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Construct Validity of the Psychopathic Personality Inventory in a Correctional Sample

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The relations between the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) and 4 theoretically related constructs (empathy, aggression, work ethic, and borderline personality disorder) were examined. Additionally, the relation between the PPI and heroism was explored. One hundred male inmates were administered the PPI, the Questionnaire Measure of Emotional Empathy (Mehrabian & Epstein, 1972), the Aggression Questionnaire (Buss & Perry, 1992), the Protestant Ethic Scale (Mirels & Garrett, 1971), the Self-Report for Borderline Personality Scale (Oldham et al., 1985), and the Activity Frequency Inventory (Lilienfeld, 1998). As predicted, the PPI was significantly negatively correlated with empathy and significantly positively related to aggression and borderline personality. Contrary to prediction, the correlation between the PPI and work ethic was not significant. Eight of 11 hypotheses regarding the relations of the PPI subscales to these 4 constructs were corroborated. Results support the construct validity of the PPI in a correctional sample. The exploratory analysis of the relation between the PPI and heroism revealed no significant relations.

Although psychopathic personality (psychopathy) is among the most widely researched of all psychiatric conditions, its correlates and etiology remain controversial. The most widely used and extensively studied measures of psychopathy are Hare's Psychopathy Checklist (PCL; Hare, 1995) and Psychopathy Checklist-Revised (PCL-R; Hare, 1991). These measures involve clinical ratings based on a semistructured interview of the participant in conjunction with review of collateral (e.g., file) data. Factor analyses of the PCL and PCL-R have revealed a two-factor structure, with the first factor (Factor I) representing the core personality features of psychopathy (e.g., grandiosity, absence of guilt, and callousness) as delineated by Cleckley (1941/1982) and the second factor (Factor II) representing a chronic antisocial and criminal lifestyle. The construct validity of the PCL and PCL-R have been supported by an extensive body of evidence (for reviews, see Hare, 1991, 1996; Hart, Hare, & Harpur, 1992). For example, the PCL and PCL-R display good predictive validity for measures of both violence and criminal recidivism (Salekin, Rogers, & Sewell, 1996) and are predictive of poor performance on laboratory measures of *passive-avoidance learning* (i.e., the capacity to withhold responses that lead to punishment; Belmore & Quinsey, 1994; Newman & Kosson, 1986). Nevertheless, the PCL and PCL-R are both time and labor intensive, often requiring over 2 hours of clinician time to assess a single participant. As a consequence, a number of investigators have sought alternative and potentially more efficient methods of assessing psychopathy, such as self-report indexes.

The self-report assessment of psychopathy, however, has been beset by at least two major methodological problems. First, virtually all widely used self-report psychopathy measures, including the Minnesota Multiphasic Personality Inventory-2 Psychopathic Deviate scale (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), the California Psychological Inventory Socialization scale (Gough, 1969), and the Millon Clinical Multiaxial Inventory-II Antisocial scale (Millon, 1987), correlate moderately with PCL and PCL-R Factor II but only negligibly with Factor I (Harpur, Hare, & Hakstian, 1989; Hart, Forth, & Hare, 1991). These indexes thus appear to assess nonspecific behavioral deviance rather than the core personality features of psychopathy (Lilienfeld, 1994). As a consequence, they are not particularly useful for the differential diagnosis of psychopathy in criminal settings.

Second, some authors have contended that the use of self-report measures among psychopaths constitutes a *method-mode mismatch* (see Haynes, Richard, & Kubany, 1995), that is, the use of an assessment modality that is not ideally suited to the construct of interest. Psychopaths are known for their propensity toward prevarication (Hare et al., 1989), and their reputation for manipulating others through favorable self-presentations suggests that they might well discern the intent of items designed to solicit self-reports of psychopathic features. Although the use of validity scales to detect impression management and other forms of social desirability might assist researchers in the detection of psychopaths' tendencies to-

ward dishonesty, relatively few self-report measures of psychopathy contain validity scales designed to detect lying and related response sets.

Largely in response to these problems, Lilienfeld (1990) developed the Psychopathic Personality Inventory (PPI), a self-report measure of psychopathy designed to assess the core personality features of this syndrome. In the construction of the PPI, items explicitly assessing antisocial and criminal behaviors were avoided in an effort to develop a more "pure" measure of the principal personality traits of psychopathy delineated by Cleckley (1941/1982). The PPI provides a global index of psychopathy and eight subscales assessing various facets of psychopathy. These subscales are

1. *Machiavellian Egocentricity*, which 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*, which 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*, which 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 an absence of sentimentality.

4. *Carefree Nonplanfulness*, which 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*, which consists of 19 items (e.g., "Making a parachute jump would really frighten me" [*false*]) and assesses the absence of anticipatory anxiety concerning harm and the willingness to participate in risky activities.

6. *Blame Externalization*, which 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 own misbehavior.

7. *Impulsive Nonconformity*, which 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*, which 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.

In preliminary research on nonclinical (i.e., student) samples, the PPI was found to correlate positively with self-report, semistructured interview, peer-rated, and interviewer-rated measures of Cleckley psychopathy and to exhibit incremental validity above and beyond several measures of antisocial behavior in the assessment of Cleckley psychopathy (Lilienfeld, 1990; Lilienfeld & Andrews, 1996). Most important, the PPI correlates moderately to highly (i.e., $r > .45$) with PCL-R Factor I in

both prison (Poythress, Edens, & Lilienfeld, 1998) and undergraduate (Lilienfeld et al., 1998) samples.¹ Thus, in contrast to most or perhaps all extant self-report indexes of psychopathy, the PPI appears to provide an adequate measure of the core personality features of this syndrome.

Nevertheless, a pressing need remains for additional construct validation studies of the PPI. With the exception of the study by Poythress et al. (1998), there are no published data on the personality and psychopathological correlates of the PPI in incarcerated samples. Moreover, there is a need to expand the nomological network (Cronbach & Meehl, 1955) surrounding the construct validation of the PPI to include additional indexes of personality. Relatively little published information exists regarding the relation of the PPI to other personality variables relevant to psychopathy (e.g., empathy). Finally, because most of the previous research on the PPI has focused largely on the PPI total score (e.g., Lilienfeld & Andrews, 1996), the personality correlates of the PPI subscales require additional investigation. The construct of psychopathy appears to be complex and multifaceted (e.g., Cleckley, 1941/1982), and the subscales of the PPI may provide useful information concerning the differential correlates of various features of psychopathy.

THIS STUDY

The primary purpose of this study was to investigate and confirm the relation of the PPI to measures of four constructs of theoretical relevance to psychopathy: empathy, aggression, work ethic, and borderline personality disorder (BPD). The hypothesized relations between PPI scores and measures of empathy, aggression, work ethic, and BPD were derived directly from the core personality features ascribed to psychopaths as well as from previous empirical studies.

Psychopathy and Empathy

A decreased ability to empathize with others has long been identified as a characteristic of antisocial and aggressive individuals (Cleckley, 1941/1982). Although often interpersonally charming, psychopaths are described as having shallow and superficial feelings. By either deception or force, they frequently and repeatedly use others for their own personal gain, discard or abandon their victims when their own needs have been met, and are "without conscience" (Hare, 1993) in regard to the plight of their victims. Various studies of adults (e.g., Mehrabian & Epstein, 1972) and adolescents (e.g., D. Cohen & Strayer, 1996) suggest negative relations between empa-

¹Lilienfeld et al. (1998) used a shortened form of the PCL-R, the PCL: Screening Version, which was designed largely to permit the assessment of psychopathy in noncriminal settings.

thy and antisocial personality as well as between empathy and aggression, constructs that theoretically are related to psychopathy. Recent studies using various measures of psychopathy with diverse populations, however, have produced inconsistent results. Zagon and Jackson (1994) administered a self-report measure of psychopathy to college undergraduates and obtained a negative correlation with a measure of empathy. Reise and Wink (1995), however, found a positive correlation between these two constructs in a college–community sample assessed using the Psychopathy Q-Sort. Rutherford, Alterman, Cacciola, and McKay (1997), on the other hand, found no association between PCL–R scores and a measure of empathy in a sample of male methadone patients. In this study, PPI psychopathy was expected to correlate negatively with a measure of empathy. Furthermore, the PPI subscales of Machiavellian Egocentricity and Coldheartedness were expected to have a negative association with empathy.

Psychopathy and Aggression

Psychopaths habitually employ violent and destructive strategies to control others and to satisfy their own selfish needs (Hare, 1996). Serin (1991) found that psychopathic inmates scored higher than nonpsychopathic inmates on various self-report and behavioral measures of aggression. In addition, inmates with histories of instrumental aggression have been found to score higher on Hare's PCL than inmates with histories of reactive aggression (Cornell, Warren, Hawk, & Stafford, 1996). Furthermore, various studies support the predictive value of psychopathy as measured by the PCL and PCL–R for behavioral measures of aggression in samples of offenders (Serin & Amos, 1995) and forensic inpatients (Heilbrun et al., 1998; Hill, Rogers, & Bickford, 1996). Thus, a positive correlation was expected between PPI psychopathy and a self-report measure of aggression. Aggression also was expected to be positively related to the PPI Machiavellian Egocentricity, Coldheartedness, and Fearlessness subscales.

Psychopathy and Work Ethic

Psychopaths also are described as deficient in prosocial attitudes and values, such as accepting responsibility for others, acquiring a work ethic (Lykken, 1995), and ambition (Albert, Brigate, & Chase, 1959). The work ethic, as described by Mirels and Garrett (1971), is based on the Puritan belief that economic success is a sign of spiritual grace. From this theological standpoint, the disciplined work style that produces financial wealth is viewed as a defense against worldly temptations that might otherwise encourage a fall from grace. The current conceptualization of the work ethic describes a personality style or disposition that emphasizes hard work,

the sacrifice of worldly pleasures, and fiscal responsibility. We hypothesized that PPI psychopathy would correlate negatively with a self-report measure of the work ethic. Furthermore, we hypothesized that the Machiavellian Egocentricity and Carefree Nonplanfulness subscales of the PPI would correlate negatively with a measure of work ethic.

Psychopathy and Borderline Personality

In recent research, psychopathy has been positively associated with various *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) personality disorders, particularly those in the dramatic/emotional/erratic cluster. Hart and Hare (1989) found that the PCL correlated positively with antisocial personality disorder and narcissistic personality disorder, as well as with histrionic personality disorder. No significant correlation was found, however, between psychopathy and the fourth disorder from this cluster, BPD. Reise and Wink (1995) obtained the same pattern of results with male participants; however, with female participants, a significant positive correlation between psychopathy and borderline personality features was obtained. Other investigators reporting a positive association between psychopathy and borderline personality features or diagnoses include Raine (1992), Lilienfeld and Andrews (1996), Stalenheim and Knorring (1996), and Rutherford et al. (1997).

Based on these findings, we hypothesized that the PPI would be positively correlated with a self-report measure of borderline personality features. This prediction corresponds with the observation that individuals with BPD tend to be impulsive and aggressive (American Psychiatric Association, 1994). Furthermore, we expected that the global index of PPI psychopathy would be more strongly related to a specific feature of borderline personality, the use of primitive defenses, than to the borderline features of identity diffusion or poor reality testing (see the Measures section for a more detailed description of the specific features of borderline personality). Specifically, such primitive defense mechanisms as idealization, denial, and projection likely are used by psychopaths to justify their abusive actions and to minimize remorseful or guilty feelings.² Borderline personality traits also were expected to correlate positively with the PPI subscales of Carefree Nonplanfulness, Blame Externalization, and Impulsive Nonconformity but to be negatively related to Stress Immunity.

²One need not accept the existence of such defense mechanisms; however, to interpret findings regarding the construct validity of the PPI. For example, although controversy persists regarding the existence of Freudian projection (Holmes, 1978), there is little question that certain individuals tend to blame others for their mistakes.

Psychopathy and Heroism

A secondary purpose of this study was to explore the relation of psychopathy to heroism. In contrast to the other constructs that we examined, the hypothesized positive relation between psychopathy and heroism was not so straightforward and was developed from more complex theoretical considerations. Some authors have conjectured that some of the personality traits of psychopathy might predispose individuals to certain forms of prosocial behavior. Lykken (1982), for example, asserted that the psychopath and the hero are sometimes “twigs from the same branch” (p. 22) and that the fearlessness characteristic of psychopathy (Lykken, 1995) may increase the likelihood of both antisocial and prosocial (e.g., heroic) behaviors (see Farley, 1981, for a similar view). The proportion of prosocial and antisocial behaviors among fearless individuals might in turn be influenced by other individual difference variables (e.g., intelligence and impulse control) and environmental factors. Lykken (1995) identified pilot Chuck Yeager, president Lyndon Johnson, and explorer Sir Richard Burton as individuals who possessed the “genetic talent” for psychopathy but “because of special talent or opportunity, manage to become tolerably socialized and even ... achieve great worldly success” (p. 155).

At this time, there is little systematic evidence relevant to Lykken’s (1982) hypothesis. Levenson (1990) found that firemen and policemen who had been decorated for bravery scored lower on measures of psychopathy and sensation seeking than did samples of rock climbers and drug-unit residents; Levenson also suggested that his findings did not support Lykken’s hypothesis that psychopathy and physical risk taking predispose individuals toward heroism. Because both rock climbers and drug users might be expected to possess especially high levels of sensation seeking and other similar traits associated with psychopathy (see Zuckerman, 1994), Levenson’s results regarding heroism (another possibly related trait) are difficult to interpret. The inclusion of a comparison group that might be expected to be average in terms of psychopathy or sensation seeking would have contributed to the meaningful interpretation of Levenson’s findings in relation to heroism. In an undergraduate sample, Lilienfeld (1990) found that the PPI correlated positively and significantly ($r = .34$) with Rushton, Chrisjohn, and Fekken’s (1981) Self-Report Altruism Scale, a measure assessing the frequency with which individuals have performed helpful actions (e.g., “I have donated blood,” “I have given a stranger a lift in my car”). Nevertheless, because the scale developed by Rushton et al. includes few behaviors that assess heroic forms of altruism, the extent to which this finding bears on Lykken’s (1982) hypothesis is unclear. Lilienfeld (1998) found that a self-report measure of heroism, the Activity Frequency Inventory (AFI), was positively correlated with the PPI and several measures of antisocial behavior among undergraduates. In contrast, McKen (1997) reported that the correlation between the AFI and PPI was nonsignificant, although positive, in an undergraduate sample. Nevertheless, McKen found that the AFI correlated negatively, and in many cases signifi-

cantly, with several measures of physical fearfulness (e.g., the Multidimensional Personality Questionnaire Harm Avoidance scale; Tellegen, 1978) and both positively and significantly with measures of antisocial and delinquent acts.

Based on Lykken's assertions and the findings of Lilienfeld (1998), we hypothesized a positive association between PPI psychopathy and a self-report measure of "heroic" acts among individuals in a correctional sample. Furthermore, positive associations were expected between heroism and PPI subscales Social Potency, Carefree Nonplanfulness, Fearlessness, and Impulsive Nonconformity. These more specific hypotheses were based on various assumptions about psychopathic personality features. For example, the hypothesized positive relation between heroism and Social Potency derived from the exploratory idea that individuals with lower social anxiety or social inhibitions are likely to engage in more high-risk, heroic actions (e.g., calming down an unruly crowd).

METHOD

Participants

Participants were pretrial inmates who were incarcerated in a county jail in west central Florida and who were represented by the county public defender. Of the 107 inmates approached, 103 agreed to participate and 100 (96 men and 4 women) completed the research protocol. Participants received \$5 (deposited to their jail accounts) as compensation for their participation.

Social history and demographic information were obtained by self-report. Participants' ages ranged from 18 to 51 years ($M = 32.5$ years). In terms of marital and living arrangements prior to incarceration, 57% were single and living alone, 15% were married, 6% were single but living with a partner, and 22% were legally separated or divorced. Educational attainment ranged from 7 to 16 years of schooling, with an average of 11.4 years. Fifty-two percent of the participants were White, 44% were African American, 3% were Native American, and 1% were Asian American or Pacific Islander. Of the total sample, 9% indicated that they were of Hispanic ethnicity. Forty-six participants indicated that they previously had served prison sentences.

Procedure

Participants were recruited by a research assistant (RA) who informed them of the general purpose of the study and that their participation was voluntary and confidential. Consent disclosures for research participation were read to participants,

and a brief comprehension test was administered to ensure that they understood the consent disclosure.

The research protocol was administered individually, in small groups of 2 or 3, or in larger groups of 8 to 10 participants. A brief social history interview was conducted and participants were administered the questionnaires described later (see Measures section). All measures were read aloud by the RA, and participants marked their responses using paper and pencil. Participants were allowed to ask the RA for clarification if they did not understand an item. The order of the measures was randomized across administrations. On completion of the protocol, the RA deposited \$5 into the institutional account of each participant.

Measures

PPI. The PPI (Lilienfeld & Andrews, 1996) is a self-report measure designed to assess the core personality traits of psychopathy. Respondents answer 187 items using a 4-point Likert scale, ranging from 1 (*false*) to 4 (*true*). As noted earlier, the PPI yields a total psychopathy index and scores on eight factor-analytically derived subscales. Three items that do not load sufficiently on any one factor but are still correlated substantially (i.e., $r > .30$) with the total score also contribute to the PPI total score. In addition, the PPI includes three validity scales:

1. *Deviant Responding* consists of 10 items (e.g., “During the day, I generally see the world in color rather than in black-and-white” [*true*]) that are designed to detect malingering, careless responding, or reading comprehension difficulties.
2. *Unlikely Virtues* consists of 14 items (e.g., “I have always been completely fair to others” [*true*]) that were derived from Tellegen’s (1978) Multidimensional Personality Questionnaire and measure socially desirable impression management.
3. *Variable Response Inconsistency* is comprised of the sum of the absolute differences between 40 item pairs (each consisting of items with high intercorrelations) and measures a respondent’s tendency to respond inconsistently to items that share similar content.

Satisfactory psychometric properties for the PPI have been reported across diverse samples. In various undergraduate samples, Lilienfeld and Andrews (1996) reported that internal consistencies (Cronbach’s α s) ranged from .90 to .93 for the total score and from .70 to .90 for the eight factors. The test–retest reliabilities for a 1-month period were also high ($r = .95$ for the total score; $r_s = .82$ – $.94$ for the factors). In a large community sample, Cronbach’s alpha was .91 for the PPI total measure and ranged from .67 (Coldheartedness) to .86 (Fearlessness) for the PPI

subscales (Edens, Poythress, & Lilienfeld, 1998). In a sample of 50 young offender prison inmates, internal consistency of the PPI total was .91 and coefficient alpha for the subscales ranged from .72 (Impulsive Nonconformity) to .91 (Machiavellian Egocentricity; Poythress et al., 1998). In this study, coefficient alpha for the PPI total score was .90, whereas alphas for the subscales ranged from .63 (Stress Immunity) to .89 (Machiavellian Egocentricity).

Questionnaire Measure of Emotional Empathy. The Questionnaire Measure of Emotional Empathy (QMEE; Mehrabian & Epstein, 1972) is a 33-item self-report measure that yields an index of an individual's level of emotional responsiveness to another's distress. Items measure various empathic tendencies, including an individual's affective susceptibility to others (e.g., "The people around me have a great influence on my moods"), a tendency to be sympathetic (e.g., "It is hard for me to see how some things upset people so much" [reverse scored]), and a tendency to be moved by others' emotional experiences (e.g., "Seeing people cry upsets me"). Respondents indicate their level of agreement with the items on a 9-point Likert scale, ranging from -4 (*very strongly disagree*) to 4 (*very strongly agree*). The split-half reliability for the measure was .84 in a sample of undergraduates (Mehrabian & Epstein, 1972). In this study, coefficient alpha for the QMEE was .73.

Aggression Questionnaire. The Aggression Questionnaire (AQ; Buss & Perry, 1992) is a self-report instrument composed of 29 items that are rated on a Likert scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). Developed on college student participants, the AQ includes four factor-analytically derived subscales: Physical Aggression (nine items), Verbal Aggression (five items), Anger (seven items), and Hostility (eight items). Buss and Perry (1992) reported a coefficient alpha of .89 for the AQ total score, with alphas for the subscales ranging from .72 (Verbal Aggression) to .85 (Physical Aggression). Test-retest reliabilities for the total scale score and subscales over a 9-week interval were adequate and ranged from .72 to .80 (Buss & Perry, 1992).

Williams, Boyd, Cascardi, and Poythress (1996) administered the AQ to 200 incarcerated adults and found that a two-factor (rather than a four-factor) solution was a better fit in an offender population. Three items that exhibited very low item-total correlations were deleted from the measure, resulting in two factors that appear to combine the Physical Aggression and Anger factors and the Verbal Aggression and Hostility factors from Buss and Perry's (1992) original solution. The factors have 14 and 12 items, respectively. Based on the research of Williams et al. with jail inmates, our analyses used the 26-item, two-factor version of the AQ. We

obtained coefficient alphas of .93 for the AQ total score, .90 for the Physical Aggression–Anger subscale, and .86 for the Verbal Aggression–Hostility subscale.³

Protestant Ethic Scale. The Protestant Ethic Scale (PES; Mirels & Garrett, 1971) is a 19-item global measure of work ethic attitudes. Such items as “Most people spend too much time in unprofitable amusements,” “Money acquired easily is usually spent unwisely,” and “A distaste for hard work usually reflects a weakness of character” assess the belief that hard work is intrinsically good and an end in itself. The response format of the scale ranges from –3 (*I disagree strongly*) to 3 (*I agree strongly*) with the zero excluded. The internal consistency for the PES is satisfactory, as indicated by a Kuder–Richardson value of .79 (Mirels & Garrett, 1971). Furthermore, a nonsignificant correlation with the Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1960) suggests that the PES is not contaminated by an approval-seeking response set (Mirels & Garrett, 1971). In this study, coefficient alpha for the PES was .62.

Self-Report for Borderline Personality. The Self-Report for Borderline Personality (SRBP; Oldham et al., 1985) is a 30-item paper-and-pencil measure consisting of three subscales designed to assess personality features across three intrapsychic dimensions (Kernberg, 1977). *Identity Diffusion* measures a poorly integrated sense of self or of significant others and includes such items as “I feel like a fake or imposter.” *Primitive Defenses* (i.e., splitting, idealization, denial, and projection), includes such items as “Uncontrollable events are the cause of my difficulties.” Finally, difficulties with *Reality Testing*, or the contradiction of perceptions derived from internal versus external origins includes such items as “I have heard or seen things when there is no apparent reason for it.” Oldham et al. suggested that individuals with BPD experience difficulties with identity integration and display primitive defenses, although they usually maintain adequate contact with reality.

Oldham et al. (1985) presented estimates of internal consistencies based on an initial set of 130 items. Cronbach’s alpha for the three subscales for a combined pilot sample of 134 inpatients, outpatients, and community volunteers ranged from .84 to .92. Pearson correlations among the subscales ranged from .75 to .79. A 30-item SRBP was derived using the 10 items with the highest item–total correlations for each subscale. Dutton and colleagues (e.g., Dutton, 1994, 1995; Dutton & Starzomski, 1993) used this 30-item scale in various studies of male batterers and reported finding internal consistency estimates similar to those reported by Oldham et al. for the 130-item scale. In this study, coefficient alpha for the SRBP was .90,

³Both the four-factor and the two-factor solution for the AQ were analyzed in this study, and no differences were found in terms of their relations to PPI psychopathy.

whereas alphas for the subscales ranged from .75 (Primitive Defenses) to .78 (Reality Testing).

AFI. Lilienfeld (1998) developed the AFI to assess what might be termed *everyday heroism*. Specifically, the AFI assesses the lifetime frequency with which individuals have performed acts of heroism that are relatively common in the general population (e.g., attempting to assist a physically injured stranger, intervening in a crime, calming down an unruly crowd). For the purposes of the AFI, heroism was operationalized as the performance of prosocial actions that appear to involve some level of either physical or social risk. In prior studies with undergraduates, the AFI has been found to possess adequate internal consistency (α s > .80 in several samples). In this study, participants' responses were recoded into five frequency categories similar to those on Rushton et al.'s (1981) self-report altruism scale. Cronbach's alpha for the AFI was .89.

RESULTS

Pearson product-moment correlations between the PPI total and subscale scores with the criterion measures are reported in Table 1.⁴

PPI and QMEE

As predicted, a significant negative correlation ($r = -.45$) was obtained between the total score of the PPI and the QMEE. Negative and significant correlations between the QMEE and the PPI subscales of Coldheartedness and Machiavellian Egocentricity were $-.52$ and $-.40$, respectively. All other PPI subscale correlations with the QMEE were nonsignificant.

PPI and AQ

As predicted, a significant relation was obtained between the PPI total score and the AQ total score ($r = .60$). All subscales of the PPI correlated positively and signifi-

⁴Ninety-four percent of participants completed the measures satisfactorily to warrant their inclusion in all analyses; however, the sample sizes for different correlations varied slightly as a function of missing data. For each correlation coefficient, participants were retained in the analysis if they had answered at least 90% of the items for the relevant scales or subscales, and mean item score substitution was used to replace missing data. Participants who had left unanswered more than 10% of the items on a scale or subscale were excluded from analyses involving that measure.

TABLE 1
Correlations Between the PPI and the Criterion Measures for Empathy,
Aggression, Work Ethic, Borderline Personality, and Heroism

PPI Scale	Criterion Measures							
	QMEE	AQ	PES	Total	SRBP			AFI
					Identity Diffusion	Primitive Defenses	Reality Testing	
PPI total	-.45**	.60**	.02	.45**	.34**	.50**	.37**	-.10
Machiavellian Egocentricity	-.40**	.64**	-.10	.46**	.36**	.48**	.40**	-.21*
Social Potency	-.11	.17	.16	.00	-.08	.11	-.03	.08
Coldheartedness	-.52**	-.08	-.04	-.29**	-.28**	-.24*	-.23*	-.16
Carefree Nonplanfulness	-.18	.16	-.15	.29**	.29**	.24*	.30**	-.13
Fearlessness	-.08	.37**	.11	.27**	.16	.33**	.22*	.07
Blame Externalization	-.20	.63**	-.10	.64**	.54**	.67**	.52**	-.15
Impulsive Nonconformity	-.16	.51**	-.08	.52**	.47**	.48**	.44**	-.05
Stress Immunity	-.10	-.45**	.17	-.50**	-.48**	-.43**	-.48**	.16

Note. PPI = Psychopathic Personality Inventory; QMEE = Questionnaire Measure of Emotional Empathy; AQ = Aggression Questionnaire; PES = Protestant Ethic Scale; SRBP = Self Report for Borderline Personality; AFI = Activity Frequency Inventory.

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

cantly with the AQ total score, except for Carefree Nonplanfulness ($r = .16$, *ns*), Coldheartedness ($r = -.08$, *ns*), and Social Potency ($r = .17$, *ns*). The remaining subscale correlations ranged from .64 (Machiavellian Egocentricity) to $-.45$ (Stress Immunity).

PPI and PES

Contrary to prediction, the correlation between the PPI and the PES was not significant ($r = .02$). Although five PPI subscales (Blame Externalization, Carefree Nonplanfulness, Coldheartedness, Impulsive Nonconformity, and Machiavellian Egocentricity) were negatively correlated with the PES, none of these correlations reached significance.

PPI and SRBP

As predicted, we obtained a moderately positive correlation ($r = .45$) between the PPI total score and the SRBP. The SRBP also correlated significantly in predicted

directions with the PPI Blame Externalization ($r = .64$), Carefree Nonplanfulness ($r = .29$), Impulsive Nonconformity ($r = .52$), and Stress Immunity ($r = -.50$) subscales. Although not predicted, the SRBP also correlated significantly with the PPI Machiavellian Egocentricity ($r = .46$), Fearlessness ($r = .27$), and Coldheartedness ($r = -.29$) subscales.

Table 1 reveals that the PPI total score was positively correlated with all three subscales of the SRBP. As predicted, the test of the significance of the difference between dependent correlations (J. Cohen & Cohen, 1975) indicated that the correlation between the PPI and Primitive Defenses ($r = .50$) was significantly higher than the correlation between the PPI and Reality Testing ($r = .37$; Cohen's $t [df] = 2.29, p < .05$, one-tailed) and the correlation between the PPI and Identity Diffusion ($r = .34$).

PPI and AFI

Contrary to prediction, none of the correlations between the AFI and the PPI total score ($r = -.10$) or its subscales was significant.

DISCUSSION

This study investigated the construct validity of the PPI, a newly developed self-report measure of psychopathy, in a correctional sample. The relations between PPI psychopathy and four theoretically related constructs (empathy, aggression, work ethic, and BPD) were examined. The relations among the total score of the PPI, the specific features of psychopathy (as measured by the PPI subscales), and the theoretically related constructs were investigated. Finally, an exploratory examination of the relation between psychopathy and heroism was conducted.

PPI Psychopathy and Related Constructs

We hypothesized that the PPI total score would be inversely related to empathy and work ethic but positively related to aggression and borderline personality. We confirmed three of these hypotheses, thus supporting the construct validity of the PPI. As expected, higher PPI scores were related to higher scores on the measures of aggression and borderline personality. Furthermore, our expectation that PPI psychopathy was more strongly related to borderline primitive defenses than to identity diffusion or reality testing was corroborated. Higher levels of PPI psychopathy were also associated with lower levels of self-reported empathic tendencies.

Contrary to prediction, no relation was found between PPI psychopathy and the PES. The absence of a significant correlation between the PPI and the PES is puzzling and may raise questions regarding the construct validity of the PPI. Nevertheless, it should be noted that the PES is largely or entirely a measure of work attitudes rather than actual work behaviors. Individuals' expressed attitudes regarding the importance of hard work and sacrifice may bear relatively little relation to their actual actions in the workplace. Similarly, in the domain of moral development, researchers have found that self-reported moral attitudes in hypothetical situations tend to bear only a weak relation to moral behavior (Perry & Bussey, 1984). In the case of work ethic, it may be that psychopathic individuals affirm the importance of proper work attitudes but do not adhere to such attitudes in their actual behavior. Nevertheless, further research examining psychopaths' workplace behaviors is needed to examine this possibility.

PPI Personality Features and Related Constructs

Our predictions regarding the ability of the PPI to measure specific personality features of psychopathy were generally supported by the relations between the PPI subscales and the target constructs. Specifically, we confirmed 8 of our 11 hypotheses regarding the relations between the PPI subscales and empathy, aggression, work ethic, and borderline personality.

Several personality features that are typically ascribed to psychopaths may help to explain the negative associations between psychopathic personality features and empathy. For example, psychopaths tend to be callous and manipulative in their social relationships in order to maximize the fulfillment of their own wants and needs. As predicted, the subscales of the PPI that measure ruthless and narcissistic attitudes in interpersonal functioning (i.e., Machiavellian Egocentricity) and a guiltless and nonsentimental personality style (i.e., Coldheartedness) were confirmed to be negatively associated with empathy.

Two of our three hypotheses regarding the relations between PPI subscales and aggression were also corroborated. Our a priori hypotheses were based in the theory that individuals who are ruthless, fearless, and callously manipulative would have few inhibitions against acting aggressively. As expected, higher scores for Machiavellian Egocentricity and Fearlessness were associated with higher aggression scores. Contrary to our hypotheses, Coldheartedness was not significantly related to aggression. It is not clear why the hypothesis for Coldheartedness was not supported; however, Coldheartedness may assess a more indirect and manipulative, rather than directly confrontational, style of using and abusing others. Future research is needed to clarify this hypothesis.

Although this result was not hypothesized, Blame Externalization and Impulsive Nonconformity were found to be positively correlated with aggression. Fur-

thermore, Stress Immunity, a subscale that measures the ability to tolerate stress-provoking situations, was inversely associated with aggression. Although this relation also was not predicted explicitly, it seems plausible that individuals with low levels of stress tolerance may become angry more easily and react aggressively more frequently. Additionally, measures of stress reactivity tend to be positively associated with indexes of hostility and irritability (Tellegen, 1978/1982). The AQ measures angry and hostile feelings as well as physically and verbally aggressive behavior; therefore, it is not surprising to observe varying relations to PPI subscales. For example, psychopathy has generally been associated with instrumental or predatory forms of aggression (i.e., both physical and verbal) as opposed to hostile or reactive aggression (Cornell et al., 1996), such as that which is expressed in response to stress.

Contrary to expectation, the psychopathic personality characteristics of Carefree Nonplanfulness and Machiavellian Egocentricity were unrelated to a measure of the work ethic. Our hypotheses were derived from the supposition that the absence of a strong achievement motive inherent in the Carefree Nonplanfulness characteristic and the narcissistic attitudes that contribute to the Machiavellian Egocentricity characteristic are incompatible with the ideal of hard work and sacrifice found in conceptualizations of the work ethic. Again, further research targeting the potential discrepancy between expressed work attitudes and actual behavior may aid in the interpretation of this absence of a relation between PPI psychopathy and work ethic.

Each of our four hypotheses regarding psychopathic personality characteristics and BPD were corroborated. The core features of BPD were used in forming our hypotheses and thus can be helpful for interpretation. For example, an unstable and socially deviant lifestyle that involves impulsive participation in many self-harmful activities (e.g., reckless sexual encounters, spending behaviors, substance abuse) is a central characteristic of BPD and clearly bears a relation, both empirically and theoretically, to the PPI subscales of Impulsive Nonconformity and Carefree Nonplanfulness. Furthermore, the empirical association between Blame Externalization and the SRBP likely stems from the theoretical commonalities between psychopathic personality features (e.g., narcissism) and the core borderline feature that involves the use of primitive defenses to rationalize one's own behavior. The SRBP also was positively related to three other subscales of the PPI: Coldheartedness, Fearlessness, and Machiavellian Egocentricity. This strong association between the PPI and a measure of borderline personality features supports the validity of the PPI as a measure of personality disorder characteristics.

The final corroborated hypothesis regarding borderline features and psychopathic characteristics may assist in discriminating between the two personality styles. Specifically, individuals with strong borderline features often display inappropriate levels of anger and other affective reactivity in response to stressful and disturbing situations. As expected, however, the psychopathic characteristic of im-

munity to stress was inversely associated with BPD. This finding offers further support for Hare's (1993) contention that psychopaths experience less stress or paranoia related to anxiety than do individuals characterized by other personality disorders (e.g., BPD). Although not explicitly hypothesized, the inverse association between BPD and Coldheartedness offers further indication that the PPI measures a personality construct related to but separable from other disorders that are part of the dramatic/emotional/erratic cluster.

Although most of these findings provide support for the construct validity of the PPI, it should be noted that all of our data were based on self-report. As a result, it is difficult to exclude entirely the possibility that some of our positive findings were attributable to method covariance. Moreover, at least some of the positive correlations we observed (e.g., between the QMEE and PPI Coldheartedness) may be at least partly attributable to relatively direct content overlap across measures (see Nicholls, Licht, & Pearl, 1982, for a general discussion of this common problem in personality assessment research). Further research therefore will be necessary to ascertain whether these correlations are observed using alternative modes of assessment (e.g., direct interview and observer ratings). Finally, the size of our sample necessitated a correlational analysis of the relations among PPI personality features and measures of other related constructs. In the future, structural equation modeling may be used with a larger sample to provide a greater understanding of the relative contributions of psychopathic personality traits to the prediction of various related constructs.

PPI and Heroism

Contrary to our expectations but similar to the findings of McKen (1997), we found no relation between PPI psychopathy and self-reported heroic behaviors. Hypotheses regarding the relations between heroism and Social Potency, Carefree Nonplanfulness, Fearlessness, and Impulsive Nonconformity were also not corroborated. Our nonsignificant results indicate that there may be a difference between the high-risk behaviors of psychopaths and the prosocial acts of heroism. Alternatively, it is possible that the association between psychopathy and heroism might be linked to extremely risky or dangerous prosocial behaviors (e.g., risking one's life to save others). These hypotheses would require further investigation, which should focus on the specific differences among high-risk behaviors, sensation seeking, and acts of bravery.

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