

Psychometric properties and validity of the Dutch Inventory of Personality Organization (IPO-NL)

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This study investigated the psychometric qualities and validity of a Dutch translation of the Inventory of Personality Organization (IPO-NL) in a heterogeneous sample of 371 psychiatric patients and a sample of 181 normal controls. Results show good internal consistency and test-retest reliability. Exploratory factor analyses did not replicate its proposed five-factor structure, but suggested a four-factor structure instead. The IPO-NL appeared to have good concurrent validity across populations, and good convergent validity in terms of associations with measures of psychological distress and personality pathology severity. Taken together, the IPO-NL appears to be a useful instrument for evaluating general personality pathology for clinical practice. Future studies may further articulate its proposed subscales. (Bulletin of the Menninger Clinic, 73[1], 44–60)

In personality assessment, a distinction can be made between descriptive and structural diagnosis. Descriptive diagnosis predominantly involves the description of externally observable behavior, whereas structural diagnosis aims to examine the underlying, not directly observable, structure of personality. Examples of the descriptive approach are the categorical diagnosis according to the *Diagnostic and Statistical Manual for Mental Disorders (DSM-IV;* American Psychiatric Association, 2000) and various dimensional models of personality (for a recent review, see Widiger & Simonsen, 2005). The structural approach is rooted in the structural model of

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Freud. Kernberg has developed a contemporary application of this structural model (Kernberg, 1984; Kernberg & Caligor, 2005).

According to Kernberg's model, the basic structure of personality can be meaningfully characterized in terms of levels of ego-organization. Kernberg distinguishes, from most to least severely disturbed, psychotic, borderline, and neurotic ego-organization, respectively. Structural diagnosis of these different levels can be derived from the specifically developed Structural Interview (Kernberg, 1984). This interview involves both a psychiatric examination and a psychodynamic diagnostic interview. Specifically, the interview explores the level of identity integration, nature of defenses, and level of adequate reality testing to determine a patient's position in the three-level classification. Criticisms of this model are primarily aimed at the scarcity of empirical underpinnings and the unsatisfactory reliability of the Structural Interview (Derksen, Hummelen, & Bouwens, 1989; Reich & Frances, 1984).

In view of the time-consuming nature of the Structural Interview, as well as the high level of psychodynamic knowledge and clinical skills required of the interviewer, Kernberg and associates constructed a semistructured interview (STIPO; Buchheim, Clarkin, Kernberg, & Doering, 2006) and the self-report questionnaire Inventory of Personality Organization (IPO; Clarkin, Foelsch, & Kernberg, 2001). The IPO is the focus of the current study. Similar to its interview counterpart, the IPO is primarily designed to measure the dimensions of identity diffusion, defenses, and reality testing, and aims to contribute to the structural diagnosis of personality.

Several studies have addressed the psychometric properties of the IPO in both clinical and nonclinical samples. Good internal consistency and test-retest reliability for the three main scales Identity Diffusion (ID), Primitive Defenses (PD), and Reality Testing (RT) were observed in nonclinical (Lenzenweger, Clarkin, Kernberg, & Foelsch, 2001; Normandin et al., 2002) and clinical (Vermote et al., 2003) samples. Factor analyses yielded a three-factor solution, but in most studies the third factor made insufficient independent contribution to the proportion of explained variance. Preference was therefore given to a clustered factor of PD and ID, with RT as a second factor (Lenzenweger et al., 2001; Normandin et al., 2002; Vermote et al., 2003).

The relationship between the IPO and *DSM-IV* personality pathology has also been investigated in several studies. For example, Foelsch et al. (2000) reported that the IPO scales differentiated between clustered (i.e., low-level borderline, high-level borderline, and neurotic) Axis II diagnoses. In a study by Vermote and colleagues (2003), high correlations were observed between the ID and PD scales and the borderline and paranoid personality disorders, as well as between the RT scale and the borderline and schizotypal personality disorders. In addition, the IPO scales showed theoretically predicted relationships to several relevant constructs in (structural) personality pathology such as negative affectivity, disturbances in aggression regulation, trait anxiety, psychosis proneness, and interpersonal problems (Lenzenweger et al., 2001; Vermote et al., 2003). Furthermore, the IPO appeared to be sensitive to changes in aspects of borderline personality organization following psychotherapeutic treatment (Arntz & Bernstein, 2006). Finally, the RT subscale emerged as a predictor for different facets of dissociation (Spitzer et al., 2006).

Various versions and translations of the IPO have been developed (e.g., Clarkin et al., 2001; Normandin et al., 2002; Vermote et al., 2003). All versions consist of the three main scales, ID, PD and RT, and some versions include additional scales. The most recent English version of the IPO was published in 2001 (Clarkin et al., 2001) and includes two additional scales, Aggression (AG) and Moral Values (MV). The authorized Dutch translation of this questionnaire (IPO-NL; Ingenhoven, Poolen, & Berghuis, 2004) and the additional scales have not yet been evaluated empirically.

The current study was designed to determine the basic psychometric properties and to investigate the concurrent and convergent validity of the IPO-NL. Specifically, we examined its sensitivity to clinical status and tested its convergent validity by relating the IPO-NL to selected measures of personality and personality pathology.

Method

Participants

The total sample ($N = 552$) comprised a heterogeneous sample of psychiatric patients and a nonclinical control sample. The clini-

cal sample ($n = 371$) was recruited from inpatient and outpatient programs from two large mental health care institutes in the Netherlands (Symfora groep, Amersfoort; and Parnassia, The Hague). All included patients were specifically referred for extensive personality assessment by a licensed clinical psychologist or psychiatrist. Referral was based on the clinical impression that significant personality pathology was implicated in the patient's presenting problems. Patients with psychotic disorders, organic mental disorders, and mental retardation and patients in acute crisis were excluded. The clinical group included 253 women (68%) and 117 men (32%); one value was missing. The mean age was 34.0 years ($SD = 11.6$, range = 17–64). The nonclinical sample ($n = 181$) consisted of various subgroups: train passengers ($n = 91$; 50%), members of an amateur choir ($n = 59$; 33%), and clinical psychologists in training ($n = 31$; 17%). This group included 125 women (69%) and 56 men (31%). Their mean age was 41.3 years ($SD = 16.8$; range = 18–80).

Instruments

Inventory of Personality Organization (IPO; Clarkin et al., 2001). The IPO is an 83-item self-report questionnaire. All items are rated on a 5-point Likert-scale format, ranging from 1 (never true) to 5 (always true). The IPO has three main scales, including Identity Diffusion (ID; 21 items), Primitive Defenses (PD; 16 items), and Reality Testing (RT; 20 items) and two additional, newly developed scales, Aggression (AG; 18 items) and Moral Values (MV; 11 items, three of which are derived from the main scales). ID measures facets related to a poorly integrated identity, for example, poor and inconsistent self-representations, and inadequate perception and understanding of others. PD refers to primitive psychological defenses such as externalization, splitting, projection, idealization, and devaluation. RT covers items related to the “capacity to differentiate self from nonself, to distinguish intrapsychic from external sources of stimuli, and to maintain empathy with ordinary social criteria of reality” (Kernberg, 1984, p. x). AG consists of items related to the control over aggressive impulses, (para) suicidal acts and ideations, manipulation of others, and sadistic

aggression. MV assesses the psychodynamic construct of superego pathology.

This study used the authorized Dutch translation by Ingenhoven et al. (2004). The original English version was translated to Dutch, and then back translated by a native English speaker. Comments on this translation by one of the original authors (J.F. Clarkin) were incorporated into the definitive translation, which was then authorized as such. This translated version differs from the version published in 2001 (Lenzenweger et al., 2001) in its inclusion of the additional AG and MV scales and in the ordering of items. In the 2001 version, items belonging to the same scale were listed sequentially, whereas the Dutch translators opted to randomize the order of items (with permission of the original authors).

Symptom Checklist (SCL-90; Derogatis, 1994; see also Arrindell & Ettema, 2003, Dutch version). The SCL-90 is a widely used 4-point self-report clinical rating scale that assesses symptoms in nine areas of patient functioning. Psychometric research on the SCL-90 has yielded favorable results with regard to internal consistency, test-retest reliability, and correlations with related measures (Arrindell & Ettema, 2003). We selected the SCL-90 Total Score and the Personality Severity Index (PSI) and the Current Symptom Index (CSI) for the analyses. The PSI is the mean score of the subscales Interpersonal Sensitivity (SEN) and Hostility (HOS) and has been found to be strongly related to (severe) personality pathology (Karterud et al., 1995; Starcevic, Bogojevic, & Marinkovic, 2000). The CSI is the mean score of the remaining SCL-90 subscales. We predicted that the IPO-NL would be most strongly related to the SCL-90 personality pathology index.

NEO-Personality Inventory (NEO-PI-R; Costa & McCrae, 1992b; see also Hoekstra, Ormel, & de Fruyt, 1996, Dutch version). The 240-item NEO-PI-R is a widely used operationalization of the Five-Factor Model (FFM) of personality. Respondents indicate their level of agreement with each of the statements on a 5-point scale. Items map onto the five personality domains, each of which is subdivided into six facets. Costa and McCrae (1992a) report extensive reliability and validity data on the NEO-PI-R. Research has shown that high scores on Neuroticism in combination with low scores on Agreeableness and Conscientiousness are strongly

connected to general (severe) personality pathology (Saulsman & Page, 2002; Widiger & Costa, 2002). This so-called NAC-profile served as another test of the IPO's convergent validity; based on theory and previous research, it was predicted that the IPO would show moderate to high correlations with Neuroticism, Agreeableness, and Conscientiousness, which would be greater than the correlations with Extraversion and Openness to Experience.

Data Analysis

Basic psychometric properties of the IPO-NL were assessed for the clinical sample. Specifically, the internal consistency (Cronbach's alpha) and test-retest reliability were assessed for the IPO-NL and its subscales, and the factor structure was investigated using a principal component analysis (PCA). A varimax rotation was used to yield factors describing the major independent components of variance in the IPO. To decide on the optimal number of factors, we inspected the Scree plot of eigenvalues and evaluated the interpretability of resulting factor structures by relating the solutions to theory (esp. Kernberg). Additional analyses were conducted to test aspects of the construct validity of the IPO. First, to establish the sensitivity of the IPO-NL to clinical status, means of the clinical and nonclinical groups were compared using ANCOVAs adjusted for age. Second, to test our predictions, correlations with the NEO-PI-R and selected SCL-90 indices were calculated. All analyses were conducted with SPSS 15.0 for Windows.

Results

Reliability

As can be seen from Table 1, Cronbach's alpha for the five IPO-NL scales in the clinical sample ranged from 0.78 (MV) to 0.93 (ID). Only three items had a corrected item-total correlation less than .30. Feedback from multiple respondents suggested that item 21 was ambiguous, which we confirmed on closer grammatical inspection. This item was therefore excluded from further statistical analyses.¹

1. In future studies, we will utilize a revised translation of item21, so that the Dutch and English versions of the IPO remain equivalent

Table 1. Means, standard deviations, internal consistency and test-retest reliability of the IPO-NL-scales in a nonclinical ($n = 181$) and a clinical group ($n = 371$)

IPO-NL-scales	Nonclinical		Clinical		d	α	r^*
	M	SD	M	SD			
Identity Diffusion	38.47	10.91	54.21	17.33	1.09	.93	.86
Primitive Defenses	26.99	7.63	38.33	12.61	1.09	.91	.82
Reality Testing	29.43	8.00	38.43	13.38	0.82	.91	.85
Aggression	23.16	4.00	30.81	9.69	1.03	.85	.80
Moral Values	21.30	5.74	24.65	7.26	0.51	.78	.75
Total Scale	139.35	32.68	186.43	54.59	1.05		

Note. M = mean score; SD = standard deviation; d = Cohen's d , effect size; α = Cronbach's alpha; r^* = test-retest reliability (combined clinical and nonclinical groups), $p < .001$ (one-tailed).

One-month test-retest correlations were computed for a subsample of normal controls ($n = 62$) and patients ($n = 14$). These correlations (see Table 1) generally did not differ between patients and control participants, and ranged from .80 (AG) to .86 (ID), suggesting excellent test-retest reliability. An exception was noted for the MV with a correlation of .72 for the patients and .84 for the normal control group.

Factor structure

To explore the factor structure of the IPO-NL, a PCA with varimax rotation was conducted on the clinical sample ($n = 371$).² We also conducted an oblique rotation (promax), which yielded a highly similar pattern of factor loadings.

An exploratory analysis was selected because no previous study has examined the IPO with the additional Aggression and Moral Values scales. While The IPO-NL was designed to measure five scales, but our scree plot suggested that a four-factor solution was more appropriate than a five-factor solution, and the four-factor solution was also superior from a theoretical point of view. This four-factor model explained a combined total of 41.9% of the variance, consisting of one large component (21.5%) and three smaller components explaining 8.5%, 8.4%, and 3.6%, respectively. Following the recommendations of Stevens (2002), we declared loadings above .27 in absolute value as statistically significant. Only

2. We also conducted an oblique rotation (promax), which yielded a highly similar pattern of factor loadings.

one item had a factor loading below .27. Items that loaded $\geq .27$ on a given factor were assigned to that factor. Items loading onto two or more factors were assigned to the factor for which they had highest loadings.

The interpretation of the pattern of rotated factor loadings (see Table 2) is as follows: Factor I was interpreted as General Personality Pathology, with primary loadings of almost all items of the ID, PD and MV scales, and seven items of the RT scale and six items of the AG scale, respectively. Fifty-two of the 82 items loaded onto this first factor. Factor II was interpreted as Reality Testing or psychotic vulnerability, with primary loadings almost exclusively from items of the RT scale. Factor III was called Aggression, with primary loadings from items of the AG scale, and items from other scales with clear aggressive content. Factor IV was interpreted as Sadistic Aggression, with primary loadings from three items with sadistic content of the AG scale. Intercorrelations between these four factors ranged from .03 (between Factors I and IV) to .60 (between Factors III and IV), with a median correlation of .41. Primary loadings were substantially higher than the secondary loadings (median difference score .33, range .02–.71).

Construct validity

As a preliminary analysis, we tested baseline equivalence of groups for gender and age. No significant group differences were observed for gender ($X^2 = 0.03$, $df = 1$, $p = .87$). The clinical group was significantly younger than the nonclinical group; $t(550) = 5.99$, $p < .001$. Next, in order to examine IPO-NL sensitivity to clinical status, the scores of the clinical and nonclinical groups were compared using ANCOVAs adjusting for age. The clinical group scored consistently higher on all IPO scales (see Table 1): ID, $F(2, 548) = 90.14$, $p < .001$; PD, $F(2, 548) = 75.81$, $p < .001$; RT, $F(2, 548) = 44.16$, $p < .001$; AG, $F(2, 548) = 65.28$, $p < .001$; MV, $F(2, 548) = 25.33$, $p < .001$; IPO total score, $F(2, 548) = 76.81$, $p < .001$.

As a test of convergent validity, correlations between the IPO-NL scales and the SCL-90 were calculated, as shown in Table 3. Correlations between the IPO-NL scales and the Personality Severity Index (PSI, median $r = .73$; range .64–.80) were higher than the associations between the IPO-NL scales and the Current Symptom Index (CSI, median $r = .63$; range .46–.67), suggesting that the IPO

Table 2. Factor loadings of the 82 items from the IPO-NL in a clinical group ($n = 371$)

IPO Scale Item number	Factor loading			
	I	II	III	IV
Identity Diffusion				
62	.76	.13	-.03	.04
15	.71	.08	.06	.01
61	.66	.19	.22	-.13
50	.66	.11	.31	.02
34	.65	.11	.05	.04
42	.63	-.03	.09	.01
39	.63	.07	.20	.09
09	.61	.15	.11	.05
79	.60	.24	.20	.11
48	.58	.19	-.02	-.02
13	.58	.23	.28	.24
69	.57	.04	.28	-.17
07 ^a	.55	.19	.24	-.04
32	.55	.09	.19	.01
83	.54	.24	.29	-.46
49	.52	.19	-.03	.09
77	.52	.14	.07	-.02
41	.51	.10	.43	.20
63	.50	.04	.20	-.27
38	.43	.30	-.04	.24
19	.39	.07	.54	.10
Primitive Defenses				
23	.69	.16	.17	.06
05	.67	.19	.18	-.07
43	.64	.10	.29	.04
12	.62	.19	.34	.14
20 ^a	.58	.30	.25	.18
33	.59	.25	.12	.10
29	.57	.22	.21	.14
06 ^a	.54	.12	.31	.12
46	.54	.18	.09	.12
17	.53	.12	.07	-.02
78	.52	.16	.11	-.06
80	.50	.20	.16	.18
36	.46	.13	.13	.16
04	.37	.22	.12	.15
70	.40	.29	.42	-.31
40	.09	.26	.19	.22
Reality Testing				
75	.61	.24	-.05	.12
10	.61	.25	.10	.01
28	.60	.19	.13	-.13
51	.51	.19	.04	-.02
66	.51	.25	.44	.18
47	.48	.40	.15	.01
53	.43	.37	.12	-.17

Table 2. (continued)

Reality Testing				
57	.04	.81	.10	.05
54	.18	.78	.11	-.04
35	.23	.76	.07	-.01
65	.04	.67	.15	-.05
76	.24	.62	.17	.22
11	.34	.56	.28	.09
01	.30	.56	.23	.07
73	.20	.55	.25	-.02
81	.27	.49	.34	-.32
58	.44	.48	.22	-.03
52	.19	.46	.08	.14
16	.30	.46	.21	.07
55	.32	.11	.45	.25
Aggression				
08	.57	.06	.20	.17
60	.52	.09	.21	-.08
24	.52	.22	.28	-.04
02	.50	.14	.29	.19
74	.43	.26	.29	-.15
30	.40	.28	.24	-.25
45	.26	.29	.23	-.20
82	-.04	.09	.73	.06
44	.20	.11	.67	.01
72	.13	.08	.66	.17
26	.07	.23	.64	.02
68	.09	.15	.54	.08
59	.18	.16	.49	-.17
25	.20	.15	.48	-.01
14	.32	.15	.44	.10
71	.20	-.01	.18	.73
56	.04	.14	.19	.67
37	.13	.08	.34	.60
Moral Values				
18	.54	.14	.18	.03
31	.53	.08	.04	.01
03	.43	.21	.27	.07
22	.41	.12	.36	-.01
64	.41	.07	.24	.16
27	.06	.22	.56	.15
67	.19	.08	.36	.22

Note. Varimax rotated principal component analysis. Factor loadings greater than .27 (Stevens, 2002) are printed in bold. ^aAlso MV scale item.

Table 3. Correlations between the IPO-NL-scales and personality and pathology measures (SCL-90, NEO-PI-R) in a clinical group (N = 109)

	IPO-NL Total	Identity Diffusion	Primitive Defenses	Reality Testing	Aggression	Moral Values
SCL-90						
Total score	.73**	.70**	.69**	.68**	.55**	.53**
PS Index	.80**	.76**	.79**	.69**	.65**	.64**
CS Index	.67**	.65**	.62**	.63**	.54**	.46**
NEO-PI-R						
Neuroticism	.66**	.76**	.61**	.53**	.48**	.49**
Extraversion	-.12	-.20*	-.06	-.14	-.06	-.06
Openness	-.09	-.02	-.10	-.07	-.13	-.11
Agreeableness	-.45**	-.34**	-.44**	-.23*	-.56**	-.59**
Conscientiousness	-.47**	-.51**	-.40**	-.36**	-.45**	-.36**

Note. * $p < 0.05$; ** $p < 0.01$ (2-tailed). PS Index; Personality Severity Index; CS Index; Current Symptom Index.

is more strongly related to personality pathology than to Axis I symptomatology.

Table 3 also shows the intercorrelation matrix of the IPO-NL scales and the NEO-PI-R domain scores. As expected, we observed low correlations with Extraversion and Openness (median $r = .10$; range .02–.20) and moderate to high correlations with Neuroticism, Agreeableness, and Conscientiousness (median $r = .48$; range .23–.76). This can be seen as suggestive evidence for a positive association with the NAC profile that presumably measures general, severe personality pathology.

Discussion

This study presents a first empirical test of an authorized version for the Dutch IPO in a heterogeneous clinical sample. Various aspects of reliability and validity of the IPO were evaluated. Regarding reliability, we found good internal consistency of the IPO-NL and its subscales, and good to excellent test-retest reliability. Our findings were commensurate with those reported in earlier studies of different (various languages) versions of the IPO (Lenzenweger et al., 2001; Normandin et al., 2002; Vermote et al., 2003).

The IPO-NL factor structure deviated from the five factors predicted by theory. Our data fit a four-factor solution best. The first, large factor defies specific interpretation other than general personality pathology. It is predominantly composed of items that putatively belong to the Identity Diffusion (ID), Primitive Defenses (PD), and Moral Values (MV) scales. We were not surprised that ID and PD loaded on one factor, as this finding corresponds to the factorial solutions from prior studies regarding the IPO (Lenzenweger et al., 2001; Normandin et al., 2002; Vermote et al., 2003). The observed ID/PD/MV factor, our “general personality pathology” factor, is theoretically related to the neurotic-borderline continuum of psychological functioning; particularly the content of the items from the ID and PD scales with the highest factor loadings represent this theme. General psychological functioning is, according to Kernberg’s model, strongly dependent on the degree of identity integration and the quality of defensive operations (Kernberg & Caligor, 2005). High scores on this factor should be strongly related to Kernberg’s concept of borderline personality organization, because the main feature of borderline personality organization is identity diffusion combined with primitive defenses, mainly splitting (Kernberg, 1984). Lower scores on this factor should be related to neurotic personality organization. It is not clear why most items of the MV scale also loaded onto this factor of general personality pathology. Perhaps the Moral Values construct is difficult to operationalize without eliciting, for instance, individual differences in tendencies toward socially desirable answers (Ganellen, 2007).

The other three factors were more straightforward to interpret. Almost all RT items coalesced in one factor, supporting the structural integrity of a reality testing subscale. This factor should differentiate the psychotic personality organization from neurotic and borderline personality organizations, because individuals with a psychotic personality organization present, in addition to severe identity diffusion and primitive defenses, a loss of reality testing. The third and fourth factors were almost completely composed of AG items, or items that have aggressive content, with the (small) fourth factor separating out blatantly sadistic content. According to Kernberg’s model, the presence of pathological aggression predominates in severe personality disorders (Kernberg & Caligor, 2005). A high score on the AG factor combined with high scores on the

other factors would give an extra indication of the severity of the personality pathology. Further research is indicated to test whether the two AG scales may be fused or should be measured separately. The distinction may be one of mere severity, but it is also possible that the sadistic aggression factor is associated with specific pathology, perhaps akin to the previously abandoned *DSM-III-R* sadistic personality disorder. Items included “I enjoy it when I make other people suffer,” “I have been told I enjoy other people’s suffering,” and “I get excited by other people suffering.”

In sum, the current IPO-NL consists of a large factor that blends ID, PD, and MV together, a specific Reality Testing factor, and two aggression-related factors (aggression and sadism) that may or may not be merged into one. As such, our factorial solution did not closely fit the predetermined constructs or scales. This finding may be due to (1) error in the delineation of the constructs, (2) difficulty operationalizing these constructs, a problem acknowledged by the original authors (Clarkin et al., 1994), (3) the Dutch translation or (4) specifics of the sample composition. Further research may rule out the latter possibility, and subsequent fine-tuning of the item formulation and selection may help decrease the probability of the second possibility for error.

Several findings in our study support the construct validity of the IPO-NL. First, the IPO-NL and its subscales discriminated between the clinical and nonclinical groups, with generally large effect sizes. Second, the IPO-NL was strongly associated with selected measures of personality and personality pathology. Our expectations regarding the pattern of associations with the Five-Factor Model were consistently confirmed. Higher IPO-NL scores were associated with higher Neuroticism, lower Agreeableness, and lower Conscientiousness. Moreover, as predicted, higher (absolute) associations were observed with the trio Neuroticism, Agreeableness, and Conscientiousness than with Extraversion and Openness to Experience. This pattern of associations and the suggestive fit with the personality pathology “NAC” profile (Saulsman & Page, 2004) lends support to the notion that the IPO measures personality pathology. Moreover, the observed differential associations with the FFM were generally in line with those reported by Laverdière et al. (2007), who found positive associations between identity diffusion (ID) and

primitive defenses (PD) with the Five-Factor dimensions Neuroticism and Agreeableness, and to a lesser extent with Conscientiousness. Consistent with the predictions and the pattern of associations with the FFM, the IPO-NL scales also yielded higher associations with the SCL-90 index that measures personality pathology (PSI) than with its SCL counterpart measuring general symptomatology (CSI, and SCL-90 total). Taken together, the IPO-NL appears to be a sensitive questionnaire that taps behaviors, cognitions, and symptoms related to severity of general personality pathology.

There are some limitations of the present study that deserve comment. First, our convenience sample consisted of outpatients presenting with diverse clinical problems. No formal diagnostic testing using structured interviews was conducted, which limits the ability for systematic comparison. The current sample should best be considered a naturalistic sample of outpatients presenting with complex, comorbid problems suggesting personality dysfunction (which led to their referral for extensive personality assessment). Caution should therefore be used in making inferences to other populations. Further, due to the size of our clinical sample (and the resulting 5–1 subject/variable ratio), cross-validation of the derived factor structure is strongly indicated.

Another limitation, though not specific to this study, concerns the use of self-reports in operationalizing Kernberg's model. Although the use of self-reports is widespread and generally cost-effective in clinical practice, it may not be optimally suited for the assessment of unconscious patterns of thinking, reacting, and behaving (Ganellen, 2007; Shedler, Mayman, & Manis, 1993). It remains to be seen to what extent self-report statements may yield viable indices of, for example, (preconscious) primitive defenses central to Kernberg's theory.

These limitations notwithstanding, we believe the present study suggests that the IPO-NL may be a clinically useful instrument for the assessment of general personality pathology, perhaps especially if it is combined or followed up with additional hetero-method instruments (Meyer, 1996). Future research may further articulate the proposed factors by taking an exploratory test construction approach, that is, by engaging in iterative cycles of item generation, data collection, and construct delineation, as recently described by Tellegen & Waller (2008).

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