Assessment of Psychopathy in a Population of Incarcerated Adolescent Offenders

John Randall Brandt, Wallace A. Kennedy, Christopher J. Patrick, and John J. Curtin
Florida State University

The reliability, validity, and factor structure of a modified version of the Psychopathy Checklist—Revised (PCL–R) for adolescents was investigated, completed using file information only, in a sample of incarcerated Black and White male adolescents. Interrater reliability and internal consistency were high, and confirmatory factor analyses and coefficients of congruence showed that the factor structure in this sample resembled the 2-factor solution found in adults. No significant racial differences were found for reliability or mean PCL–R scores. In addition, relationships between PCL–R scores and psychometric measures and behavioral indicators of maladjustment were similar to those previously found in adult populations. The construct of psychopathy, as defined by the PCL–R modified for use with adolescents, appears applicable to both Black and White adolescent male offenders. The study gives evidence for the structural and substantive validity of the modified PCL–R in this population.

The Psychopathy Checklist—Revised (PCL–R; Hare, 1991) has proven reliable and useful in subgrouping adult offenders who are incarcerated, White, and male. This study examined the usefulness of this instrument with a population of incarcerated Black and White male adolescent offenders.

The Criminal Psychopath

Although most psychologists, and many lay people, profess to know what psychopathy is, the process of diagnosing psychopathy for clinical and research purposes has been varied (Hare, 1985). Cleckley's seminal work, *The Mask of Sanity* (1976), considered by many to have captured the essence of psychopathy, has greatly influenced the conceptualizations of clinicians as well as guided much modern research on psychopathy. Cleckley, in narrowing and refining the term *psychopathy*, described the disorder through a list of specific traits.

Hare (1991) developed the revised Psychopathy Checklist (PCL–R), a 20-item diagnostic scale explicitly tied to Cleckley's classic work, as a means of identifying individuals with psychopathy in a criminal offender population. The structural validity of the PCL–R has been established in adult male offenders through studies demonstrating high interrater reliability and high internal consistency (Hare, 1991).

Harpur, Hakstian, and Hare (1988) factor analyzed the original PCL (Hare, 1980) and identified an oblique two-factor struc-

ture. Items that "describe a constellation of personality traits that many clinicians consider the core of psychopathy" (p. 745) loaded on Factor 1: "glibness/superficial charm," "egocentricity/grandiose sense of self-worth," "pathological lying and deception," "conning/lack of sincerity," "lack of remorse or guilt," "lack of affect/emotional depth," "callousness/lack of empathy," and "failure to accept responsibility for actions." Factor 2 of the PCL was identified by "items [that] describe a chronically unstable and antisocial lifestyle beginning at an early age" (p. 745): "proneness to boredom/low frustration tolerance," "parasitic lifestyle," "short-tempered/poor behavioral controls," "early behavior problems," "lack of long-term plans," "impulsivity," "irresponsible behavior as a parent," "juvenile delinquency," and "poor probation or parole risk."

Considerable evidence has accumulated in support of the substantive validity of the PCL–R in adult offender populations. Offenders with high scores on both factors of the PCL–R display violent and aggressive behavior disproportionately more often while incarcerated than do other prisoners (Hare, 1991; Hare & McPherson, 1984; Wong, 1984). In addition, the PCL–R has improved significantly the prediction of outcome after release when added to demographic and criminal history variables (Hart, Kropp, & Hare, 1988; Kosson, Smith, & Newman, 1990; Ogloff, Wong, & Greenwood, 1990; Serin, Peters, & Barbaree, 1990; Wong, 1984). Little evidence has been found for racial differences in PCL–R scores (Hare, 1991; but see Kosson et al., 1990).

The diagnosis of antisocial personality disorder (APD; American Psychiatric Association, 1987), which emphasizes early conduct problems and adult antisocial deviance, is related asymmetrically to the PCL–R. Among adult prisoners, most persons who are psychopathic according to the PCL–R meet the criteria for APD, but only approximately 25% who meet the criteria for APD meet the PCL–R criteria for psychopathy (Hare, Hart, & Harpur, 1991). The relationship of the PCL–R with APD, as

one would expect, is mediated primarily by the behavioral factor (i.e., Factor 2). PCL–R scores also correlate positively with Scales 4 (Psychopathic Deviate) and 9 (Hypomania) of the MMPI, which assess social norms, lack of responsibility, and impulsiveness (Hathaway & McKinley, 1943). Once again, this relationship is mediated primarily by PCL–R Factor 2. Other variables that have been shown to correlate selectively with PCL–R Factor 2 scores include IQ and educational achievement (negatively; Harpur, Hare, & Hakstian, 1989) and substance abuse (positively; Smith & Newman, 1990).

On the other hand, consistent with clinical descriptions and empirical studies (Hare & Schalling, 1978; Patrick, 1994) indicating that psychopathic individuals do not experience normal levels of emotional tension and turmoil, PCL–R Factor 1 scores correlate negatively with self-report anxiety scales (Harpur et al., 1989). This inverse relationship is specific to Factor 1: Total PCL–R scores are uncorrelated with anxiety. Factor 2 scores are correlated positively with anxiety reports (Harpur et al., 1989).

This Study

The current study was designed to further evaluate the structural and substantive validity of the PCL–R (Loevinger, 1957) within a population of incarcerated, adolescent male offenders. We adopted a revised version of the PCL–R used in an initial study by Forth, Hart, and Hare (1990), which eliminated certain inapplicable items and modified the scoring of one item (criminal versatility) to accommodate the shorter life histories of juvenile offenders. Forth et al. obtained very high interrater reliability for the PCL–R in this population, encouraging the belief that the instrument can be modified effectively for reliable and valid use with adolescents. They also found the base rate and psychometric properties of the PCL for male adolescent offenders to be similar to those found among adult male offenders.

In the present study, we hypothesized that the PCL–R would show high interrater reliability and internal consistency with adolescent offenders and that it would yield a two-factor structure and relationships with criterion measures in parallel with those observed in adult prisoners. Specifically, we predicted that PCL–R total scores would correlate significantly with age at first offense, number of previous offenses, severity of current offense, and number of previous criminal commitments. We also hypothesized that PCL–R total scores would be significantly and inversely related to time elapsed between release and rearrest.

Specific predictions were also made for the two PCL–R factors. We hypothesized that the behavioral deviance component (Factor 2) would be negatively correlated with IQ and educational achievement, and positively correlated with MMPI Scales 4 and 9; conduct disorder symptoms according to the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–III–R*; American Psychiatric Association, 1987); Child Behavior Checklist scores (CBCL; Achenbach & Edelbrock, 1983); and history of substance abuse. On the other hand, measures that reflect distress and dysphoria, MMPI Scales 2 (Depression) and 7 (Psychasthenia) were expected to be inversely related to PCL–R Factor 1 scores because this aspect

of psychopathy is believed to reflect callousness and imperturbability (Hare, 1991).

Method

Participants

The study was conducted at The Arthur G. Dozier School for Boys (AGDS), a residential training facility for severe juvenile-delinquent boys between the ages of 13 and 19. To be committed to AGDS, the adolescent must have been charged with at least three felonies; thus, most participants in this study had long criminal histories. This institution is reserved for those adolescent boys who, having exhausted less restrictive alternatives, are likely to be tried in the adult system the next time they face charges.

The study sample comprised 130 students, released from AGDS between January 1, 1990 and July 31, 1990, who ranged in age from 14 to 18 years at institutionalization. Representative of the AGDS population, the participants were approximately 70% Black, 28% White, and 2% Hispanic and had been committed for crimes including manslaughter, sexual battery, aggravated battery, armed robbery, carrying a concealed weapon, grand theft, possession or distribution of cocaine, arson, and escape from a previous commitment facility.

Diagnostic Assessment

Psychopathy was assessed using the PCL–R, following the guidelines established by Hare (1991) and modified for use with juveniles by Forth et al. (1990). Because most juveniles, by virtue of their status as dependents, meet the criteria for parasitic lifestyle (Item 9) and have limited opportunity for many short-term marital relationships (Item 17), these items were omitted. Furthermore, because all youthful offender participants fulfilled criteria for juvenile delinquency (Item 18), the scoring of this item was revised: 2 = *violent crimes;* 1 = *nonviolent crimes* (cf. Forth et al., 1990). Because juveniles have had less time to accumulate a criminal history, criminal versatility (Item 20) was scored as follows: 2 = *four or more types of offenses;* 1 = *three types;* 0 = *one or two types* (Forth et al., 1990).

Wong (1984, 1988) demonstrated that the PCL can be completed reliably from file information alone, if that information is extensive. In the present study, the PCL–R was rated on the basis of information included in the historical record that came in with each student at the time of his incarceration. These historical records included the youth's previous arrests, prior commitments, detailed presentence reports, earlier psychological evaluations, and demographic information. Two examiners rated 30 pilot participants, not included in the study sample, on the PCL–R using both interview and historical file information; a third examiner reviewed historical file information only. Correlations between the third rater and the average of the first two were total score, .94; Factor 1, .83; and Factor 2, .84. Assessment of psychopathy, therefore, was assumed to be reliable using only historical file information.

A total PCL–R score of 27 or more was the cutoff for a diagnosis of psychopathy. This cutoff for the 18-item adolescent version of the PCL–R corresponds to the cutoff of 30 recommended for the full-length, 20-item PCL–R (Hare, 1991). Having omitted two items, Factor 1 scores were obtained by summing items 1, 2, 4, 5, 6, 7, 8, and 15; Factor 2 scores, by summing items 3, 9, 11, 12, 13, 14, 16, and 17. Items 10 and 18 contributed to the total score but not to either factor score.

Criterion Measures

The participants' individual historical records provided the source for data such as history of substance abuse, age at first offense, and severity

of current offense. These data were gathered by trained undergraduates who were unaware of the PCL–R scores and did not participate in the gathering of PCL–R data. Interrater reliabilities were not formally assessed for these or other variables coded from file records, because the relevant information was objective and readily accessible from the files.

The number of conduct disorder symptoms evidenced by each participant also was gathered by undergraduate research assistants trained especially for this function. These symptoms were recorded over time while the assistants were on campus, and this information was gathered from various campus sources, such as houseparents, counselors, teachers, and therapists, as well as from individual campus files. CBCL ratings were provided by the on-campus classroom teachers, who were unaware of other aspects of this study.

Residents of the AGDS facility complete various psychological tests on their admittance, including the Wechsler Adult Intelligence Scale— Revised (WAIS–R; Wechsler, 1981) or Wechsler Intelligence Scale for Children—Revised (WISC–R; Wechsler, 1974), depending on individual appropriateness, and the MMPI. The IQ and MMPI scores used in this study were acquired, independently of the PCL–R data gathering, from file records by undergraduate assistants specifically trained for this purpose. Adolescent norms for the MMPI were used. The MMPI–A Archer, 1992; Butcher et al., 1992) was not used in this study because it was not available at the time data collection began. However, there is evidence that adolescent-normed MMPI scores are similar to MMPI–A scores, particularly for the clinical scales used in the present study (Archer, 1997, pp. 97–99).

While institutionalized at AGDS, each resident's behavior was monitored closely by staff members. According to their daily behavior, students were cited for major and minor infractions and positive behaviors. For performing required activities appropriately, students also received points, which they traded, along with positive behavior citations, for canteen goods. Residents exhibiting behaviors that endangered themselves or others were put under close observation in the Intensive Supervision Program (ISP) for a limited time. Major and minor infractions, positive behavior citations, points, and ISP placements were documented in individual cumulative behavioral records contained in the individual campus files.

Data gathered from official state sources were used in analyses of violent and nonviolent criminal recidivism. To identify which participants had been rearrested or charged with new offenses by January 31, 1992 (a follow-up period of 18–24 months), searches of official state government files were conducted. The number and types of new offenses were coded for each participant by undergraduate researchers unaware of the PCL–R and other data gathering. Because this coding involved simple transcription, interrater reliabilities were not assessed formally.

Procedure

An experienced clinical graduate student, formally trained to use the PCL–R, instructed eight upper level undergraduates in its use. These nine served as the diagnostic raters. Two raters who had been randomly selected from this pool of nine independently scored each participant, using historical file information. All subsequent analyses used the average score of two raters for each participant.

The raters of the PCL–R were unaware of the on-campus institutional files initiated after students' arrival at AGDS, which included information about institutional behavior and adjustment, psychological test results, school records, and individual and group therapy notes. The on-campus behavior write-ups in these institutional files were performed by counselors, teachers, and therapists, who in turn were unaware of the PCL–R scores. On-campus case managers, teachers, and therapists, as well as law enforcement officials, could access the main historical files on which

the PCL–R was based, but they seldom did so. The PCL–R was never a part of the institutional record.

Results

Structural Validity of the PCL–R

Interrater reliability. Interrater reliability for the PCL–R was evaluated by intraclass correlation coefficients (Shrout & Fleiss, 1979). Single-rater coefficients were .87 for the overall sample; .89, Blacks; .85, Whites. Coefficients for the mean of two raters were .93 overall; .94, Blacks; .90, Whites. Z tests for the difference in these coefficients between Black and White participants were not significant, Z s $= .25$ and $.42$, even though the power of this statistical test was adequate (i.e., this sample size provides 72% power to detect a difference of .1 between correlation coefficients in this portion of the interval). Our PCL–R interrater reliability was similar to that reported by Hare (1991) and exceeded that reported by Kosson et al. (1990) for Black participants.

Internal consistency. Indices of internal consistency were within acceptable limits, indicating that the PCL–R functioned as a relatively homogeneous scale in this sample. Coefficient alpha was .85 for the sample as a whole. The mean item–total correlation was .23 for all participants (.25, Blacks and .19, Whites), which compared favorably with values reported by Hare (1991). Because the study's sample sizes provided only 7% power to detect a difference of .1 between correlation coefficients in this portion of the interval, the Z test for the difference in mean item–total correlations between racial groups was not meaningful and therefore is not reported.

Diagnostic classifications. PCL–R total scores were used to classify study participants into low (<22), medium (22–27), and high (>27) psychopathy groups. Kappa coefficients for these classifications, reflecting the extent of interrater agreement correcting for chance, were .71 for all participants; .67, Blacks; and .79, Whites. A chi-square test of the difference in proportion of agreement between raters on psychopathy group classifications for Black as compared with White participants was not significant, $\chi^2(1, N = 127) = 0.72$, even though this statistical test possessed adequate power (i.e., the study's sample size provided 91% power to detect a moderate effect size as defined by Cohen, 1989).

The PCL–R total scores used in subsequent analyses were computed by averaging the scores of the two independent raters. Means and standard deviations for these scores, computed separately for Black and White participants, are presented in Table 1. A t test revealed no significant difference between the scores of Black and White participants, $t(125) = 1.88$, even though the power of this statistical test was adequate (i.e., the study's sample size provided 91% power to detect a moderate effect size as defined by Cohen, 1989). The base rate of psychopathy in this sample (i.e., PCL–R > 27) was 37% (43% of Blacks, 25% of Whites), which exceeds that reported in adult offender populations (Hare, 1991) and also to some extent that observed in prior work with adolescents (Forth et al., 1990).

Factor structure. To determine whether the oblique two-factor PCL–R structure reported by Harpur et al. (1988) in

Table 1

Means and Standard Deviations for PCL–R Scores and Factors

Sample	N	PCL–R total		Factor 1		Factor 2	
		M	SD	M	SD	M	SD
All	129	24.74	5.26	9.26	3.13	12.37	2.38
Black	91	25.35	5.29	9.60	3.11	12.56	2.43
White	38	23.41	5.00	8.58	3.00	11.91	2.27

Note. PCL–R = Psychopath Checklist—Revised.

adult prisoners held for adolescent offenders, confirmatory factor analyses comparing the observed factor structure with that reported by Harpur et al. were performed for Black participants alone and for all participants. The sample of White participants was too small to perform a confirmatory factor analysis. In these confirmatory analyses, a correlation between the two PCL–R factors was assumed (Harpur et al., 1988), but this parameter was left free to vary in the model rather than being fixed.

For the sample as a whole, the value of the comparative fit index was .83, indicating a moderate fit with the predicted factor structure. The value of the fit index for Black participants alone was .86, suggesting a somewhat closer fit. In addition, congruence coefficients reflecting the degree of correspondence between each of the two factors extracted in the present study and the factors obtained in previous research were computed. For the overall sample, the coefficient was .91 for Factor 1 and .84 for Factor 2. For Black participants, the coefficients were .89 and .86 for Factors 1 and 2, respectively.

Thus, the oblique two-factor structure found in adult populations was found to be similar in a mixed-race sample of adolescent offenders and in a subsample of Black adolescent offenders. Although PCL–R items show high internal consistency, the instrument can nevertheless be distilled into two correlated but distinct components, one reflecting core affective/interpersonal traits and the other reflecting antisocial behaviors. Factor scores used in subsequent analyses were computed by summing the ratings for the items composing Hare's (1991) two-factor solution.

Substantive Validity of the PCL–R

Postdictive, concurrent, and predictive validity were assessed by examining Pearson correlations between PCL–R total and factor scores and criterion variables. Because PCL–R reliabilities and factor structure were similar for Black and White participants, and because there were too few White participants to permit separate analyses by race, the groups were combined for the validity analyses. This of course precluded any inferences about racial-group differences in PCL–R validity.

Postdictive. The familywise error rate for correlations of the PCL–R with demographic and history variables was held at .05 by testing each correlation at the .05/4 = .0125 level (Table 2). Factor 2 of the PCL–R correlated significantly and negatively with educational level. Virtually no relationship was

found between a history of substance abuse, as reported in the individual historical records, and the PCL–R for these juvenile offender participants. The younger the participants were at time of assessment on the PCL–R, the lower they tended to be rated on Factor 2 of the PCL–R, yielding a significant and negative relationship. However, PCL–R total scores did not correlate significantly with number of previous offenses or severity of current offense. Number of prior commitments correlated significantly with PCL–R total scores.

Concurrent. Evidence for concurrent validity was derived from psychometric measures purportedly related to psychopathy and behavioral indicators of maladjustment while incarcerated (Table 3). PCL–R total scores correlated significantly with the number of *DSM–III–R* conduct disorder symptoms exhibited ($r = .48$), as did Factor 2 ($r = .43$) and, to a lesser degree, Factor 1 ($r = .36$). Diffuse pathology, as defined by overall CBCL elevation, correlated significantly with PCL–R total scores ($r = .24$) and with Factor 2 scores ($r = .25$). PCL–R total score and both factor scores correlated significantly with the Externalizing factor of the CBCL, particularly the Aggressive subscale. No other relationships involving the CBCL were significant.

The relationship between the PCL–R and MMPI Scales 4 and 9 was as predicted. The total score correlated moderately with Scales 4 and 9 and with the prototypic antisocial MMPI profile, Scales 4 + 9; this relationship was accounted for principally by Factor 2. MMPI Scales 2 and 7 were not significantly correlated with PCL–R total or factor scores. Psychopathy, as measured by the PCL–R, was unrelated to IQ in the present sample.

PCL–R total and Factor 2 scores were correlated significantly with each of the negative behavior indicators during institutionalization. Factor 1 scores were correlated significantly only with the number of majors received for verbal and physical aggression, and the number of placements in the ISP.

Table 2

Correlations of PCL–R Scores and Demographic and Criminal-History Variables

Variable	M	SD	PCL–R		
			Total	Factor 1	Factor 2
Demographic					
Educational level	9.2	1.2	−.18	−.13	−.23*
Substance abuse	2.4	1.3	.10	.06	.03
Age at assessment	16.1	1.0	−.16	−.11	−.21*
Criminal history					
Age of first arrest	12.6	2.1	−.46*	−.36*	−.43*
No. of prior referrals	15.1	9.3	−.46*	−.36*	−.43*
Crime severity	45.6	2.6	.25*	.24*	.15
No. of prior commitments	2.6	1.5	.49*	.38*	.47*

Note. PCL–R = Psychopathy Checklist—Revised. Substance abuse was coded as a four-level variable (1 = *none*, 2 = *occasionally*, 3 = *weekly*, 4 = *daily*). Crime severity was coded on the basis of ratings of offenses included in the National Crime Information Center (NCIC) registry (cf. Megargee, 1982).
* $p < .0125$.

Table 3

Correlations of PCL–R and Psychometric Measures of Psychopathy and Behavioral Indicators of Maladjustment

			PCL–R		
Variable	*M*	*SD*	Total	Factor 1	Factor 2
Psychometric measures					
No. of conduct disorder criteria	6.6	1.8	.48*	.36*	.43*
MMPI					
Scale 4	65.6	12.4	.17	.05	.23*
Scale 9	70.4	12.4	.23*	.17	.22*
Scale 4 + 9	68.0	9.7	.26*	.16	.29*
Scale 2	62.0	13.3	.00	−.08	.11
Scale 7	53.6	18.7	.00	−.13	.16
Scale 2 + 7	57.8	13.8	.00	−.12	.16
CBCL					
Diffuse	58.4	3.6	.24*	.20	.25*
Internalizing	57.5	3.5	.16	.14	.13
Externalizing	59.3	5.1	.23*	.25*	.23*
Social Withdrawal	57.7	4.1	.13	.15	.12
Anxious	57.3	4.4	.12	.09	.09
Unpopular	58.9	5.3	.18	.13	.16
Obsessive–Compulsive	58.5	5.8	.10	.03	.14
Immature	59.6	6.2	.20	.15	.20
Self-Destructive	56.9	3.8	.20	.13	.22
Inattentive	58.2	4.9	.08	.11	.07
Aggressive	60.4	6.4	.31*	.31*	.32*
Full Scale IQ	84.1	12.3	.00	.02	−.05
Performance–Verbal split	8.7	11.6	−.08	−.03	−.09
Behavioral indicators					
Major infractions, verbal	2.8	4.2	.31*	.24*	.34*
Major infractions, physical	1.4	1.9	.28*	.23*	.33*
Major infractions, total	12.1	14.4	.24*	.19	.27*
Ratio of negative to positive reviews	0.7	0.4	.25*	.18	.32*
ISP placements	8.3	16.8	.31*	.25*	.35*

Note. PCL–R = Psychopathy Checklist—Revised; MMPI = Minnesota Multiphasic Personality Inventory; CBCL = Child Behavior Checklist; ISP = Intensive Supervision Program.
* Significant holding familywise error rate at .05, by dividing alpha by the number of variables within each family (e.g., for MMPI variables, significance level = .05/6 = .008).

Predictive. The association between psychopathy scores and length of time before rearrest was evaluated for the three PCL–R groups (i.e., low, medium, and high psychopathy). A survival analysis of these data (cf. Hart et al., 1988) revealed no significant group differences in length of time before receiving a referral for a nonviolent offense. However, for violent offenses, the Lee-Desu statistic revealed that the group survival functions were significantly different from one another, $\chi^2(2, N = 127) = 22.99$, $p < .0001$, with the low PCL–R scorers taking the longest and the high PCL–R scorers the shortest time to be rereferred for a violent offense. A group difference also was found for referrals for new violations as a whole (i.e., violent and nonviolent offenses combined), $\chi^2(2, N = 127) = 19.13$, $p < .0002$, with low PCL–R scorers again taking the longest and high PCL–R scorers the shortest time to be referred for any new offense.

To evaluate the incremental predictive validity of the PCL–R over and above demographic, criminal history, and psychometric variables (see Tables 2 and 3), a hierarchical regression analysis was performed. Following earlier research (Harpur & Hare, 1991), the non-PCL–R variables were entered into the equation

first. Then, PCL–R scores were entered in the following order: Factor 2, Factor 1, and the interaction term (Factor 1 × Factor 2).

This permitted an assessment of whether Factor 2 contributed independently to prediction, whether Factor 1 contributed anything beyond this, and then, whether any further increase in prediction was provided by the interaction of the two factors. This order of entry was used because we were interested in determining whether the core personality features of psychopathy (Factor 1) would contribute to the predictive equation after more standard behavioral indexes of deviance (Factor 2) had been entered (cf. Harpur & Hare, 1991).

The possibility of an interaction between the two factors in predicting recidivism was raised by prior research suggesting a multiplicative rather than merely additive influence of these two variables on offensive aggressive behavior (Frick, O'Brien, Wootton, & McBurnett, 1994; Harpur & Hare, 1991). The criterion measures were the number of postrelease referrals for violent offenses, nonviolent offenses, and total offenses.

Although the PCL–R variables did not add significantly to prediction for the two individual offense categories, a significant

incremental contribution was found for offenses as a whole. With only the non-PCL–R variables in the equation, a significant predictive relationship was found, $F(2, 81) = 1.97, p < .02$. The value of R was .57 ($R^2 = .32$).

Factor 2 added significantly to the prediction equation after non-PCL–R variables had been entered, $\Delta R^2 = .05, p < .02$. The entry of Factor 1 also produced an additional increment in prediction, $\Delta R^2 = .03, p < .04$. At this stage, the overall prediction equation remained significant, $F(22, 79) = 4.38, p < .05$. The entry of the interaction term at the final step did not result in any significant further increase in prediction.

Discussion

The results of the current investigation extend the findings of an earlier study by Forth et al. (1990) and indicate that the PCL–R can be used to make reliable and valid assessments of psychopathy in a population of Black and White adolescent male offenders. Interrater reliabilities for the scale were high and commensurate with reliabilities reported in the literature for adult male offenders. PCL–R scores obtained in the present study were higher than those reported by Hare (1991) and somewhat higher than those reported by Forth et al. (1990). The current adolescent sample is probably more homogeneous because most participants had exhausted less restrictive environments before they were sentenced to AGDS. Theoretically, this weeding process would result in the sample's including more hard-core, psychopathic offenders with higher PCL–R scores.

A factor analysis of the PCL–R within this adolescent population yielded an oblique, two-factor structure that was comparable to that obtained in previous research with adult prisoners (Hare, 1991; Harpur et al., 1988). Relationships in the expected direction were found between PCL–R scores and criminal history variables, including age at first arrest and number of prior incarcerations. PCL–R total scores were also related to conduct disorder symptomatology and to poorer institutional adjustment, as indexed by behavioral write-ups during incarceration and isolative confinements. The robust relationship found between the PCL–R and features of conduct disorder is noteworthy when one considers that conduct disorder symptoms were coded only from secondary sources and thus may not have been assessed in an optimally sensitive way. The PCL–R also showed incremental predictive validity in that it contributed uniquely over other available measures to the prediction of elapsed time between release and violent recidivism.

Also consistent with prediction, the two factors of the PCL–R showed differential relationships with selected criterion variables. The behavioral deviance factor (Factor 2) was uniquely associated with lower educational achievement, with younger age at first incarceration, and with MMPI scales reflecting amoral rebelliousness and impulsive tendencies (i.e., Scales 4 and 9). Contrary to prediction, MMPI indexes of depression and anxiousness (i.e., Scales 2 and 7) did not correlate significantly with either PCL–R factor, although relationships for the two factors were in the expected direction.

The core personality component of the PCL–R (Factor 1) was significantly related to admitting offense severity, whereas the behavioral deviance component (Factor 2) was not, sug-

gesting that more serious criminal violations were associated with traits of callousness and emotional detachment (cf. Hare & McPherson, 1984). PCL–R Factor 1 also contributed uniquely to the prediction of recidivism above and beyond Factor 2 (and other available psychometric, demographic, and criminal history variables), suggesting that the affective/interpersonal traits of psychopathy are important to consider in forecasting future criminal activity (cf. Frick et al., 1994; Harpur & Hare, 1991).

Of interest is that although higher PCL–R total and Factor 2 scores were associated with more negative monthly evaluations by staff, no such relationship was observed for Factor 1, suggesting that review committees relied predominantly on overt behavior or, alternatively, that individuals high on Factor 1 were able to charm their way out of negative reviews.

One notable area in which the PCL–R did not exhibit relationships consistent with those observed in adult offenders was substance abuse; Smith and Newman (1990) reported a significant relationship between PCL–R Factor 2 and abuse of alcohol and drugs, but the current study did not find any relationship between the total PCL–R, or either of its factors, and substance abuse. Although it might be tempting to conclude that substance abuse is mediated differently in adolescents than in adults, it should be acknowledged that the present study used a potentially less sensitive index of substance abuse than Smith and Newman's (i.e., file-based categorical diagnosis vs. standardized questionnaire measure) and that it included substantially fewer participants (i.e., 130 vs. 360).

With regard to intelligence, the findings of the present study are consistent with a considerable body of evidence indicating that intelligence, as measured by traditional psychometric approaches, is basically unrelated to psychopathy (Hare, 1991). It could be argued that a restricted IQ range contributed to the null effects for intelligence. However, the standard deviation for Full Scale IQ in the present sample (12.3; see Table 3) was not substantially lower than in the population at large.

The present study also failed to obtain racial-group differences in PCL–R scale means and reliabilities, even though statistical power was at least adequate in most analyses. In an earlier investigation, Kosson et al. (1990), using a sample almost three times larger than the current study's, reported some race-related differences in PCL–R scores. However, these differences were quite selective and have not been observed consistently in other research (cf. Hare, 1991).

In summary, PCL–R ratings of adolescent offenders in the present study showed psychometric properties and relationships with criterion variables similar to those observed in adult prisoner populations. In view of the discrepant findings between the present study and others that have examined psychopathy–substance abuse relationships and racial group differences in PCL–R scores, more research in these areas with juvenile offenders is warranted.

Ultimately, valid assessment of individual differences among criminal offenders may help to reveal the causes of psychopathy and contribute to effective intervention strategies. The current study indicates that psychopathic traits are firmly established by adolescence and that investigations of even younger offenders may be needed to explore etiology fruitfully.

This study also suggests that short-term treatment of juvenile

offenders, even within the bounds of an intensive treatment environment, does not prevent future offenses over an extended follow-up period. It may be that for intervention to bring about a lasting change in their behavior, treatment of incarcerated adolescents must be over an extended period of time. Certainly research to date does not seem to offer much hope for changing the antisocial behavior of psychopathic individuals once they reach adulthood.

References

Achenbach, T. M., & Edelbrock, C. (1983). *Manual of the Child Behavior Checklist and Revised Child Behavior Profile.* Burlington: University of Vermont, Department of Psychiatry.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.

Archer, R. P. (1992). *MMPI–A: Assessing adolescent psychopathology.* Hillsdale, NJ: Erlbaum.

Archer, R. P. (1997). Future directions for the MMPI–A: Research and clinical issues. *Journal of Personality Assessment, 68,* 95–109.

Butcher, J. N., Williams, C. L., Graham, J. R., Archer, R. P., Tellegen, A., Ben-Porath, Y. S., & Kaemmer, B. (1992). *MMPI-A: Minnesota Multiphasic Personality Inventory—Adolescents.* Minneapolis: University of Minnesota Press.

Cleckley, H. (1976). *The mask of sanity* (5th ed.). St. Louis, MO: Mosby.

Cohen, J. (1989). *Statistical power analyses for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Forth, A. E., Hart, S. D., & Hare, R. D. (1990). Assessment of psychopathy in male young offenders. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2,* 342–344.

Frick, P. J., O'Brien, B. S., Wootton, J. M., & McBurnett, K. (1994). Psychopathy and conduct problems in children. *Journal of Abnormal Psychology, 103,* 700–707.

Hare, R. D. (1980). A research scale for the assessment of psychopathy in criminal populations. *Personality and Individual Differences, 1,* 111–119.

Hare, R. D. (1985). Comparison of procedures for the assessment of psychopathy. *Journal of Consulting and Clinical Psychology, 53,* 7–16.

Hare, R. D. (1991). *The Hare Psychopathy Checklist—Revised.* Toronto: Multi-Health Systems.

Hare, R. D., Hart, S. D., & Harpur, T. J. (1991). Psychopathy and the *DSM–IV* criteria for antisocial personality disorder. *Journal of Abnormal Psychology, 100,* 391–398.

Hare, R. D., & McPherson, L. M. (1984). Violent and aggressive behavior by criminal psychopaths. *International Journal of Law and Psychiatry, 7,* 35–50.

Hare, R. D., & Schalling, D. (1978). *Psychopathic behavior: Approaches to research.* Chichester, England: Wiley.

Harpur, T. J., Hakstian, A. R., & Hare, R. D. (1988). Factor structure of the Psychopathy Checklist. *Journal of Consulting and Clinical Psychology, 56,* 741–747.

Harpur, T. J., & Hare, R. D. (1991, August). *Psychopathy and violent behavior: Two factors are better than one.* Paper presented at the Annual Meeting of the American Psychological Association, Boston.

Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1,* 6–17.

Hart, S. D., Kropp, P. R., & Hare, R. D. (1988). Performance of male psychopaths following conditional release from prison. *Journal of Consulting and Clinical Psychology, 56,* 227–232.

Hathaway, S. R., & McKinley, J. C. (1943). *The Minnesota Multiphasic Personality Inventory* (rev. ed.). Minneapolis: University of Minnesota Press.

Kosson, D. S., Smith, S. S., & Newman, J. P. (1990). Evaluating the construct validity of psychopathy in Black and White male inmates: Three preliminary studies. *Journal of Abnormal Psychology, 99,* 250–259.

Loevinger, J. (1957). Objective tests as instruments of psychological theory. *Psychological Reports, 3,* 635–694.

Megargee, E. I. (1982). Psychological determinates and correlates of criminal violence. In M. E. Wolfgang & N. A. Weiner (Eds.), *Criminal violence* (pp. 81–170). London: Sage.

Ogloff, J. R., Wong, S., & Greenwood, A. (1990). Treating criminal psychopaths in a therapeutic community program. *Behavioral Sciences and the Law, 8,* 81–90.

Patrick, C. J. (1994). Emotion and psychopathy: Startling new insights. *Psychophysiology, 31,* 319–330.

Serin, R. C., Peters, R. D., & Barbaree, H. E. (1990). Predictors of psychopathy and release outcome in a criminal population. *Psychological Assessment, 2,* 419–422.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlation: Uses in assessing rater reliability. *Psychological Bulletin, 86,* 420–428.

Smith, S. S., & Newman, J. P. (1990). Alcohol and drug abuse-dependence disorders in psychopathic and nonpsychopathic criminal offenders. *Journal of Abnormal Psychology, 4,* 430–439.

Wechsler, D. (1974). *WISC–R: Wechsler Intelligence Scale for Children—Revised.* New York: The Psychological Corporation.

Wechsler, D. (1981). *WAIS–R: Wechsler Adult Intelligence Scale—Revised.* New York: The Psychological Corporation.

Wong, S. (1984). *The criminal and institutional behaviors of psychopaths* (Research Rep. No. 1984-87). Ottawa: Ministry of the Solicitor General of Canada.

Wong, S. (1988). Is Hare's Psychopathy Checklist reliable without the interview? *Psychological Reports, 62,* 931–934.