



Published in final edited form as:

Psychol Assess. 2006 June ; 18(2): 204–208.

Construct Validity of the Psychopathic Personality Inventory Two-Factor Model With Offenders

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Abstract

Much of the research on psychopathy has treated it as a unitary construct operationalized by total scores on one (or more) measures. More recent studies on the Psychopathic Personality Inventory (PPI) suggest the existence of two distinct facets of psychopathy with unique external correlates. Here, the authors report reanalyses of two offender data sets that included scores on the PPI along with various theoretically relevant criterion variables. Consistent with hypotheses, the two PPI factors showed convergent and discriminant relations with criterion measures, many of which would otherwise have been obscured when relying on PPI total scores. These results highlight the importance of examining facets of psychopathy as well as total scores.

Keywords

psychopathy; two-factor model; antisocial behavior; externalizing; personality

Over the past three decades a wealth of research has been conducted on psychopathic personality, typically operationalized using the Psychopathy Checklist–Revised (PCL–R; Hare, 2003). Although the PCL–R remains the best-validated measure of psychopathy, in recent years a number of other measures have emerged to assess psychopathic traits, primarily via self-report. The Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) is one newer self-report measure that is heavily grounded in the work of Cleckley (1941) and other early theorists. The PPI focuses on personality traits, attitudes, and dispositions but, unlike the PCL–R, does not assess explicitly antisocial behavior. Additionally, as a self-report scale, the PPI potentially offers several practical advantages over a more labor-intensive measure based on individual clinical interviews and reviews of extensive file data.

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Further information concerning the details of analyses reported here (including the initial factor analysis of PPI subscales and derivation of PPI factor scores employed in the main analyses) can be obtained from the corresponding author upon request.

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The PPI yields a total score representing global psychopathy and scores on eight factor analytically derived scales representing specific facets of psychopathy. Much like other psychopathy measures, early studies have focused mainly on correlates of total PPI scores (e.g., Edens, Poythress & Watkins, 2001). However, recent work by Benning, Patrick, Hicks, Blonigen, and Krueger (2003) using a community sample revealed that the subscales of the PPI coalesce around two orthogonal higher order factors. PPI-I, labeled *Fearless Dominance* by Benning, Patrick, Blonigen, Hicks, and Iacono (2005), is marked by the Social Potency, Fearlessness, and Stress Immunity subscales. PPI-II, termed *Impulsive Antisociality*, is marked by subscales of Carefree Nonplanfulness, Impulsive Nonconformity, Machiavellian Egocentricity, and Blame Externalization. One other PPI subscale, Coldheartedness, does not load appreciably on either factor.

Benning et al. (2003) found that PPI-I and PPI-II were differentially associated with a variety of criterion measures of theoretical import. PPI-I was somewhat positively associated with indices of academic performance, socioeconomic status, and verbal intelligence (r s range .10 to .14), whereas PPI-II was negatively correlated with these variables (r s range $-.12$ to $-.24$). Correlations with self-reported externalizing conduct (e.g., adult and childhood antisocial behavior; alcohol and drug use/abuse) and personality trait scales from Tellegen's (in press) Multidimensional Personality Questionnaire (MPQ) revealed PPI-I indexes tendencies toward stability and positive adjustment. PPI-I was associated with adult antisocial behavior but unrelated to other indices of externalizing behavior; positively correlated with such MPQ traits as well-being, achievement, and social potency; negatively related to Stress Reaction (and higher order Negative Emotionality); and largely unrelated to aggression. In contrast, PPI-II was positively associated with both adult and childhood antisocial deviance and with most other indices of externalizing behavior. With respect to the MPQ, PPI-II was negatively associated with well-being and achievement and positively correlated with stress reaction, alienation, aggression and higher order Negative Emotionality. Only PPI-I was significantly correlated with harm avoidance (a measure of fearfulness, $r = -.31$), whereas both PPI-I ($r = -.15$) and PPI-II ($r = -.40$) were negatively associated with the higher order factor of Constraint.

Taken together, these findings indicate that the two PPI factors index markedly distinctive psychopathy-related constructs. PPI-I reflects aspects of positive adjustment (e.g., well-being, achievement) as well as emotional-interpersonal elements of psychopathy (e.g., high dominance; low anxiety and low fearfulness). On the other hand, PPI-II more purely reflects deviancy in the form of externalizing tendencies (i.e., child and adult antisocial behavior, alcohol and drug problems, impulsive and aggressive personality traits). The primary goal of the present research was to extend this existing work by examining the nomological network surrounding the two factors of the PPI among male criminal offenders. To achieve this, we undertook a reanalysis of data from two published studies (Edens et al., 2001; Sandoval, Hancock, Poythress, Edens, & Lilienfeld, 2000) that predated Benning et al. (2003). These two studies provided an array of theoretically important criterion measures that allowed us to expand the nomological net for the PPI factors to offenders.

Within each of the samples described below, we computed PPI-I and PPI-II scores as described by the Benning et al. (2003) derivation sample. PPI-I scores were computed by summing standardized scores on the Social Potency, Stress Immunity, and Fearlessness subscales, and PPI-II scores were derived by combining standardized scores on the Carefree Nonplanfulness, Impulsive Nonconformity, Blame Externalization, and Machiavellian Egocentricity subscales.¹ We predicted that previously reported associations between the PPI total score and criterion variables would mask unique and opposing correlations with its underlying factors. Specifically, within the offender samples examined here, we predicted that PPI-I would be selectively and positively related to criterion measures of dominance and heroism, and negatively related to measures reflecting anxiousness and distress. On the other hand, we

predicted that PPI-II would be positively and selectively related to various indices of externalizing maladjustment including antisociality, aggression, and alcohol and drug problems. In addition, we predicted that PPI-II would show robust positive associations with indices of anxiousness and distress and with measures of borderline personality features.

Study 1

Method

A more extensive description of the methods for this study is provided by Sandoval et al. (2000). In brief, participants were 96 male pretrial inmates (M age = 32.5 years) who were incarcerated in a county jail in west central Florida. The sample was primarily White (52%) and Black (44%), with an average educational level of 11.4 years.

Several criterion measures were included in this study. The *Questionnaire Measure of Emotional Empathy* (QMEE; Mehrabian & Epstein, 1972) is a 33-item self-report measure of one's level of emotional responsiveness to another's distress. Items index various empathic tendencies, including an affective susceptibility to others, a tendency to be sympathetic, and a tendency to be moved by others' emotional experiences. Alpha was .73 in this study. The *Aggression Questionnaire* (AQ; Buss & Perry, 1992), a widely used 29-item self-report instrument developed on college student participants, was also administered. Buss and Perry have reported adequate psychometric properties for total scores on the AQ. In the current study, we used a slightly abbreviated (26-item) version that has demonstrated superior psychometric properties with offenders ($\alpha = .93$). Work ethic was assessed via the *Protestant Ethic Scale* (PES; Mirels & Garrett, 1971), a 19-item global index of work ethic attitudes. Items such as "Most people spend too much time in unprofitable amusements" assess the belief that hard work is inherently good and an end unto itself. Internal consistency was satisfactory in the developmental research ($\alpha = .79$; Mirels & Garrett, 1971), but somewhat lower in this data set (.62). Also administered was the *Self-Report for Borderline Personality* (SRBP; Oldham et al., 1985), a 30-item instrument that measures borderline personality features related to identity diffusion (a poorly integrated sense of self or of significant others), primitive defenses (tendencies to engage in splitting, idealization, denial, and projection), and impaired reality testing. In this study, coefficient alpha was .90. Finally, the *Activity Frequency Inventory* (AFI; Lilienfeld, 1998) was used to measure what Lilienfeld termed *everyday heroism*. The AFI assesses the lifetime frequency that individuals have performed "heroic" acts reasonably common in the general population (e.g., attempting to assist a physically injured stranger). Coefficient alpha for the AFI was .89.

Results

Analyses indicated that the relationship between PPI-I and PPI-II was weak and nonsignificant ($r = .04$) in this sample. The correlations between PPI-I and PPI-II with criterion variables are provided in Table 1.² Both PPI factors were negatively related to self-reported empathy, although only the correlation with PPI-II was statistically significant. PPI-II was correlated positively and substantially with borderline features and aggression, whereas small and

¹Before examining the correlates of the two-factor PPI structure described by Benning et al. (2003), we sought to replicate their factor-analytic results using exploratory factor analysis with Procrustes rotation. This method assesses the congruence between an observed factor structure (obtained by means of exploratory factor analysis) and a targeted structure defined by the pattern matrix from a prior study. The sample for this analysis comprised the participants described in this report plus an additional group from one other study of offenders that included the PPI (Poythress, Edens, & Lilienfeld, 1998), which resulted in a combined n of 302. Consistent with the results of Benning et al., the initial exploratory extraction revealed two dominant factors (eigenvalues = 2.52 and 1.64) that accounted collectively for 52.0% of the covariance among the PPI subscales. The Procrustes rotation yielded subscale loadings that corresponded closely to those previously reported for PPI-I and PPI-II.

²For both samples described below, we had an a priori basis for predicting relations for each PPI factor with most criterion measures. We therefore used one-tailed p values in evaluating zero-order and dependent correlations unless otherwise noted.

nonsignificant relations with PPI-I were observed for these two variables. Except for the measure of self-reported empathy, the correlations for PPI-I and PPI-II with each criterion measure differed significantly from one another according to Cohen and Cohen's (1983) test statistic.

Opposing correlations of approximately the same magnitude were obtained for the two PPI factors with both the Protestant Ethic Scale (PES) and the heroism measure (AFI). Each measure was associated positively with PPI-I and negatively with PPI-II. For the PES, neither correlation differed significantly from zero, but the difference between correlations was statistically significant, $t(90) = 1.96, p < .05$. For the AFI both correlations were statistically different from zero and significantly different from one another, $t(93) = 2.83, p < .01$.

Study 2

Method

A more extensive review of the methodology used in this research can be found in Edens et al. (2001). In brief, 89 male offenders were recruited from a state prison in west central Florida. Of these participants, 59 were members of the general inmate population and 30 were recruited from the prison mental health unit. The mean age of the sample was 32.8 years ($SD = 9.0$). Most inmates were Black (60.9%) or White (32.2%).³

The *Personality Assessment Inventory* (PAI; Morey, 1991) is a widely used 344-item self-report measure designed to assess personality, psychopathology, and other variables of clinical concern (e.g., social support). The scales of primary interest here were those tapping constructs theoretically relevant to psychopathy, such as the *Antisocial Features* (ANT) scale. ANT was designed to tap the core affective, interpersonal, and behavioral features historically associated with this disorder. Research suggests that the ANT scale correlates moderately with psychopathy in offender samples, although it is a stronger indicator of Factor 2 features (see Edens & Ruiz, 2005, for a review).

Several other PAI scales assess clinical variables theoretically relevant to psychopathy—in particular, various forms of externalizing or disinhibitory behavior. These include the *Aggression* (AGG), *Alcohol Problems* (ALC), *Drug Problems* (DRG) and *Suicide* (SUI) scales. The PAI also measures several theoretically relevant constructs of a more “internalizing” nature, operationalized by what Morey (1991) has referred to as “Neurotic Spectrum” scales. For example, the item content of the *Anxiety* (ANX), *Anxiety Related Disorders* (ARD), and *Somatic Complaints* (SOM) scales reflect various cognitive, affective, physiological, and behavioral symptoms associated with these forms of psychopathology. Additionally, the PAI *Dominance* (DOM) scale assesses the extent to which respondents report a forceful interpersonal style characterized by control and independence in relationships. Unlike most self-report measures, DOM is somewhat more strongly related to the interpersonal (grandiose, manipulative) features of Factor 1 of the PCL-R than to the antisocial features of Factor 2 (for a review of evidence supporting the construct validity of these scales, see Edens & Ruiz, 2005; Morey, 1991).

We also examined the relationship between the PPI factors and various forms of institutional misconduct in this sample. The Inmate Discipline Procedure Manual of the Florida Department of Corrections (DOC) contains the “Rules of Prohibited Conduct” for state prisoners. Edens et al. (2001) used an a priori classification scheme for placing each infraction into one of three categories of *Disciplinary Reports* (DRs): Physical Aggression (PA; e.g., “Fighting”), Verbal

³A subsample of general population inmates ($n = 29$) completed the PAI with instructions to malingering symptoms of major mental illness. This subsample was omitted from the analyses assessing the relationship between the PPI and the PAI, reducing the n to 60.

Aggression/Acts of Defiance (VA; e.g., “Spoken or written threats”), or Nonaggressive Infractions (NA; e.g., “Unauthorized absence”). The Florida DOC central office provided records summarizing DRs received during the first year of incarceration. Each DR was coded into the classification scheme noted above. Due to the low base rate of infractions, we created a dichotomous variable for each category indicating whether the individual had been cited for misconduct on at least one occasion.

Results

The correlation between PPI-I and PPI-II was $r = .00$ in this sample. Correlations between each PPI factor and criterion scales from the PAI are shown in Table 1. For all PAI measures, the difference in the magnitude of correlations for PPI-I versus PPI-II was statistically significant. For PAI scales that measure Antisocial Features, Aggression, Borderline Features, Alcohol Problems, and Drug Problems, significant positive relationships were found with PPI-II (range .28 to .71). In contrast, correlations with PPI-I were low and nonsignificant (range $-.04$ to $.12$) except for Alcohol Problems, for which a significant *negative* correlation was found. For measures of internalizing symptoms (Anxiety, Anxiety Related Disorders, Somatic Complaints) significant negative associations (range $-.23$ to $-.37$) were noted for PPI-I; in contrast, significant positive correlations (range $.43$ to $.49$) were evident for PPI-II. Scores on the PAI Suicidal ideation scale were selectively associated with PPI-II ($r = .40$ vs. $r = .00$ for PPI-I), whereas PAI Dominance was preferentially associated with PPI-I ($r = .50$ vs. $r = .18$ for PPI-II).

Regarding PPI factors and the occurrence of disciplinary infractions, there was some evidence for a preferential association with PPI-II. For PA, the point-biserial correlations with PPI-I and PPI-II were $r = .06$ (*ns*) and $r = .27$ ($p < .05$), respectively. For VA, the correlations with PPI-I and PPI-II were $r = .01$ (*ns*) and $r = .21$ ($p < .05$), respectively. Both PPI-I ($r = .26$, $p < .05$) and PPI-II ($r = .25$, $p < .05$) correlated positively with NA infractions.

Discussion

Our results are informative on a number of fronts. First, we were able to replicate the two-factor structure of the PPI identified by Benning et al. (2003) in a relatively large sample of offenders (see Footnote 1), which lends support to the stability and robustness of this model in a previously unstudied population of great theoretical relevance to psychopathy. Second, the pattern of correlations with criterion measures helps to inform our understanding of the nomological network surrounding the two factors of the PPI. As the results provided in Table 1 clearly indicate, there was substantial evidence of differential correlations that were consistent with predictions based on earlier investigations. Related to this point, it is clear that some of the previously reported associations between the PPI total score and criterion variables masked unique and opposing correlations with its underlying factors. For example, Sandoval et al. (2000) and Edens et al. (2001) reported significant positive correlations between PPI total scores and measures of aggression and borderline features from the PAI. As the data in Table 1 reveal, these associations are clearly attributable exclusively to PPI-II; PPI-I showed a negligible association with these constructs in both studies. The same pattern of results was obtained for the Drug Problems and Suicidal Ideation subscales of the PAI, which were not included in the earlier report of Edens et al. (2001). Both of these measures correlated significantly with overall scores on the PPI ($r_s = .29$ and $.33$, respectively), but in each case the association was attributable entirely to PPI-II.

Moreover, whereas the PPI total score exhibited small and nonsignificant associations with measures of work ethic attitudes and heroism in Sandoval et al. (2000), the present analyses revealed that correlations of the PPI factors with these two constructs fractionated in opposite directions, both being positively associated with PPI-I but negatively associated with PPI-II

(see Table 1). A similar result was obtained for the Alcohol Problems subscale of the PAI, which was not examined by Edens et al. (2001). Scores on this subscale were not significantly correlated with overall scores on the PPI, but significant correlations in opposing directions were found for the two factors of the PPI (i.e., negative with PPI-I, positive with PPI-II). These findings highlight important limitations associated with conceptualizing and assessing psychopathy as a unitary rather than as a multifaceted construct.

It is notable that PPI-I showed negative correlations with various indices of maladjustment, in contrast with PPI-II, which showed positive correlations with criterion measures reflecting antisocial deviance and psychological maladjustment. Elsewhere, Blonigen, Hicks, Patrick, Krueger, Iacono, and McGue (2005), in a study of community twins, reported a significant negative *genetic* association between PPI-I (estimated from scores on the MPQ) and symptoms of internalizing psychopathology (anxiety disorders, depression). Such findings might lead one to argue that PPI-I is not indexing psychopathy given its association with positive adjustment rather than pathology. Cleckley's (1941) conceptualization of psychopathy, however, explicitly included features of positive adjustment—such as superficial charm, good intelligence, absence of psychotic and psychoneurotic symptoms, and immunity to suicide. Indeed, our results suggest that PPI-I assesses, at least in part, the convincing “mask” of sanity that Cleckley regarded as central to psychopathy. Moreover, data from other studies indicate that scores on PPI-I are robustly associated with psychopathy-related constructs including narcissism, thrill-adventure seeking, and Factor 1 of Hare's Self-Report Psychopathy II (SRP-II) scale (Benning, Patrick, Blonigen, et al. 2005; Benning, Patrick, Salekin, & Leistico, 2005).

These results suggest that it is clinically important to examine scores on the two distinctive factors of the PPI. For example, considering only the total scores derived from this inventory would hamper a clinician's ability to predict whether clients might exhibit other psychological symptoms, such as anxiety or problematic alcohol use. In addition, consideration of the distinctive components of psychopathy embodied in the PPI is likely to be valuable in terms of accounting for variations in the clinical expression of psychopathy (e.g., “primary” vs. “secondary” variants).

Acknowledgements

This research was supported by a grant from the University of South Florida Division of Sponsored Research, National Institutes of Health Grants MH52384 and MH65137, and by funds from the Hathaway endowment at the University of Minnesota.

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Table 1
PPI-I and PPI-II Correlations with Measures of Personality and Clinical Symptomatology

Study 1 Criterion Measures	PPI Total	PPI-I	PPI-II
Questionnaire Measure of Emotional Empathy (QMEE)	-.45**	-.08	-.24**
Aggression Questionnaire (AQ)***	.60**	.05	.66***
Protestant Ethic Scale (PES)*	.02	.14	-.14
Self-Report for Borderline Personality (SRBP)***	.45**	-.06	.67***
Activity Frequency Inventory (Heroism) (AFI)**	-.10	.19	-.20*
Study 2 Criterion Measures			
PAI Scales:			
Antisocial Features (ANT)***	.67**	.12	.71***
Aggression (AGG)***	.68**	.03	.62***
Dominance (DOM)*	.38**	.50***	.18
Borderline Features***	.39**	-.04	.54***
Anxiety (ANX)***	.19	-.37**	.49***
Anxiety Related Disorders (ARD)***	.20	-.23*	.43***
Somatic Complaints (SOM)***	.20	-.23*	.43***
Alcohol Problems (ALC)**	.10	-.22*	.28*
Drug Problems (DRG)*	.29*	.01	.36***
Suicidal Ideation (SUI)*	.33**	.00	.40***

Note. PAI = Personality Assessment Inventory. PPI-I and PPI-II = Factors 1 and 2 of the Psychopathic Personality Inventory (Benning et al., 2003). Asterisks next to each criterion measure name denote the significance level of the difference between the correlations of PPI-I and PPI-II with that measure.

N's range from 88 to 96, except for the PAI scales, where *n* = 60.

* $p < .05$,

** $p < .01$,

*** $p < .001$ (all correlations one-tailed).