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Criterion-Related Validity of the Psychopathic Personality Inventory in a Prison Sample

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The Psychopathic Personality Inventory (PPI; S. O. Lilienfeld & B. P. Andrews, 1996), a self-report measure of psychopathic personality features, and R. D. Hare's (1991) Psychopathy Checklist—Revised (PCL—R) were administered to adult youthful offender prison inmates ($N = 50$). As hypothesized, PPI scores were significantly correlated with scores on the PCL—R, providing evidence of concurrent validity for the PPI. Moreover, unlike existing self-report psychopathy measures, the PPI showed a moderate and positive correlation with PCL—R Factor 1 (i.e., the core personality traits of psychopathy). Discriminant function analysis using the optimal PPI total score value to predict PCL—R classifications of psychopath ($n = 10$) and nonpsychopath ($n = 40$) resulted in accurate classification of 86% of the cases (sensitivity = .50, specificity = .95). Results are discussed in terms of the relative merits of these 2 measures of psychopathy and the validation of the PPI for clinical use.

In evaluating offender populations, the construct of psychopathy, based on the early writings of Cleckley (1941), has been shown to be related to a number of outcome variables of concern to institution administrators and policymakers. For example, psychopathy has been shown to be related to (a) institutional violence (Hare & McPherson, 1984), (b) treatment failure in a therapeutic community (Rice, Harris, & Cormier, 1992), (c) recidivism in general (e.g., Hart, Kropp, & Hare, 1988; Serin, 1996; Serin, Peters, & Barbaree, 1990) and violent recidivism in particular (Harris, Rice, & Cormier, 1991; Serin, 1996; see Salekin, Rogers, & Sewell, 1996, for a meta-analytic review), and (d) length of time in the community prior to rearrest (Hart et al., 1988; Serin & Amos, 1995).

Much of the research linking psychopathy to these important outcome measures has used Hare's Psychopathy Checklist (PCL; Hare, 1980) and Psychopathy Checklist—Revised (PCL—R; Hare, 1991). The PCL—R involves clinician or researcher ratings on 20 dimensions of psychopathy, and it yields a total score as well as separate scores on two factor-analytically derived dimensions. Factor 1 primarily represents core personality features of psychopathy (e.g., superficial charm, conning or manipulative tendencies, lack of remorse, lack of empathy), whereas Factor 2 primarily represents antisocial or deviant behavior (e.g., parasitic lifestyle, poor behavior controls, impulsiv-

ity, juvenile delinquency). The ratings are based on an extensive clinical interview plus a review of available institutional file data. Clinically, persons scoring 30 or higher (out of a possible 40) are considered psychopathic.

One factor that potentially limits the use of the PCL—R is that it is resource intensive; the clinical interview may routinely take upward of 2 hr, and, if the files to be reviewed are extensive, considerably more time may be required. However, researchers have been pessimistic about the use of potentially more efficient self-report measures: "Behavioral checklists and self-report scales are poorly suited to assessing psychopathy because of their susceptibility to a variety of response biases and because they have difficulty measuring the interpersonal and affective symptoms of the disorder" (Hart, Hare, & Forth, 1994, p. 85; see also Hare, 1996). These concerns have grown out of previous studies that examined the correlations between the PCL and PCL—R and various self-report measures that purport to assess psychopathic features. Harpur, Hare, and Hakstian (1989), for example, found that several popular (e.g., the Psychopathic Deviate and Hypomania clinical scales of the Minnesota Multiphasic Personality Inventory [MMPI]; the Socialization scale of the California Psychological Inventory) and experimental (Self Report Psychopathy scale; Hare, 1985) self-report psychopathy scales correlated moderately with PCL Factor 2 (range = $-.44$ to $.49$) but negligibly with PCL Factor 1 (range = $-.06$ to $.18$). The latter correlations led Harpur et al. to conclude that extant self-report measures of psychopathy are inadequate for assessing the core personality features of this syndrome. Thus, the PCL—R remains the measure of choice for the assessment of psychopathy, at least in forensic and correctional populations.

Lilienfeld and Andrews (1996) recently introduced the Psychopathic Personality Inventory (PPI), a 187-item self-report measure that is intended to measure psychopathic features. The PPI differs from previous self-report psychopathy measures in a number of important ways. First, whereas virtually all prior

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self-report psychopathy measures include items that measure antisocial or deviant behavior (thus the higher correlation with PCL-R Factor 2), all of the PPI items focus on personality traits thought to be characteristic of psychopathy. Second, because the PPI was intended to be sensitive enough to capture psychopathic features in a noncorrectional population, the item subtlety of the measure may make it more difficult for respondents to dissimulate. Third, the PPI has built-in validity scales designed to identify persons who attempt to malingering or who respond in an inconsistent fashion. Fourth and finally, the PPI consists of eight factor-analytically derived subscales, which may enable researchers to examine the differential correlates of the various facets of psychopathy. Thus, the PPI may overcome several limitations of previous self-report measures, and although it was designed to assess psychopathic features in noninstitutionalized persons, it may have utility in forensic or corrections settings as well. However, to date, virtually all of the research using the PPI has used college participants, and Lilienfeld and Andrews (1996) acknowledged the need for further validation studies:

[I]t will be necessary to administer the PPI in conjunction with the PCL-R. . . . Administration of the PCL-R along with the PPI would permit a test of the prediction that, unlike most or all extant self-report psychopathy measures . . . the PPI should correlate more highly with PCL-R Factor 1 (the core personality traits of psychopathy) than with PCL-R Factor 2 (antisocial and criminal behaviors). [I]t will be necessary to examine the construct validity of the PPI in samples, such as prison inmates, characterized by elevated rates of psychopathic personality traits. (p. 517)

To investigate the criterion-related validity of the PPI, we administered the PPI and the PCL-R to a sample of 50 youthful offender prison inmates. We examined the correspondence between PPI and PCL-R scores, with particular focus on correlations between the PPI and its subscales with PCL-R Factors 1 and 2. We also examined the ability of the PPI to accurately classify inmates as psychopathic or nonpsychopathic according to dichotomous determinations based on established PCL-R cutting scores.

Method

Participants

Fifty participants were recruited from the inmate population at a youthful offender prison in west central Florida. All participants were men and primarily English speaking; persons of all racial backgrounds and ethnic heritages were eligible for participation. Given the youthful offender status of participants, the age range of the sample was 17-21 years ($M = 18.60$, $SD = 0.78$), and nearly all were single (98%). The mean education level reported by participants was 9.00 years ($SD = 1.01$), although 42% of the participants reported having either graduated from high school or completed a General Equivalency Diploma while incarcerated. Self-reported racial and ethnic background data revealed a diverse sample of participants, consisting of African American (54%), Caucasian (32%), Hispanic (12%), and "other" (2%).

Measures

PPI. The PPI was administered to all participants. Respondents rate themselves on each item using a scale from 1 (*false*) to 4 (*true*). The

PPI provides a total score as well as eight factor-analytically derived subscales that assess different aspects of psychopathy:

1. Machiavellian Egocentricity consists of 30 items (e.g., "I always look out for my own interests before worrying about those of the other guy" [True]) and assesses narcissistic and ruthless attitudes in interpersonal functioning.
2. Social Potency consists of 24 items (e.g., "Even when others are upset with me, I can usually win them over with my charm" [True]) and assesses one's perceived ability to influence and manipulate others.
3. Coldheartedness consists of 21 items (e.g., "I have had 'crushes' on people that were so intense that they were painful" [False]) and measures a propensity toward callousness, guiltlessness, and un sentimentality.
4. Carefree Nonplanfulness consists of 20 items (e.g., "I often make the same errors in judgment over and over again" [True]) and assesses an attitude of indifference in planning one's actions.
5. Fearlessness consists of 19 items (e.g., "Making a parachute jump would really frighten me" [False]) and assesses absence of anticipatory anxiety concerning harm and a willingness to participate in risky activities.
6. Blame Externalization consists of 18 items (e.g., "I usually feel that people give me the credit I deserve" [False]) and assesses a tendency to blame others for one's problems and to rationalize one's misbehavior.
7. Impulsive Nonconformity consists of 17 items (e.g., "I sometimes question authority figures 'just for the hell of it'" [True]) and measures a reckless lack of concern regarding social mores.
8. Stress Immunity consists of 11 items (e.g., "I can remain calm in situations that would make many other people panic" [True]) and assesses an absence of marked reactions to anxiety-provoking events.

The PPI also includes three validity scales designed to assess various response sets. The Unlikely Virtues scale (Tellegen, 1982) consists of 14 items and is a measure of impression management. Deviant Responding consists of 10 items that, although bizarre (e.g., "When I am under stress, I often see large, red, rectangular shapes moving in front of my eyes"), are not indicative of known psychopathology; this scale is intended to detect individuals who are malingering, responding carelessly or randomly, or having difficulty comprehending the items or instructions. The Variable Response Inconsistency scale (80 items) consists of 40 pairs of items which empirically are moderately or highly ($r \geq .3$) intercorrelated; inconsistency in responding in a similar way to both items of a pair suggests either careless or random reporting or reading difficulties.

Satisfactory psychometric properties have been reported by Lilienfeld and Andrews (1996) among several undergraduate samples. Internal consistencies (Cronbach's alpha) for the PPI have ranged from .90 to .93, and internal consistencies for the PPI subscales have ranged from .70 to .89. The test-retest reliability of the PPI (mean 26-day test-retest interval) is .95, and the test-retest reliabilities of the subscales range from .82 to .94. In addition, the PPI has been reported to correlate positively and substantially with self-report, structured interview, and peer-rating indices of Cleckley (1941) psychopathy and antisocial behavior (see Lilienfeld & Andrews, 1996). In the present study, the internal consistency (Cronbach's alpha) of the PPI total score was .91; alpha values for the PPI subscales ranged from .91 (Machiavellian Egocentricity) to .72 (Impulsive Nonconformity).

PCL-R. Hare's (1991) PCL-R was administered to all partici-

pants. Given the relatively young age of the prison inmates, four PCL-R items that often are not applicable to adolescents (parasitic lifestyle, many short-term marital relationships, revocation of conditional release, criminal versatility) were not scored (see Forth, Hart, & Hare, 1990, for a similar modification to the PCL-R). Results reported here are based on prorated scores (the PCL-R may be prorated for up to five missing items). Excellent psychometric properties have been reported for the PCL-R (Hare, 1991). In the present study, internal consistency (Cronbach's alpha) was .87. To establish interrater reliability in this study, 20 interviews were observed by a second rater, who also completed a file review of each participant. An intraclass correlation of .94 was obtained for these 20 cases.

Procedure

Inmates were selected randomly from the institutional population and then were approached by either Norman G. Poythress or John F. Edens, engaged in an informed consent disclosure and discussion, and invited to participate. Only 4 (about 7%) inmates declined; 1 inmate who was non-English speaking was excluded from the study. The PCL-R was administered first, followed by the PPI. While the inmate completed the PPI, the interviewer(s) reviewed the inmate's institutional file in order to complete the PCL-R ratings. Inmates were paid \$10 on completion of the protocol.

Results

Because of their restricted age range and broader ethnic diversity, our participants are demographically dissimilar from many of the previous samples in which the PCL-R has been used (i.e., primarily Caucasian adult Canadian prison inmates). Nevertheless, prison inmates in this study obtained a mean PCL-R total score of 21.50 ($SD = 7.99$), which falls within the range of mean scores (21 to 24) reported by Hare (1991) for several samples of Canadian inmates. Regarding the categorical classification of psychopathy (i.e., inmates scoring ≥ 30 on the PCL-R), 20% of the present sample were above this cutoff score. This percentage also falls within the range (15%–25%) reported in previous samples (Hare, 1991). Finally, the correlation between PCL-R Factors 1 and 2 in the present sample was .66, which is somewhat higher than the correlation of .50 reported in most other studies (Hare, 1991).

Correlational Analyses

Table 1 presents the correlations between the PPI total score, validity scales, and subscales with the PCL-R total score and factor scores. Although clinical lore holds that the trait of "pathological lying" ascribed to psychopathic personalities might lead to gratuitous exaggeration or fabrication of odd or unusual symptoms in most any context (see Clark, 1997), the low and nonsignificant correlation between Deviant Responding with PCL-R indices suggests that the likelihood to malingering or respond carelessly or inconsistently is not associated with the level of psychopathy, at least in this research context.¹ Similarly, some might expect psychopathic individuals to be inclined toward social desirability impression management, given their reputations for conning others through gaining and then betraying trust (Cleckley, 1941). However, the negative correlation between the Unlikely Virtues scale and the PCL-R suggests that

Table 1
Correlations Between PCL-R and PPI Scales

PPI scale	PCL-R Total	Factor 1	Factor 2
Validity scale			
Deviant Responding	.13	.12	.12
Unlikely Virtues	-.24	-.16	-.33*
Variable Response Inconsistency	-.09	-.05	-.13
Total score	.54***	.54***	.40**
Clinical subscale			
Machiavellian Egocentricity	.57***	.56***	.44**
Social Potency	.33*	.37**	.20
Coldheartedness	.33*	.37**	.21
Impulsive Nonconformity	.28*	.31*	.23
Fearlessness	.21	.22	.17
Blame Externalization	.12	.05	.16
Carefree Nonplanfulness	.24	.23	.24
Stress Immunity	.04	.12	-.08

Note. PPI = Psychopathic Personality Inventory; PCL-R = Psychopathy Checklist—Revised.

* $p < .05$. ** $p < .01$. *** $p < .001$.

"pathological lying" in the socially desirable sense is also not operating in this research context.

The PPI total score correlates moderately highly with the PCL-R total score, and it is also significantly correlated with each of the PCL-R factor scores. Further analyses revealed that most of the unique variance in PPI scores is associated with Factor 1 rather than Factor 2 of the PCL-R. When Factor 1 scores were controlled for by using partial correlation, the correlation between the PPI Total score and Factor 2 of the PCL-R was .14 (ns). However, even when a partial correlation controlling for Factor 2 was performed, the relationship between the PPI Total score and Factor 1 of the PCL-R remained significant ($r = .40$, $p = .004$). Finally, removing one case that borders on being a statistical outlier (standardized residual = 2.96) from the analyses raised substantially the correlations between the PPI total score and PCL-R total ($r = .62$) and both Factor 1 ($r = .61$) and Factor 2 ($r = .48$) scores.

As the lower portion of Table 1 reveals, four of the PPI subscales (Machiavellian Egocentricity, Social Potency, Coldheartedness, and Impulsive Nonconformity) were significantly correlated with the PCL-R total and factor scores, whereas only Machiavellian Egocentricity correlated significantly with Factor 2. A test of the difference between dependent correlations revealed that Machiavellian Egocentricity was more highly correlated with the PCL-R total score ($r = .57$) than was the next highest subscale (Social Potency, $r = .33$, Cohen's $t(47) = 2.40$, $p < .05$). A similar analysis comparing the correlation between PCL-R Factor 1 with Machiavellian Egocentricity ($r =$

¹ Research has not established firm cutoff scores on the PPI validity scales for considering a profile invalid. By visual inspection, the protocols of 5 participants appeared suspect on the basis of Deviant Responding or Variable Response Inconsistency score distributions. However, exclusion of these participants from the analyses did not significantly alter the results. Therefore, all 50 protocols are included in the results reported here.

.56) and with Social Potency ($r = .37$) approached significance (Cohen's $t(47) = 1.91, p < .10$), as did the comparison between PCL-R Factor 2 with Machiavellian Egocentricity ($r = .44$) and Impulsive Nonconformity ($r = .23$; Cohen's $t(47) = 1.83, p < .10$). None of the PPI subscales exhibited a significant difference in correlation between PCL-R Factors 1 and 2.

Classification Utility of the PPI

A discriminant function analysis using the PPI total score to predict PCL-R categories of psychopathy (PCL-R < 30 = nonpsychopathic; PCL-R ≥ 30 = psychopathic) as the criterion was significant, Wilks' $\lambda = .74, \chi^2(1, N = 50) = 14.18, p = .0002$. Overall classification accuracy was 86%. Specificity was high, with only 2 (5%) of the 40 nonpsychopaths being misclassified on the basis of their PPI total scores. Sensitivity was lower, however, with only 5 (50%) of the 10 psychopathic individuals being correctly identified by their PPI total score. The positive predictive power was .71, and the negative predictive power was .88.

Discussion

Self-report indices of psychopathy have often been criticized for their low correlations with other ostensible measures of psychopathy (Hare, 1985; Hundleby & Ross, 1977; Widom & Newman, 1985) and failure to assess the fundamental personality features of this syndrome (Hare, 1996; Harpur et al., 1989). In this study, we found that the PPI, a questionnaire designed to remedy many of the deficiencies of extant self-report indices of psychopathy, correlated moderately to highly with the PCL-R, which is currently the best validated measure of this syndrome. This finding suggests that the low correlations commonly reported between self-report and other measures of psychopathy do not reflect an inherent problem with the use of a self-report format (cf. Hare, 1985). Instead, it seems likely that these low correlations are a product of the poor content validity of standard self-report measures of psychopathy (e.g., the MMPI-2 Psychopathic Deviate scale), most of which contain few items explicitly assessing psychopathic personality traits (Lilienfeld, 1994).

More important is the moderate and significant correlation between the PPI and Factor 1 of the PCL-R, which indicates that, as intended, the PPI does assess the personality characteristics of psychopathy delineated by Cleckley (1941) rather than nonspecific behavioral deviance. To our knowledge, the PPI is the first self-report measure of psychopathy to correlate substantially with Factor 1. Our findings suggest that the PPI, unlike most existing questionnaire measures, may be useful in the differential diagnosis of psychopathy in offender samples and other samples characterized by high levels of antisocial behavior.

An examination of the correlations between PPI subscales and PCL-R total and factor scores revealed several suggestive findings. The higher correlations found with the Machiavellian Egocentricity, Social Potency, Coldheartedness, and Impulsive Nonconformity subscales suggest that individuals who meet the PCL-R definition of a psychopath describe themselves as self-centered, ruthless, and willing to take advantage of others. The moderately strong association between Machiavellian Egocen-

tricity and PCL-R ratings is consistent with a growing body of empirical data suggesting that exaggerated or inflated perceptions of self-worth may identify a subgroup of delinquent or criminal offenders who are at greater risk to engage in increased levels of violence and antisocial behavior (see Baumeister, Smart, & Boden, 1996; Edens, in press).

On the other hand, the finding that Fearlessness and Stress Immunity were negligibly related to the PCL-R and its component factors raises questions concerning models positing that fearlessness and absence of anxiety are core deficits of psychopathy (e.g., Gray, 1982; Lykken, 1995), at least as construed by the PCL-R. It should be noted, however, that the PCL-R interview does not include queries directly assessing low anxiety (Lilienfeld, 1994).

Correlations between the PPI total score and the PCL-R indices, and the results of the discriminant function analysis suggest that the PPI may have some utility in identifying persons with significant psychopathic features. Limitations of the present study (e.g., sample size, lack of cross-validation), however, militate against recommending the PPI for clinical use pending further investigation. This is a direction of research that is well worth pursuing, however. A valid self-report measure of psychopathy might be of considerable value in large prison reception centers, for example, where many inmates go through classification procedures. Administration of the PCL-R may not be practical due to the required administration time, and in many cases the type of case history and file information needed to complete the ratings may not be available on admission to the center.

Although the correlation between the PPI and PCL-R is encouraging, the relationship between the PPI and relevant outcome criteria (e.g., institutional violence, treatment response, recidivism) has yet to be established. Whether the PPI possesses predictive utility comparable to that of the PCL-R (Salekin et al., 1996) is an important area for future research. Such studies may help determine the incremental validity of these two measures for socially important criteria. Data bearing on this issue are necessary to address the question of whether the PPI measures predictively useful personality traits (e.g., fearlessness) that might be inadequately assessed by the PCL-R. In addition, because the PCL-R is extremely time- and labor-intensive, it will be important to determine whether it provides unique information relative to more efficient and easily administered self-report indices. For example, the PCL-R, unlike the PPI, makes use of third-party (institutional file) information, which sometimes conflicts with respondents' self-reports. The extent to which corroborative data contribute predictively useful information above and beyond self-reports remains an important area for further investigation.

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