions of Clark's (1993a) personality model and the symptomatology of four specific personality disorders. Some hypotheses about the relationships of trait scales to specific disorders may be made on the basis of previous findings reported by Clark et al. (1993) and Clark (1999). For example, borderline personality disorder is expected to relate to the Self-Harm, Aggression, Dependency, Impulsivity, and Negative Temperament scales. These previous studies also demonstrated a relationship between borderline personality and the Eccentric Perceptions scale ($r = .33-.43$), although these are also defining features of schizotypal personality disorder ($r = .33-.36$). Thus, specificity of the Eccentric Perceptions scale to borderline or schizotypal personality was also an area of investigation. Previous literature (Clark, 1999; Clark et al., 1993) also indicates that avoidant personality disorder was related to increased scores on the Detachment scale ($r = .38-.50$); that obsessive-compulsive personality was related to the Workaholism ($r = .18-.40$), Detachment ($r = .08-.52$), and Propriety ($r = .04-.40$) scales; and that schizotypal personality disorder related to the Mistrust and Eccentric Perceptions scales ($r = .43-.45$ and $r = .33-.36$, respectively). In contrast to previous studies, the current study has a significantly larger clinical sample and focuses on disorders that have received attention in this area, such as schizotypal, avoidant, and obsessive-compulsive personality disorders. To increase the validity of assigned diagnoses and also to deal with the issue of diagnostic comorbidity, we assessed participants to determine a primary personality diagnosis in cases where patients appeared to meet criteria for more than one diagnosis. Finally, the present study included a large comparison group of participants with major depression but no personality disorder. This group provides an opportunity to examine the ability of the model to both distinguish between Axis I and Axis II disorders, as well as its ability to distinguish among Axis II disorders.

Method

Participants

Participants in this study were evaluated as part of the Collaborative Longitudinal Study of Personality (Gunderson et al., 2000) of four target personality disorders (borderline, schizotypal, avoidant, and obsessive-compulsive personality disorders). A comparison group of participants meeting criteria for major depressive disorder without comorbid personality disorder was also recruited. Three of the four personality disorders studied were selected to represent the three *DSM-IV* clusters, and the fourth (obsessive-compulsive personality disorder) was selected because factor analytic studies of Axis II have indicated a fourth factor consisting of obsessive-compulsive personality features (e.g., Hyler & Lyons, 1988; Kass, Skodol, Charles, Spitzer, & Williams, 1985) in addition to the three clusters.

Participants between the ages of 18 and 45 years were recruited from patients seeking treatment in both inpatient and outpatient services affil-

ated with the four recruitment sites (see Gunderson et al., 2000, for further details on the rationale for participant selection). The sample also included participants who responded to advertisements for people who had recently been in psychiatric treatment or psychotherapy or were currently seeking or receiving such treatment. Potential participants were prescreened to determine eligibility in the study; patients with organic mental disorder, acute substance intoxication or withdrawal, active psychosis, or a history of schizophrenia, schizophreniform, or schizoaffective disorders were excluded. Eligible participants provided written informed consent after research procedures were fully explained to them.

The total sample of the longitudinal study consisted of 668 participants, 571 of whom received one of the four Axis II diagnoses under consideration. In the larger study, Axis II diagnoses were assigned using a semistructured interview and confirming interview diagnoses with either a prototypicality rating from a treating clinician or with *DSM-IV* Axis II scales developed by Clark (1993a) for the SNAP. For the present article, a different procedure was used to avoid the confound of using the SNAP as a confirmation strategy. Thus, the current study represented a subsample of 432 of the 571 Axis II patients from the larger study, removing participants for whom the SNAP was required to establish a primary diagnoses. These 432 patients were assigned one of four primary personality disorder diagnoses on the basis of results of a semistructured diagnostic interview supplemented by a clinician rating form, as described below. Frequency of these diagnoses included schizotypal ($n = 40$), borderline ($n = 139$), avoidant ($n = 128$), and obsessive-compulsive ($n = 125$) personality disorders. The comparison group involved an additional 97 who met criteria for major depressive disorder without any comorbid personality disorder, resulting in a sample for this study of 529 patients. This sample was primarily Caucasian (76%), 64% were female, and the average age was 32.7 years ($SD = 8.1$).

Assessment

Participants were first asked to complete a brief self-report screen; those who screened positively for any of the target personality disorders were then interviewed using the Diagnostic Interview for Personality Disorders-IV (DIPD-IV; Zanarini, Frankenburg, Sichel, & Yong, 1996; for information on reliability, see Zanarini et al., 2000) by a trained interviewer (at master's level or above). In an attempt to reduce the impact of Axis II comorbidity on our results, an attempt was made to establish a primary personality disorder diagnosis in cases where a patient met criteria for more than one diagnosis on the DIPD-IV. This determination was made using the Personality Assessment Form (PAF; Shea et al., 1987), a scale that involves a judgment of diagnostic prototypicality made, using anchored descriptors, by the participant's primary clinician for each personality disorder. In instances in which the DIPD-IV resulted in more than one study Axis II diagnosis, the clinician's ratings on the PAF for each diagnosis were compared as a tie breaker to determine the patient's primary diagnosis. In instances in which the PAF was not available or there was a tie on the PAF, the participant was excluded from our analyses, resulting in the exclusion of 139 of 571 patients.

Participants were also assessed for major depressive disorder using the Axis I section of the Structured Clinical Interview for *DSM-IV* (SCID-IV; First, Gibbon, Spitzer, & Williams, 1996). Participants were put in the depressed comparison group if they did not meet more than 14 total Axis II criteria on the DIPD-IV, were not within two criteria of meeting any Axis II disorder, and met criteria for major depressive disorder on the SCID-IV.

Participants also completed the SNAP (Clark, 1993a), the measure of Clark's (1993a) model of personality disorders and related trait pathology. The 12 trait scales of the SNAP are reasonably independent, with median scale intercorrelations ranging from $|.17|$ to $|.20|$, respectively (Clark, 1993a). To assess higher order factors that underlie these lower order traits (Clark, Vorhies, & McEwen, 1994), we also included three temperament

scales: Negative Temperament, Positive Temperament, and Disinhibition (vs. Constraint). The three temperament scales demonstrate predictably strong relationships to the FFM traits of Neuroticism (Negative Temperament), Extraversion (Positive Temperament), and Conscientiousness (negatively related to Disinhibition; Watson et al., 1994). Internal consistency in our study sample was consistent with results described in the SNAP manual (Clark, 1993a), with a median of .89 for the higher order temperament scales and a median of .84 for the lower order trait scales.

Results

The mean standardized scores for the SNAP trait and higher order scales for the five study groups are presented in Table 1. These values are computed as *t* scores, which have a mean of 50 and a standard deviation of 10 with reference to community sample norms for the SNAP. Table 1 also presents the results of one-way analyses of variance that compared the significance of mean differences among these groups. These analyses revealed that all of the traits of the model, including both lower and higher order traits, distinguished between the five groups in some form. Groups that were identified as significantly different using Bonferroni post hoc tests are denoted with different letter subscripts; means that share a subscript do not significantly differ from one another. Thus, the 58.79 mean *t* score for the borderline group on Impulsivity is significantly higher than means for the avoidant and obsessive-compulsive groups but not significantly different from the schizotypal or depressed patient groups.

The mean values presented in Table 1 provide a first step toward confirming the utility of the SNAP model for distinguishing among these personality disorders because each of the traits distinguished in some way among the disorders. However, because of the relatively large sample size for the groups, differences that are statistically significant may not necessarily reflect core or defining traits for these disorders. In other words, a statistically significant difference may not necessarily reflect a difference that is definitionally or clinically meaningful. To examine this issue more explicitly, we calculated effect size comparisons for three different contrasts for each of the personality disorder groups: (a) the disorder compared with non-clinical community norms pooled across men and women, as provided by Clark (1993a), (b) the disorder compared with mean scores for the depressed comparison group, and (c) the disorder compared with the remaining three personality disorder groups examined in this study. These effect size comparisons (Cohen's *d*, representing the magnitude of the mean difference expressed in standard deviation units, using standard deviation estimates obtained in this study) are presented in Table 2. Thus, the mean score of schizotypal patients on Mistrust was 1.42 standard deviations above Clark's community norms, 1.21 standard deviations above that of the depressed group, and 0.59 standard deviations above the combined mean of the borderline, avoidant, and obsessive-compulsive groups. In attempting to evaluate the potential definitional significance of a particular trait, Cohen's conventions of .70 for large, .50 for moderate, and .30 for small effect sizes serves as a useful point of reference. Table 2 demonstrates that, for all four diagnostic groups, there are at least two variables that have moderate to large effect sizes, distinguishing that group from the three comparison groups.

Table 2
Diagnostic Group Effect Sizes on SNAP Trait Scales for Different Contrast Groups

SNAP trait scale	Schizotypal			Borderline			Avoidant			Obsessive compulsive		
	Normal	Depressed	Other PDs	Normal	Depressed	Other PDs	Normal	Depressed	Other PDs	Normal	Depressed	Other PDs
Negative Temperament	1.28	0.61	-0.22	1.78	1.10	0.49	1.53	0.86	0.09	1.12	0.45	-0.52
Mistrust	1.42	1.21	0.59	1.11	0.89	0.30	0.81	0.60	-0.14	0.62	0.40	-0.43
Manipulativeness	0.58	0.40	0.19	0.70	0.52	0.42	0.21	0.03	-0.28	0.23	0.05	-0.25
Aggression	0.74	0.60	0.06	1.11	0.96	0.60	0.40	0.26	-0.40	0.50	0.35	-0.26
Self-Harm	1.32	0.56	-0.05	1.98	1.22	0.90	1.39	0.63	0.03	0.69	-0.07	-0.96
Eccentric Perceptions	1.16	1.08	0.71	0.74	0.66	0.36	0.16	0.08	-0.46	0.34	0.26	-0.21
Dependency	0.18	0.09	-0.47	0.73	0.64	0.17	0.27	0.86	0.48	0.27	0.18	-0.47
Positive Temperament	-0.86	-0.12	-0.07	-0.84	-0.09	-0.07	-1.27	-0.52	-0.66	-0.24	0.50	0.76
Exhibitionism	-0.38	-0.23	-0.04	-0.16	-0.02	0.26	-0.89	-0.75	-0.77	0.03	0.18	0.51
Entitlement	-0.03	0.19	0.33	-0.36	-0.14	-0.05	-0.79	-0.56	-0.64	0.06	0.29	0.55
Detachment	1.25	1.07	0.39	0.77	0.59	-0.21	1.22	1.04	0.45	0.64	0.46	-0.39
Disinhibition	0.60	0.21	0.24	0.81	0.42	0.63	0.21	-0.18	-0.24	0.00	-0.39	-0.53
Impulsivity	0.38	-0.14	-0.03	0.85	0.33	0.65	0.27	-0.25	-0.19	0.05	-0.47	-0.48
Propriety	0.13	0.76	0.26	-0.21	0.42	-0.16	-0.11	0.52	-0.01	-0.05	0.58	0.08
Workaholism	0.32	0.49	-0.07	0.33	0.50	-0.08	0.01	0.17	-0.54	0.86	1.02	0.66

Note. Large effects are presented in bold. SNAP = Schedule for Nonadaptive and Adaptive Personality; PD = personality disorder.

In addition to group comparisons among the different diagnostic groups, correlational analyses were conducted comparing SNAP scale scores with dimensional scores representing criterion counts for the 10 *DSM-IV* personality disorders and the two additional research criteria sets for negativistic-passive aggressive and depressive personality disorders. These correlations are presented in Table 3. Although the present study focused on four specific personality disorders, the comorbidity of these disorders assured that there were numerous patients in the sample (ranging from 13 for schizoid to 177 for depressive personality) that met criteria for each of the remaining disorders (McGlashan et al., 2000). Sample sizes for the remaining personality disorders were generally less robust than those of the four study disorders, but the numerous significant correlations in Table 3 suggest that the SNAP scales are likely to also be of utility in assessing the remaining personality disorders. Particularly worthy of note are relatively high associations between the Exhibitionism scale and histrionic personality and the Detachment scale and schizoid personality features.

Finally, two different sets of analyses were conducted to summarize the ability of the collective set of SNAP variables to significantly differentiate individuals with the target disorders from other individuals in the sample. Results of regression analyses contrasting specific diagnostic groups with all other patients in the sample yielded adjusted R^2 values of 43.6% for the borderline diagnosis, 27.8% for the schizotypal diagnosis, 38.97% for the avoidant diagnosis, and 26.7% for the obsessive-compulsive personality diagnosis. All were statistically significant, although these figures were somewhat lower than results of similar analyses reported previously (Clark, 1999; Reynolds & Clark, 2001). In addition, discriminant function analyses (backward stepwise elimination method) were conducted as a summary examination of the efficiency of these personality traits in identifying patient diagnosis. In further support of the utility of the SNAP model in describ-

ing these personality disorders, the classification accuracy for these functions based on the three higher order traits scores was 40.59% ($\kappa = .233$), $\chi^2(16, N = 529) = 118.83, p < .01$; as would be expected, the discriminant functions derived from the 12 lower order trait scores offered an appreciable improvement on the results from the higher order domains, with a classification accuracy of 50.6% ($\kappa = .376$), $\chi^2(16, N = 529) = 292.06, p < .01$. However, it should be noted that identifying personality trait differences among personality disorder diagnostic groups is complicated by the noteworthy co-occurrence of Axis II diagnoses. Although the study groups were mutually exclusive on the basis of their primary diagnoses, a number of patients were in fact comorbid for some study diagnoses (see McGlashan et al., 2000, for a complete description of comorbidity in the full study sample). Thus, for example, some patients in the borderline personality group did in fact meet criteria for avoidant personality disorder, potentially confounding borderline-avoidant discrimination. To estimate the magnitude of this comorbidity on SNAP discriminations, we selected a subsample of 389 patients who met *DSM-IV* criteria for only one study diagnosis—in other words, a sample in which there was no co-occurrence whatsoever of the four study diagnoses. This subsample included 23 patients with schizotypal personality disorder, 69 with borderline personality disorder, 98 with obsessive-compulsive personality disorder, 102 with avoidant personality disorder, as well as the original 97 patients in the major depressive disorder group. The classification accuracy for discriminant functions on the basis of these noncomorbid groups reflected only a slight improvement on discriminations noted in the original sample; accuracy for the three higher order traits was 42.6% ($\kappa = .252$), $\chi^2(16, N = 389) = 109.63, p < .01$, whereas the discriminant functions derived from the 12 lower order traits displayed a slightly higher classification accuracy of

Table 3
Correlations Between Personality Disorder Criteria Scores and SNAP Trait Scales

SNAP trait scale	Personality disorder											
	STY	PAR	SCHZ	BORD	HIST	NARC	ANT	DEP	AVD	OCP	DEPR	PASS AGG
Negative Temperament	.15**	.25**	.07	.40**	.20**	.11**	.07	.22**	.27**	-.06	.43**	.31**
Mistrust	.43**	.48**	.31**	.35**	.17**	.15**	.23**	.15**	.24**	-.01	.20**	.28**
Manipulativeness	.18**	.21**	.14**	.28**	.27**	.31**	.38**	.11*	.04	-.05	.12*	.35**
Aggression	.25**	.35**	.13**	.37**	.21**	.24**	.39**	.02	.00	.10*	.13**	.40**
Self-Harm	.18**	.21**	.22**	.58**	.11**	.05	.23**	.28**	.38**	-.27**	.40**	.27**
Eccentric Perceptions	.42**	.27**	.17**	.36**	.18**	.13**	.23**	.07	.00	.03	.09	.21**
Dependency	.02	.05	-.07	.17**	.19**	.02	-.04	.46**	.32**	-.15**	.26**	.13**
Positive Temperament	-.04	-.14**	-.21**	-.08	.17**	.21**	.08	-.13**	-.41**	.36**	-.20**	-.03
Exhibitionism	-.02	-.09*	-.22**	.02	.38**	.31**	.14**	-.07	-.33**	.10**	-.17**	.09*
Entitlement	.15**	.05	-.03	-.02	.15**	.38**	.15**	-.15**	-.32**	.23**	-.14**	.10*
Detachment	.20**	.27**	.42**	.07	-.14**	-.03	.09	.00	.41**	-.10*	.18**	.00
Disinhibition	.18**	.11*	.08	.31**	.27**	.26**	.46**	.16**	.04	-.21**	.13**	.30**
Impulsivity	.10*	.03	.06	.32**	.22**	.13**	.31**	.15**	.02	-.20**	.17**	.23**
Propriety	.16**	.17**	.04	-.01	-.02	-.01	-.08	.03	.05	.17**	.03	-.03
Workaholism	.03	.02	.03	.04	.06	.10*	-.04	-.09	-.16**	.45**	.03	-.06

Note. SNAP = Schedule for Nonadaptive and Adaptive Personality; STY = schizotypal; PAR = paranoid; SCHZ = schizoid; BORD = borderline; HIST = histrionic; NARC = narcissistic; ANT = antisocial; DEP = dependent; AVD = avoidant; OCP = obsessive-compulsive; DEPR = depressive; PASS AGG = passive aggressive.
* $p < .05$. ** $p < .01$.

56.9% ($\kappa = .454$), $\chi^2(16, N = 389) = 329.11, p < .01$, in these patients.

Discussion

The results of this study suggest that the dimensions of the SNAP model have significant relations with structured-interview-based diagnoses of four *DSM-IV* personality disorders. These dimensions proved to distinguish patients with these disorders from a variety of comparison groups, including normal individuals, depressed patients, and patients with other personality disorder diagnoses. Certain findings confirmed observations made in previous studies, whereas others provided new insights into the utility of the model for representing *DSM-IV* categorical diagnoses.

For borderline personality, earlier research (Clark, 1993a, 1999; Clark et al., 1993) had suggested that the Negative Temperament and Self-Harm scales were particularly strong SNAP correlates of this disorder, and this finding was confirmed here. In particular, results indicated that the Self-Harm scale appeared to reflect a core trait of this disorder, as mean scores for the borderline patients were quite high on this scale in comparison to any contrast group—normal, depressed, or other personality disordered participants. Another candidate as a core trait for borderline personality was the Aggression scale, on which these patients differed from all other comparison groups by at least 0.5 standard deviations. In contrast, the Negative Temperament scale for borderlines was markedly elevated in comparison to normal and depressed patients but considerably less so with respect to the other personality disorder groups. This latter finding may suggest that the Negative Temperament scale may be related to the presence of personality pathology in general but of less use in differentiating among specific personality disorders. Similar conclusions have been offered about the conceptually similar Neuroticism dimension of the FFM (Widiger, 1993). Thus, the SNAP characterizes the individual with borderline personality as moody and easily angered, prone to deal with frustration and upset by hurting themselves or by lashing out at others.

Previous research has suggested that schizotypal personality disorder was related to Clark's (1993b) scales of Mistrust and Eccentric Perceptions (Clark, 1993a, 1999; Reynolds & Clark, 2001). Our sample confirmed that these two dimensions are distinguishing markers of schizotypal personality disorder when compared with other personality disorders: Means on both dimensions were each over 0.5 standard deviations higher for the schizotypal personality disorder group than for the other personality disorders. The schizotypal group was also markedly elevated on the Detachment scale relative to depressed and nonclinical groups and scored significantly higher on this scale than the borderline and obsessive-compulsive personality disorder groups. However, schizotypal patients were not significantly different on this scale from the avoidant group. This finding is consistent with earlier hypotheses suggesting that detachment may be a component of both of these disorders (Clark, 1993a). Thus, core SNAP indicators of schizotypal personality suggest an individual who is mistrustful and alienated from others, prone to experiencing unusual phenomena or feelings of depersonalization.

The finding that both the schizotypal and avoidant groups differed markedly from all other comparison groups on the Detachment scale suggests that these disorders may share interpersonal

alienation as a core feature. However, a number of other features appear to distinguish these two groups. Avoidant patients were over 0.5 standard deviations lower than the other personality disorder groups on the Workaholism, Exhibitionism, and Entitlement scales. Consistent with conceptual predictions (Clark, 1993a), Positive Temperament was over 0.5 standard deviations lower in avoidant patients than the other personality disorders and the depressed patients. The SNAP portrayal of avoidant personality involves a person who desires to avoid attention and who is very self-effacing and humble. Such people would tend to be unenthusiastic and uninspired, and this apathy is likely to involve work as well as social relationships.

Confirming findings from earlier research (Clark, 1999), workaholism appears to be a core trait of obsessive-compulsive personality disorder. Scores on this scale showed moderate to large effect sizes when compared with the other personality disorders, the depressed group, and the normal controls. Although propriety has been hypothesized to be a conceptually important part of obsessive-compulsive disorder (Clark, 1993a, 1999), these data do not support this dimension as an important component of obsessive-compulsive personality disorder. On the three temperament scales, Negative Temperament and Disinhibition were both 0.50 standard deviations below the other personality disorders, and Positive Temperament was 0.75 standard deviations above, suggesting that obsessive-compulsive personality disorder may be quite different temperamentally from the other three personality disorders studied here. Thus, the SNAP represented these individuals as perfectionists who place a greater premium on their work productivity than their social relationships.

The results of this study indicate that the trait and temperament scales of the SNAP appear to have considerable promise in differentiating normal from abnormal personality, as well as in distinguishing different personality disorder categories. The four personality disorder groups were different from depressed patients and from Clark's (1993a) nonclinical sample in many respects, particularly in their susceptibility to negative affects and in their interpersonal detachment. These findings suggest that elevations on scales such as Negative Temperament and Detachment may be of particular use in distinguishing personality disorders from both normal personality and from Axis I disorders.

Although the SNAP has promise for identifying issues related to the broad category of personality disorder, it also appears to have clinical and research utility for the more difficult task of differentiating among specific personality disorders. All four personality disorders studied had at least two dimensions that were substantively different from the other personality disorders, and, in some cases, as many as 5 or 6 of the 15 SNAP dimensions appeared to uniquely characterize a disorder. This result compares favorably with results from the FFM, both in previous research (e.g., Morey et al., 2000; Zweig-Frank & Paris, 1995) as well as in results obtained using data from this project (Morey et al., 2002), particularly at lower level examinations of the two models. For example, the kappa for classification accuracy of .376 (.454 in the noncomorbid subsample) provided by discriminant functions derived from the lower order SNAP trait scores obtained in this study represents somewhat of an improvement on the kappa value of .270 (.400 in the noncomorbid sample) obtained in similar analyses using the 30 lower order facet scores of the FFM in these patients (Morey et al., 2002). Similar results comparing the lower

order dimensions of the two models were reported by Reynolds and Clark (2001). Such results support the continued examination of the SNAP model as a viable dimensional model for abnormal personality.

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