Psychopathy and Offending From Adolescence to Adulthood: A 10-Year Follow-Up

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This study examined the predictive validity of the Hare Psychopathy Checklist: Youth Version (PCL:YV; A. E. Forth, D. S. Kosson, & R. D. Hare, 2003) from adolescence to early adulthood. The authors coded the PCL:YV using file information and collected criminal record information over a 10-year follow-up period on 157 boys, ages 12 through 18, referred to Youth Forensic Psychiatric Services for assessment in 1986. The risk for violence into early adulthood was greater among those with high PCL:YV scores than among those with low scores, even after controlling for conduct disorder, age at first offence, and history of violent and nonviolent offending. These results indicate that the PCL:YV provides meaningful information about young offenders' risk for violence into early adulthood. Clinical implications are discussed, with reference to pertinent ethical issues.

The present study examines the ability of the Hare Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) to predict long-term violent, nonviolent, and sexual offending over 10 years from adolescence into adulthood in a sample of 157 court-referred male adolescent offenders.

Adolescence is marked by increased involvement in antisocial behavior in general and violence in particular (Farrington, 1983; Wolfgang, Thornberry, & Figlio, 1987). Although violent crime

cases have varied only slightly since 1995, particular types of violence (e.g., robbery and aggravated assault) have increased substantially (Canadian Crime Statistics, 1999). In the United States, rates of violent crime committed by youths in 1998, although down slightly from 1994 levels, had nonetheless increased 33% since 1989 (U.S. Department of Justice, 2001). The impact of violent crime is considerable, affecting the targeted individuals, families, and communities.

When a youth is charged with a criminal offence in Canada, a judge has the authority through the Youth Criminal Justice Act to order a psychiatric–psychological examination at any stage of proceedings against a young person.[1] Assessments may be ordered to determine whether the young person could be suffering from a mental illness or disorder, a psychological disorder, emotional disturbance, or learning or mental disability. Assessments may be ordered if a young person's history indicates a pattern of repeated findings of guilt or if a young person is alleged to have committed a serious violent offence. Jack and Ogloff (1996) studied characteristics of court-referred youth and found that they comprised about 2% of young offenders before the courts. Referred young offenders were more likely than nonreferred youths to have had contact with the court system at a younger age, to present with charges for a number of offences, and to be charged with a crime against a person.

Although court-referred adolescents represent a group of severe young offenders, not all go on to commit serious acts of violence, nor do their criminal careers necessarily extend into adulthood. The challenge for mental health professionals and the criminal

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[1] At the time the study was conducted, the Young Offenders Act was in effect. This was replaced with the Youth Criminal Justice Act on April 1, 2003.

justice system alike is (a) to identify youths who are a particular risk for serious, chronic offending and violence; (b) to identify risk areas that are malleable and amenable to change and/or management; and (c) to develop and implement early intervention and management strategies to reduce this risk. To meet this challenge, we require reliable and valid risk-assessment strategies that can be used with youths early in their contact with the legal system.

Psychopathy

Psychopathy is a personality disorder characterized by early onset and long-term social and interpersonal dysfunction (American Psychiatric Association, 1994; Hare, 1998; Millon, 1981). Clinical tradition (Cleckley, 1976; Hare 1991, 2003) describes psychopathic individuals as grandiose, manipulative, forceful, and cold-hearted individuals. They display shallow and labile emotions; are unable to form long-lasting bonds to people, principles, and goals; and are lacking in empathy, guilt, and remorse. They also are impulsive, sensation seeking, and irresponsible and readily violate social and legal norms. Because of their disproportionate involvement in crime, and, in particular, violent crime, psychopathic individuals are of special concern to the criminal justice system and to mental health professionals alike (Hare, 2003; Millon, Simonson, Birket-Smith, & Davis, 1998).

Assessment of Psychopathy in Adulthood

The instrument of choice for researchers and clinicians assessing psychopathy in adults is the 20-item Hare Psychopathy Checklist—Revised (PCL–R; Hare, 1991, 2003). The PCL–R uses a semistructured interview and file and collateral information to measure inferred personality traits and behaviors related to psychopathy. It yields dimensional scores but also may be used to classify or diagnose individuals for research and clinical purposes. The PCL–R is underpinned by two broad correlated factors that tap affective–interpersonal features (e.g., glibness and superficial charm, egocentricity, lack of empathy, shallow emotions; Factor 1) and socially deviant lifestyle and behaviors (e.g., impulsivity, sensation seeking, irresponsibility, early behavior problems, poor behavioral controls; Factor 2). Recently, Cooke and Michie (2001) described a three-factor model for the PCL–R that was based on analysis of a selected set of 13 items. In their model, the original Factor 1 was split into an Interpersonal factor and an Affective factor, and the number of items in the original Factor 2 was reduced from 8 to 5 to form a Lifestyle factor. However, large-sample, multigroup analyses by Parker, Sitarenios, and Hare (2004; see also Hare, 2003) indicate that 5 of the items excluded by Cooke and Michie (2001) form a fourth factor, labeled Antisocial. These four factors (or facets) underpin two higher order factors (Interpersonal–Affective; Lifestyle–Antisocial) that are identical with the original PCL–R factors, with the exception that 10 items (rather than 9) now load on Factor 2.

An extensive literature indicates that, when properly assessed, the construct of psychopathy has major implications for criminal justice system professionals' understanding and predicting of long-term criminality and violence among adults. This body of research has found that psychopathic criminals and patients, as assessed by the PCL–R, reoffend more quickly, more often, and more violently following release from custody than do other offenders (e.g.,

Salekin, Rogers, & Sewell, 1996). Further, the PCL–R predicts general and violent recidivism across several cultures (Hare, Clark, Grann, & Thornton, 2000), underlining the importance of this clinical construct for criminal justice and mental health settings.

Assessment of Psychopathy in Adolescence

Compared with what is known about adult psychopathy, much less is known about its early course. There is, however, an emerging literature that is beginning to characterize both the developmental aspects of psychopathy and the importance of differentiating between this disorder and other early conduct problems.

The PCL:YV is an instrument designed to measure the interpersonal, affective, and behavioral domains of psychopathy among adolescents ages 12 to 18. The PCL:YV is similar in both structure and content to the PCL–R. Whereas the PCL:YV retains all 20 of the PCL–R items, some specific items were revised to make them more appropriate for adolescents. In addition, instructions were modified to emphasize the nature of normal adolescent behavior and its variability over time. Items also were revised to reflect the greater involvement of peers, family, and school. Finally, focus was placed on relatively enduring features of the youths that are present across settings and over time. As with the adult PCL–R, emphasis is placed on information obtained from multiple sources and contexts and on evaluating each item according to the frequency, intensity, and duration of its expression.

Interest in the construct of psychopathy in adolescence arose partly out of a realization that assessments that rely solely on behavioral diagnoses, such as conduct disorder (CD), may lead to an overestimation of young people at risk for chronic conduct problems (e.g., Lynam 1996; Toupin, Mercier, Déry, Côté, & Hodgins, 1996). CD, as described in the fourth edition *Diagnostic and Statistical Manual for Mental Disorders* (*DSM–IV*; American Psychiatric Association, 1994) is a disorder that characterizes youths who engage in persistent and serious antisocial acts. CD is not synonymous with psychopathy, but it is a childhood disorder that may be a part of a developmental trajectory to adult antisocial personality disorder. Adolescent psychopathy is associated with CD symptoms in both forensic (Forth, Hart, & Hare, 1990; Kosson, Cyerski, Steuerwald, Neumann, & Walker-Mathews, 2002) and community samples (Forth, 1996; Toupin et al., 1996). However, almost all adolescent offenders meet the *DSM–IV* diagnostic criteria for CD (e.g., Forth, 1995). Such extreme base rates in offender samples limit the utility of a CD diagnosis in predicting ongoing offending within a criminal justice setting. By comparison, the base rate for psychopathy (using the adult cut score of 30) is about 25% for institutionalized male adolescent offenders and about 10% for male adolescents on probation (see Forth et al., 2003). Further, studies have identified an asymmetric relation between *DSM–IV* CD and PCL:YV psychopathy. Whereas virtually all psychopathic adolescent offenders (as defined by PCL:YV scores in the high range; see the *Measures* section) meet *DSM–IV* criteria for CD, only about 20%–30% of those with CD score in the high PCL:YV range (Forth, 1995; Forth et al., 2003). The PCL:YV defines a smaller subgroup of offenders than does CD.

Research indicates that adolescent psychopathy, as measured by the PCL:YV (and earlier versions of this instrument), is predictive of aggression and violence among adolescents in forensic samples (Brandt, Kennedy, Patrick, & Curtin, 1997; Catchpole & Gretton,

2003; Forth et al., 1990; Gretton, McBride, Hare, O'Shaugnessy, & Kumka, 2001; Kosson et al., 2002), inpatient psychiatric samples (Stafford & Cornell, 2003), and community samples (Toupin et al., 1996). In some cases (e.g., Brandt et al., 1997), but not in others (e.g., Långström & Grann, 2002), the predictive value of psychopathy remains even after controlling for demographic variables and criminal history. Adolescents with many psychopathic traits are more likely than those with few psychopathic traits to have a history of maladaptive family environments (Forth, 1996), a lack of attachment to parents (Kosson et al., 2002), and a wide range of antisocial and violent behaviors (Forth, 1996; Kosson et al., 2002).

Concerns Over the Use of the PCL:YV

Recently, researchers have raised concerns about the appropriateness of applying the label of psychopathy to adolescents (e.g., Edens, Skeem, Cruise, & Cauffman, 2001; Seagrave & Grisso, 2002). Attempts to investigate and understand the precursors to adult psychopathy must consider several issues, including (a) the stability of personality traits and behavioral patterns from adolescence to adulthood and (b) the possibility that childhood and adolescent features believed to be precursors to adult psychopathy may be little more than signs and processes common in normally developing youth. Debate concerning the issue of labeling no doubt will intensify as instruments for the assessment of adolescent psychopathy become more widely used in the mental health and criminal justice systems. Some commentators fear that the PCL:YV will be used by forensic clinical examiners for purposes of classification and sentencing. Because of the serious consequences of labeling, clinicians need to consider carefully the quality of the measures used to inform the courts about the character of youths charged with serious offences (e.g., Seagrave & Grisso, 2002).

Cautions like these stimulate important discussions about the limits of current knowledge and the potential for misuse of assessment strategies for juvenile psychopathy. In response to concerns over the stability of psychopathic traits in adolescence, Lynam (2002) has argued that the risk for overestimating psychopathy because of the appearance of developmentally normative and transient psychopathic-like characteristics observed in adolescents is not as great as some commentators believe. He noted that traits in the five-factor model of personality (Costa & Widiger, 2002), including those that are defining of psychopathy, are present in adolescents (John, Caspi, Robins, Moffitt, & Stouthamer-Loeber; 1994) and stable from adolescence into adulthood (Block, 1993). Paunonen (2001) noted that single behaviors have too many transient determinants to be useful long-term predictors but that the aggregation of specific indicators to form higher order constructs increases temporal stability. Similarly, Frick (2002) argued that the presence of individual characteristics in adolescents may not be unusual, but that psychopathy—as with other forms of psychopathology—is assessed on the basis of an accumulation of characteristics that together comprise the construct. Further, Hare (2003) points out that the features indicative of adolescent psychopathy typically are more serious or extreme variants than those found normatively among adolescents. An adolescent may exhibit *some* of these features to a certain extent and for a time, but may grow out of them. However, a "heavy dose" that would warrant a high rating of psychopathy is rare among adolescents and represents a condition far more extreme than that found in normally developing youths (who typically obtain a score of less than 5 on the PCL:YV, compared with an average score of at least 20 for young offenders; Forth et al., 2003). There are relatively few adolescents who manifest the range of affective, interpersonal, and behavioral characteristics in sufficient intensity, frequency, and duration to warrant a high psychopathy rating.

In addition, there is evidence that normal and abnormal constellations of personality traits are relatively stable from late childhood to early adulthood (e.g., Caspi, Bem, & Elder, 1989; Huesmann, Eron, Lefkowitz, & Walder, 1984). Crawford, Cohen, and Brook (2001) reported that the latent traits underlying narcissistic, borderline, and histrionic personality disorder symptoms were "highly stable across an eight-year interval from early adolescence to early adulthood" (p. 329). Some of these stable traits are similar to those assessed with the PCL:YV, and we might therefore expect that assessments of adolescent psychopathy will be relatively stable into at least early adulthood. Externalizing symptoms were less stable, suggesting that for some individuals the conduct problems exhibited in adolescence do not persist into early adulthood (cf. Moffitt, 1993).

The strong association between adult psychopathy and both general and violent recidivism is of major concern to the criminal justice system and to the general public. The evidence indicates that the most severe, chronic, and violent adult offenders have lengthy offending histories, with early beginnings. Concerns raised about the appropriateness of applying the construct of psychopathy to adolescents certainly are warranted. However, parallel to these concerns is the argument that more work is needed to define this subgroup of offenders, evaluate the stability of this trajectory into adulthood, and determine the short- and long-term risks associated with this disorder. Clearly, a better understanding of the developmental and long-term course of psychopathy is needed so that earlier and more appropriate intervention and management strategies can be developed. Researchers in this area must weigh the dangers associated with overpredicting and misusing psychopathy measures against the implications of neglecting this extremely important area of research.

The Present Study

The purpose of the present research was to investigate the construct of psychopathy in adolescent offenders, using the PCL:YV, and to provide longitudinal data on psychopathy and criminal behavior from adolescence to early adulthood. We followed the criminal outcomes of adolescents for a 10-year period subsequent to their court-mandated psychological–psychiatric assessments in an inpatient youth forensic psychiatric facility.

Method

Participants

Participants were adolescent boys, ages 12 to 18, directed by the courts to undergo a psychological and psychiatric assessment at the Youth Forensic Psychiatric Services (YFPS) Inpatient Assessment Unit (IAU) in Burnaby, British Columbia between January 1, 1986 and December 31, 1986. They had confessed to or were convicted of one or more violations of the criminal code and were awaiting sentencing. The average age at time

of assessment was 16.1 years (SD = 1.4). Average age at follow-up was 26.0 years (SD = 1.5). Seventy-nine percent of the participants were White, 19% were Aboriginal, and the remaining 2% were from other ethnic backgrounds. There were no differences between White and non-White participants on any demographic variables, PCL:YV scores, or offending histories. The sample had a Grade 8 education, on average (M = 8.1, SD = 1.1).

Of the 175 assessment referrals to the IAU, we obtained PCL:YV assessments and criminal record information for 157 (89.7%). Nine youths were excluded because of file information insufficient to complete the PCL:YV assessment, and 9 others were excluded because of lack of criminal record information during the follow-up period.

Ethical approval was obtained from the University of British Columbia Ethics Committee, the clinical director, and the research committee at YFPS. Confidentiality was assured through a data-coding system.

Procedures

Archival file history data were used to retrospectively code the PCL:YV and to collect information on the demographic and background characteristics of participants. These rich data consisted of file history information, including psychiatric and psychological evaluations; social history; police and victim statements; offence type; predisposition reports; interview notes; and nursing documentation for the duration of each offender's 3 to 7 day stay at the IAU. Trained undergraduate research assistants completed the coding. PCL:YV ratings were coded separately from background information. Files were coded subsequent to the youth's discharge from YFPS. As the data were gathered retrospectively, the PCL:YV assessment had no bearing on participants' dispositions by the courts.

Data from the Wechsler Intelligence Scale for Children—Revised Version (Wechsler, 1974) or Wechsler Adult Intelligence Scale—Revised (Wechsler, 1981) were obtained from file records.

CD symptoms were coded according to *DSM–IV* criteria from clinical notes in the file, which were based on observed behavior as well as on information obtained from collateral sources (i.e., parents and probation officers). The interrater reliability was .83 (as measured by the single-rater intraclass correlation; ICC; Bartko, 1976) for the number of CD symptoms, based on a subsample of 30 double-coded files. Substance use information was obtained from clinical notes in the files based on self-report and/or collateral information. After reviewing the information on substance abuse, coders were instructed to rate the severity of substance abuse as "none" (no substance use), "mild" (occasional recreational use that has little impact on the youth's functioning), "moderate" (use more frequent, causes some impairment in functioning), or "severe" (frequent use, causes significant impairment in functioning). The reliability (single-rater ICC) of these ratings, based on a subsample of 24 double-coded files, was .83.

Measures

The PCL:YV is a 20-item clinical rating scale designed to assess the construct of psychopathy in adolescents ages 12 through 18. Conceptually, the PCL:YV closely parallels the PCL–R. Several items in the PCL:YV were modified for use with adolescents. Like the PCL–R, each item is scored on a 3-point scale: 2 indicates that the item *applies to the individual*; 1 indicates that the item *may apply or that it applies to a certain extent*; and 0 indicates that *it does not apply*. Total scores can range from 0 to 40 and reflect the extent to which an individual matches the traditional prototypical conception of a psychopathic person (Cleckley, 1976; Hare, 1991, 2003). The psychometric properties of the PCL:YV are essentially the same as those of the PCL–R (e.g., Brandt et al., 1997; Forth et al., 1990, 2003; Kosson et al., 2002). In the present study, the reliability was calculated for the PCL:YV total score on the basis of a subsample of 39 participants. The single-rater ICC for the PCL:YV total score was .84.

The standard procedure for a PCL–R or PCL:YV assessment involves the integration of interview and file information. However, numerous studies have used file information to code the PCL:YV (e.g., Brandt et al., 1997; Catchpole & Gretton, 2003; O'Neill, Lidz, & Heilbrun, 2003) and PCL–R (e.g., Hare, 2003; Rice & Harris, 1995; Wong, 1988), with reliable and valid results. In a pilot study comparing file review to file and interview, Gretton et al. (2001) found a strong relationship between the two methods when the file information was comprehensive and detailed.

For most analyses, the PCL:YV scores were treated as continuous. However, we also were interested in group differences in outcome variables. For research with adult offenders, psychopathy typically is defined by a PCL–R score of 30 or more, which is approximately 1 SD above the mean for offenders in general (Hare, 1991, 2003). The mean PCL:YV score for the present sample was 22.8 (SD = 7.1), which is similar to that obtained for youths in open custody or adjudicated as delinquent (Forth et al., 2003) but somewhat lower than the mean score obtained with incarcerated youth (24.1; Forth et al., 2003). As yet, there is no recommended cut score for use with the PCL:YV (Forth et al., 2003). For the purposes of the present study, we divided the sample into three PCL:YV groups on the basis of cut scores frequently used with adults: High (PCL:YV score 30 or greater), medium (PCL:YV score between 18 and 29 inclusive), and low (PCL:YV score less than 18). The cut score for the high group, as with adults, is approximately 1 SD above the mean of the sample. Thirty-four (22%) of the youths were in the high PCL:YV (psychopathic) group, 82 (52%) were in the medium PCL:YV group, and 41 (26%) were in the low PCL:YV group.

Recent large-sample analyses (Kosson, Neumann, Forth, & Hare, 2004) have indicated that the factor structure of the PCL:YV is virtually identical with the factor structure of the PCL–R. We computed factor scores by totaling the scores of the items in each factor: Factor 1, Interpersonal–Affective (Items 1, 2, 4, 5, 6, 7, 8, and 16) and Factor 2, Lifestyle–Antisocial (Items 3, 9, 10, 12, 13, 14, 15, 18, 19, and 20). The mean scores for Factors 1 and 2 were 8.27 (SD = 3.75) and 12.59 (SD = 3.24), respectively. The single-rater ICC was .72 for Factor 1 and .68 for Factor 2.

Outcome Variables

Royal Canadian Mounted Police–Finger Print Service and British Columbia Corrections files were obtained on March 15, 1996 and July 10, 1996, respectively. Raters of criminal outcome were blind to PCL:YV scores. Information from these sources was used to tabulate the number of criminal offences (charges and convictions), months spent in custody, months on probation, and months free in the community for each youth.

Offences included in the criminal record were tabulated for the preassessment and follow-up periods. Types of offences were divided into three broad categories. Nonviolent offences included theft, possession of stolen property, fraud, breaches of the conditions of probation, escaping custody, driving offences, and drug offences. Violent offences included murder, manslaughter, attempted murder, assault, robbery, kidnapping, possession of a weapon, and arson. Sexual offences included sexual assault, sexual assault with a weapon, aggravated sexual assault, and sexual interference. We excluded sexual offences of a nonassaultive nature, including prostitution, committing an indecent act in public, and "other sexual and moral offences" (indicated as nudity or obscene matter), as they seemed conceptually distinct from assaultive sexual offences. The number of months on probation and months free were summed to determine the total number of months that the participant spent in the community during follow-up.

Results

Background Characteristics of Youth

Psychosocial characteristics of the PCL:YV groups, including IQ (full-scale, verbal, and performance), abuse history, substance

Table 1
Characteristics of Youth by Hare Psychopathy Checklist: Youth Version Group

Characteristic	Psychopathy Checklist: Youth Version group		
	Low ($n = 41$)	Medium ($n = 82$)	High ($n = 34$)
IQ, M (SD)			
FSIQ	95.91 (10.35)	97.64 (12.01)	99.65 (11.41)
VIQ	94.47 (11.77)	93.68 (12.71)	93.95 (12.14)
PIQ	98.29 (10.27)$_a$	102.67 (11.96)	105.50 (12.04)$_b$
History of abuse (%)			
Physical	29.7	27.6	44.1
Sexual	13.5	6.3	14.7
Emotional	18.9	13.8	23.5
Substance abuse (%)	60.0	63.2	80.8
CD symptoms, M (SD)	3.95 (1.72)$_a$	4.93 (1.94)$_b$	7.09 (1.93)$_c$
Preassessment offending (%)			
Violent	7.3$_a$	15.9	29.4$_b$
Nonviolent	58.5	70.7	67.6
Sexual	0.0	2.4	5.9

Note. Substance abuse refers to the percentage of individuals with moderate to severe substance use. Means with differing subscripts are significantly different. FSIQ = Full-Scale Intelligence Quotient; VIQ = Verbal Intelligence Quotient; PIQ = Performance Intelligence Quotient; CD = conduct disorder.

use, and CD, are presented in Table 1. With respect to IQ, the PCL:YV groups differed significantly only in performance IQ (PIQ) scores, $F(2, 154) = 3.80$, $p = .024$; $r = .21$.[2] Tukey's honestly significant difference post hoc pairwise comparisons revealed that the high PCL:YV group had higher PIQ scores than did the low PCL:YV group ($p < .05$). There were no significant group differences in the percentage of youths with either a history of moderate to severe abuse (physical, sexual, or emotional) or a history of moderate to severe alcohol and/or drug use. There were significant group differences in the number of CD symptoms, $F(2, 153) = 26.91$, $p < .001$; $r = .49$.[3] Tukey's post hoc comparisons revealed differences in the number of CD symptoms between all PCL:YV groups ($ps < .05$; see Table 1).

Offending History

Preassessment history of offending. The percentage of youths with a preassessment history of offending is presented for each PCL:YV group in Table 1. Overall, 67% of the participants had a preassessment nonviolent offence history, 17% had a violent offence history, and 3% had a sex offence history. PCL:YV scores were correlated with the presence and/or absence of preassessment violent offending ($r = .20$, $p = .013$) but not with preassessment nonviolent ($r = .11$, $p = .19$) or sexual offending ($r = .11$, $p = .16$). Youths in the high PCL:YV group (29%) were more likely than those in the low group (7%) to have had a violent offence prior to admission to the IAU, $\chi^2(1, N = 75) = 6.33$, $p = .012$; $r = .30$. There were no significant PCL:YV group differences in history of nonviolent and sexual offences. The average age at first offence was 15 ($SD = 1.4$). PCL:YV scores were negatively correlated with age at first offence ($r = -.17$, $p = .039$).

Referral offence characteristics. The average age at assessment was 16.1 ($SD = 1.4$). Eighty-five percent of the youths were referred for assessment for a nonviolent offence, 26% for a violent offence, and 6% for a sexual offence. There were no significant PCL:YV group differences in the types of offences for which

participants were referred for assessment. (Percentages do not total 100% because of the possibility of being charged with multiple offences.) PCL:YV scores were unrelated to age at assessment ($r = -.03$).

PCL:YV and Recidivism

We evaluated several postassessment outcome measures as tests of the general hypothesis that adolescent psychopathy is predictive of offending behavior. In most cases, the statistical analyses involved nondirectional (two-tailed) tests of the association between the PCL:YV and a set of three dependent variables: nonviolent, violent, and sexual offences. We used the Bonferroni adjustment procedure to keep the set-wise Type I error rate for these analyses at .05. That is, the significance level for testing each dependent variable in a three-variable set was .05/3 = .017.

Recidivism rates. Most (96%) of the participants committed at least one known offence during the 10-year follow-up period. The offence rate was 95% for nonviolent offences, 68% for violent offences, and 11% for sexual offences. The percentage of youths in each PCL:YV group that offended violently, nonviolently, and sexually in the follow-up period is presented in Figure 1. Bartholomew's test of qualitatively ordered proportions (Fleiss, 1981, pp. 147–149) yielded a significant linear trend in violent failure rates for the three PCL:YV groups, $\chi^2(N = 157) = 11.03$, $c = .33$, $p < .001$. There were no significant group differences for nonviolent or sexual offences.

We computed point-biserial correlations between continuous PCL:YV scores and recidivism (yes–no) over the entire 10-year

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[2] The correlation between PCL:YV total score and PIQ was the same as that between the PCL:YV groups and PIQ ($r = .21$ in both cases).

[3] The correlation between PCL:YV total score and number of CD symptoms was .52.
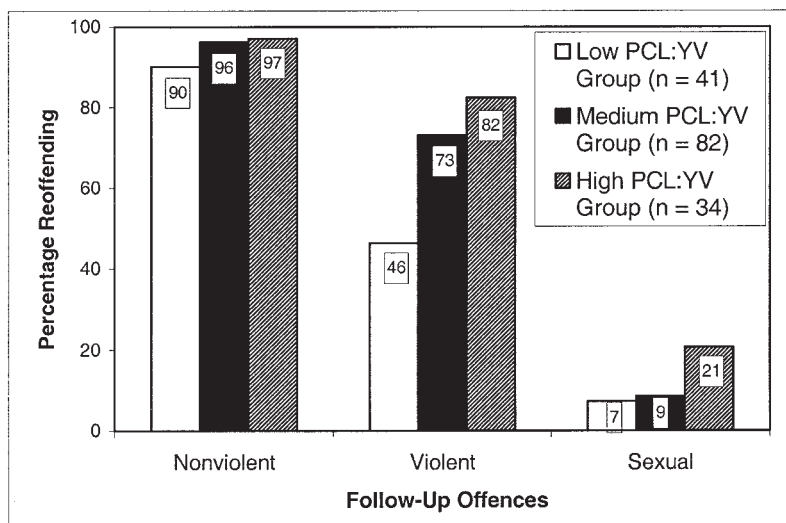
Figure 1. Percent reoffending in 10-year follow-up by Hare Psychopathy Checklist: Youth Version (PCL:YV) group.

follow-up. The PCL:YV total score was significantly correlated with violent recidivism ($r_{pb} = .32$, $p < .001$). The correlations between violent recidivism and Factor 1 and Factor 2 were .24 ($p = .003$) and .42 ($p < .001$), respectively. After Bonferroni correction, the relationships between PCL:YV total score and nonviolent recidivism ($r_{pb} = .19$, $p = .02$) and sexual recidivism ($r_{pb} = .11$, $p = .19$) were not significant. The correlation between Factor 1 and nonviolent recidivism was not significant ($r_{pb} = .04$, $p = .64$), although Factor 2 was correlated with nonviolent recidivism ($r_{pb} = .33$, $p < .001$). Neither Factor 1 ($r = .15$, $p = .07$) nor Factor 2 ($r = .06$, $p = .45$) was correlated with sexual recidivism.

Time to first offence. The previous analyses indicate that the PCL:YV was significantly related to the likelihood that a violent offence would occur in the follow-up period, but they do not tell us how soon the offence occurred. In those cases, did individuals with higher PCL:YV scores reoffend *more quickly* following discharge than their lower scoring counterparts? To answer this question, we first computed correlations between the PCL:YV and time to first offence. The PCL:YV was significantly (negatively) correlated with time to first violent offence ($r = -.40$, $p < .001$) and time to first nonviolent offence ($r = -.22$, $p = .005$). After Bonferroni correction, time to first sexual offence ($r = -.19$, $p = .02$) was not significant. The correlations between time to first violent offence and Factors 1 and 2 were $-.28$ ($p < .001$) and $-.49$ ($p < .001$). The correlations between time to first nonviolent offence and Factors 1 and 2 were $-.09$ ($p = .27$) and $-.39$ ($p < .001$). The correlations between time to first sexual offence and Factors 1 and 2 were $-.08$ ($p = .33$) and $-.22$ ($p = .01$).

We also conducted survival analyses to examine group differences in the proportion of participants that remained free of offences (survived) as a function of time spent in the community. Log-rank tests revealed that the survival functions for the three PCL:YV groups were significantly different for violent offences, $\chi^2(2, N = 157) = 18.21$, $p < .001$; see Figure 2. Pairwise comparisons indicated that the high and medium PCL:YV groups

violently recidivated significantly earlier following discharge ($M = 33.8$ months and 47.8 months, respectively) than did the low PCL:YV group ($M = 76.1$ months).

Similar analyses indicated that the differences between PCL:YV groups for nonviolent, $\chi^2(1, N = 157) = 7.90$, $p = .019$, and sexual offences, $\chi^2(1, N = 157) = 7.38$, $p = .025$, were not significant, following Bonferroni adjustment.

Incremental predictive utility of psychopathy. To examine the relative contribution of PCL:YV scores to the prediction of violent offending over the follow-up period, we conducted a hierarchical logistic regression analysis to predict violent outcome. In Step 1, we entered criminal history and CD variables (the number of
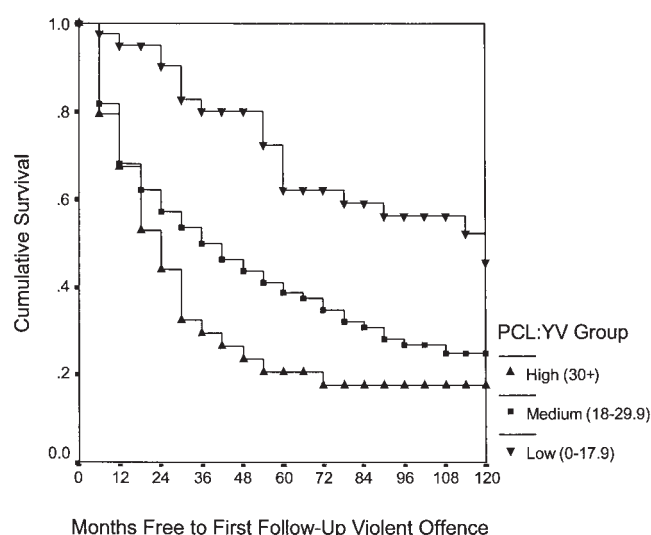

Figure 2. Survival curve of months free in the community until first violent reoffence by Hare Psychopathy Checklist: Youth Version (PCL:YV) group.

violent and nonviolent preassessment offences, age at first offence, and number of CD symptoms). To determine whether the PCL:YV added to the prediction over and above criminal history variables, we added PCL:YV scores in Step 2. Results are presented in Table 2. We found that the model at Step 1 significantly predicted violent outcome, $\chi^2(4, N = 157) = 12.70$, $p = .01$, although on Step 1 only the number of CD symptoms significantly contributed to the equation ($p = .04$). The PCL:YV scores, added at Step 2, contributed significantly and incrementally to the prediction of violent offending, $\chi^2(1, N = 157) = 7.95$, $p = .005$. Thus, psychopathy was a significant predictor of violence over the 10-year follow-up, independent of criminal history and CD.

We also conducted a similar logistic regression analysis entering the same criminal history variables at Step 1, but entering the PCL:YV factor scores at Step 2 (instead of the total score). Although the PCL:YV factors, added at Step 2, contributed significantly to the prediction of violent offending, $\chi^2(1, N = 157) = 15.04$, $p = .001$, only Factor 2 was significant ($p = .002$).

Because the bivariate relationships between PCL:YV score and nonviolent and sexual reoffending were not significant, we did not conduct logistic regression analyses with these dependent variables. Instead, because the correlations between PCL:YV score and *latency* to first violent and nonviolent offence were significant, we conducted a hierarchical linear regression with months free to first nonviolent and violent offence as dependent variables and with the same independent variables as in the logistic regression. Overall, the model at Step 1 (CD and criminal history) predicted latency to first nonviolent, $F(4, 151) = 3.86$, $p = .005$; $R^2 = .09$, and violent, $F(4, 151) = 6.17$, $p < .001$; $R^2 = .14$, offence. Moreover, the addition of the PCL:YV total score at Step 2 incrementally added to the prediction of latency to first nonviolent, $\Delta F(1, 150) = 4.93$, $p = .03$; R^2 total $= .12$, and first violent offence, $\Delta F(1, 150) = 14.05$, $p < .001$; R^2 total $= .21$. We examined the contributions of Factors 1 and 2 to latency to nonviolent and violent outcome. Again, although the model changed significantly at Step 2, $\Delta F(2, 133) = 7.62$, $p = .001$; R^2 total $= .20$, and $\Delta F(2, 133) = 10.88$, $p < .001$; R^2 total $= .27$, respectively, only Factor 2 was a significant contributor ($p < .001$ in each case).

Discussion

We investigated the construct of psychopathy in adolescent offenders and examined offence patterns longitudinally over a 10-year follow-up period, from early adolescence into early adulthood. Psychopathy, as measured by the PCL:YV, predicted offending behavior over a 10-year period following a court-mandated psychiatric/psychological assessment. The predictive validity of the PCL:YV was particularly strong for violent offending, with high PCL:YV scores being associated with both an increased likelihood of violent offending and shorter latency to the first postassessment violent offence. The PCL:YV did not predict the commission of nonviolent or sexual offence rates. However, the nonviolent offence rate for the entire sample was so high (95%) that differential prediction was virtually impossible; similarly, the low base rate for sexual offending also limits predictive ability. Nevertheless, the PCL:YV was significantly associated with latency of the first nonviolent offence. As with violent offences, the higher the PCL:YV score, the earlier an offence occurred.

The present findings suggest that the propensity to violence in this sample was a relatively stable individual characteristic. They are consistent with the results of longitudinal studies of juvenile antisocial behavior indicating remarkable long-term stability in aggressive behavior over several decades (Loeber & Farrington, 1997). In the present study, adolescents with many psychopathic features continued to engage in high rates of nonviolent crime as they approached adulthood, but it was their long-term propensity for violence that distinguished them from other adolescent offenders.

Incremental Utility of PCL:YV

One of the recent concerns about the construct of adolescent psychopathy is that whereas the label may carry negative implications for a youth, it may not provide additional meaningful information about future risk beyond that provided by other indices, such as CD (Edens et al., 2001). We investigated this concern by examining whether the relationship between the PCL:YV and violent recidivism could be accounted for by a number of other relevant variables, including CD symptoms. The relationship between PCL:YV score and violent recidivism held after controlling

Table 2
Logistic Regression Analysis of Violent Recidivism by Hare Psychopathy Checklist: Youth Version (PCL:YV) and Criminal History

Variable	β	SE	Wald	Exp(β)	p
Step 1					
Age at first offence	−.14	.14	0.97	0.87	.32
No. of nonviolent preassessment offences	.05	.05	0.80	1.05	.37
No. of violent preassessment offences	.52	.49	1.13	1.68	.29
No. of conduct disorder symptoms	.18	.09	4.14	1.20	.04
Step 2					
Age at first offence	−.13	.15	0.77	0.88	.38
No. of nonviolent preassessment offences	.04	.06	0.62	1.05	.43
No. of violent preassessment offences	.39	.50	0.61	1.48	.43
No. of conduct disorder symptoms	.05	.10	0.27	1.05	.61
PCL:YV total score	.09	.03	7.49	1.09	.006

Note. Exp = exponent.

for number of previous violent and nonviolent offences, age of first offence, and number of CD symptoms. This is a very stringent test of the incremental utility of the PCL:YV. Although there are many risk factors for crime and violence, the present results clearly indicate that, within a court-referred adolescent sample, psychopathy, as defined by the PCL:YV, is by itself a potent risk factor, as it is with adult offender and forensic psychiatric populations (e.g., Hemphill, Hare, & Wong, 1998; Salekin et al., 1996). It also provides additional meaningful information about propensity to violence.

We examined the contributions of Factor 1 (Interpersonal–Affective) and Factor 2 (Lifestyle–Antisocial) to nonviolent and violent outcome. Examined individually, Factor 1 was significantly associated with violent outcome and with time to first violent offence. Factor 2 was associated with nonviolent and violent outcome as well as with time to first nonviolent and violent offence. Incrementally, however, Factor 2 (Lifestyle–Antisocial) outweighed Factor 1 (Interpersonal–Affective domain) in its prediction of violent outcome when each of the factors was entered into a regression equation. In the present study, the behavioral dimension of psychopathy was more clearly associated with violent outcome than the affective–personality dimension. However, the use of file review data to code PCL:YV items limits the scope of the present study in the interpretation of findings relating to PCL:YV factor structure and outcome. Arguably, it is preferable to infer personality traits on the basis of both interview and file data rather than on file data alone. It will be important to determine whether predictions based on the interpersonal–affective domain improve in studies when interview information is included in PCL:YV assessments. Future studies using file and interview information are needed to address questions about the relative contribution of interpersonal, affective, antisocial, and lifestyle components of psychopathy to the prediction of recidivism and violence.

Recidivism Among Adolescents Referred by the Courts for Psychological Assessment

The offenders in the present study had been referred for psychological assessment under the Young Offenders Act of Canada, and they represent some of the more serious adolescent offenders in British Columbia (Jack & Ogloff, 1996). As a group, the youths in the present study demonstrated a high risk for recidivism. Almost all (96%) reoffended during the follow-up period, with almost 70% committing a violent offence. The present study found that PCL:YV scores distinguished propensity for violence in an already high-risk group of adolescent offenders. Future research assessing psychopathy in the context of a longitudinal cohort study will provide an opportunity to determine how the PCL:YV operates within a broader group of adolescents.

Clinical Implications

One of the responsibilities facing mental health professionals who conduct assessments for the courts and make recommendations regarding disposition is differentiating among offenders according to their risk for long-term antisocial behavior and making recommendations for appropriate forms of intervention. Clearly, an important aspect of research in forensic assessment is empiri-

cally evaluating and setting realistic standards and limitations for these types of assessments.

The construct of psychopathy, as conceptualized by the PCL:YV, provides a strategy for assessment that can be conducted in adolescence. The age range studied in the present follow-up includes ages defined by cohort studies as a time of peak offending for adolescent offenders (e.g., Farrington, 1983; Patterson & Yoerger, 1993). As Moffitt, Caspi, Silva, and Stouthamer-Loeber (1995) pointed out, it is difficult to differentiate trajectories of offending in adolescence based solely on the contemporary information typically available to researchers and practitioners. The current study, along with other research on adolescent psychopathy (e.g., Brandt et al., 1997; Catchpole & Gretton, 2003; Kosson et al., 2002; Toupin et al., 1996), represents a step toward the goal of meaningfully differentiating among subtypes of offenders on the basis of information that is collected at the time of assessment.

Nonetheless, caution is still warranted in several areas related to clinical practice. Research in adolescent psychopathy is in the early stages, and we need much more information regarding the psychometric properties of the PCL:YV among different adolescent populations as well as regarding its implications for treatment and for the evaluation of risk.

Although the current study demonstrates relative stability of aggressive behavior among high-PCL:YV-scoring youths from adolescence to adulthood, the results were based on group data; clinical and individual application warrants careful consideration of PCL:YV findings in the context of other risk and/or need factors for violence among youths.

Intervention for Psychopathic Adolescents

The risk–need–responsivity principle (Andrews & Bonta, 1994) implies that the most intensive treatment should be reserved for high-risk offenders with strong criminogenic needs. Currently, there is little available research concerning the impact of treatment interventions for psychopathic youth. Although the treatment amenability of adult psychopathic offenders is commonly thought of as poor (e.g., Rice, Harris, & Cormier, 1992), most of the empirical evidence comes from treatment and intervention programs that are inappropriate for psychopathic offenders (Hemphill & Hart, 2002; Wong & Hare, in press). Whereas there is strong evidence that certain personality characteristics are enduring, there is increasing interest and discussion among personality theorists regarding mechanisms that contribute to change (Caspi & Roberts, 2001). Developmentally, it is arguable that youths are likely to be more malleable, and thus more likely to respond to intervention efforts, than adults. Findings from a 10-year follow-up of a sex offender treatment program for adolescents suggest that there may be some benefits from intensive, individualized, management-focused, community-based treatments for psychopathic youths (Gretton, McBride, Hare, & O'Shaughnessy, 2000). However, these findings are preliminary and need to be replicated across treatment settings. Salekin (2002), in a meta-analysis of several studies, found that younger age was associated with better treatment outcome among psychopathic individuals. However, his analyses included many studies without careful controls or objective outcome measures. Wong and Hare (in press) have argued that although the prevailing view is that "nothing works," we should not conclude that "nothing will work." They have developed a set of program guidelines for

the treatment of violent adult psychopaths. The development and implementation of such programs may help to counter the view that psychopaths cannot, or should not, be treated. With respect to adolescent offenders, it is important that PCL:YV scores not "be used to try to identify, weed out, and indefinitely lock up those youths who are too far along in their psychopathic development for treatment efforts to be worthwhile" (Seagrave & Grisso, 2002, p. 230). There is, at present, no empirical basis on which to exclude adolescents exhibiting psychopathic traits from intervention efforts. Life-span theories of personality do not specify the age at which personality or other psychological constructs stop developing. Rather, they put forward the notion that as we age we become more consistent, yet we retain the potential for change (Caspi & Roberts, 2001). A challenge for treatment programs that target adolescent offenders will be to develop intervention strategies appropriate for those who exhibit a high number of psychopathic traits, are at high risk for violence, and are unmotivated for treatment.

Future Directions

Research is needed to better understand adolescent psychopathy in female young offenders and various ethnic and cultural groups. The present study used file review data for PCL:YV assessments. Prospective studies using information from both file and interview data will provide important information as to whether predictions can be improved when interview information is included in PCL:YV assessments. We expect that the inclusion of interview information will improve the assessment, reliability, and predictive validity of the PCL:YV.

As of yet, we know little about the phenotypic stability (from adolescence to adulthood) of psychopathic traits (affective–interpersonal, and lifestyle–behavioral) as measured by the PCL:YV. There is a need to better understand the motivations and the cognitive, affective, familial, and biological factors that underlie or perhaps interact with early manifestations of the disorder. We require further study examining differences in maturation, protective factors, and interventions that may lead to differential outcomes among high PCL:YV youths. Studies like these will help to refine and bridge our understanding of developmental manifestations of the psychopathy construct.

Longitudinal research is needed to establish the link between adolescent psychopathy and other outcomes that are associated with adult psychopathy, apart from formal criminal outcomes. It is not known whether factors that appear to reduce the risk for violent and criminal behavior also reduce the risk for psychopathic individuals in other areas of occupational, interpersonal, and social functioning. As Farrington, Ohlin, and Wilson (1986) have pointed out, researchers must recognize the continuity between crime and other social problem behaviors. Criminal behavior is only one part of a larger social problem. Absence of recidivism, based on criminal record information, does not provide an understanding of the course of an individual's functioning in other socially and psychologically meaningful domains, such as school, work, relationships, and family behavior. The personality traits of psychopathy, such as callousness, superficiality, grandiosity, and lack of empathy, are likely to impact many areas of functioning. For individuals whose records indicate a cessation in arrests, one cannot conclude that their criminal career has terminated, nor can one draw conclusions

regarding other important aspects of their functioning. The behavior sampled by criminal record information gives us some idea of the cost of psychopathy to the judicial system, social services, and society, but likely only taps the tip of the iceberg in helping us to understand the complexity of the disorder.

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