

THE RELIABILITY AND VALIDITY OF THE PSYCHOPATHY CHECKLIST–REVISED IN A SAMPLE OF FEMALE OFFENDERS

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The reliability and validity of the Psychopathy Checklist–Revised (PCL–R) was examined in a sample of 528 nonpsychotic female offenders participating in a study assessing the generalizability of the instrument to females using personality, attitudinal, and laboratory behavioral measures. Results showed good interrater reliability and adequate internal consistency. Correlations with a number of self-report validity measures and previous criminal behavior provide support for the convergent validity of the instrument. A lack of association with general psychopathology provides support for the discriminant validity of the instrument. However, significant correlations with anxiety, negative affectivity, and intelligence run counter to expectations and to findings with male offenders. Furthermore, the low base rate of psychopathy in this sample, relative to base rates among male prisoners, raises the concern that either psychopathy is less prevalent in females than in males or the PCL–R is not adequately assessing the construct in female offenders.

Psychoopathic individuals are characterized by inadequately motivated antisocial behaviors, a lack of emotional connection with others, and an incapacity for guilt and remorse (Cleckley, 1976). Their callous behaviors exact a considerable psychological, emotional, and

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physical toll on those around them that does not go unnoticed in most societies (Cooke, 1996; Hare, 1996; Lykken, 1995). Cleckley (1941 [1976]) provided the first comprehensive description of these individuals in his 1941 book *The Mask of Sanity*. From the descriptions in this book, Cleckley distilled 16 core traits of psychopathy. In the years since the formulation of these “Cleckley criteria,” the development of the Psychopathy Checklist (PCL) (Hare, 1980) and Psychopathy Checklist–Revised (PCL–R) (Hare, 1991) have provided researchers and clinicians with reliable and valid measures of the psychopathy construct. The PCL–R is an interview-based measure composed of 20 items based on the Cleckley criteria, which are individually scored as 0 (not present), 1 (may be present), or 2 (definitely present). Hare (1991) has recommended a cutting score of 30 to categorize individuals as psychopathic. The PCL–R is composed of two highly correlated factors. Factor 1 assesses the psychopathic individual’s callous disregard for the feelings and rights of others (including such items as lack of guilt/remorse, callous/lack of empathy, and shallow affect), whereas Factor 2 assesses the presence of persistent antisocial behavior (including juvenile delinquency and criminal versatility) (Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990).

Studies incorporating PCL–R assessments have increased our knowledge of psychopathic individuals’ characteristics and have begun to clarify the processes that may underlie the disorder. For example, incarcerated individuals with high PCL–R scores demonstrate anomalous processing of emotional cues (e.g., Patrick, 1994), commit more violent criminal offenses than individuals with low scores (Serin, 1994), and are more likely to recidivate violently (Hare, 1996; Hemphill, Templeman, Wong, & Hare, 1998; Serin, Peters, & Barbaree, 1990). It has also been suggested that high scorers are less successful in treatment programs (Ogloff, Wong, & Greenwood, 1990).

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Although the research supporting the use of the PCL–R in such domains has been well-replicated, there is an important caveat. Whereas Cleckley’s original conception of psychopathy had no cultural or gender bounds, the majority of research on the etiological and predictive validity of the PCL–R has involved incarcerated Caucasian males. Until recently (e.g., Brandt, Kennedy, Patrick, & Curtin, 1997; Cook & Michie, 1997; Forth, Brown, Hart, & Hare, 1996; Kosson, Smith, & Newman, 1990; Rutherford, Cacciola, Alterman, & McKay, 1996), little has been done to explore either cross-cultural or gender differences in PCL- and PCL–R- assessed psychopathy. As a result, there is limited evidence that the findings that have emerged from the existing literature on Caucasian male prisoners can be generalized to other groups.

Recently, researchers have begun to expand our understanding of psychopathy by attempting to generalize the PCL–R and the psychopathy construct to non-male and non-Caucasian populations. An important first step of this work has been to examine the validity and reliability of the PCL–R in these different groups. Recent studies have examined the PCL–R in incarcerated female populations (e.g., Loucks, 1995; Neary, 1990; Strachan, 1993; Tien, Lamb, Bond, Gillstrom, & Paris, 1993). Taken collectively, these studies have provided evidence for the applicability of the PCL–R to female samples. First, the PCL–R has shown high interrater reliability and internal consistency when used in these samples (Rutherford et al., 1996; Strachan, 1993). Second, studies examining the validity of PCL–R classifications in female samples have found PCL–R scores to be correlated with other measures related to the psychopathy construct, including poor perspective taking, decreased empathy, and extensive past criminal behavior (Neary, 1990; Rutherford et al., 1996; Strachan, 1993).

It should be noted that although the authors of these studies have all concluded that the PCL–R is a valid instrument to use with female samples, these studies have raised important methodological issues concerning the use of the PCL–R in female samples. The first of these is the generally lower prevalence of psychopathy in female samples than in male samples. Whereas studies with male offenders find that the percentage of individuals scoring in the “psychopathic” range of the PCL–R (scores greater than or equal to 30) typically falls between

15% and 30% (Salekin, Rogers, Ustad, & Sewell, 1998), studies with female samples usually find rates ranging from 9% to 23% (Loucks, 1995; Neary, 1990; Salekin, Rogers, & Sewell, 1997; Tien et al., 1993). However, when considering base rates across female samples, it is important to note that there are two samples that do not fall within this range. Strachan (1993) found that 31% of her sample was classified as psychopathic. This prevalence is higher than the rates typically found in male offenders, and Strachan (1993) attributed this finding to the fact that 35 of the 75 women included in her sample were incarcerated at the maximum security level. Conversely, Rutherford et al. (1996) found a base rate of 0% in their sample, which the authors attributed, in large part, to their use of a noninstitutionalized clinical sample.

The generally lower base rate of psychopathy often means that the number of “psychopathic” women included in any given study is limited. In the most extreme cases, there may not be any women who meet the classification criteria for psychopathy. For example, when trying to examine the predictive validity of the PCL–R in a sample of female methadone patients, Rutherford et al. (1996) were unable to utilize the traditional cut score because none of their participants scored above 30. As a result, the authors suggested that the PCL–R might function more appropriately as a dimensional, rather than categorical, instrument for women.

The second important issue that has arisen in studies of the PCL–R in female samples involves differences in the PCL–R’s factor structure between male and female samples. In the single study to address the replicability of the two-factor structure in female offenders, Salekin et al. (1997) noted that the factor structure in their sample of 103 female offenders was not the same as the factor structure typically found with men. The results of this analysis must be accepted cautiously, however, for two reasons. The first is the small sample size. The most recent view is that an exploratory factor analysis for an instrument of the PCL–R’s length and structure requires a sample size of at least 200 participants (MacCallum, Widaman, Zhang, & Hong, 1999). On this basis, Salekin et al.’s sample of 103 women was too small to conduct an adequate analysis. A second limitation is Salekin et al.’s (1997) failure to divide their sample by race. Studies examining the factor structure of the PCL–R across race have found differences

between Caucasian and African American male samples (Kosson et al., 1990; Lorenz, Smith, Bolt, Schmitt, & Newman, 2001). Just more than one half of Salekin et al.'s (1997) sample was composed of Caucasian women. Thus, the failure to replicate the factor structure typically observed in Caucasian male samples is qualified by the relatively small sample and the failure to consider race.

Although the literature on female psychopathic individuals is growing steadily, it is still hampered by three important limitations. First, as noted above, sample sizes generally have been small, ranging from 58 (Rutherford et al., 1996) to 120 (Neary, 1990). As a result, it has been difficult to determine if anomalous findings such as unusual factor structure and nonsignificant relations with convergent validity measures represent true differences in the function and applicability of the PCL-R across gender or are the result of underpowered samples. Second, the correlates of psychopathy chosen to be studied are often not the same as those that have been used in studies of male psychopathic individuals. Thus, these associations in female samples often cannot be compared to reliable findings in the existing literature on psychopathy in men. Third, concerns about race have never been addressed in the literature on psychopathy and women. Just as we would be cautious in applying the PCL-R to women without a number of studies examining the psychopathy construct in this group, we should hesitate to extend the PCL-R to non-White samples until we better understand the measure in these samples. As Sue (1999) noted, "Many principles can be applied to different populations. Problems occur when the assumption of generality is made. Generality is a phenomenon that should be empirically tested" (p. 1074). In keeping with this suggestion, researchers using the PCL-R in female samples should refrain from collapsing across race until psychometric equivalence is demonstrated.

A more complete understanding of the applicability of the PCL-R to female populations requires consideration of these issues. To this end, we present data on the reliability and validity of the PCL-R collected from 536 incarcerated women as part of an ongoing study at the Taycheedah Correctional Institution, a minimum-, medium-, and maximum-security-level prison for women in central Wisconsin. Specifically, for both Caucasians and African Americans, we examined (a) the reliability between interviewer and observer PCL-R ratings,

(b) the distribution of PCL–R scores, (c) the internal structure of the PCL–R, including item-to-total correlations and coefficient alphas,¹ and (d) the validity of the PCL–R as assessed using a variety of relevant self-report measures.

Our examination of the validity of the PCL–R included measures of both convergent and discriminant validity. To determine which functions each measure would serve, we utilized the existing literature on male psychopathy to determine the theoretical and empirical relevance of the measures. The measures selected to demonstrate the convergent validity of the PCL–R in women were chosen to address the impulsive, callous, manipulative, and antisocial behaviors and attitudes that are central to the psychopathy construct.

Antisocial Personality Disorder (APD) was diagnosed using the criteria of the Diagnostic and Statistical Manual of Mental Disorders—fourth edition (*DSM–IV*, American Psychiatric Association, 1994). Research with men has shown that PCL–R scores are positively related to the presence of an APD diagnosis. The Self-Report Psychopathy Scale (SRPS) (Levenson, Kiehl, & Fitzpatrick, 1995) was used as a self-report measure of psychopathy. The Socialization scale of the California Psychological Inventory (Gough, 1969) was chosen on the basis of a historical association with psychopathy and criminality in males (e.g., Belmore & Quinsey, 1994; Gough & Bradley, 1992; Hare, 1978).

Studies of psychopathic males have consistently revealed higher levels of substance abuse among these individuals (Cleckley, 1976; Hart & Hare, 1989; Smith & Newman, 1990). Thus, the Short Form of the Michigan Alcohol Screening Test (SMAST) (Selzer, Vinokur, & vonRooijen, 1975), a self-report measure of alcohol-related problems, was used. We also included the Psychoticism subscale of the Eysenck Personality Questionnaire (EPQ) (Eysenck & Eysenck, 1975), which taps callousness, impulsiveness, and sensation-seeking, all characteristics that have long been associated with the psychopathy construct (Rutherford et al., 1996). The Constraint factor of the Multidimensional Personality Questionnaire (MPQ) (Tellegen, 1982) was included for similar reasons (Lykken, 1995).

Extensive antisocial behavior has been shown to be closely related to PCL–R-assessed psychopathy in male offenders. Individuals classified as psychopathic on the basis of the PCL and PCL–R commit

more than twice as many crimes, both violent and nonviolent, as nonpsychopathic individuals (Hare, 1996; Kosson et al., 1990). Thus, the number of violent and nonviolent crimes committed and the number of types of crimes (criminal versatility) committed were included among our convergent validity measures.

Hart and Hare (1989) demonstrated that psychopathy was not significantly related to psychopathology with the exception of substance abuse and APD. Thus, the measures selected to demonstrate the discriminant validity of the PCL-R in women included a measure of general psychopathology, the Symptom Checklist-90-R (SCL-90) (Derogatis, 1992), as well as a specific measure of depression, the Beck Depression Inventory (BDI) (Beck, 1987). In addition, we included several other measures to assess the personality and affective characteristics that have been shown to be empirically unrelated to or are theoretically independent of psychopathy in males. These included the Welsh Anxiety Scale (WAS) (Welsh, 1956), the Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown, & Steer, 1988), the Neuroticism subscale of the Eysenck Personality Questionnaire (Hare, 1982; Rutherford et al., 1996), and the Positive and Negative Affectivity factors of the Multidimensional Personality Questionnaire (Brinkley, Schmitt, Smith, & Newman, 2001). In part, these measures were selected to test Cleckley's contention that the psychopathic individual is one who is free from "nervousness and psychoneurosis," a belief that has formed the basis of more modern theories of psychopathy (e.g., Lykken, 1995; Patrick, 1994).

Finally, Cleckley (1976) argued that psychopathic behavior was not simply the result of inadequate intelligence. Empirical findings have supported this by demonstrating that the correlates of PCL-R-assessed psychopathy are independent of intelligence. Thus, PCL-R scores in this sample should not reflect differences in general intelligence. To assess this, we included the Shipley Institute of Living Scale (SILS) (Zachary, 1986) as a measure of general intelligence to ensure that PCL-R scores were unrelated to estimated Wechsler Adult Intelligence Scales-Revised (WAIS-R) IQ scores derived from the SILS.

Each of the above measures was selected on the basis of its theoretical and empirical relevance to the psychopathy construct as it has been studied or theorized about in male samples. Overall, we predicted that

the pattern of results would support the convergent and discriminant validity of the PCL–R in the female sample.

METHOD

PARTICIPANTS

Participants were 528 adult, nonpsychotic women incarcerated at the Taycheedah Correctional Institution in central Wisconsin. Approximately one half (248) of the participants were Caucasian, and one half (280) of the participants were African American. The women were drawn from the minimum, medium, and maximum security levels. Participants were excluded on the basis of age (no participants older than 45 years), any current use of antipsychotic medication, and academic level (all participants were required to have at least 4th-grade reading and mathematical levels). Screening criteria are in place to maximize the likelihood that historical information collected during the interviews is reliable, to ensure that participants will be able to read and understand the items on the various self-report questionnaires, and to control for age-related performance differences on the behavioral laboratory tasks being administered as part of the larger Taycheedah research project.

The mean age of participants was 29 years old ($SD = 6.05$), with an age range from 18 to 43 years. Education level ranged from elementary school to college graduate, with an average of 11 years of education ($SD = 1.84$). There were no differences in the mean age, $F(1, 526) = .92, p = .34$, or education level, $F(1, 526) = .06, p = .80$, of Caucasian versus African American women.

MATERIALS

Psychopathy assessments. Participants were classified as psychopathic or nonpsychopathic on the basis of the PCL–R (Hare, 1991). The PCL–R (1991) consists of 20 items that target personality characteristics and behavior patterns. These items are rated on a scale from 0

to 2, with 0 = absent, 1 = may be present, and 2 = definitely present. Thus, scores can range from 0 to 40. Scoring is done on the basis of hour-long semistructured interviews as well as extensive file reviews. Information obtained through the file reviews for each participant included a presentencing investigation conducted for the court and any conduct reports that had accumulated throughout the individual's incarceration.

Interviewers and observers were Caucasian female and male graduate students in clinical psychology and Caucasian female and male professional research assistants. All interviewers received extensive training related to the psychopathy construct and onsite use of the PCL-R. Observers were present at approximately 25% of the interviews. Observers were either individuals being trained to do interviews by the experienced interviewer or were experienced interviewers present to provide PCL-R ratings for the interrater reliability analyses. Participants' responses during the interview were recorded separately by the interviewer and the observer. File reviews were also conducted independently, and the interviewer and observer independently rated each participant on the PCL-R.

Also at the time of the initial PCL-R rating, we recorded the number of formal charges for each participant within 11 specific categories of criminal offenses. The number of each type of crime committed by the individual was recorded, which enabled us to differentiate between an individual's criminal versatility and the number of crimes she committed. Crimes coded as violent were robbery, assault, murder, weapons offenses, sexual assault, arson, and kidnapping. Those coded as nonviolent were theft, drug offenses, fraud, crimes against the state, obstruction of justice, escape, and miscellaneous minor crimes. In all analyses involving crime, prorated PCL-R scores were used, with items 18 and 20 ("Juvenile Delinquency" and "Criminal Versatility"), omitted.

Antisocial Personality Disorder diagnoses. The APD diagnoses were made based on information gathered during the PCL-R interviews and the file reviews. An APD diagnosis requires the presence of three or more antisocial behaviors (e.g., lack of remorse, repeatedly performing acts that are grounds for arrest) since the age of 15, in addition to the presence of conduct disorder before age 15.

The Short Form of the Michigan Alcohol Screening Test. The SMAST (Selzer et al., 1975) is a 34-item yes/no questionnaire that assesses the symptoms and consequences of alcohol abuse and dependence (Hedlund & Vieweg, 1984). Research has demonstrated that SMAST scores differentiate alcoholics from controls (Hedlund & Vieweg, 1984). SMAST scores correlate highly with the full version of the Michigan Alcohol Screening Test (Selzer et al., 1975) as well as other self-report measures of alcohol abuse/dependence (Hedlund & Vieweg, 1984). In this sample, the internal consistency of the SMAST was an alpha of .93.

The Shipley Institute of Living Scale. The SILS (Zachary, 1986) is a measure of intellectual functioning. It consists of a 40-item vocabulary test and a 20-item abstraction test. The measure can be used to obtain reliable estimates of WAIS-R scores (Zachary, 1986). The SILS has demonstrated good psychometric properties including split-half reliabilities ranging from .84 to .92 (Zachary, 1986).

The Welsh Anxiety Scale. The WAS (Welsh, 1956) is a 39-item true/false questionnaire that was derived from the Minnesota Multiphasic Personality Inventory (MMPI) to measure anxiety and negative affect. Gray (1991) has suggested that the construct assessed by the WAS is a combination of neuroticism and introversion. In this sample, the internal consistency of the WAS was an alpha of .92.

The Beck Anxiety Inventory. The BAI (Beck et al., 1988) is a 21-item inventory that was designed to tap "pure" anxiety. It consists of 21 symptoms that participants rate experiencing from "not at all" to "severely." The BAI was designed to be independent of depression (Beck et al., 1988). In this sample, the internal consistency of the BAI was an alpha of .92.

The Beck Depression Inventory. The BDI (Beck, 1987) is a 21-item self-report measure of depressive symptomatology. The BDI reliably differentiates between clinically depressed and nondepressed psychiatric patients and demonstrates good psychometric properties across clinical and nonclinical samples (Steer, Beck, & Garrison, 1986). In this sample, the internal consistency of the BDI was an alpha of .88.

The Self-Report Psychopathy Scale. The SRPS (Levenson et al., 1995) is a 26-item self-report measure of psychopathy. The SRPS is based on the PCL-R and is composed of two factors similar to those that make up the PCL-R. SRPS Factor 1 is referred to as “primary psychopathy” and is composed of items that tap the presence of a callous interpersonal style. SRPS Factor 2, or “secondary psychopathy,” measures behavioral problems. Participants decide how much they agree or disagree with each item on a scale from 1 (*strongly disagree*) to 4 (*strongly agree*). The SRPS correlates with various measures related to the psychopathy construct, including the PCL-R, substance abuse, and criminal behavior (Brinkley et al., 2001; Levenson et al., 1995). In this sample, the internal consistency of the primary scale and the secondary scale were alpha levels of .81 and .69, respectively.

The Multidimensional Personality Questionnaire. The MPQ (Tellegen, 1982) is a 300-item self-report instrument that measures individual differences in behavior and personality. Items fall into one of several subscales, which then compose three major factors: Positive Affectivity, Negative Affectivity, and Constraint. Evidence pertaining to the reliability and validity of the MPQ has been presented by a number of researchers (Tellegen, 1982). Test-retest reliability coefficients range from .88 to .91 for the content scales and internal consistency ranges from .76 to .89 (Tellegen, 1982).

The Eysenck Personality Questionnaire. The EPQ (Eysenck & Eysenck, 1975) is a series of 90 yes/no questions that make up four scales: Extraversion, Neuroticism, Psychoticism, and Lie. The Extraversion and Neuroticism scales have demonstrated convergent validity with other self-report personality scales (Steele & Kelly, 1976; Wakefield, Sasek, Brubaker, & Friedman, 1976), and the Psychoticism and Extraversion scales correlate with theoretically related measures, such as sensation seeking (Eysenck & Zuckerman, 1978). In this sample, the internal consistency of each subscale was: Extraversion (alpha = .76), Neuroticism (alpha = .79), Psychoticism (alpha = .80), and Lie (alpha = .65).

The Symptom Checklist-90-Revised. The SCL-90 (Derogatis, 1992) is a 90-item questionnaire that assesses the degree to which a

participant is experiencing current major psychiatric symptoms. The measure consists of nine primary symptom scales (e.g., depression, schizophrenia) and three global indices. The Global Symptom Index (GSI) is one of the three indices and provides an estimate of individuals' overall self-reported pathology. The SCL-90 demonstrates test-retest reliability coefficients ranging from .80 to .90 (Derogatis, 1992) and correlates with other measures of psychopathology (e.g. MMPI, Social Adjustment Scale, and General Health Questionnaire) (Derogatis, 1992). In this sample, internal reliability for the various subscales ranged from alpha levels of .73 to .97.

The California Psychological Inventory-Socialization Scale. The SO (the California Psychological Inventory-Socialization Scale) (Gough, 1969) is a 54-item, true/false self-report measure of socialization and role-taking ability. The SO scale has been shown to differentiate consistently between delinquents and nondelinquents, and prisoners and nonprisoners (Megargee, 1977). In this sample, the internal consistency of the SO scale was an alpha of .73.

PROCEDURE

Participants meeting the inclusion criteria were provided with written and verbal descriptions of the study. If participants consented to participate, they were immediately interviewed as part of the PCL-R assessment. Participants earned \$5 for the PCL-R assessment interview and \$5 for completing the various questionnaires. Participants were administered the questionnaires on 3 separate days over the course of 3 to 4 weeks.

RESULTS²

RELIABILITY

Intraclass correlation (ICC) analyses were used to calculate interrater reliability of the PCL-R assessments. To provide a conservative estimate of the reliability, we used absolute rather than consistency agreement and treated both raters and participants as random

effects (McGraw & Wong, 1996). Reliability data were available for 62 participants. These analyses yielded an ICC of .95 for Caucasian participants and .97 for African American participants.³

DISTRIBUTION

Consistent with prior studies, the distribution of PCL–R scores was somewhat different for this sample of female offenders than for male samples. Utilizing the recommended cutting score of 30 and above for psychopaths and 20 and below for controls yielded 49 psychopathic individuals (9%), 160 “middles” (30%), and 319 controls (61%), overall.

When the sample was divided by race, the PCL–R distributions were similar for Caucasian and African American women. In Caucasian women, these cut scores yielded 24 psychopathic individuals (10%), 64 “middles” (26%), and 160 controls (64%). In African American women, the cutting scores yielded 25 psychopathic individuals (9%), 96 “middles” (34%), and 159 controls (57%). A chi-square test revealed that the association between race and PCL–R group membership was not statistically significant, $\chi^2(2, N = 528) = 4.50, p = .10$.

Descriptive statistics for the PCL–R ratings of the total sample, the Caucasian participants, and the African American participants are provided in Table 1. A one-way analysis of variance with race as a between-groups factor was calculated to determine if there was a significant difference between psychopathy scores for the two races. This analysis showed that there was no significant difference in the mean PCL–R scores of Caucasian and African American women, $F(1, 526) = 2.19, p = .14$.

INTERNAL STRUCTURE

Coefficient alphas were computed for each race separately, as well as for the sample as a whole. The coefficient alpha for Caucasian participants was .82; for African American participants, alpha was .82; and, for the whole sample, alpha was .82. These coefficient alphas are only slightly lower than those reported by Hare (1991), who showed that the internal consistency of the PCL–R in various samples ranged

TABLE 1: Descriptive Statistics for the Psychopathy Checklist—Revised

<i>Statistic</i>	<i>Full Sample N = 528</i>	<i>African American Women n = 280</i>	<i>Caucasian Women n = 248</i>
PCL–R total (<i>M</i>)	18.77	19.13	18.44
<i>SD</i>	7.26	7.19	7.27
Factor 1 (<i>M</i>)	7.59	8.00	7.12
<i>SD</i>	3.39	3.43	3.24
Factor 2 (<i>M</i>)	8.67	8.70	8.59
<i>SD</i>	3.74	3.54	3.94
Median			
PCL–R total	19	19	18
Factor 1	7	8	7
Factor 2	9	9	9
Range			
PCL–R total	3 to 35	3 to 35	3 to 33
Factor 1	0 to 16	0 to 16	1 to 16
Factor 2	0 to 17	1 to 17	0 to 17

from .83 to .91, and the alpha of .87 reported by Rutherford et al. (1996) for their sample of female methadone patients.

PCL–R item-to-total correlations for each race and the sample as a whole are presented in Table 2. For both Caucasian and African American participants, all correlations were significant and over .25 and the majority of correlations for both races were above .40.

RELATIONS BETWEEN PCL–R SCORES AND VALIDITY MEASURES FOR CAUCASIAN PARTICIPANTS

The associations found between the convergent validity measures and the PCL–R when it was used dimensionally support the validity of the instrument. As predicted, EPQ–Psychoticism, SRPS, SMAST, MPQ–Constraint, and SO scale scores were significantly related to PCL–R scores (see Table 3).

In keeping with the common practice in the psychopathy literature of dividing participants into psychopathic and nonpsychopathic groups, we used the traditional cutting scores of 20 and 30 to divide our sample and conducted a series of point biserial correlations. We

TABLE 2: Psychopathy Checklist–Revised (PCL–R) Item-to-Total Correlations for the Full Sample, African American Women, and Caucasian Women

<i>Item</i>	<i>PCL–R Total Score</i>		
	<i>Full Sample</i> N = 349	<i>African American</i> n = 178	<i>Caucasian</i> n = 171
Glibness/superficial charm	.44	.46	.42
Grandiose sense of self-worth	.44	.46	.41
Need for stimulation/ proneness to boredom	.57	.52	.63
Pathological lying	.49	.56	.41
Conning/manipulative	.54	.51	.57
Lack of remorse or guilt	.46	.48	.43
Shallow affect	.46	.43	.48
Callous/lack of empathy	.57	.61	.52
Parasitic lifestyle	.47	.42	.53
Poor behavioral controls	.49	.48	.47
Promiscuous sexual behavior	.56	.55	.60
Early behavior problems	.50	.49	.51
Lack of realistic, long-term goals	.45	.43	.49
Impulsivity	.54	.50	.60
Irresponsibility	.44	.50	.39
Failure to accept responsibility	.33	.40	.25
Many short-term marital relationships	.38	.35	.44
Juvenile delinquency	.41	.37	.45
Revocation of conditional release	.35	.35	.36
Criminal versatility	.52	.52	.52

elected to report point biserial correlations, which measure the relation between group assignment (psychopathic vs. nonpsychopathic) and the various convergent and discriminant validity measures, because they afford a more direct comparison with findings from the Pearson correlation analyses. To facilitate this comparison, the results of both types of analyses are provided in Table 3. In contrast to the findings when the PCL–R was used dimensionally, when the PCL–R groups were utilized, the relations between EPQ–Psychoticism and PCL–R scores and SO scale scores and PCL–R scores were not significant (see Table 3). A chi-square analysis revealed a significant associ-

TABLE 3: Relationships Between Psychopathy Checklist–Revised Scores and Convergent Validity Self-Report Measures

Measure	African American				Caucasian			
	Correlations (n)		M (SD)		Correlations (n)		M (SD)	
	Group	Continuous	NP	P	Group	Continuous	NP	P
EPQ-Psychoticism	.01 (127)	.05 (199)	6.24 (4.6)	6.40 (3.4)	.13 (147)	.20 (198)**	5.67 (4.5)	7.50 (4.4)
SMAST	.17 (98)	.17 (145)*	6.70 (5.7)	9.60 (7.5)	.24 (111)*	.33 (145)**	9.05 (8.0)	14.56 (7.5)
MPQ-Constraint	-.16 (97)	-.27 (152)**	168.49 (12.1)	163.59 (11.7)	-.26 (116)**	-.40 (159)**	169.75 (14.3)	157.77 (14.3)
SRPS-Primary	.20 (170)**	.29 (262)**	31.20 (8.1)	36.04 (9.5)	.40 (174)**	.44 (236)**	26.61 (6.2)	34.87 (7.6)
SRPS-Secondary	.27 (170)**	.30 (262)**	21.65 (5.3)	25.78 (4.1)	.30 (174)**	.45 (236)**	21.73 (5.4)	26.52 (3.9)
Socialization Scale	-.39 (65)**	-.48 (103)**	23.70 (7.0)	15.12 (5.6)	-.23 (58)	-.46 (86)**	22.11 (8.0)	16.33 (3.1)

NOTE: Group = Psychopathy Checklist–Revised cut scores 30 and 20. Continuous = continuous PCL–R scores; P = psychopathic individuals; NP = nonpsychopathic individuals; SMAST = Michigan Alcohol Screening Test–Short Form; SRPS-Primary and Secondary = Self-Report Psychopathy Scale-Primary Factor and Secondary Factor.

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

ation between PCL–R group membership and the presence of an APD diagnosis, $\chi^2(1, N = 160) = 33.8, p < .01$.

The predicted associations between PCL–R assessed psychopathy and crime were borne out in both dimensional and group analyses. Using the PCL–R dimensionally revealed significant positive correlations with overall criminal versatility and the number of violent and nonviolent crimes committed (see Table 4). This pattern of associations did not change when the PCL–R was used with a cutting score of 30 (see Table 4).

The results of analyses examining the associations between the PCL–R and the measures of discriminant validity were mixed. Of those measures we selected to demonstrate the discriminant validity of the PCL–R, scores on the EPQ-Neuroticism scale, BAI, BDI, MPQ-PA (Positive Affectivity), SCL–90–GSI, and estimated WAIS–R IQ were all unrelated to PCL–R scores. Only scores on the WAS and MPQ-NA (Negative Affectivity) scales showed unexpected significant positive associations with PCL–R scores when the instrument was used dimensionally (see Table 5). When the 30/20 cutting scores were used, the associations between psychopathy and all discriminant validity measures were nonsignificant (see Table 5).

RELATIONS BETWEEN PCL–R SCORES AND VALIDITY MEASURES FOR AFRICAN AMERICAN PARTICIPANTS

In keeping with our hypotheses regarding the convergent validity of the PCL–R, when the PCL–R was used dimensionally, the instrument was significantly related with the SRPS, MPQ-Constraint, SO scale, and the SMAST. Only EPQ-Psychoticism was unrelated to PCL–R scores (see Table 3). Group analyses using participants scoring 30 or more (psychopathic) and 20 or less (nonpsychopathic) showed nonsignificant associations between the PCL–R and the MPQ-Constraint scale and PCL–R and the SMAST (see Table 3). There was a significant relationship between PCL–R group membership and the presence of an APD diagnosis, $\chi^2(1, N = 167) = 30.7, p < .01$.

The association between PCL–R-assessed psychopathy and criminal behavior in our African American participants was consistent with our expectations. Using the PCL–R dimensionally revealed significant positive correlations with criminal versatility and the number of

TABLE 4: Relationships Between Psychopathy Checklist–Revised Scores and Crime

Measure	African American				Caucasian			
	Correlations (n)		M (SD)		Correlations (n)		M (SD)	
	Group	Continuous	NP	P	Group	Continuous	NP	P
Types of crime	.42 (164)**	.51 (251)**	4.02 (1.9)	6.54 (1.3)	.36 (160)**	.53 (214)**	3.55 (1.7)	5.30 (1.3)
Number of violent crimes	.44 (164)**	.38 (250)**	2.13 (2.3)	5.81 (3.9)	.18 (160)*	.26 (214)**	1.32 (2.2)	2.61 (3.8)
Number of nonviolent crimes	.31 (164)**	.34 (250)**	6.63 (7.5)	14.0 (9.6)	.23 (160)**	.37 (214)**	6.66 (6.4)	10.87 (6.1)

NOTE: Group = Psychopathy Checklist–Revised cut scores 30 and 20. Continuous = continuous PCL–R scores. P = psychopathic individuals. NP = nonpsychopathic individuals.
 * $p < .05$. ** $p < .01$.

TABLE 5: Relationships Between Psychopathy Checklist–Revised Scores and Discriminant Validity Self-Report Measures

Measure	African American				Caucasian			
	Correlations (n)		M (SD)		Correlations (n)		M (SD)	
	Group	Continuous	NP	P	Group	Continuous	NP	P
EPQ-Neuroticism	.11 (127)	-.02 (199)	13.04 (4.6)	13.04 (4.6)	-.01 (147)	.09 (198)	12.82 (5.4)	12.67 (3.7)
WAS	.26 (174)**	.16 (267)**	14.86 (8.9)	21.83 (7.4)	.06 (176)	.21 (239)**	14.70 (9.3)	16.45 (8.8)
BAI	.07 (170)	.03 (262)	6.73 (33.5)	13.23 (8.9)	.01 (172)	.12 (234)	10.82 (11.1)	11.00 (11.4)
BDI	.08 (61)	-.08 (98)	18.58 (11.0)	21.13 (7.32)	-.12 (53)	-.01 (78)	19.62 (9.6)	15.00 (9.01)
GSI	.09 (76)	.09 (120)	.73 (.6)	.90 (.88)	-.04 (123)	.11 (159)	.69 (.63)	.60 (.63)
WAISREST	-.13 (173)	-.12 (265)*	82.59 (13.2)	77.66 (12.1)	-.02 (171)	-.09 (233)	95.01 (13.4)	94.42 (8.5)
MPQ-PA	.07 (97)	.10 (152)	152.40 (10.7)	154.47 (9.9)	.02 (116)	-.11 (159)	152.19 (12.0)	152.85 (14.2)
MPQ-NA	.10 (97)	.09 (152)	146.04 (14.7)	150.06 (15.3)	.08 (116)	.21 (159)**	138.44 (17.6)	142.77 (20.5)

NOTE: Group = Psychopathy Checklist–Revised cut scores 30 and 20. Continuous = continuous PCL–R scores. P = psychopathic individuals. NP = nonpsychopathic individuals. WAS = Welsh Anxiety Scale. BAI = Beck Anxiety Inventory. BDI = Beck Depression Inventory. GSI = Global Severity Index of SCL–90–R. WAISREST = Shipley Institutes of Living Scale estimated WAIS–R IQ. MPQ-PA and NA = Positive Affectivity and Negative Affectivity factors of the MPQ.

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

nonviolent and number of violent crimes committed (see Table 4). Using the PCL–R categorically with the traditional cutting scores did not alter this pattern of results (see Table 4).

Of those measures we selected to demonstrate the discriminant validity of the PCL–R, WAS scores and estimated IQ scores were related to psychopathy when the instrument was used dimensionally (see Table 5). The association with Welsh anxiety was replicated when using the cutting scores of 30 and 20 (see Table 5).

SUPPLEMENTAL ANALYSES

The unexpected finding that PCL–R scores were significantly associated with scores on the WAS for both Caucasian and African American women appeared to warrant further examination. It has been suggested (e.g., Patrick, Zempolich, & Levenston, 1997) that, although there is often a positive relation between anxiety and the antisocial behavioral aspects of psychopathy (e.g., PCL–R Factor 2), anxiety is inversely related to the callous, unemotional features of psychopathy captured in Factor 1. To test this hypothesis, we examined the correlations between WAS scores and Factor 1 and Factor 2 scores. Results provided limited support for this proposal in both races. For Caucasian women, the relation between WAS scores and Factor 1 scores was, $r(239) = .03$, *ns*, and the relation between WAS scores and Factor 2 scores was $r(239) = .27$, $p < .05$. For African American women, the relation between WAS scores and Factor 1 scores was $r(267) = .06$, *ns*, and the relation between WAS scores and Factor 2 scores was $r(267) = .22$, $p < .05$. As predicted, the relation between Factor 2 and anxiety was significant and positive. However, Factor 1 scores were unrelated to anxiety scores, which is inconsistent with the proposal that Factor 1 is characterized by a lack of anxiety.

To further pursue the relation between the PCL–R factors and anxiety, we considered an alternative explanation for the relation between PCL–R scores and anxiety that has been proposed by several researchers (e.g., Fowles, 1987; Frick, 1998; Lilienfeld, 1992, 1994). This proposal is that anxiety assessed in psychopathic individuals reflects, to a large extent, the individuals' negative reactions to the consequences of their antisocial behaviors (e.g., interpersonal conflicts, prison terms, injury as a result of physical altercations) rather than representing a

temperamental or personality characteristic. This is similar to the proposal of Patrick et al. (1997) in that it posits that anxiety scores will be associated with Factor 2. However, this proposal does not require that Factor 1 be negatively associated with anxiety.

One method for testing this proposal is to partial out the effects of the participants' antisocial lifestyles when examining the relationship between the PCL-R and anxiety (e.g., Schmitt & Newman, 1999). Specifically, the effects of PCL-R Factor 2, which assesses antisocial lifestyle, can be partialled out of the relation between PCL-R scores and anxiety measures.

To test this proposal in the current data set, semipartial correlations were computed to examine the unique relationship between PCL-R total scores and anxiety while controlling for the influence of Factor 2. The results of these analyses supported the proposal of Frick (1998) and others (Fowles, 1987; Lilienfeld, 1992, 1994) in both Caucasian and African American women. When Factor 2 was controlled for, the semipartial correlation between PCL-R scores and WAS scores in the Caucasian women was no longer significant, $pr = -.05$, *ns*. Similarly, in the African American women, the relationship was nonsignificant, $pr = -.07$, *ns*.

DISCUSSION

The purpose of this study was dual in nature. Our goal was simultaneously to determine if the PCL-R could be used reliably in a female sample and then to determine if the women identified as psychopathic by the measure would exhibit personality characteristics and behaviors similar to those exhibited by psychopathic males.

Consistent with previous research in female samples, the results of this study provided evidence for the reliability of the instrument in female offenders. For the most part, the internal consistency and item-to-total correlations were as high as in male samples, and the interrater reliability was comparable to the range of reliabilities (.87 to .94) that has been found with male samples (Hare, 1991).

Overall, the pattern of results for both the Caucasian and African American women provided support for the convergent validity of the PCL-R in this sample. Similarly, the general pattern of results for the

discriminant validity measures conformed to our expectations, although there were potentially important exceptions: PCL-R scores were significantly associated with WAS and MPQ-NA scale scores in Caucasian women and with WAS scores and estimated IQ scores in African American women. The relatively small effect sizes of these relations (ranging from $r = -.12$ to $r = .26$) mitigate the implications of the results somewhat, as does the fact that we would expect one of the 16 discriminant validity analyses across race to be significant merely by chance. However, these results are still noteworthy. First, the relation between PCL-R scores and WAS scores were present in both races, suggesting that this may be a reliable association. Furthermore, relations between PCL-R scores, anxiety, and intelligence are clearly inconsistent with traditional descriptions of the psychopathic individual. As previously noted, the definitive Cleckley psychopath is an individual with “good intelligence” who is free from “nervousness or psychoneurosis.” Cleckley believed that individuals whose psychopathic characteristics and behaviors were driven by these characteristics were “neurotic” or “secondary” psychopaths who might appear psychopathic but who do not share the same underlying dysfunction as the “primary” psychopath (Cleckley, 1976; Karpman, 1961). Placed in this context, the relations between PCL-R scores and measures of anxiety and intelligence in this sample raise an important note of caution.

The historical distinction between “primary” and “secondary” psychopathy has contemporary relevance in terms of how we validate the PCL-R across gender. The majority of studies, including the present examination, have elected to examine the personality characteristics and behaviors related to psychopathy. Although these measures are useful for determining if psychopathic females resemble psychopathic males on these dimensions, they cannot demonstrate that the etiological processes associated with the disorder in females are the same as those in males. In the absence of studies examining theorized etiological processes, the significant relations between PCL-R scores and anxiety, negative affectivity, and low intelligence demonstrated in this sample suggest that these factors may contribute strongly to the PCL-R scores of female offenders and may, in particular cases, lead to the misclassification of “neurotic” or “secondary” psychopathic women.

This possibility is mitigated somewhat by the more thorough, theoretically oriented examination of the relation between anxiety and PCL–R ratings conducted in this sample. Consistent with Patrick et al. (1997), we found that when the PCL–R was considered in terms of its component factors, there was a significant positive relation between Factor 2 scores and WAS scores. This was true in both Caucasian and African American women. Further examination of the relation between WAS and psychopathy when the influence of Factor 2 was controlled for showed that the association between PCL–R psychopathy and anxiety appeared to be primarily due to the relation between anxiety and the antisocial/unstable lifestyle items comprising Factor 2 of the PCL–R. This finding is consistent with the proposal of Frick (1998) and others (e.g., Fowles, 1987; Lilienfeld, 1992, 1994) that the anxiety exhibited by psychopathic individuals is not a function of temperament or personality but actually stems from the individual's negative reactions to consequences accrued as a result of his or her antisocial behaviors.

According to this scenario, the positive relation between PCL–R scores and anxiety in this sample may reflect the increasing costs of being an irresponsible, risk-taking, aggressive female within a society in which women are viewed as gentle and nurturing. The consequences, legal and interpersonal, that such women face may engender high levels of anxiety and negative affect. However, this proposal assumes causality, holding that it is the antisocial lifestyle that subsequently leads to anxiety. It is equally likely that a woman who is experiencing high levels of negative affect is at increased risk for engaging in antisocial behaviors and consequently elevated PCL–R scores. Because these two possibilities cannot be tested in this sample, we cannot rule out the possibility that it is neuroticism and anxiety that are influencing PCL–R scores.

It will be important for future research to test these possibilities to determine the causal direction of the anxiety/Factor 2 relation. If the proposal that antisocial behavior leads to increases in anxiety is supported, then it would be important to clarify the particular factors involved and to explicate the mechanism by which behavioral consequences result in increased anxiety. Furthermore, research should be conducted to determine if such "acquired" anxiety interacts with psychopathy in particular ways. For example, as the antisocial woman's

anxiety increases, is she more or less likely to continue engaging in antisocial behaviors? Addressing such questions would not only increase our understanding of psychopathy and anxiety in women but also our understanding of psychopathy in general.

A second important issue that arose from this investigation is the paucity of participants scoring over 30 on the PCL-R. This issue has been raised in previously published studies examining the PCL-R in incarcerated, clinical, and community samples of women (e.g., Rutherford et al., 1996; Tien et al., 1993; Weiler & Widom, 1996), and our replication of this skewed distribution requires attention. The most parsimonious explanation for the scarcity of high PCL-R scorers is that the base rate of psychopathy in women may be lower than it is in men. Whereas psychopathic individuals compose approximately 25% of male inmate populations, this may not be true of populations of female offenders. If this were the case, it would be consistent with the lower prevalence of other antisocial behavior-based disorders, such as APD and Conduct Disorder (e.g., American Psychiatric Association, 1994; Hartung, 1998; Milich, Hartung, Martin, & Haigler, 1994), in females than in males. However, as we have noted elsewhere (Vitale & Newman, 2001), it may be that the PCL-R items are not adequately capturing the construct as it is expressed in female populations. Future examination of item function and tests of etiological validity are necessary to clarify this issue.

A final issue raised by this study concerns the similarity of the PCL-R in Caucasian and African American females. These results revealed few important differences between the races. These included significantly higher Factor 1 scores among African American women relative to Caucasian women and the significant relation between estimated IQ and PCL-R scores observed for African American women but not for Caucasian women. The mean PCL-R score did not differ across race, and there was no significant effect of race on psychopathy group membership. Although the magnitude of the correlations between PCL-R scores and the measures of convergent validity tended to be larger in Caucasians, the relations were moderate and significant in African Americans. Thus, overall, there was relatively little evidence for the presence of race differences within females in this study.

However, this does not suggest that future studies should collapse across race. This study is seriously limited by the failure to conduct confirmatory factor analyses to demonstrate the instrument's structural similarity across race and by the absence of laboratory measures assessing proposed etiological processes. Among males, it is these types of studies that have provided the strongest and clearest evidence for the difference in PCL-R psychopathy across race and the consequent need to disaggregate by race when studying psychopathy (e.g., Kosson et al., 1990; Lorenz et al., 2001; Newman & Schmitt, 1998). Until these studies have been conducted in female samples, researchers cannot assume the generalizability of the psychopathy construct as it is assessed by the PCL-R across Caucasian and African American females.

Overall, this study yielded good evidence for the reliability and validity of the PCL-R in women. Using the PCL-R in its existing form provided reliable psychopathy ratings that were associated in expected ways with various measures of personality and behavior. Although promising, these results are not sufficient for concluding similarity of PCL-R structure across gender. For example, confirmatory factor analyses and item-response theory analyses are needed to provide a more comprehensive examination of the structure of the instrument and functioning of individual items in female samples.

Furthermore, as noted above, this study provides little information relevant to the etiology of psychopathy in women. In future studies, it will be important to move beyond personality and behavioral correlates of the syndrome and to begin testing hypotheses that have been derived from etiological theories of psychopathy. For example, passive avoidance deficits predicted by both Lykken's (1957) low-fear hypothesis and Newman's (1998) response modulation hypothesis have been well-replicated in male psychopathic individuals (e.g., Lykken, 1957; Newman & Kosson, 1986; Newman & Schmitt, 1998; Thornquist & Zuckerman, 1995). However, it has not yet been shown that the passive avoidance deficits evidenced in male psychopathic individuals are also present in female psychopathic individuals. Similarly, investigations with male offenders (e.g., Levenston, Patrick, Bradley, & Lang, 2000; Williamson, Harpur, & Hare, 1991) support

theoretical predictions regarding group differences in affective processing that have yet to be demonstrated in female samples.

These are important concerns that should, in part, dictate the future of research in psychopathy and women. The best way to address such issues is to test specific hypotheses pertaining to the processes underlying psychopathy in both Caucasian and African American women using PCL–R ratings within samples yielding sizable numbers of psychopathic women. Only by exploring these additional domains will we be able to determine if any differences observed between male psychopathic individuals and females assessed as psychopathic on the PCL–R are the result of flaws in the content or structure of the measure itself, differences in the prevalence or expression of psychopathy across gender, or differences in the basic etiologic processes underlying psychopathy in males and females.

NOTES

1. A more thorough examination of the Psychopathy Checklist–Revised's (PCL–R) structure when used with female samples, including confirmatory factor analyses and item-response theory analyses, is beyond the scope of the current article. However, we are currently conducting comparisons of the PCL–R structure across both gender and race. The results of this examination will be forthcoming.

2. We do not present data from male samples on the various measures used in this study as these data have been published elsewhere. Readers interested in comparing the effect sizes in this study to those in male samples are referred specifically to Hare (1991) and Brinkley et al. (2001). With few exceptions, data from males on the measures used in this study can be found in these publications.

3. Although we are collecting reliability data from both male and female raters, there was not a sufficient number of pairings to examine same-gender and cross-gender pairs separately. We intend to present this information when we have collected sufficient data.

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