Concurrent Validity of the Psychopathic Personality Inventory with Offender and Community Samples

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Abstract

The Psychopathy Checklist - Revised (PCL-R; Hare, 2003) is a frequently used and well-validated measure of psychopathy, but is relatively time-intensive and expensive to administer. The Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) is a self-report measure that provides a less time-intensive and less expensive method for identifying psychopathic individuals. Using three independent samples and two different versions of the PCL (i.e., PCL-R, PCL:SV), we evaluated the extent to which the PPI and PCL overlap in their measurement of the psychopathy construct. Across three studies, PPI total and Factor 2 scores correlated moderately to strongly with PCL total and Factor 2 scores. Results for PPI and PCL Factor 1 scores were less positive. These findings raise important questions concerning the integration of results obtained using alternative psychopathy assessments.

Keywords

Psychopathic Personality Inventory; Psychopathy Checklist - Revised

Psychopathy is a personality disorder involving a deceitful, insincere interpersonal style and an impulsive, irresponsible lifestyle. Cleckley (1941/1982) conceptualized the prototypic psychopath as a superficially charming, egocentric, disinhibited individual who engages in pathological lying and manipulation and seems incapable of anything more than shallow and short-lived interpersonal relationships. Furthermore, he noted that psychopathic individuals exhibited average or above average intelligence, an absence of psychotic symptoms, nervousness, social anxiety, and "psychoneurotic" symptoms, and a low rate of genuine suicide attempts. Although Cleckley's seminal work provided a rich description of psychopathy, he did not propose a systematic means of measuring the construct. This task has been undertaken by many researchers over the past two decades (Hare & Neumann, 2006, in press; Lilienfeld & Fowler, 2006), but Hare's development of the Psychopathy Checklist (1980) and Psychopathy Checklist - Revised (PCL-R; Hare, 2003) has the most substantial and arguably unparalleled impact on the field.

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The PCL-R, deemed by some to be the current "gold standard" psychopathy assessment with institutionalized populations (Fulero, 1995; but see Faraone & Tsuang, 1994, for a critique of the use of the "gold standard" term in psychopathology research), has facilitated the proliferation of psychopathy research with incarcerated samples. But the PCL-R is not without its critics. Some argue that the PCL measures (e.g., PCL-R; Psychopathy Checklist: Screening Version, PCL:SV) are heavily weighted towards indicators of general social deviance that perhaps have "drifted from" Cleckley's original conceptualization of the construct, which included a number of ostensibly non-pathological features (Skeem & Cooke, in press; cf. Hare & Neumann, 2008 for an in-depth discussion of the construct 'drift' issue). Additionally, many acknowledge that psychopathy is a dysfunctional personality style that extends into the general population (Hart & Hare, 1994; Levenson, Kiehl, & Fitzpatrick, 1995; Neumann & Hare, in press; Widom, 1977), thus warranting assessment instruments suitable for community and student samples. To date, investigators have employed both interview-based (e.g., PCL: SV; Hart, Cox, & Hare, 1995) and self-report instruments [e.g., Psychopathic Deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI/MMPI-2), Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989; Levenson's Self-Report Psychopathy Scale; Levenson et al., 1995] to assess psychopathy with non-institutionalized samples and to capture aspects of psychopathy that are underrepresented in the PCL-R. Although there are advantages and disadvantages to both methods, correlational research with most self-report measures suggests they are better suited for assessing the antisocial and impulsive (i.e., social deviance) aspects of the PCL-R than its interpersonal and affective features (Edens, Hart, Johnson, Johnson, & Olver, 2000; Harpur, Hare, & Hakstian, 1989).[1]

In part to address the limitations associated with existing self-report measures, Lilienfeld (1990; see also Lilienfeld & Andrews, 1996) developed the Psychopathic Personality Inventory (PPI), a self-report instrument designed to assess the personality features of psychopathy. Based on theoretical (Lilienfeld & Andrews, 1996) and empirical (e.g., Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Poythress, Edens, & Lilienfeld, 1998) evidence, it appears that the PPI captures many of the affective and interpersonal, as well as impulsive and irresponsible, psychopathy features as operationalized by the PCL-R.

A substantial body of research supports the reliability and validity of the PPI in non-institutionalized samples, revealing significant associations between the PPI and its factors with an array of personality and psychopathy measures (e.g., Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Benning, Patrick, Salekin, & Leistico, 2005; Lilienfeld & Andrews, 1996; Sellbom, Ben-Porath, Lilienfeld, Patrick, & Graham, 2005), laboratory tasks (e.g., Selbom & Verona, 2007), and psychophysiological indices (ERP, fMRI) (e.g., Gordon, Baird, & End, 2004; Miller & Rosenfeld, 2004; Nuñez, Casey, Egner, Hare, & Hirsch, 2005). Furthermore, a growing body of evidence has accrued supporting the use of the PPI with correctional and forensic samples (e.g., Douglas, Lilienfeld, Skeem, Poythress, Edens, & Patrick, in press; Edens, Poythress, Lilienfeld, Patrick & Test, 2008; Neumann, Malterer, & Newman, 2008; Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006). Although a review of the findings from these aforementioned studies with both community and offender samples is beyond the scope of this paper, the key findings will be incorporated herein.

Although the use of alternative measures of psychopathy in both incarcerated and nonincarcerated samples has important advantages, it is important to evaluate whether alternative measures of psychopathy are measuring the same thing. To the extent that the PCL-R and self-report measures of psychopathy are highly correlated, such concerns are minimized.

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[1]Although these findings have typically been viewed as raising questions concerning the validity of self-report instruments, they are not necessarily problematic if one views the 'primary' features of the PCL-R (conning, deception, lacking guilt, reckless, irresponsible behavior) are fundamentally antisocial.

However, to the extent that they are not, there is greater reason to be concerned. The PCL-R identifies a useful construct and has served to build a fairly replicable nomological network of findings. In the event that self-report measures are not highly correlated with the PCL-R, the nomological network of findings that characterizes such measures may be different and thus require careful scrutiny before equating the constructs. In addition, there has been an increasing emphasis on understanding psychopathy by characterizing its primary dimensions and examining the external correlates of the PCL-R factors. Here, too, it is important to examine the correspondence between the factors that characterize alternative measures of psychopathy and the PCL-R rather than assume equivalence and comparable nomological networks of findings. In this way, we can further understand the nomological network that surrounds psychopathy, as operationalized by both interview-based and self-report measures of the latent construct.

A first step in addressing these questions involves evaluating the comparability of the PPI and PCL through a direct assessment of the extent to which the measures are correlated (i.e., concurrent validity). As noted by Benning et al. 2005, "if psychopathy measures assess similar constructs, they should be strongly related to each other" (p. 271). To date, there is limited published evidence regarding the direct relationship between PPI and PCL-R scores in a prison sample[2] (Poythress et al., 1998). In a sample of 50 youthful offenders (*M* age = 18.3 years), Poythress et al., 1998 found positive correlations ($r = .54$) between the PPI and PCL-R, as did Kruh, Whittemore, Arnaut, Manley, and Gage (2005) with a sample of 50 insanity acquittees using the PCL:SV ($r = .62$). Although the PPI total score correlations with the PCL-R and its variants are promising, replication with larger, more representative samples is still needed to establish generalizability.

A second aspect of evaluating the similarity of the PPI and PCL involves determining the extent to which the PPI and PCL are composed of similar underlying dimensions. In the field of psychopathy research, there has been general agreement that the construct incorporates two fundamental factors (Harpur et al., 1989), including interpersonal-affective (Factor 1) and antisocial-impulsive (Factor 2) components[3]. In fact, the contribution of the interpersonal-affective characteristics in addition to the antisocial-impulsive dimensions is what ostensibly distinguishes psychopathy from broad externalizing disorders, such as antisocial personality disorder. In this regard, moderate correlations between the PPI total score and both PCL-R (Poythress et al., 1998) and PCL:SV (Kruh et al., 2005) Factors 1 and 2 have been reported. Yet, due to the moderate inter-correlation between the PCL factors, it may be misleading to examine only the correlations between the PPI and the PCL factors without controlling for their overlapping variance. Thus, it is important to ascertain whether the association between PPI and PCL total scores is accounted for entirely by Factor 2 or whether it reflects the unique contribution of both factors.

A third step in addressing the similarity of the PPI and PCL involves an investigation of the association between corresponding factors. Using a community sample, Benning et al. (2003) factor analyzed the PPI subscales and extracted two largely orthogonal factors (PPI-I and PPI-II[4]). They found that these factors displayed marked differential associations;

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[2]See also Benning, Patrick, Blonigen, Hicks, and Iacono (2005a) for correlations among MPQ-estimated PPI scores, PCL-R, and a number of theoretically relevant personality variables, in both community and offender samples.

[3]Although there is theoretical and empirical support for a two-factor model, three- (Cooke & Michie, 2001; Cooke, Michie, Hart, & Hare, 1999) and four-facet (Hill, Neumann, & Rogers; 2004; Vitacco, Neumann, & Jackson, 2005) models have also been proposed. Note that Hare and Neumann (in press) have argued that their four-factor model can easily be converted to the traditional two-factor form.

[4]Recent research on the PPI with offenders (Neumann, Malterer, & Newman, 2008) raises questions about the validity of the two-factor PPI model. However, to be consistent with Benning et al. (2003), we continued with the current two-factor PPI model. Moreover, because this model is the focus of extensive recent research on psychopathy, the PCL correlates of the two PPI factors identified by Benning et al. are important to ascertain.

specifically, they reported that PPI-I correlated positively with dominance and venturesomeness and negatively with anxiety, and that PPI-II correlated positively with antisocial behavior, substance abuse, and negative emotionality, and negatively with socioeconomic status, verbal ability, and behavioral constraint. Others have found moderate correlations between PPI-I and dominance (Patrick et al., 2006), low anxiety (Patrick et al., 2006; Uzieblo, Verschuere, & Crombez, 2007; cf. Schmitt & Newman, 1999) and low BIS/ high BAS (Uzbielo et al., 2007) and between PPI-II and suicidal ideation and behavior (Douglass et al., in press; Patrick et al., 2006), aggressive and non-aggressive infractions (Edens et al., 2008), anxiety (Falkenbach, Poythress, Falki, & Manchak, 2007; Patrick et al., 2006), self-reported aggression (Falkenbach et al., 2007; Patrick et al., 2006), drug problems (Patrick et al., 2006), and measures of primary and secondary psychopathy (Falkenbach et al., 2007). This pattern of findings shows partial overlap with some of the external correlates of the PCL-R Factor 1 (e.g., high dominance and low anxiousness; Harpur et al., 1989; Hicks & Patrick, 2006; Verona, Patrick, & Joiner, 2001) and Factor 2 (e.g., antisocial behavior, substance abuse, high anxiety, Hare, 2003).

Although Benning et al. (2003) suggested that the external correlates of the PPI and PCL-R factors are largely analogous, it is equally important to examine the direct association between these instruments' corresponding factors. Edens et al. (in press) re-examined the Poythress et al. (1998) data and reported modest correlations between PPI-I and PCL-R facets 1 (interpersonal) and 2 (affective) of .24 and .27, respectively. Surprisingly, the associations were actually larger in magnitude between PPI-I and PCL-R facets 3 (behavioral, $r = .42$) and 4 (antisocial; $r = .40$). Conversely, the association between PPI-II and the behavioral and antisocial facets were moderate in size ($r = .34$ and .40, respectively), and larger than the associations with facets 1 and 2. Notably, in the original study, Poythress et al. (1998) found that only one PPI-I subscale (Social Potency) and one PPI-II subscale (Machiavellian Egocentricity) were significantly associated with PCL-R Factors 1 and 2, respectively. Lastly, the PPI Coldheartedness subscale, which does not load substantially on either PPI factor (Benning et al., 2003), is significantly associated with PCL-R Factor 1 and total score (Poythress et al., 1998). Overall, then, the low PPI-I associations, lack of significant associations between PPI subscales and the PCL-R factors, as well as the omission of Coldheartedness from the PPI factors, call into question the comparability of the presumably corresponding PPI and PCL-R factors. In light of these issues and the fact that the associations between the presumably corresponding PPI and PCL-R factors in an institutionalized sample has only been reported for one relatively small sample of youthful offenders (N = 50), our investigation also examined the zero-order correlations between these factors.

Given the importance of clarifying the association between the PPI and PCL and the dearth of published reports, there is a clear need for additional research. First, although early investigations of this relationship in correctional samples yielded promising results (Poythress et al., 1998; Kruh et al., 2005; see also Benning et al., 2005a, for data on the MPQ-estimated PPI factors), the replicability of the findings may be limited due to sample size and composition (i.e., restricted age range, Poythress et al., 1998; insanity acquittees, Kruh et al., 2005). Additionally, the direct association between the PPI and PCL has never been examined in a non-institutionalized sample. Second, what makes psychopathy distinctive from antisocial personality disorder is primarily inclusion of the interpersonal-affective component (Factor 1), which self-report measures are notoriously unable to capture with high fidelity (e.g., Harpur et al., 1989). Thus, it will be important to examine whether the PPI overcomes this oft-cited limitation of self-report measures, and shows significant associations with both Factors 1 and 2 of the PCL-R.

Third, due to the substantial inter-correlation between the two PCL-R factors, it is also important to determine whether the relationship between the PPI and PCL factors is obfuscated

by this overlap. Fourth, and finally, because there is limited published evidence (Edens et al., in press) addressing the comparability of the PPI and PCL factors it is unclear whether the PPI factors measure the same underlying dimensions as the PCL factors.

The purpose of Study 1 is to address these gaps in the literature and to test several hypotheses concerning the relation between the PPI and PCL-R total and factor scores in a relatively large sample of adult criminal offenders. In Studies 2 and 3, we examined the consistency of these relationships using different samples and the PCL:SV. Our first goal is to examine the association between the PPI and PCL across diverse samples (e.g., inmates, undergraduates). Based on past findings (e.g., Poythress et al., 1998; Kruh et al., 2005), we predict that PPI and PCL total scores will be positively associated. Our second goal is to examine the ability of the PPI to capture both PCL factors. Specifically, we examine whether the association between PPI and PCL factor scores in the present samples reflects the unique contributions of both PCL factors or is accounted for by one factor alone. Our third goal is to provide an examination of the concurrent validity of the PPI and PCL factors. Specifically, we test the hypothesis that the PPI-I will be significantly associated with PCL Factor 1, and PPI-II with PCL Factor 2 (convergent validity), with significantly lower correlations between the non-corresponding factors (discriminant validity).

Study 1

Our first study was designed to evaluate the equivalence of the PPI and PCL-R in a sample of adult male inmates.

Method

Participants—The sample consisted of 876 adult males (55.5% African-American, 44.5% Caucasian), ranging in age from 18 – 45 years old (M = 28.8 years, SD = 6.91). Participants were incarcerated at one of two different locations, either a minimum (n = 388) or maximum (n = 488) security Wisconsin state prison. Data collection was part of a large-scale ongoing research project examining the information processing deficits of psychopathic individuals and took place over a three-year period from 1998–2001. Participants received consent procedures both orally and in written form and researchers informed participants that their participation in the study would have no impact on their correctional status.

Researchers selected potential participants from a comprehensive prison roster. Given that the problematic traits and behaviors associated with psychopathy are not due to psychotic thinking (Cleckley, 1976) and appear to taper off with advancing age (Harpur & Hare, 1994), we also administered a measure of psychosis and used an age cut-off (cf. Brinkley et al., 2004). As such, we screened out anyone who was older than 45 or diagnosed with psychosis or bipolar disorder according to institutional file-information (e.g., psychiatric evaluations, clinical progress notes). Due to possible effects on laboratory task performance (not reported here), participants were also excluded if receiving psychotropic medication.

Measures

PPI: The PPI (Lilienfeld & Andrews, 1996) is a 187-item self-report measure developed to capture the core personality traits of the psychopathy construct. In contrast to the PCL-R, the PPI (designed primarily for non-criminal populations) does not include items explicitly indicative of overt antisocial or criminal behaviors. Respondents answer questions using a 4-point Likert scale (1 = *false,* 2 = *mostly false*, 3 = *mostly true*, 4 = *true*). The PPI yields both a total score that provides an estimate of global psychopathy and eight factor-analytically derived subscales (e.g., Machiavellian Egocentricity, Fearlessness, Social Potency) that assess specific lower-order facets of the psychopathy construct. The PPI total score has demonstrated adequate

internal consistency and test-retest reliability in undergraduate and prison samples. In addition, PPI total scores exhibit strong convergent validity with self-report and interview-based measures of psychopathy and potentially related conditions (e.g., narcissistic personality disorder) and discriminant validity from self-report measures of depression, schizotypy, and other conditions largely unrelated to psychopathy (Lilienfeld & Andrews, 1996; see Lilienfeld & Fowler, 2006, for a review).

Following factor analyses by Benning et al. (2003), we computed PPI-I by summing the standardized scores on the PPI Fearlessness, Social Potency, and Stress Immunity subscales, and PPI-II by summing the standardized scores on the PPI Machiavellian Egocentricity, Blame Externalization, Carefree Nonplanfulness, and Impulsive Nonconformity subscales. The PPI Coldheartedness subscale does not load highly on either higher-order factor and is thereby excluded from the computation of both factors. The internal consistency of the factors was computed by using all of the items from all of the subscales that load onto the appropriate factor (See Table 1 for the internal consistency, using Cronbach's Alpha, of PPI total and factor scores).

PCL-R: The PCL-R (Hare, 1991, 2003) is an interview- and file-based measure that consists of 20 items indicative of psychopathic traits based in large part on the characteristics delineated by Cleckley (1941/1982), although notably some Cleckley criteria were excluded (e.g., good "intelligence", absence of delusions and other signs of irrational thinking, absence of "nervousness" or psychoneurotic manifestations). Each PCL-R item is scored on a 3-point scale (0=*clearly not present*; 1=*maybe present*; 2 = *clearly present*) and the scores are summed to yield a total score that ranges from 0 to 40. Scores are based on information derived from a semi-structured interview as well as a review of information in institutional files. The reliability and construct validity of the PCL-R are well established (see, Hare, 1985; Hare, 1996; Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990). Early work with the PCL-R revealed a replicable two-factor structure (Harpur et al., 1989) with Factor 1 assessing interpersonal and affective characteristics (e.g., shallow affect, pathological lying) and Factor 2 assessing impulsive and antisocial behavior (e.g., juvenile delinquency, impulsivity). See Table 1 for the internal consistency of PCL-R total and factor scores.

During a random subset of interviews ($n = 171$), a second trained rater was present in the room to provide an independent rating of the inmate in order to evaluate interrater reliability. The intraclass correlation coefficients (ICCs; Bartko, 1976) were calculated using a two-way mixed effects model, absolute agreement and was as follows: Total score = .94, PCL-R Factor 1 = .870; PCL-R Factor 2 = .873, indicating strong agreement. The ICC obtained in the present study is similar to that reported for the Total score by Forth, Brown, Hart, & Hare (1996) and Hart et al. (1994).

Procedure—All inmates were assessed for psychopathy using the PPI (Lilienfeld & Andrews, 1996) and the PCL-R (Hare, 2003). The PPI was administered as part of a battery of self-report personality, cognitive, and behavioral measures (not reported in this study). The PCL-R ratings were based on data gathered during a semi-structured clinical interview and collateral information found in the inmate's institutional file (e.g., pre-sentence investigations, police reports, psychological evaluations).

The PCL-R interviews were conducted by bachelors- or masters-level students (5 males, 4 females) who completed extensive training prior to conducting interviews independently. Training consisted of both didactic (e.g. assigned readings) and on-site training (e.g., modeling and direct observation by an expert rater). Ongoing group supervision was provided to address any concerns with ratings and to minimize observer drift.

Results

PPI and PCL-R Total Scores—As expected, PPI and PCL-R total scores were positively and significantly correlated ($r = .391$, p < .01). More specifically, the proportion of shared variance between the variables was approximately 15%. See Table 1 for the inter-correlation matrix between the PPI and PCL-R total and factor scores.

Partial Correlations – Total Score—Similar to Poythress et al. (1998) and Kruh et al. (2005), the PPI total score was significantly associated with both PCL-R Factor 1 ($r = .263$, $p = .001$) and Factor 2 ($r = .433$, $p = .001$). We examined whether the association between PPI and PCL-R factor scores remained significant after removing the contribution of PCL-R Factor 2. Once the variance associated with PCL-R Factor 2 was removed using partial correlation analyses, the previously significant association between the PPI and PCL-R total scores was no longer significant ($r_{partial} = .039$, $p = .2$).

PPI and PCL-R Factor Scores—In contrast to prediction, although we found a significant correlation between PPI-I and PCL-R Factor 1 ($r = .184$, p < .01), this correlation was not significantly greater ($p = .983$) than the PPI-I and PCL-R Factor 2 correlation ($r = .183$, p < .01). As predicted, PPI-II was significantly associated with PCL-R Factor 2 ($r = .414$, p < .01). Moreover, this association was significantly larger in magnitude ($p < .001$) than the corresponding correlation with PCL-R Factor 1 ($r = .199$, $p < .01$). Correlations between the PPI and PCL-R factors and total scores are presented in Table 1.[5]

PPI Subscale Correlations—To further examine the low PPI-I and PCL-R Factor 1 association, we subdivided PPI-I into its three respective subscales (Social Potency, Stress Immunity, and Fearlessness). Based on prior published work, we predicted that the Social Potency and Stress Immunity subscales of PPI-I in particular would show significant associations with PCL Factor 1. We found significant, albeit small associations between PCL-Factor 1 and the PPI Social Potency ($r = .195$), Stress Immunity ($r = .110$) and Fearlessness ($r = .071$) subscales.

Partial Correlations – Factor Scores—Given the high correlation between the two PCL-R factors, we used partialling to examine whether the association between the PPI and PCL-R factor scores (reported in Table 1) remained significant after removing the contribution of the other PCL-R Factor score from this association. Regarding PPI-I, after removing the variance due to PCL-R Factor 2 scores, the association between PPI-I and PCL-R Factor 1 scores was small but significant ($r_{partial} = .100$, $p < .05$). After removing the variance associated with PCL-R Factor 1, the association between PPI-I and PCL-R Factor 2 scores was similarly small but significant ($r_{partial} = .107$, $p < .05$).

Regarding PPI-II, after removing the variance due to PCL-R Factor 1 scores, the association between PPI-II and PCL-R Factor 2 scores remained significant ($r_{partial} = .370$, $p < .001$). In contrast, once the variance associated with PCL-R Factor 2 was removed, the previously significant association between the PPI-II and PCL-R Factor 1 scores was no longer significant ($r_{partial} = -.019$, $p = .584$).

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[5]Given empirical support for the heterogeneity of the factors, we conducted all analyses using the four-facet model. Due to the low reliability (based on Nunnally and Bernstein, 1994), of the facets (range .46 – .73), and low ICC (< .75) for Facet 2 in Studies 1 and 2, and Facets 1–3 in Study 3, we elected to only report the findings for the two-factor model. The findings from the four-facet model are available upon request.

Study 2

Our second study was designed to evaluate the association between the PPI and PCL psychopathy using an alternative assessment instrument, the PCL:SV, and a different offender sample.

Method

Participants—A sample of 247 adult male offenders (81% Caucasian) ranging in age from 18 – 45 years old (M = 29.4 years, SD = 7.9) participated. They were incarcerated in a maximum-security Wisconsin state prison that served as a reception center for all incoming offenders. Data were collected as part of an ongoing research project examining a variety of performance deficits in psychopathic individuals and took place over a one-year period from 2005–2006. Researchers selected potential participants according to the same procedure used in Study 1 and consent procedures were also the same.

Measures

PPI: Researchers administered the PPI (Lilienfeld & Andrews, 1996) in the same manner as in Study 1. Internal consistency (alpha) coefficients for the PPI total and factor scores are reported in Table 2.

PCL:SV: The PCL:SV (Hart et al., 1995) is a 12-item interview- and file-based rating scale, derived from the 20-item PCL-R (Hare, 2003), that was designed to provide a briefer assessment of psychopathy across a wider range of settings. Individual items are scored using a 3-point scale analogous to the rating system of the PCL-R (0 = *clearly not present*; 1 = *maybe present*; 2 = *clearly present).* Traditionally, the PCL:SV has been divided into two subscale scores: Factor 1 consists of six items and is largely isomorphic with PCL-R Factor 1 (callous, selfish, remorseless); Factor 2 consists of six items and is largely isomorphic with PCL-R Factor 2 (chronically unstable and antisocial lifestyle).

We used the PCL:SV rather than the PCL-R because it is a broader, screening measure requiring less detailed collateral information, which was a concern given that inmates recently arriving at the reception center did not always have complete institutional files[6]. Studies have demonstrated excellent correspondence between the PCL:SV and PCL-R, as well as good reliability and validity with both non-forensic and incarcerated samples (Hart et al., 1995;Cooke, Michie, Hart, & Hare, 1999). Table 2 contains the internal consistency for PCL:SV total and factor scores. A second trained rater was present for a random subset of interviews (n = 61) to establish interrater reliability and provided a second, independent rating blind to the score of the interviewer. ICCs (Bartko, 1976) were calculated using a two-way mixed effects model of absolute agreement, and were as follows: Total score = .90 (consistent with Forth et al., 1996;Hart et al., 1995), PCL:SV Factor 1 = .80; PCL:SV Factor 2 = .93, indicating strong agreement.

Procedure—Researchers interviewed inmates using the PCL:SV (Hart et al., 1995) and assigned them ratings based on semi-structured interviews and information found in institutional files (e.g., pres-sentence investigations, police reports, institutional misconduct records). The PCL:SV interviews were conducted by post-baccalaureate students (2 males, 3 females) who completed extensive training, consistent with that detailed in Study 1, prior to conducting the interviews. Researchers then administered the PPI (Lilienfeld & Andrews, 1996) in conjunction with a battery of other measures not reported here.

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[6]By screening files to ensure participants had a pre-sentence investigation (which includes social history, family background, criminal history, etc.), we were able to select participants with sufficient collateral information.

Results

PPI (Total and Subscale) and PCL:SV Total Scores—As predicted, the PPI total score was significantly correlated with the PCL:SV total score ($r = .415$, $p < .01$). The proportion of shared variance between the variables was approximately 17%. See Table 2 for the inter-correlations between PPI and PCL:SV total and factor scores.

Partial Correlations – Total Score—As in Study 1, PPI total scores were significantly associated with both PCL:SV Factor 1 ($r = .249$, $p = .001$) and Factor 2 ($r = .461$, $p = .001$). Consistent with the rationale presented in Study 1, we examined the association between PPI and PCL:SV total scores, controlling for Factor 2. Consistent with Study 1, when Factor 2 was partialled from PCL:SV total score, the previously significant association between the PPI and PCL:SV total scores was rendered non-significant ($r_{partial} = .038$, $p = .556$).

PPI and PCL:SV Factor Scores—Contrary to prediction, the association between PPI-I and PCL:SV Factor 1 ($r = .155$, $p < .05$) was not significantly greater ($p = .653$) than the PPI-I and PCL:SV Factor 2 correlation ($r = .115$, $p = .072$). On the other hand, consistent with prediction, the association between PPI-II and PCL:SV Factor 2 ($r = .457$, $p < .001$) was significantly larger ($p < .001$) than the PPI-II and PCL:SV Factor 1 correlation ($r = .179$, $p < .001$).

PPI Subscale Correlations—Once again, to elucidate the relatively small PPI-I and PCL-R Factor 1 association, we examined the PPI-I subscales. In contrast to Study 1, only one PPI-I subscale, Social Potency, showed a significant association with PCL-R Factor 1 ($r = .193$).

Partial Correlations – Factor Scores—Paralleling analyses in Study 1, we examined the association between PPI and PCL:SV Factor scores, controlling for each factor. After removing the variance due to PCL:SV Factor 2 scores, the association between PPI-I and PCL:SV Factor 1 scores was small but approached significance ($r_{partial} = .115$, $p = .072$). After removing the variance associated with PCL:SV Factor 1, the association between PPI-I and PCL:SV Factor 2 scores was non-significant ($r_{partial} = .048$, $p = .449$).

Regarding PPI-II, and consistent with Study 1, after removing the variance due to PCL:SV Factor 1 scores, the association between PPI-II and PCL:SV Factor 2 scores remained large and significant ($r_{partial} = .430$, $p < .001$). Also consistent with Study 1, once the variance associated with PCL:SV Factor 2 was removed, the previously significant association between the PPI-II and PCL:SV Factor 1 scores was no longer significant ($r_{partial} = -.044$, $p = .491$).

Study 3

The purpose of Study 3 was to evaluate the association between the PPI and the PCL:SV in a nonclinical (undergraduate) sample, the participants for whom the PPI was primarily designed.

Method

Participants—The sample consisted of 140 male undergraduates enrolled in an introductory psychology course at a large Midwestern university, who participated for extra credit[7]. Data were collected as part of an ongoing university-based research project examining the information processing deficits associated with psychopathy in a non-institutionalized sample and took place over a five-month period from November, 1997 through April, 1998. Participants were excluded if they had a psychotic disorder or bipolar disorder, consistent with

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[7]Age and race data were not collected for this study. Nevertheless, based on extensive past experience with Introductory psychology undergraduates at this university, the participant pool was primarily Caucasian with an age range of 17–22 years.

the rationale provided in Study 1. Participants received consent procedures both orally and in written form.

Measures—Both psychopathy measures, the PPI and PCL:SV, are the same as those used in Study 2 and were described in detail earlier. The PCL:SV ratings were based solely on interview information because collateral information was not available. Although others have reported reliable findings using the PCL:SV with undergraduate students without collateral information (e.g., Forth et al., 1996 – Samples 1 and 3), we examined their internal consistency to ensure that the absence of collateral information did not reduce the reliability. The internal consistency (alpha) coefficients for the PPI and PCL:SV total and factor scores were acceptable (all greater than .79) and are reported in Table 3, though it may be worth noting that the inter-correlation between PCL:SV Factors 1 and 2 (= .76) was higher than in Study 2 and some other published reports (e.g., Guy & Douglass, 2006 =.61; Kruh et al., 2005 = .55;)

To evaluate interrater reliability, a second rater was present for a random subset of interviews ($n = 35$) and completed a second, independent rating. ICC (Bartko, 1976) was calculated using a two-way mixed effects model of absolute agreement, and was as follows: Total score = .813, Factor 1 = .779, Factor 2 = .765.

Procedure—Researchers set out a sign-up sheet with a brief description of the study and Introductory Psychology students signed up to volunteer. When participants arrived, researchers presented the informed consent procedures and all participants provided written consent. Researchers then interviewed participants and used the information to complete the PCL:SV ratings. Interviewers were undergraduate or post-baccalaureate students (2 males, 3 females) who received extensive didactic and applied training prior to the study. Participants completed a battery of self-report measures, including the PPI, additional personality-based measures, and multiple laboratory computer tasks (the latter two sets of measures are not reported in this study). The study took approximately 2 hours and participants received extra credit points for their participation.

Results

PPI (Subscale and Total) and PCL:SV Total Scores—We found a significant association between the PPI and PCL:SV total score ($r = .609$, p < .001). The proportion of shared variance between the variables was approximately 36%. See Table 3 for the inter-correlation matrix of PPI and PCL:SV total and factor scores.

Partial Correlations – Total Score—As in Studies 1 and 2, PPI total was significantly associated with both PCL-R Factor 1 ($r = .532$, $p < .001$) and Factor 2 ($r =.610$, $p < .001$). Similar to Studies 1 and 2, we found when controlling for Factor 2, the association between the PPI and PCL:SV total scores was no longer significant ($r = .131$, $p = .138$).

PPI and PCL:SV Factor Scores—Contrary to prediction, although the correlation between PPI-I and PCL:SV Factor 1 ($r = .231$, $p < .001$) was significant, it was not significantly larger ($p = .965$) than the association with PCL:SV Factor 2 ($r = .236$, $p < .001$). Similarly, PPI-II and PCL:SV Factor 2 were significantly associated ($r = .584$, $p < .001$). Although this association was larger in magnitude than the zero-order correlation between PPI-II and PCL:SV Factor 1 ($r = .466$, $p < .01$), the difference was not statistically significant ($p = .176$).

PPI Subscale Correlations—Consistent with the first two studies, we examined the PPI-I subscales' associations with PCL-R Factor 1. In contrast with both Studies 1 and 2, Fearlessness, showed a moderate, significant association with PCL-R Factor 1 ($r = .311$).

Inconsistent with prediction, neither Social Potency nor Stress Immunity were significantly associated with PCL-R Factor 1.

Partial Correlations – Factor Score—After removing the variance due to PCL:SV Factor 2 scores, the association between PPI-I and PCL:SV Factor 1 scores was small and non-significant ($r_{partial} = .083$, $p =. 353$). Once the variance associated with PCL:SV Factor 1 was removed, the association between PPI-I and PCL:SV Factor 2 scores was also small and non-significant ($r_{partial} = .096$, $p = .277$).

Regarding PPI-II, after removing the variance due to PCL:SV Factor 1 scores, the association between PPI-II and PCL:SV Factor 2 scores remained strong and significant ($r_{partial} = .400$, $p <. 001$). After the variance associated with PCL:SV Factor 2 was removed, the previously significant association between the PPI-II and PCL:SV Factor 1 scores was non-significant ($r_{partial} = .045$, $p = .612$).

Discussion

In many respects, the results of these three studies tell a consistent tale. Across all three samples, PPI total scores were positively and significantly correlated with total scores derived from the PCL-R or its briefer descendant, the PCL:SV. Nevertheless, in the incarcerated samples these correlations were only moderate in magnitude (_rs_ ranged from .39 to .42) and smaller than those reported in past research (Poythress et al., 1998; Kruh et al., 2005), revealing substantial non-shared variance between these two indices of global psychopathy. In contrast, the correlation was much larger ($r = .609$) in the university sample. One possible explanation for the substantially larger association with the university sample is the fact that no collateral information was available for scoring the PCL:SV, and as such, the instrument functioned more similarly to a self-report measure (possibly reducing the effects of unshared method variance). Alternatively, it is possible the PPI performed better with the population for which it was developed, namely college students and other nonclinical participants. Our results for Studies 1 and 2 echo previous findings revealing only modest associations between self-report and interview-based measures of this condition (Hare, 1985; Hare & Neumann, in press; Widom & Newman, 1985; see Lilienfeld, 1994, for a review). In this context, it is worth keeping in mind the "jingle fallacy" (Kelley, 1927; see also Block, 1995), i.e., the all-too-common error of assuming that two measures that bear the same label – in this case, psychopathy – are equivalent).

That being said, it is important to note that the correlations are not unreasonably low given the different measurement domains of the PCL and PPI (i.e., clinical-diagnostic vs. self-report, respectively), which is broadly consistent with results comparing self-report with other methods of measurement (Benning et al., 2005b). In fact, results of the current report indicate that the observed association between PPI and PCL scores overall is at the level one would expect for two measures of the same construct in different domains (i.e., ~.4) (see Campbell & Fiske, 1959).

Moreover, it is likely that the strength of the associations between these two measures would increase if examined at a latent level (Neumann, Kosson, & Salekin, 2007). However, the item-level factor structure of the PPI need to be clarified before such latent analyses can be conducted (Neumann, Malterer, & Newman, 2008). Nevertheless, the results reported here offer an important caveat for psychopathy researchers. Because the PPI and PCL-R are far from isomorphic in incarcerated samples, it would be erroneous to assume that equivalent groups or dimensions would be identified using the two measures or that results based on one measure will necessarily generalize to the other.

In addition, our results suggest that the relationship between the PPI and the PCL seems to be accounted for by Factor 2. The significant relationship between PPI and PCL total disappeared once the antisocial-impulsive dimension of psychopathy was controlled for statistically[8]. These findings suggest that chronically unstable, antisocial and socially deviant tendencies whether assessed with the PCL instruments or a self-report measure such as the PPI may largely explain the covariation between these measures. Such findings raise the possibility that the nomological network of findings associated with PPI total scores may reflect the antisociality/externalizing features of psychopathy primarily. Regardless of whether this possibility is supported or refuted by subsequent research, the current findings provide preliminary evidence that largely observer-based and self-reported measures of certain personality traits relevant to psychopathy yield markedly different, although perhaps each valid, sources of psychological information (Grove & Tellegen, 1991;Lilienfeld & Fowler, 2006). Further investigation of the differential correlates and potential incremental validity of observer/interviewer versus self-reported Factor 1 traits is clearly warranted. Although both sets of factor correlations (PPI-I-PCL Factor 1; PPI-II-PCL Factor 2) were significant, the proportion of shared variance between PPI-I and PCL:SV Factor 1 was relatively small (2%), whereas the proportion of shared variance between PPI-II and PCL:SV Factor 2 was much larger (20%).

Another consistent finding across all three studies was the low correlation between PPI-I and PCL-R/SV Factor 1 (*rs* ranged from .15 to .24; accounting for only 2% to 5% of shared variance). Even using a reduced threshold (.3 – .5) for comparing instruments across different measurement domains, these correlations are still low. These low correlations stand in sharp contrast to the moderate correlations between PPI-II and PCL-R/SV Factor 2 across all three studies (*rs* ranged from .42 to .58). Hence, our findings paint a mixed picture of the PPI factors' convergent validity with those of the PCL-R/SV. The observed correspondence between PPI Factor 1 scores and PCL Factor 1 scores in the current studies is lower than what one would expect for two measures of the same construct in different domains, and somewhat lower than that reported by Edens et al. (in press; .24 interpersonal facet 1, .27 affective facet 2). One potential explanation for the low convergence between the Factor 1 scores from the two instruments, relative to the Factor 2 scores from the two instruments, relates to the fact that PCL Factor 1 is associated with antisociality/externalizing (i.e., correlated with Factor 2 features; Widiger, 2006) whereas the two factors of the PPI are relatively independent. In addition, it has been proposed that PPI-I indexes something distinct from antisociality/externalizing and taps traits associated with positive adjustment as well as narcissistic features of psychopathy (e.g., Patrick, 2006). Yet, if the PPI-I is completely distinct from antisociality/externalizing, it is not clear why it showed similarly-sized correlations with PCL-R Factor 2.

At first blush, these findings seem to raise the possibility that the PPI may not adequately assess the interpersonal and affective features of psychopathy as measured by the PCL-R/SV, although it adequately assesses the impulsive-antisocial features of this syndrome (e.g., Hare & Neumann, in press). The current findings may seem surprising given that the PPI was developed largely to detect the fundamental interpersonal and affective traits of psychopathy rather than its concomitant antisocial and criminal behaviors (Lilienfeld & Andrews, 1996). However, it is worth mentioning that Lilienfeld and Andrews (1996) found that the PPI total score was strongly associated with both ASPD, as well as with measures of the classic Cleckley criteria. Moreover, to the extent that interpersonal and affective (e.g., deception, pathological lying, remorseless use of others) psychopathic features are inherently tied to antisocial tendencies, the current findings dovetail with other recent research on psychopathy (Neumann et al., 2007). For example, evidence from behavior genetic research (Larsson et al., 2007) shows that the same general four factors as present in the 4-factor model of psychopathy

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[8]For a discussion of potential problems related to partialling variables, particularly concerning how the findings relate to the general construct being studied, see Lynam, Hoyle, & Newman, (2006).

(Interpersonal, Affective, behavioral Lifestyle, Antisocial) all loaded onto a single genetic factor. In addition, the covariance between the affective and antisocial components of psychopathy can be explained by a common genetic factor (Viding et al., 2007).

Nevertheless, our findings are open to alternative explanations. In particular, our results do not demonstrate that the PPI is inferior to the PCL-R/SV in its assessment of personality traits, as it is possible that the low correlation between the corresponding first factors of these measures reflects (a) lower validity on the part of PCL Factor 1 compared with PPI-I, (b) the fact that each factor taps differing valid regions of the criterion space of psychopathic personality features, or (c) the fact that one cannot easily separate the 'core' personality features of psychopathy from the antisocial features because those features are fundamentally antisocial. As such, it may be justifiable to regard these two instruments as complementary rather than as competing or mutually exclusive. To illustrate, critics (e.g., Hicks & Patrick, 2006; Widiger, 2006) argue that the PCL-R is weighted toward assessing psychopathy in terms of indicators of behavioral deviancy and as such, overall PCL-R scores are correlated predominantly with criterion measures tapping maladjustment (e.g., aggression/violence, drug/alcohol abuse). In contrast, there is evidence that PPI-I in particular correlates with indices of good adjustment (e.g., assertiveness, low suicidal ideation, low anxiety). This highlights one example of the potential complementarity of the instruments. Nevertheless, further research on the incremental validity of each measure above and beyond the other for clinically relevant criteria will be needed before their potentially complementary roles for clinical assessment and research purposes can be clarified.

The results of these studies should be considered in light of their limitations. First, we limited our focus strictly to an examination of the concurrent validity of the PPI (i.e., direct association between the PPI and PCL), at the exclusion of examining associations with external correlates. Although not without its limitations, we view this as an invaluable step in establishing the construct validity of an instrument. As suggested by Benning et al. (2005b), "in the case of psychopathy measures, the first layer of the nomological network involves one measure's relationships with other measures of psychopathy" (p. 271). That being said, we encourage research that examines construct validity by comparing the pattern of associations between theoretically and empirically meaningful external correlates with both the overall and factor scores for both instruments. Second, we were unable to obtain collateral information in Study 3 and had to rely solely on self-report of the university students when making PCL:SV ratings. Although the absence of collateral information could potentially reduce reliability, both the internal consistency and ICC of the total and factor scores were within an acceptable range and comparable to Studies 1 and 2. Other researchers have reported findings using the PCL:SV with no collateral information (e.g., Forth et al., 1996; Hart et al., 1994) and reported no differences between PCL:SV scores made with or without collateral information (Forth et al., 1996).

The present results clearly demonstrate that the PPI and PCL, although overlapping in important respects, exhibit notable differences, particularly in their assessment of the core interpersonal and affective traits that comprise Factor 1 of the PCL-R and PCL-SV in incarcerated populations. Psychopathy investigators should therefore not regard these two measures as fungible, nor assume that findings derived from one measure will necessarily generalize to the other. Nevertheless, findings that emerge consistently across both measures are likely to be especially robust (see Shadish, Cook, & Campbell, 2002, on the "heterogeneity of irrelevancies").

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Table 1

Descriptives, Reliabilities, and Correlations for PCL–R and PPI Measures for Study 1

Measure	1	2	3	4	5	6	7	M	SD	Skew	K
1. [a] PCL-R F1	**.775**	-	-	-	-	-	-	8.49	3.52	-.047	
2. [b] PCL-R F2	.517**	**.653**	-	-	-	-	-	10.56	3.49	-.416	
3. [a] PCL-R Total	.851**	.860**	**.820**	-	-	-	-	22.66	7.11	-.226	
4. [a] PPI-I	.184**	.183**	.202**	**.857**	-	-	-	.002	.682	.042	
5. [a] PPI-II	.199**	.414**	.346**	.053	**.920**	-	-	-.023	.722	-.072	
6. [a] PPI Total	.263**	.433**	.391**	.511**	.854**	**.911**	-	380.24	41.61	-.050	
7. [a] Coldheartedness	.139**	.116**	.154**	.097**	.163**	.377**	**.800**	47.02	9.44	.686	

Note. Values in the **diagonal** represent the internal consistency (Cronbach's alpha) of each scale. PCL–R = Psychopathy Checklist – Revised; F1 = Factor 1 (Interpersonal/Affective); F2 = Factor 2 (Impulsive Lifestyle/Antisocial); PPI = Psychopathic Personality Inventory.

[a] n = 876.

[b] n = 852.

** p<.01.

Table 2

Descriptives, Reliabilities, and Correlations for PCL:SV and PPI Measures for Study 2

Measure	1	2	3	4	5	6	7	M	SD	Skew	K
1. PCL:SV F1	**.629**	-	-	-	-	-	-	6.47	2.50	.054	
2. PCL:SV F2	.468**	**.703**	-	-	-	-	-	7.45	2.80	-.245	
3. PCL:SV Total	.826**	.865**	**.758**	-	-	-	-	13.96	4.49	-.101	
4. PPI-I	.155*	.115	.155*	**.865**	-	-	-	.015	.72	.179	
5. PPI-II	.179**	.457**	.377	.043	**.915**	-	-	-.006	.73	-.168	
6. PPI Total	.249**	.461**	.415**	.525**	.839**	**.924**	-	386.74	40.33	-.006	
7. Coldheartedness	.089	.179**	.150*	.012	.114	.314**	**.844**	48.01	9.96	.594	

Note. Values in the **diagonal** represent the internal consistency (Cronbach's alpha) of each scale. PCL:SV = Psychopathy Checklist: Screening Version; F1 = Factor 1 (Interpersonal/Affective); F2 = Factor 2 (Impulsive Lifestyle/Antisocial); PPI = Psychopathic Personality Inventory.

[a] N = 247.

*
p<.05.

**
p<.01.

Table 3

Descriptives, Reliabilities, and Correlations for PCL:SV and PPI Measures for Study 3

Measure	1	2	3	4	5	6	7	M	SD	Skew	K
1. [a] PCL:SV F1	**.795**	-	-	-	-	-	-	3.54	2.88	.980	
2. [a] PCL:SV F2	.763**	**.794**	-	-	-	-	-	3.39	3.02	.914	
3. [a] PCL:SV Total	.935**	.942**	**.885**	-	-	-	-	6.91	5.55	1.003	
4. [b] PPI-I	.231**	.236**	.250**	**.907**	-	-	-	.05	.74	-.592	
5. [b] PPI-II	.466**	.584**	.560**	.036	**.926**	-	-	.04	.75	.158	
6. [b] PPI Total	.532**	.610**	.609**	.551**	.808**	**.915**	-	379.91	37.77	.140	
7. [b] Coldheartedness	.259**	.243**	.268**	.071	.159	.397**	**.834**	43.70	8.86	.691	

Note. Values in the **diagonal** represent the internal consistency (Cronbach's alpha) of each scale. PCL:SV = Psychopathy Checklist: Screening Version; F1 = Factor 1 (Interpersonal/Affective); F2 = Factor 2 (Impulsive Lifestyle/Antisocial); PPI = Psychopathic Personality Inventory.

[a]
$n = 140$.

[b]
$n = 130$.

*
$p < .05$.

**
$p < .01$.