INDIVIDUAL AND FAMILIAL RISK FACTORS FOR
ADOLESCENT PSYCHOPATHY

by

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ABSTRACT

Despite the wealth of research on psychopathy in adulthood, little is known about the developmental antecedents of the disorder. The purpose of the present investigation was to examine developmental risk factors to psychopathy in two adolescent offender populations. In Study 1, subjects were 233 adolescent sexual offenders who had participated in a sex-offender treatment program between 1985 and 1992. Archival data were used to retrospectively complete the Psychopathy Checklist: Youth Version (PCL:YV) and to code family background, individual, demographic, and criminological variables. PCL:YV scores were associated with physical abuse, parental social deviance, and adolescent Hyperactivity-Impulsivity-Attention (HIA) problems. In addition, relationships between PCL:YV scores and demographic and criminological variables were similar to those found in adult populations. In Study 2, mothers of 74 adolescent offenders completed questionnaires related to parenting strategies, physical abuse, maternal psychopathy, and child characteristics. The PCL:YV was completed using file information. PCL:YV scores were associated with physical abuse by father, maternal psychopathy, ineffective parenting strategies, and HIA. Results also indicated that the Psychopathy Screening Device, a measure of psychopathy in children, showed low concurrent validity with the PCL:YV. It was concluded that the investigation of risk factors is important to both our understanding of psychopathy and to early identification and treatment of those at risk for the disorder.
# TABLE OF CONTENTS

**ABSTRACT** ......................................................................................................................... ii

**LIST OF TABLES** .................................................................................................................. v

**ACKNOWLEDGMENTS** .......................................................................................................... vi

**I. INTRODUCTION** ................................................................................................................ 1

A. Psychopathy in Adulthood ................................................................................................. 3

B. Psychopathy in Adolescence ............................................................................................. 9

C. Age of Onset ...................................................................................................................... 10

D. Potential Risk Factors to Psychopathy ........................................................................... 11

E. Investigating Developmental Correlates of Psychopathy: Existing Approaches ............ 17

1. The Retrospective Approach .............................................................................................. 17

2. Identifying a “Psychopathic” Juvenile Subgroup ............................................................... 23

3. Assessment of Psychopathy in Children ......................................................................... 28

**II. STUDY 1** ......................................................................................................................... 36

A. Purpose of the Research .................................................................................................... 36

B. Method ................................................................................................................................ 37

1. Subjects ................................................................................................................................ 37

2. Procedure ............................................................................................................................ 39
LIST OF TABLES

1: Items in the Hare Psychopathy Checklist-Revised ........................................... 5
2: Items in the Psychopathy Screening Device ....................................................... 30
3: Correlations Between PCL:YV Scores and Demographic and Criminal-History Variables .............................................................................................................. 45
4: Correlations Between PCL:YV Scores and Adolescent and Parental Background Characteristics ................................................................................................. 47
5: Standardized Beta Coefficients for Multiple Regression Analyses Predicting PCL:YV Scores Using Background Characteristics .................................................................. 49
6: Background Variables as a Function of Psychopathy Group .................................. 51
7: Correlations Between PCL:YV Scores and Measures of Background Variables ................................................................................................................. 66
8: Standardized Beta Coefficients for Multiple Regression Analyses Predicting PCL:YV Scores Using Background Characteristics .................................................................. 68
9: Background Variables as a Function of Psychopathy Group .................................. 70
10: Concurrent Validity of the Psychopathy Screening Device (PSD): Correlations with PCL:YV Scores ........................................................................................................ 72
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I dedicate this thesis to Eric.
I. INTRODUCTION

A growing body of research indicates that among conduct-disordered children and adolescents distinct types or subgroups emerge that may be differentiated in terms of child characteristics (American Psychiatric Association, 1980, 1987; Faraone, Biederman, Chen, Milberger, Warburton, & Tsuang, 1995; Frick et al., 1993; Quay, 1987), developmental sequence of problem behaviour (Loeber, 1988, 1990), and prognosis (Kratzer & Hodgins, 1997; Farrington, 1991; Moffitt, 1990, 1993; Nagin, Farrington, & Moffitt, 1995). Additional evidence indicates that such conduct-disordered subgroups are differentially associated with patterns of developmental precursors and family variables (Faraone et al., 1995; Frick, Lahey, Loeber, Stouthamer-Loeber, Christ, & Hanson, 1992; Lahey, Piacentini, McBurnett, Stone, Hartdagen, & Hynd, 1988; Loeber, Lahey, & Thomas, 1991; Moffitt, 1990, 1993; O'Donnell, Hawkins, & Abbott, 1995). Together, a picture emerges of distinct developmental pathways or trajectories that are linked to unique outcomes among delinquent youths. These findings suggest that factors that may "cause", influence, or maintain antisocial behaviour differ among behaviourally-disordered subgroups. Overall, such a developmental approach has important implications, not only for the early identification of those at risk for poor prognosis but also for the focus of intervention programs in that risk factors specific to high risk groups can be targeted for treatment (Lochman & The Conduct Problems Prevention Research Group, 1995; Tolan, Guerra, & Kendall, 1995; O'Donnell et al., 1995). From this perspective, identifying risk markers that are potentially mutable is especially useful for intervention efforts (Lochman et al., 1995). Such factors can include poor parental
monitoring, inconsistent parental discipline, and/or harsh and abusive parenting, all of which are associated with risk for persistent, adolescent antisocial behaviour (Loeber & Stouthamer-Loeber, 1986; Farrington, 1991; Rivera & Widom, 1990).

A central premise of the current work is that this developmental approach to identifying and dealing with delinquent subgroups could profitably be applied to the study of a particular subgroup of adolescent offenders characterized by the personality traits that define psychopathy. There is now considerable evidence that suggests that psychopaths represent a unique subgroup among offenders, one associated with serious and persistent violent offending and poor treatment prognosis (for reviews, see Hare, 1991, 1996; Hare, Forth, & Strachan, 1992; Hart & Hare, 1997). Despite the wealth of information generated on psychopathy in adults and adolescents, little is known about its developmental nature. Presumably, like other subgroups of delinquents, there are early risk factors and correlates, and perhaps a distinct developmental pathway, uniquely associated with this subgroup. Ultimately, knowledge of such developmental risk factors, particularly those that can be targeted for treatment, would enhance our ability to deal with the serious problem of psychopathy.

The primary goal of this thesis is to assess the extent to which adolescent psychopathy is associated with parenting strategies, a history of abuse, and parental antisocial characteristics, variables that the literature suggests are risk factors to psychopathy. A secondary goal is to evaluate a hypothesis proposed by Lynam (1996, 1997) that adult psychopathy is preceded by comorbid symptoms of attention-deficit hyperactivity disorder and conduct disorder. Finally, the concurrent validity of a measure used to assess psychopathy in children, the Psychopathy Screening Device, will be
examined. This paper begins with a review and evaluation of existing research relevant to developmental aspects of psychopathy. Specifically, the review will include attempts to (a) identify developmental correlates of psychopathy retrospectively from the study of adults and adolescents, (b) developmentally link the disorder to a known subgroup of delinquents whose developmental trajectory has been reasonably well established, and (c) directly identify psychopathy in children. I will then outline an approach to delineating a developmental trajectory to psychopathy.

A. Psychopathy in Adulthood

Psychopathy is a serious personality disorder defined by a constellation of affective, behavioural and interpersonal traits. As described by Cleckley (1976) and Hare (1991) individuals with this disorder are superficially charming, egocentric, grandiose, manipulative and deceitful. Their behaviour is characterized by a profound degree of behavioural and emotional dyscontrol, such that they exhibit chronic patterns of impulsivity, quick-temperedness and aggression. They have a high need for stimulation and, therefore, engage in sensation seeking and reckless behaviour. They demonstrate a general poverty of emotions, and their affective bonds are superficial and unenduring. Central to the disorder is a lack of empathy, guilt, or genuine feeling for others. Overall, psychopaths demonstrate a callous disregard for the rights and feelings of others, and a propensity for violating social norms and laws.
The most widely accepted measure of psychopathy is the Psychopathy Checklist-Revised (PCL-R; Hare, 1991). The PCL-R\(^1\) is a 20-item construct rating scale designed to be employed only by clinicians trained in its use. Each item consists of a detailed and lengthy description, typically including several exemplars of the construct. The extent to which each item is characteristic of an individual is scored on a 3-point scale. Assessments are based on a semi-structured interview with the target individual as well as on extensive case-history and collateral information. A considerable body of literature attests to the reliability and validity of this measure in both male and female populations (for reviews, see Hare, 1991; Hare, Cooke, & Hart, in press; Hare et al., 1992).

One important aspect of the PCL-R is its factor structure. Factor analyses reveal two distinct but correlated factors: Factor 1 reflects interpersonal and affective characteristics, such as superficial charm, absence of remorse, callousness, egocentricity, and manipulativeness. Factor 2 represents behavioural characteristics associated with a chronically unstable and antisocial lifestyle (Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990; Harpur, Hakstian, & Hare, 1988). Additional research provides evidence for the discriminant validity of the two factors (Harpur, Hare, & Hakstian, 1989). For example, Factor 1 correlates negatively with self-report measures of anxiety and empathy, and positively with measures of narcissism. Factor 2 correlates negatively with socioeconomic status (SES) and IQ and positively with self-reported sensation-seeking. PCL-R items and factor loadings are presented in Table 1.

The relationship between psychopathy and criminal offending has garnered a growing interest over the past decade, particularly from researchers working within the

\(^1\) I will discuss the PCL-R, its psychometric properties and association with other variables in some detail as they are relevant to the validity of measures of psychopathy in children addressed later in the paper.
Table 1

Items in the Hare Psychopathy Checklist-Revised

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Glibness/Superficial Charm</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Grandiose</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Need for Stimulation/Proneness to Boredom</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Pathological Lying</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Conning/Manipulative</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>Lack of Remorse or Guilt</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Shallow Affect</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>Callous/Lack of Empathy</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>Parasitic Lifestyle</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>Poor Behavioral Controls</td>
<td>2</td>
</tr>
<tr>
<td>11.</td>
<td>Promiscuous Sexual Behavior</td>
<td>--</td>
</tr>
<tr>
<td>12.</td>
<td>Early Behavior Problems</td>
<td>2</td>
</tr>
<tr>
<td>13.</td>
<td>Lack of Realistic Long-Term Goals</td>
<td>2</td>
</tr>
<tr>
<td>14.</td>
<td>Impulsivity</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Irresponsibility</td>
<td>2</td>
</tr>
<tr>
<td>16.</td>
<td>Failure to Accept Responsibility for Own Actions</td>
<td>2</td>
</tr>
<tr>
<td>17.</td>
<td>Many Short-Term Marital Relationships</td>
<td>--</td>
</tr>
<tr>
<td>18.</td>
<td>Juvenile Delinquency</td>
<td>2</td>
</tr>
<tr>
<td>19.</td>
<td>Revocation of Conditional Release</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>Criminal Versatility</td>
<td>--</td>
</tr>
</tbody>
</table>
criminal justice system. Research suggests that approximately 15-25% of incarcerated adult offenders meet the criteria for psychopathy (Hare, 1991; Hart & Hare, 1997). Compared with other offenders, psychopaths are significantly more violent, prolific and versatile in their offending (Hare, 1991; Hare, McPherson, & Forth, 1988). Predictive studies show that they are more likely to reoffend after release from prison, and to reoffend sooner, than are other offenders (Hart, Kropp, & Hare, 1988; Hemphill, Templeman, Wong, & Hare, 1998; Rice, Harris, & Cormier, 1992; Serin & Amos, 1995). Despite the fact that most of the research has been conducted with male offenders, there is some evidence that the criminal and antisocial activities of psychopathic female offenders are much like those of their male counterparts (for reviews, see Hare et al., in press; Hemphill et al., 1998).

Although there is a strong relationship between psychopathy and criminality, it is important to remember that psychopathy is conceptualized principally in terms of personality traits and that it is not synonymous with antisocial behaviour (Cleckley, 1976). This point is illustrated by the relationship between psychopathy and antisocial personality disorder (ASPD), as defined in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). The criteria for ASPD are based primarily on a list of antisocial, criminal, or delinquent behaviours, with relatively little emphasis on personality characteristics. Within prison populations, as many as 80% of adult males meet the criteria for ASPD; however of those who meet these criteria only 15-30% meet the criteria for psychopathy (Hare, 1985; Hare et al., 1991). Given that most inmates meet the criteria for ASPD it is
not surprising that it has less predictive validity than the PCL-R (Hare, 1991; Hare et al., 1988).

Among those who engage in criminal behaviour, those defined by a psychopathic personality structure represent a small and particularly severe subgroup of criminals. Cross-sectional research indicates that the core personality features of psychopathy remain stable across the adult life span, and that psychopaths tend to commit violent crimes at a higher rate across the lifespan than do nonpsychopaths (Harpur & Hare, 1994). It appears likely that the personality structure of the psychopath contributes to the stability of the disorder and to the maintenance of its association with repeat and violent offending.

Given the enormous costs exacted from society by this small subgroup of individuals, the need to develop effective treatment programs to deal with their behaviour is paramount. Recent research suggests that by the time psychopaths reach adulthood they are relatively resistant to treatment efforts. For example, Ogloff, Wong, and Greenwood (1990) assessed psychopathy and treatment-related variables in 80 offenders who volunteered to attend a therapeutic treatment program in a correctional facility. Results indicated that those who met the PCL-R criteria for psychopathy were more likely to terminate treatment early or to be ejected for security reasons than were those who did not meet the criteria for psychopathy. In addition, psychopaths received lower ratings of treatment motivation from treatment providers than did other offenders.

Rice et al. (1992) assessed outcome variables in 176 males who participated in a treatment program in a psychiatric forensic hospital, and 146 untreated offender controls. All subjects were assigned to high and low psychopathy groups on the basis of their PCL-
R scores. The treated psychopaths were involved in higher rates of misbehaviour during treatment than were treated nonpsychopaths. In order to assess post-treatment reoffending, criminal records were obtained for patients and controls an average of 10.5 years later. Although the treated and untreated psychopaths did not differ with respect to their likelihood of committing a nonviolent offence (87% and 90%, respectively), when rates for violent recidivism were compared, a significant and sobering finding emerged: Treated psychopaths were more likely to commit a violent crime following release than were nontreated psychopaths (77% and 55%, respectively). In comparison, nonpsychopaths who received treatment were less likely than untreated nonpsychopaths to commit a nonviolent offence (44% and 58%, respectively); and less likely to commit a violent offence (22% and 39%, respectively). Thus, while treatment had a beneficial effect for nonpsychopaths, it appears to have had a harmful effect for psychopaths.

There is now considerable evidence that psychopathic offenders form a unique and homogeneous subgroup, not simply with respect to their pattern of offending and amenability to treatment, but also in terms of their performance on a variety of laboratory tasks. Psychopaths have been reliably differentiated from other offenders in terms of a number of psychophysiological (for reviews, see Hare, 1998; Lykken, 1995), performance (Newman & Wallace, 1993; Newman & Kosson, 1986; Newman, Kosson, & Patterson, 1992; Newman, Patterson, & Kosson, 1987), and linguistic measures (Gillstrom & Hare, 1988; Hare, 1998; Williamson, Harpur, & Hare, 1991). Together, these results suggest that psychopaths display abnormalities in cognitive functions involving attention and impulse control as well as in the processing of affect and language (Hare, 1988; Harpur & Hare, 1994).
B. Psychopathy in Adolescence

The expression of psychopathy in adolescence, as operationalized by the PCL-R, has been shown to be remarkably similar to that in adulthood (Brandt, Kennedy, Patrick, & Curtin, 1997; Forth, 1995; Forth, Hart, & Hare, 1990; Toupin, Mercier, Déry, Côté, & Hodgins, 1996). Brandt et al. (1997) used the PCL-R to assess psychopathy in a sample of 130 delinquent males aged 14 to 18 years. They found that adolescent psychopathy was positively related to number of previous offences and recidivism, but unrelated to intelligence, results similar to those obtained in adult samples (Hare, 1991; Harpur et al., 1989). In a sample of 75 young offenders aged 13 to 20, Forth et al. (1990) found adolescent psychopathy was positively associated with number of conduct disorder symptoms, number of previous violent offences, and violent recidivism, but unrelated to SES. In addition, Toupin et al. (1996) administered a French translation of the PCL-R to 52 adolescents undergoing treatment in community settings. All subjects met the criteria for conduct disorder. Eighty-one percent of the sample were followed up over a one year period. Toupin et al. found that PCL-R scores predicted delinquency, aggressive behaviour, alcohol use, and number of aggressive conduct disorder symptoms as assessed by self-report at follow up. Across studies, factor analyses of adolescent PCL-R scores yielded a two-factor structure comparable to that obtained in adult samples (Brand et al., 1997; Forth, 1995; Forth et al., 1990; Toupin et al., 1996). Overall, PCL-R ratings of adolescent offenders showed psychometric properties and relationships with criterion
variables that mirrored those found in studies of incarcerated adults. These studies indicate that the psychopathy can be reliably and validly assessed in adolescence.

The extent to which psychopathy is associated with moral reasoning has also been investigated in adolescents. Trevethan and Walker (1989) assessed moral reasoning in 14 psychopaths, 15 delinquents, and 15 nondelinquent controls. Moral reasoning was scored on the basis of Kohlberg's hypothetical moral dilemmas and a subject-generated real-life dilemma. Psychopaths did not differ from other offenders with respect to moral reasoning scores. However, when real-life dilemmas were discussed, they were more likely to focus on self-related issues than were other offenders.

C. Age of Onset

It is widely believed that psychopathy is manifested at a young age (Hare, 1991; Hart & Hare, 1997). The inclusion of early behaviour problems (before age 12) as a criterion for psychopathy reflects that belief, and significant correlations between that criterion and Total PCL-R scores provide evidence for the relationship (Hare, 1991). With respect to the relationship between psychopathy and onset of criminal behaviour in young offenders, a negative association exists between PCL-R scores and age at first arrest (Brandt et al., 1997) and between PCL-R scores and self-reported age of onset for violent and nonviolent offending (Forth, 1995). For example, Forth (1995) found that young offenders scoring high on the PCL-R reported an age of onset of 9 years for nonviolent and 12 years for violent offending, compared to low scorers who reported onset at ages 12 and 14 years, respectively.
Although these results suggest that adolescent and adult psychopathy are associated with early behaviour problems and an early onset of offending, they cannot be taken as evidence that the core features of psychopathy are also manifested at an early age. The extent to which childhood antisocial behaviour is linked to corresponding psychopathic personality characteristics in the development of those who manifest psychopathy as adults is unknown. Indeed, the manner in which psychopathy is expressed in early childhood, or if it is expressed at all, remains a key question (which will be discussed later in this paper). Two studies to date report information relevant to the relationship between psychopathy and age in adolescents. Both studies (Brandt et al., 1997; Forth et al., 1990) report a negative but nonsignificant relationship between Total PCL-R scores and age at time of assessment; however, Brand et al., report a significant negative relationship between age and Factor 2. The latter result is not surprising given that Brandt et al.'s sample was comprised of severely delinquent, repeat offenders, and that the younger members of their sample were likely to have been particularly deviant, as compared to other individuals in their early adolescence. These findings suggest that, among adolescents, psychopathy and age are not positively related. That is, both younger and older adolescents expressed both the behavioural and personality characteristics of psychopathy. This finding is important as it provides some support for the validity of the construct of psychopathy in younger adolescents.

D. Potential Risk Factors to Psychopathy
Prior to considering potential risk factors to psychopathy, a discussion regarding the nature and implication of risk factors in general is warranted. The term “risk factor” refers to earlier events or conditions that are associated with a negative outcome. The term does not apply only to early factors that cause an outcome, but also to those that influence an outcome (Loeber & Stouthamer-Loeber, 1996; Lochman et al., 1995). From this perspective, factors that mediate other processes within the individual or environment, which in turn may be causally linked to a negative outcome, are also important risk factors. It is widely acknowledged that understanding early antecedents of serious antisocial behaviour is central to timely intervention of those at risk for such behaviour (Kazdin, 1987; Lochman et al., 1995; Loeber et al., 1991; O'Donnell et al., 1995; Tolan et al., 1995). Research suggests that the stability of disruptive behaviour increases with age (Loeber, 1982; Loeber et al., 1991) and that risk is cumulative, in that the pathway to severe antisocial behaviour involves a progressive “stacking” of problem behaviours and conditions (Loeber & Stouthamer-Loeber, 1996). Therefore, interventions aimed at reducing antisocial outcomes should be provided early, before patterns of behaviour and interactions have become entrenched and resistant to change (Loeber et al., 1991; Moffitt, 1990; Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995).

Risk factors can be characterized as dynamic (changeable) or static (less changeable) (Atkinson, Kropp, Laws, & Hart, 1995). Both are useful for early identification and prediction; however, dynamic risk factors have special relevance for the focus of treatment efforts (Kazdin, 1987; Lochman et al., 1995; Tolan et al., 1995). For example, the knowledge that early childhood aggression is highly predictive of adolescent
offending (Farrington, 1991; Loeber, 1988) is useful, in that children at risk can be targeted for treatment at an early age and, perhaps, the course toward adolescent offending can be interrupted. However, the aggressive behaviour itself may be less modifiable than other factors known to predict adolescent delinquency. For example, factors such as harsh and inconsistent parenting, poor parental monitoring, and lack of parental warmth are all associated with early aggression and adolescent delinquency (Haapasalo & Tremblay, 1994; Loeber & Stouthamer-Loeber, 1986). As previously mentioned, such factors are potentially mutable through treatment and thus are especially useful. Indeed, a number of studies attest to the effectiveness of parenting programs in preventing the escalation of antisocial behaviour in aggressive youths (see Kazdin, 1987).

Despite the abundance of research on psychopathy in adulthood, little is known about developmental antecedents or risk factors of the disorder. A review of the literature reveals that speculation regarding the developmental precursors of psychopathy has far outpaced the empirical data. Factors such as early physical and emotional abuse (Jenkins & Hewitt, 1944; Hodge, 1992; Meloy, 1988; Porter, 1996), parental pathology (Trasler, 1987), hyperactivity (af Klinteberg, 1988; af Klinteberg, Andersson, Magnusson, & Stattin, 1993; Lynam, 1996, 1997; Robins, 1966; Trasler, 1987), and poor parenting (Lykken, 1995; McCord & McCord, 1964; Robins, 1966) have all been suggested as potential risk factors to psychopathy in adulthood. These assumptions are reasonable, given that research implicates such background characteristics as risk factors to violent and chronic offending (Farrington, 1991; Loeber & Stouthamer-Loeber, 1986; Moffitt, 1990; Rivera & Widom, 1990; Robins, 1966; Widom, 1989), forms of offending that are also associated with psychopathy.
However, the putative relationship between psychopathy and adverse family background is a controversial one. Cleckley, who has provided one of the most comprehensive and influential descriptions of the psychopath, stresses: "I do not believe obvious mistreatment or any simple egregious parental errors can justifiably be held as the regular cause of a child's developing this complex disorder" (Cleckley, 1976, p. 24). Other researchers similarly claim that there is no substantial evidence to indicate that the core features of adult psychopathy are related to any traumatic experience or to any particular type of family background (Hare, 1970, 1980; Harpur et al., 1989).

Hare (1993) and others (Forth and Burke, 1998; Lykken, 1995) suggest that, as with other personality disorders, a large component of psychopathy is likely to be associated with genetic factors. Support for this hypothesis comes from a recent twin study in which personality and behavioural characteristics associated with psychopathy were found to have heritability estimates in the 40-60% range, indicating a significant genetic component (Livesley, 1998). A genetic component for offending, particularly nonviolent offending, has also been consistently demonstrated (for review, see DiLalla & Gottesman, 1989). However, the fact that psychopathy is, in part, genetically mediated also points to the likelihood of existing environmental risk factors to the disorder. That is, parents who are psychopathic are likely to behave in a volatile, irresponsible, or at least indifferent manner toward their children. A high prevalence of psychopathic and antisocial features in parents of children with similar features would, therefore, likely result in a positive relationship between psychopathy and a history of poor parenting and physical abuse (cf. DiLalla & Gottesman, 1989). The possible confound of genetic and environmental
factors underscores the position that risk factors, such as a history of poor parenting or abuse, are not necessarily causal factors.

The current state of knowledge affords little resolution to the controversy and speculation surrounding developmental aspects of psychopathy. The problem of how to answer such questions becomes equally compelling. One possible approach comes from the developmental literature regarding pathways to delinquency. A number of longitudinal studies demonstrate that different subgroups of delinquents have distinct developmental correlates and trajectories (Loeber, 1990; Moffitt, 1990, 1993). However, meaningful differences between groups become apparent only when they are studied over time, and when childhood data are considered. Thus, researchers (Loeber & Farrington, 1994; Loeber & Stouthamer-Loeber, 1996; Moffitt, 1990; Rivera & Widom, 1990) argue that attempts to examine developmental pathways that discriminate among subtypes of offenders are best served by a longitudinal design. From this approach, high risk children could be followed throughout childhood and those who go on to manifest psychopathy could be differentiated from other subgroups by their adolescent PCL-R scores. The primary problem with this approach lies in identifying the small, discrete subgroup of children who are at risk for developing psychopathy. In fact, identifying children at risk for any sort of delinquency is difficult. For example, White, Moffitt, Earls, Robins and Silva (1990) found that of 209 preschoolers designated as high risk for antisocial behaviour, only 15% evidenced such behaviour at age 11. Similarly, Loeber and Dishion (1983) reported that as few as 30% of boys who engaged in aggressive behaviour at ages 4 through 11 continued to demonstrate the same behaviour 4 to 9 years later. Tremblay et al. (1995) identified a group of 246 kindergarten children who were rated by their
teachers as highly disruptive. Of those identified, however, only 6.7% were later convicted of a criminal offence between the ages of 12 and 15.

The possibility of identifying a group of children in later childhood who may be at risk for psychopathy, or even for severe adolescent delinquency, is no more promising. For example, even if a conservative criterion of CD is used to designate a high risk group, a failure to capture any children who go on the manifest psychopathy in adulthood may still result (McBurnett & Pfiffner, 1998). The problem is that the prevalence of CD is fairly high. Estimates of the disorder range from 6 to 16% in males, and 2% to 9% in females under the age of 18 (American Psychiatric Association, 1994). In addition, CD is only moderately persistent and, of children diagnosed with the disorder, only 50% qualify for a diagnosis when reassessed at a later date (see Lahey et al., 1995). Given that the prevalence of ASPD is estimated at only 3% in adult males (American Psychiatric Association, 1994), and the prevalence of psychopathy in that population is substantially lower (as discussed previously), it is unlikely that CD would prove to be a sufficiently powerful criterion for identifying children at risk for psychopathy. Another possibility, which will be addressed later in some detail, is that children with comorbid symptoms of CD and attention deficit hyperactivity disorder may represent an increased risk for psychopathy. However, researchers (Lynam, 1996; McBurnett & Pfiffner, 1998) have only recently begun to explore this hypothesis. Information to date is insufficient to warrant longitudinal studies which, according to Rutter (1994) are "expensive, time consuming, and need to be reserved for circumstances when their considerable research power can be used to maximum advantage and not wasted on exploratory investigative forays into new territories" (p. 928).
E. Investigating Developmental Correlates of Psychopathy: Existing Approaches

In order to circumvent the cost and effort associated with a longitudinal design, researchers have employed a variety of approaches to investigate the developmental correlates of psychopathy. In this section I will review and evaluate the existing approaches.

1. The Retrospective Approach

To date four studies have examined the relationship between psychopathy and family variables using a retrospective self-report design. Hare et al. (1988) assessed psychopathy and quality of family background in 315 male adult offenders. Results indicated that a diagnosis of psychopathy was not related to global assessments of "poor" or "good" family background. They did find, however, that "poor" family background was associated with early age of onset for criminal offending in nonpsychopaths, but not in psychopaths.

DeVita, Forth, and Hare (1990) assessed the relationship between psychopathy and a variety of family variables in 107 male adult inmates. Institutional files were used to assess background variables including parental rejection, lack of supervision, physical punishment, verbal abuse, parental criminality, parental substance abuse, and marital discord. Among the individual variables, only a lack of supervision and parental rejection were associated with a diagnosis of psychopathy. However, when variables were
collapsed to form a composite score of family background, the Hare et al. (1988) findings were replicated. That is, a diagnosis of psychopathy was not related to global quality of family background. Overall, nonpsychopaths from a poor family background committed their first offence at a younger age than did those from a “fair” family background, but quality of family background was not related to early emergence of criminal behaviour in psychopaths. However, when only violent offences were considered the data revealed an interesting trend. Psychopaths from a poor family background were more likely to have committed a violent offence than were those from a “fair” background (73% vs. 39%, respectively). For nonpsychopaths, those from a poor family background were no more likely to commit a violent offence than those from a more stable background (33% vs. 20%, respectively).

Marshall and Cooke (1996) assessed the relationship between psychopathy and self-reports of early childhood experiences and parenting in a Scottish inmate sample of 50 psychopaths and 55 nonpsychopaths. Subjects were interviewed using questions from The Childhood Experience of Care and Abuse interview (Bifulco, Brown, & Harris, 1994). This measure assesses a number of variables including parental rejection, neglect, poor supervision and discipline, discord in the home, physical and sexual abuse. Overall, parental rejection, poor supervision and discipline, and poor school experience were positively associated with Total PCL-R scores. Regression analyses showed that PCL-R Factor 1 (interpersonal/affective) was strongly associated with self-reported history of poor discipline and physical abuse; whereas Factor 2 (social deviance) was related only to poor school experience.
Forth (1995) investigated the relationship between family factors and psychopathy in a male sample of 106 young offenders and 50 adolescent community controls. Subjects were assessed with a semi-structured interview designed to measure a variety of childhood experiences and family background variables. In total 16 background variables were assessed. These variables were as follows: four indices of childhood maltreatment (physical, sexual, and emotional abuse and neglect); six parental characteristics (physical discord, verbal discord, antisocial attitudes, psychiatric history, criminal history, and alcohol history); and six other environmental factors (inconsistent discipline, lack of supervision, physical punishment; early parental separation, broken home, and criminal siblings). All variables were coded as either present or absent. Results for the entire sample indicated that psychopathy in adolescents was positively related to parental antisocial attitudes, inconsistent discipline, physical punishment, early childhood separation, and having come from a broken home. However, when only young offenders were considered, comparisons between those with high PCL-R scores and those with low scores (excluding a middle group) revealed a significant difference only for parental alcohol abuse. Comparisons with the other 15 variables did not reach significance. The authors then collapsed all 16 dichotomous variables to form a single global rating of poor family background. Again, when the entire sample was considered, global ratings were positively associated with PCL-R Total and both Factor scores. When only young offenders were considered, poor family background was associated with PCL-R Total and Factor 2 scores, but not with Factor 1 scores.²

² The data were later reanalyzed, resulting in somewhat different findings (Forth & Burke, 1998).
Overall, studies using a retrospective approach to assess background factors in psychopathy have yielded mixed results. Explanations for discrepancies among findings have not been addressed by the authors to date. Across studies it appears that when family background ratings were based on interview information (Forth, 1995; Marshall & Cook, 1996) a stronger association between family factors and psychopathy was obtained than when family background ratings were based on file information (Devita et al., 1990; Hare et al., 1988). Possibly, an interview format increases the amount of information available, such that the power to detect differences between groups is increased. It is also possible that psychopaths, who are prone to “pathological lying” by definition, may be more motivated to falsely claim that they experienced a difficult childhood in a research interview, in which the research topic may be more or less obvious to them, than during general prison intake interview (which contributes to the information used in file reviews).

In addition, psychopathy and adverse family factors were more strongly associated in samples with relatively low PCL-R scores, than in those with higher scores (Devita et al., 1990; Hare et al., 1988). In this regard, psychopathy scores in the Scottish sample (Marshall & Cooke, 1996) and Forth’s (1995) adolescent sample were notably lower than those in the other samples (which consisted of highly criminal individuals). Possibly, differences between studies are due to sample differences in base rates and variability of adverse family characteristics. That is, groups that are more criminal may have been exposed to higher levels of family adversity than those who are less criminal. If so, research in highly criminal populations may not reveal differences between

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³ Mean scores out of a possible 40 for the Scottish and combined adolescent samples were 20.5 and 19.03, respectively, while mean scores for the other two samples fell above 24.
psychopathy groups due to a restricted range or a ceiling effect for poor family
background within the sample. Some support for this hypothesis comes from studies that
demonstrate a relationship between early abuse or neglect and later criminality (see
Widom, 1989). For example, results from a large scale study, indicated that individuals
with a documented history of abuse or neglect (n = 908) had an earlier onset of criminal
offending, were more likely to be chronic violent offenders in adolescence, and had
substantially higher rates of violent offending in general, than did a matched group of
individuals with no history of abuse or neglect (n = 667) (Rivera & Widom, 1990). Other
research has found that base rates of physical abuse in delinquent samples are as high as
60 percent (Geller & Ford-Somma, 1984; Lewis, Shanok, Pincus, & Glaser, 1979, cited
in Widom, 1989). In addition, in the Forth (1995) study, the community sample was
significantly less likely to have been exposed to 15 of 16 negative family factors than
were the young offenders. Unfortunately information regarding sample base rates of
adverse family factors was not available for the other studies.

Part of the difficulty in interpreting the results of these studies is that they have been
based primarily on unsubstantiated retrospective reports. This is true of both the
interview-based studies and the file review-based studies, in that file information is
primarily based on offender self-report at intake. The validity and reliability of this
method in general (Brewin, Andrews, & Gotlib, 1993; Halverson, 1988; Lewinsohn &
Rosenbaum, 1987) and specifically with respect to self-reports of offenders, have been
widely questioned (Weis, 1986; Widom, 1989). Retrospective data are subject to both
intentional and unintentional distortion (Widom, 1989). In general, accuracy of
autobiographical memory is a function of the amount of time between event and recall
(Blumstein, Cohen, Roth, & Visher, 1986; Weis, 1986) as well as current mood
(Gerlsman, Emmelkamp, & Arrindell, 1990; Teasdale, Taylor, & Fogarty, 1980). For
example, subjects in an induced "elated" mood have been found to recall more pleasant
memories than do those in whom a "depressed mood" has been induced (Teasdale et al.,
1980). Such a bias is particularly relevant to retrospective reports provided by offenders
who may interpret their developmental history from the context of their current
incarceration.

The validity of retrospective self-reports of offenders is also subject to more specific
concerns. Widom (1989) reviewed the literature on the relationship between childhood
physical abuse and adult offending, as assessed by retrospective report, and concluded
that the methodological limitations inherent in that method cast doubt on the findings.
One concern is that those involved with the justice system will act on the belief that they
would be regarded with sympathy and perhaps treated leniently if they falsely claim to
have survived a difficult childhood (Widom, 1989). Unfortunately, collateral information
regarding the background of adult inmates is often difficult, if not impossible, to obtain.
Sources such as institutional files are often incomplete and the type of data collected
inconsistent (Prentky, Knight, Sims-Knight, Straus, Rokous, & Cerce, 1991). Finally, in
the case of research with psychopaths, the validity of self-report data is of particular
concern given that these individuals are by definition prone to manipulation and deceit
(Hare, Forth, & Hart, 1989). As noted by Hare (1991), "lying and deceit are a
characteristic part of [the psychopath's] interactions with others... He often lies for
obvious reasons, but deceiving others also appears to have some intrinsic value for him"
Clearly, conclusions regarding the developmental backgrounds of psychopaths can not be based solely on unsubstantiated self-reports.

2. Identifying a "Psychopathic" Juvenile Subgroup

Another approach to determining risk factors to psychopathy is represented in attempts to bootstrap a known childhood disorder to the adult disorder. In this approach a potential link between the two disorders is demonstrated by showing that correlates of the childhood group map onto predictors and characteristics of the adult group. In particular, several researchers (Lynam, 1996; McBurnett & Pfiffner, 1998) have demonstrated that children characterized by the syndrome of hyperactivity, impulsivity, and attentional deficits (HIA), and comorbid conduct disorder or conduct problems (CP) are similar to psychopaths in a number of respects. This approach has the potential to be highly fruitful, as the developmental correlates of this comorbid subgroup have been, to some extent, established (Faraone et al., 1995; Frick et al., 1992; Loeber, 1990; Moffitt, 1990, 1993). In general, children with comorbid CP and HIA tend to have a poorer adolescent and adult prognosis than those with either disorder alone (Barkley, 1997; Farrington, Loeber, and Van Kammen, 1990; Moffitt, 1990). Such results are consistent with findings of prospective studies, which show that individuals who meet the criteria for CP and HIA are more likely to show persistent CP

4 Throughout successive revisions of the Diagnostic and Statistical Manual of Mental Disorders (DSM) the criteria and diagnostic labels for the syndrome of hyperactivity and attention deficit problems have changed. I will adopt the label, hyperactivity-impulsivity-attention problems (HIA), used by Lynam (1996) and Loeber (1990) to avoid specific diagnostic labels. Similarly, the label conduct problems (CP) will be used to avoid various labels such as conduct disorder and oppositional defiant disorder.
than are those with CP alone (August & Stewart, 1982; Magnusson, 1988; however, for an exception see Lahey et al., 1995). In addition, across studies, characteristics of children with a comorbid condition of CP and HIA appear to be topographically similar to those associated with psychopathy (Lynam, 1996). For example, in a review of research on empirically-derived syndromes of children's behaviour, Quay (1987) noted that an "undersocialized aggressive" CP subgroup consistently emerges. This small subgroup is characterized by HIA, aggression, poor peer relationships, and lack of empathy. In addition, as adolescents these individuals exhibit poorer treatment prognosis, higher rates of failure on conditional release, and higher rates of recidivism after release than do other disordered adolescents.

Loeber (1990) identified a similar subgroup of severe offenders, and delineated several pathways to delinquency. He discussed developmental pathways corresponding to three subtypes of offenders: the non-aggressives, the exclusive substance abusers, and the aggressive/versatiles. This latter subgroup corresponds to the undersocialized aggressives, particularly with respect to the overlap between HIA and CP, and poor prognosis. The aggressive/versatile pathway was associated with early onset of problem behaviour, HIA, aggression, poor peer relationships, and covert behaviours (such as stealing and substance abuse). In addition, their antisocial behaviour was exhibited across situations and was marked by considerable versatility. As compared to the other subgroups, the "versatile/aggressives" were more likely to develop new behaviour problems and less likely to desist.

Loeber's results were consistent with those obtained from the Cambridge Study of Delinquent Involvement (Farrington, 1991; Nagin et al., 1995; West & Farrington,
1973) in which 411 males were followed from age 8 to 32 years. In that study, serious offending in adolescence was associated with HIA, early antisocial behaviour, such as dishonesty and aggression, sensation-seeking, and poor school performance. Chronic offending in adulthood was associated with early antisocial behaviour, versatility in offending, and sensation-seeking. Those individuals who became chronic offenders as adults also had the highest rates of offending as adolescents. Farrington et al. (1990) reanalyzed the data collected at ages 8 and 10 to establish four groups; HIA-CP, CP-only, HIA-only, and nondisordered controls. As compared to the other groups, the HIA-CP group had higher rates of criminal offending across adolescence and adulthood.

Moffitt (1990) employed similar group distinctions in her longitudinal analysis of a birth cohort (n = 435) followed from age 3 to 15. Four groups were defined at the age of 13 on the basis of delinquency and HIA: HIA + delinquent, HIA-only, delinquent-only, and nondisordered. The HIA + delinquent subgroup had earlier onset of antisocial behaviour (preschool), were rated as most aggressive by teachers and parents, and were more persistent and versatile delinquents in adolescence, than were the other groups.

It is interesting to note that several studies found that the HIA and CP subgroup was also associated with familial risk factors. For example, in her prospective study Moffitt (1990) assessed family adversity, including measures of family social environment and maternal maladjustment, six times between the ages of 3 and 13 years. The HIA and delinquent subgroup had higher levels of family adversity across all age groups than did other behaviourally disordered groups and controls. In addition, results

5 With the exception of eight individuals who died prior to the age 32 follow-up.
from Farrington et al. (1990) indicate that the proportion of children who had been exposed to poor parental supervision was higher in the HIA/CP group than in the CP-only and HIA-only groups. Finally, in his review of the literature, Lynam (1996) provided evidence that those with CP and HIA were more likely to have antisocial and aggressive fathers than were those in a CP or HIA-only group. A similar trend has been reported for mothers, but the results did not reach statistical significance (Lahey et al., 1988).

Again, it is important to emphasize that such risk factors are not necessarily causal factors. It is entirely possible that poor parenting or family distress are a consequence of severely disruptive behaviour on the part of the child (Bell & Chapman, 1986; Moffitt, 1990; Pelham et al., 1997). It may be that disruptive children elicit increasingly harsh parenting, or perhaps parents become overtaxed and provide less adequate supervision. In addition, there is evidence to suggest that HIA and antisocial behaviour are to some extent genetically mediated (Faraone et. al, 1995), and similarities between parents and children would be expected.

In the studies reported above, a comorbid pattern of HIA and CP is associated with early onset of disruptive behaviour, aggression, and an offending pattern marked by versatility and persistence. The versatile/aggressive, undersocialized aggressive, and HIA/CP groups bear a striking resemblance to each other and to the adult disorder of psychopathy. In particular, the pattern of their offending appears to be topographically similar to that uniquely associated with psychopathy. As previously discussed, adults and adolescents who meet the diagnostic criteria for psychopathy have an earlier onset
of childhood problem behaviour and are more versatile, violent, and persistent in their offending as compared to other offenders.

The emphasis on HIA as a risk factor for psychopathy is consistent with the results of numerous studies, which show that psychopaths appear similar to HIA children with respect to their performance on measures of physiological and cognitive functioning. For example, both psychopaths (Newman & Kosson, 1986; Newman et al., 1992; Newman et al., 1987) and ADHD children (Iaboni, Douglas, & Baker, 1995; for review, see Barkley, 1997) perform poorly on measures of delayed gratification and response modulation, compared with appropriate control groups. One task that both groups have difficulty with is the go/no-go discrimination task. Here, subjects may be rewarded for responding to “correct” cues (numbers) and/or punished for responding to “incorrect cues”. Over time subjects learn, by trial and error, to respond to correct cues and to inhibit responding to incorrect cues. Results from such studies indicate that, under conditions of reward and punishment, individuals with HIA (Iaboni et al., 1995) and psychopaths (Newman & Kosson, 1986) have difficulty moderating their response sets.

Overall, the parallels between the CP/HIA subgroup and adult psychopaths are compelling. However, the CP/HIA subgroup has been bootstrapped to adult psychopathy primarily through the demonstration of shared behavioural characteristics. Research to date has not demonstrated a relationship between this childhood subgroup and the personality characteristics that are considered central to the construct of psychopathy in adolescence and adulthood. Thus, although comorbid CP and HIA

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6 However impaired inhibition was more generalized across conditions in HIA children than in the psychopaths.
appears to constitute a likely risk factor to psychopathy, the question of whether the syndrome represents a childhood manifestation of psychopathy per se remains an empirical question.

3. Assessment of Psychopathy in Children

A third approach to investigating developmental aspects of psychopathy is represented in attempts to directly assess in children the personality and behavioural characteristics associated with psychopathy in adults. To date, two instruments to assess psychopathy in children have been developed, each of which was modeled after the PCL-R. Frick, O'Brien, Wootton, and McBurnett (1994) developed the Psychopathy Screening Device (PSD), a 20-item rating scale to be completed by a parent or teacher. Each of the PCL-R items was translated into a simple age-appropriate statement, and the extent to which each item characterizes an individual is rated on a three point scale. Frick et al. tested the PSD in a sample of 95 clinic referred children aged 6 to 13 years. A two-factor structure, purportedly reflecting that yielded by the PCL-R, was uncovered. In this regard, a 6-item callous-unemotional (CU) factor was equated with Factor 1, and a 10-item impulsivity/conduct problems (I/CP) factor was equated with Factor 2. The items that form the two scales are listed in Table 2.

In a subsample of 64 children, Frick et al. (1994) tested associations between PSD factor scores and variables known to be associated with psychopathy in adults. Consistent with findings in the adult literature, both scales were associated with measures of delinquency and aggression. Other associations, however, were not consistent with
findings at the adult level. For example, Frick et al. found that sensation-seeking was more strongly associated with the CU factor than with the I/CP factor; however, the opposite relationship is found in the adult literature. That is, sensation-seeking is associated with Factor 2, but not Factor 1, in adults (Harpur et al., 1989). Furthermore, in the child sample, those with the highest CU and I/CP traits also had the highest IQ scores; however, studies with adults have consistently indicated no relationship between IQ and Total PCL-R scores (see Hare, 1991). Finally, Frick et al. reported that there was no relationship between SES and their I/CP factor; however, SES is associated with Factor 2 in adults (Hare, 1991). In general, it appears that the pattern of associations found with the child measure was not entirely consistent with that found across samples of adults using the PCL-R.

Despite these discrepancies, Frick et al. suggest that similarities between the PCL-R and the PSD, in terms of item content and factor structure, provide evidence for the construct validity of the PSD. However, there are critical differences between these measures that call such apparent similarities into question. First of all, the similarities between PSD items and PCL-R items appear superficial. With respect to the PCL-R, each item consists of a one-page description, including extensive and wide-ranging examples of that characteristic. In scoring the PCL-R clinicians use the item description to create a prototype of the item and then decide how closely the construct applies to an individual (Hare, 1991). In addition, prior to using the PCL-R, clinicians typically receive extensive training in the use of the instrument. Overall, this system ensures that each item is scored strictly according to operationally-defined criteria. Moreover, this method of rating discourages bias due to a global impression or “halo” effect (Hare,
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Blames others for mistakes</td>
<td>2</td>
</tr>
<tr>
<td>2. Engages in illegal activities</td>
<td>2</td>
</tr>
<tr>
<td>3. Concerned about schoolwork (I)</td>
<td>1</td>
</tr>
<tr>
<td>4. Acts without thinking</td>
<td>2</td>
</tr>
<tr>
<td>5. Emotions seem shallow and not genuine</td>
<td>1</td>
</tr>
<tr>
<td>6. Lies easily and skillfully</td>
<td>--</td>
</tr>
<tr>
<td>7. Good at keeping promises (I)</td>
<td>--</td>
</tr>
<tr>
<td>8. Brags about accomplishments</td>
<td>2</td>
</tr>
<tr>
<td>9. Gets bored easily</td>
<td>2</td>
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<tr>
<td>10. Uses or cons others</td>
<td>--</td>
</tr>
<tr>
<td>11. Teases or makes fun of others</td>
<td>2</td>
</tr>
<tr>
<td>12. Feels bad or guilty (I)</td>
<td>1</td>
</tr>
<tr>
<td>13. Engages in risky and dangerous activities</td>
<td>2</td>
</tr>
<tr>
<td>14. Acts charming in ways that seem insincere</td>
<td>1</td>
</tr>
<tr>
<td>15. Becomes angry when corrected</td>
<td>2</td>
</tr>
<tr>
<td>16. Thinks he/she is more important than others</td>
<td>2</td>
</tr>
<tr>
<td>17. Does not plan ahead</td>
<td>1</td>
</tr>
<tr>
<td>18. Is concerned about other’s feelings (I)</td>
<td>1</td>
</tr>
<tr>
<td>19. Does not show feelings or emotions</td>
<td>1</td>
</tr>
<tr>
<td>20. Keeps the same friends (I)</td>
<td>2</td>
</tr>
</tbody>
</table>

Note. (I) denotes items that are inversely scored.

a 1 denotes Callous Unemotional Traits, 2 denotes Impulsive Conduct Problems

b This item was eventually eliminated from the overall factor.
In contrast, PSD items are not anchored in operational definitions. Parents or teachers are asked to read a simple statement (e.g., "His emotions seem shallow and not genuine") and decide how well it describes the child, without the benefit of examples or descriptions. Thus, scoring is left open to idiosyncratic interpretations that may affect the validity and reliability of the measure. In fact, the relationship between teacher and parent ratings suggests that interrater agreement is very low for the CU factor ($r = .36$) and only moderate for the I/CP factor ($r = .60$).

Secondly, despite claims that a factor analysis of the PSD yielded a factor structure that closely fit that underlying the PCL-R, the factors, upon close examination, are fairly discrepant. Several items assessing personality characteristics such as grandiosity, callousness ("teases others"), and, "blames others" which are systematically associated with Factor 1 in adults, loaded on the behavioural (I/CP) factor in the child sample. Other personality related items (e.g., lying and conning) associated uniquely with Factor 1 in adults, were associated with both factors in children. Similarly, an item related to impulsivity loaded on the CU factor rather than the I/CP factor as would have been expected (and was therefore dropped).

Frick et al. (1994) speculate that discrepancies between their findings and those in the adult literature may reflect sample differences, distortion introduced by parental/teacher report, or developmental differences in the expression of psychopathy. Regardless, they state that "results of the present study provide the basis for extending a model of psychopathy to children" (p. 704). Furthermore, Frick and his colleagues have gone on to use the PSD as a measure of psychopathy in a number of studies (Frick, 1998;
Wootton, Frick, Shelton, & Silverthorn, 1997). It is interesting that in subsequent studies they have relied solely on the 6-item CU scale to designate psychopathy, an approach which is at odds with the traditional and widely accepted view of psychopathy, which encompasses both behavioural and personality characteristics (Cleckley, 1976; Harpur et al., 1989; Lilienfeld & Andrews, 1996).

More recently, Lynam (1997) introduced the Childhood Psychopathy Scale (CPS), also modeled after the PCL-R. The instrument was developed from archival measures of child behaviour and personality which had been completed by mothers as part of a large scale study of 430 boys aged 12-13 years. Specifically, items were drawn from the Child Behaviour Checklist (Achenbach, 1991) and the Common Language Q-set (Block & Block, 1980) to operationalize PCL-R constructs. A number of PCL-R constructs could not be represented due to an absence of corresponding items in the archival data set. In the end, Lynam was able to adequately operationalize 13 of the 20 PCL-R constructs, each assessed with two or more items. Archival measures of self-reported delinquency at age 10 and 13 were used to assess the relationship between the CPS and early antisocial behaviour. CPS scores were associated with aggression, serious delinquency and stable delinquency. In addition, CPS scores were positively associated with measures of impulsivity. Overall, results were consistent with those found in the adult psychopathy literature.

Lynam’s CPS offers some improvement over the PSD in that it was developed on a larger sample and uses more than one simple descriptor to characterize each psychopathy

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7 Confirmatory factor analyses revealed that the two factor structure underlying the PCL-R also fit the CPS. However, because the two factors were highly correlated, Lynam used only the total score in subsequent analyses.
construct. As Lynam points out, however, the archival nature of the data restricted the range of psychopathy constructs that could be measured, and also necessitated the use of items that did not optimally reflect PCL-R constructs. In addition, Lynam notes that the use of the archival data led to an overreliance on behavioural descriptors and underrepresented personality variables. Due to these limitations, Lynam concluded that the CPS requires refinement before it can be used more broadly.

On a more general level, the question of whether either scale constitutes a valid measure of childhood psychopathy, or indeed whether childhood precursors to psychopathy would necessarily resemble characteristics of the disorder in adulthood, remain open. Researchers in child and adolescent psychopathology agree that the presentation of disorders often changes considerably over the course of development (cf. Farrington & Loeber, 1994; Mash & Terdal, 1987; McMahon, 1994; Rutter, 1994; Rutter, Quinton, & Hill, 1990; Sroufe & Rutter, 1984). For this reason, continuity in specific forms of anxiety, affective, behavioural, or personality disorders should not be expected; rather one should look for "transformations in behavioural manifestations" (Sroufe & Rutter, 1984). Such discontinuity has critical implications for assessment, as age-appropriate measures must be tailored to target behaviours or symptoms relevant to a disorder at a given developmental period. In addition, appropriate norms are necessary to control for corresponding age-related changes in the general population. For example, there is evidence to suggest that there are significant changes in the expression of HIA symptoms from childhood to adolescence, in the course of both normal and deviant development (Mash & Terdal, 1988; McMahon, 1994). Similarly, the frequency of conduct problems is higher in children of younger ages (e.g., tantrums, lying), and these
behaviours are often not viewed as inappropriate or diagnostic unless they are expressed at older ages (Mash and Terdal, 1987). In addition, Rutter and colleagues (Rutter, 1994; Rutter et al., 1990; Quinton, Rutter, & Gulliver, 1990) note that the persistence of a disorder, such as conduct disorder, is often contingent on a variety of risk factors or experiences, and that continuities in development may be seen only when transactional effects are considered.

From this view, attempts to identify adult disorders, such as psychopathy, in children should not be undertaken without some prior understanding of the developmental expression of the disorder. What is first needed is research bridging the developmental gap between late childhood, adolescence, and adulthood. In the absence of such research, the results from studies with the PSD and the CPS are difficult to interpret. For example, it is impossible to assess whether differences in findings between Frick et al.’s child sample and those in adult samples are due to differences in samples, measurement, or age-related changes in symptomatology. Thus, attempts to explore psychopathy in children by spanning a large developmental range run the risk of substituting expediency for validity.

How then do we study developmental aspects of psychopathy? As noted, developmental changes are best observed through prospective studies; however, the low base rate of psychopathy and the paucity of knowledge regarding its developmental nature makes an approach of that kind premature. Instead, it appears that the developmental pathway to psychopathy is best constructed carefully backward in a stepwise manner from a valid sample. In this regard, the nature and validity of the disorder should be well established in one age group (i.e., adolescents), by using a
validated measure and by demonstrating shared associations with the older sample (e.g.,
similar performance on laboratory measures, correlations with external criteria), prior to
forays into younger groups. Investigations in successively (but not excessively) younger
groups should each be firmly anchored to the older group via a similar measure and
shared associations. At the same time, the PCL-R could be adapted, if necessary, to
include only developmentally relevant symptoms. The use of a single instrument would
allow for continuity between studies and cross-age comparisons and, perhaps, ultimately
a childhood measure of psychopathy could be developed.

More importantly, such an approach would enable researchers to pursue the
fundamental and compelling questions that have given rise to attempts to study
developmental aspects of psychopathy: What are the factors that cause or maintain the
disorder and how can we develop effective prevention, intervention, and treatment
programs to deal with the problem? To this end, a backward and systematic approach to
the assessment of psychopathy as it develops should be complemented by the study of
risk and protective factors. As an initial step in this approach, developmental correlates
of psychopathy in adolescents were examined in the following two studies.
II. STUDY 1

A. Purpose of the Research

The present study was designed to evaluate developmental risk factors for psychopathy in a population of adolescent offenders. An adolescent population is ideal for this purpose because: (1) the PCL-R has been adapted for use in adolescence (PCL:YV; Hare, Forth, & Kosson, 1994); and (2) the wide range of collateral contemporaneous and background information available on adolescent offenders circumvents the need to rely on retrospective self-reports. For example, simply by virtue of the fact that adolescents are subject to care by others, a multitude of caregivers (parents, social workers, teachers, and mental health workers) are able and available to provide first-hand knowledge of the adolescents' background characteristics. Such is not the case for their adult counterparts.

A number of hypotheses arising from the literature were addressed in Study 1. Institutional files of adolescent offenders, which included reports based on semi-structured interviews with parents and other collaterals, were used to retrospectively assess psychopathy, a variety of factors traditionally associated with psychopathy in adulthood, and background characteristics generally associated with poor adolescent outcome (e.g., parental and family characteristics, abuse, and adolescent characteristics). First, it was expected that adolescent psychopathy would be associated with criterion variables in a manner that parallels associations found in other studies with adults and adolescents. Specifically, it was predicted that psychopathy would be negatively
correlated with age at first arrest, and positively correlated with number of previous offences and number of violent offences. In addition, it was expected that SES and IQ would not be related to Total PCL:YV scores. Second, regarding family background variables, it was expected that psychopathy would be associated with a history of abuse and indices of parental social deviance. This hypothesis was based on the findings of longitudinal research which suggest that severe and chronic adolescent offending is systematically associated with adverse family characteristics. In addition, the likelihood that psychopathy has a large heritable component suggests that parents of psychopathic adolescents may be more violent with their children and more antisocial on average than the parents of nonpsychopathic individuals. Finally, based on research that suggests that HIA in a criminal sample constitutes a risk factor for chronic and severe offending, a positive association between a psychiatric diagnosis of HIA-related disorders and psychopathy was expected.

B. Method

1. Subjects

The initial subject pool consisted of 259 young male offenders who had been evaluated and treated in a sex offender treatment program between 1985 and 1992. This population was selected because extensive background and social history information was collected on each subject in a fairly consistent manner as part of the treatment program. In particular, parents, youth workers, social service agencies and others who had personal
experience with each subject were contacted by social workers and asked standardized questions concerning family background and upbringing. The subject pool represented a fairly heterogeneous group of general offenders, despite the fact that each had committed a sexual offence. For example 56% of the subjects had been formally charged or convicted of a non-sexual offence at the time of assessment, and the vast majority self-reported a crime other than sexual. Archival file information was used to retrospectively assess psychopathy and other study variables. In addition to extensive social history information, institutional files included psychiatric and psychological evaluations, police and victim statements, predisposition reports, criminal records, and interview, nursing and treatment notes. Files of all 259 treatment participants were reviewed. Subjects with insufficient background information, due to unavailability of parents or collaterals, were excluded from the study. This resulted in a total sample of 233 male offenders. It is important to note that the subjects included in the study and those who were not did not differ significantly in PCL:YV score, $t(257) = 1.13$, number of years living with both parents, $t(257) = 1.08$, or age at first offence, $t(257) = 0.20$.

The average age at assessment was 14.7 years (SD = 1.5 yrs.) with a range of 12-18 years. The sample consisted of 79% Caucasian, 18% Native-Canadian, and a smaller subgroup of Asian and Indo-Canadian subjects (3%). The subjects came from middle to low income households, most (70%) of which were located in urban or suburban communities. The natural parents of the majority of the subjects (66%) were divorced or separated.
This research received full approval from the Clinical Director and research committee at Youth Court Services, and the ethics committee at the University of British Columbia.

2. Procedure

Psychopathy Assessments

Psychopathy was assessed using the Psychopathy Checklist: Youth Version (PCL:YV; Hare et al., 1994), a version of the PCL-R modified for use with adolescents (cf. Forth et al., 1990). A number of studies attest to the validity and reliability of the PCL:YV (e.g., Brandt et al., 1997; Forth, 1995; Forth et al., 1990; Gretton, 1998; Toupin et al., 1996). These studies have shown that the PCL:YV has psychometric properties (including factor structure and distribution of scores) and associations with criterion variables similar to those obtained with the PCL-R in adult inmate samples. In addition, both the PCL-R (Wong, 1988) and the PCL:YV (Brandt et al., 1997; Gretton, 1988) can be completed reliably from file information, provided the information is extensive.

Each of the 20 items in the PCL-R and PCL:YV alike is scored on a 3-point scale: 2 indicates that the item definitely applies; 1 that it applies to some extent; 0 indicates that the item does not apply to the individual. The items are summed to obtain a Total score rating from 0 to 40. In addition, Factor 1 scores are obtained by summing Items 1, 2, 4, 5, 6, 7, 8, and 16; Factor 2 scores are obtained by summing Items 3, 9, 10, 12, 13, 14, 15, 18, and 19.
The following items were modified for use with adolescents. Item 17 (many short-term relationships) was expanded to include non live-in relationships. Furthermore, the scoring of Item 18 (juvenile delinquency) was revised as follows: 2 = a history of violent offences; 1 = a history of nonviolent offences; and 0 = no offences prior to age 18. Finally, because juveniles tend to have a shorter criminal history than do adults, Item 20 (criminal versatility) was scored as follows: 2 = four or more types of offences; 1 = three types; 0 = two types or less.

A total PCL:YV score of 30 or greater was used as cutoff score for a diagnosis of psychopathy. This cutoff is recommended by Hare (1991) and has been used in other samples of adolescent offenders (Brandt et al., 1997; Forth et al., 1990; Toupin et al., 1996). A subset of 47 subjects was independently double rated for the purposes of establishing reliability.

Criminal History and Family Background Variables

Criminal history, and family background data were gathered by trained graduate and fourth-year undergraduate students. With the exception of SES (see below), variables were included only if they were available for at least 80% of the subjects. Missing values were coded as not present for dichotomous variables (e.g., HIA) or replaced with sample means for continuous variables (Tabachnick & Fidell, 1989). Criminal history variables, such as age at first offence and offence types and frequencies were obtained from criminal records. Background variables were obtained primarily from the social history reports, which were based on a semi-structured interview with parents and telephone
contact with other collateral informants. Interrater reliability was assessed for SES and abuse variables, but not for other background characteristics because the relevant information was objective and easily obtained from the files.

**Abuse.** Each file was coded for a history of three types of abuse: Physical, sexual, and emotional. A history of physical abuse was conservatively defined as intentional and unnecessary physical harm, including physical punishment that resulted in bleeding or bruising, frequent pushing or grabbing, and being hit with a fist or other object. This definition did not include frequent spanking. Sexual abuse was defined as (a) the experience of unwanted sexual contact, and/or (b) sexual contact while under the age of 12 with someone at least 4 years older (cf. Worling, 1995). A history of emotional abuse was defined as chronic humiliation, name calling, bullying, and rejection from one or more caregivers. All abuse variables were coded as dichotomous variables. In addition, abuse was coded as present only on the basis of parental or collateral report and not on the basis of an adolescent offender’s self-report. In order to assess interrater reliability, this variable was independently scored by a second rater for 47 subjects. Kappa coefficients for abuse variables were all above .76, indicating very good agreement between raters.

**Parental variables.** Parental criminality, drug abuse, and alcohol abuse were dichotomous variables assessed separately for each parent. Parental criminality was defined as a history of formal charges or convictions. These variables were coded from social history reports, which were based on the parental interview, during which such topics were specifically addressed. However, information regarding parental alcohol and/or drug abuse also often was obtained from social agency reports. Each variable was
assigned a value of 0 = "not present" or 1 = "present". These variables were collapsed to form 4-point global maternal and paternal "social deviance" scores. Social deviance scores ranged from 0 = "low social deviance" to 3 = "high social deviance".

Hyperactivity-Impulsivity-Attention problems (HIA). At the time of intake, presence or absence of Attention Deficit Hyperactivity Disorder (ADHD), or Attention Deficit Disorder (ADD) in the case of those evaluated prior to 1987, was assessed by a psychiatrist. The fact that a diagnosis of Attention Deficit Disorder (ADD) was made before the advent of DSM-III-R in 1987 affects the results only to the extent that the estimates of ADD were somewhat more conservative (Barkley, 1988). Although the assessments were made by experienced clinicians, the specific basis for and reliability of individual intake diagnoses could not be established. Again, in order to avoid the use of specific diagnostic labels, both disorders will be referred to as HIA for the present purposes.

Socioeconomic status (SES). The SES of each subject’s caretaker(s) was scored according to the Hollingshead two-factor index of social position. This index takes into account both the caretakers’ occupation and education. If a subject was from a two-parent household, the scores of the two parents were averaged; if the household consisted only of one parent, that parent’s score was used. Unfortunately, questions about SES were not incorporated into the social history interview. As a result, SES could be calculated for less than half of the subjects (n=107). However, subjects for whom SES could be calculated did not differ significantly from the rest of the sample with respect to PCL:YV scores, t (231) = < 1. In order to assess interrater reliability, this variable was
independently scored by a second rater for 56 subjects. Reliabilities for single ratings (ICC₁ = .93) and double ratings (ICC₂ = .98) were very high.

IQ. I.Q. was assessed by trained psychometricians at the beginning of the treatment program. Depending on the subject's age at assessment, either full scale scores from the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1972) or the Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981) were employed.

Criminal history variables. Criminal offence variables were coded by offence type: nonviolent, violent, and sexual. For the purposes of the present research only official charges and convictions, and not self-admitted offences, were considered. Nonviolent offences included all thefts, drug offences, major driving offences, fraud, escape, obstruction of justice (e.g., resisting arrest), arson, and vandalism. Violent offences included assault, threatening, and robbery. Sexual offences included rape, sexual interference, and the like. A criminal versatility score was computed by assigning values of 1 = present and 0 = not present to each of the three types of offences and then summing across offence types.

C. RESULTS

Psychopathy

Interrater reliability for the PCL:YV was assessed by computing intraclass correlation coefficients (Shrout & Fleiss, 1979). Reliabilities for single ratings (ICC₁ = .82) and
double ratings ($ICC_2 = .91$) were high. The Kappa coefficient for psychopathy group classifications was .81, indicating excellent agreement. Internal consistency was assessed by Cronbach's alpha and the mean item-total correlation. Cronbach's alpha for the PCL:YV ratings was .84. The mean item-total correlation was .46. Indices of internal consistency for the present sample were comparable to values reported in other samples (e.g., Hare, 1991) and are well within acceptable limits. PCL:YV scores ranged from 5 to 37, with a mean of 21.4 ($SD = 7.3$). The mean of the sample was lower than that reported in samples of incarcerated adults (Hare, 1991) and adolescents (Brandt et al., 1997; Forth et al., 1990), but higher than that reported in a sample of nonincarcerated conduct-disordered adolescents (Toupin et al., 1996). The Total PCL:YV scores of Caucasians ($M = 21.7, n = 182$) did not differ significantly from those of Native Canadians ($M = 20.7, n = 42$), $t(222) < 1$.

Demographic and Criminal Variables

The relationship between psychopathy scores and demographic and criminal history variables was assessed by examining Pearson correlations (Table 3). The younger the subjects were at time of assessment, the higher they tended to be rated on PCL:YV Total and Factor scores, yielding significant and negative relationships for each score. Factor 2 was negatively associated with the total number of years spent with both parents. SES was not significantly associated with PCL:YV scores.

Prior to assessing the relationship between PCL:YV scores and criminal history variables, items from psychopathy Total and Factor 2 scores that appeared to overlap with
Table 3
Correlations Between PCL:YV Scores and Demographic and Criminal-History Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at assessment</td>
<td>14.72</td>
<td>1.51</td>
<td>-.19***</td>
<td>-.19***</td>
<td>-.17***</td>
</tr>
<tr>
<td>Years with both parents</td>
<td>9.18</td>
<td>5.56</td>
<td>-.12</td>
<td>-.04</td>
<td>-.18**</td>
</tr>
<tr>
<td>SES (n=107)</td>
<td>30.47</td>
<td>11.31</td>
<td>.09</td>
<td>.15</td>
<td>-.01</td>
</tr>
<tr>
<td><strong>Criminal history</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at first arrest</td>
<td>14.31</td>
<td>1.31</td>
<td>-.35***</td>
<td>-.25***</td>
<td>-.36***</td>
</tr>
<tr>
<td>No. prior nonviolent crimes</td>
<td>1.41</td>
<td>2.27</td>
<td>.33***</td>
<td>.20***</td>
<td>.30***</td>
</tr>
<tr>
<td>No. prior violent crimes(^a)</td>
<td>0.22</td>
<td>0.59</td>
<td>.26***</td>
<td>.17**</td>
<td>.22***</td>
</tr>
<tr>
<td>No. prior sexual crimes</td>
<td>1.93</td>
<td>1.74</td>
<td>.06</td>
<td>.04</td>
<td>.06</td>
</tr>
<tr>
<td>Criminal Versatility(^b)</td>
<td>1.51</td>
<td>0.77</td>
<td>.36***</td>
<td>.26***</td>
<td>.32***</td>
</tr>
</tbody>
</table>

**Note.** N = 233 unless otherwise specified. PCL:YV = Psychopathy Checklist: Youth Version; SES = socio-economic status.

\(^a\) Correlation computed after items related to violence (Items 10 and 18) were dropped from Factor 2 and Total PCL:YV scores.

\(^b\) Correlation computed after Item 20 (criminal versatility) was dropped from Total PCL:YV score.

*p < .05. **p < .01. ***p < .005.
criterion variables were omitted. Items 10 (poor behavioural control) and 18 (juvenile
delinquency) were omitted from Total PCL:YV and Factor 2 scores prior to assessing the
relationship between those scores and number of previous violent offences. Item 20
(criminal versatility) was omitted prior to assessing the relationship between PCL:YV
Total scores and the criminal versatility criterion variable. PCL:YV Total and Factor
scores were significantly and negatively associated with age at first arrest, and positively
correlated with number of prior nonviolent crimes, number of prior violent crimes, and
criminal versatility. However, virtually no relationship was found between number of
prior sexual offences and PCL:YV scores. Taken as a whole, this pattern of results was
strikingly similar to those obtained in other adolescent offender samples (e.g., Brandt et
al., 1997; Forth et al., 1990).

Background Characteristics

Correlations between PCL:YV scores and background characteristics are presented in
Table 4. Pearson correlation coefficients were calculated for continuous variables, and
biserial correlation coefficients were calculated for dichotomous variables (e.g., abuse
variables). A diagnosis of HIA was strongly and positively associated with all PCL:YV
scores. There was no relationship between PCL:YV scores and full scale IQ scores, a
result consistent with those reported for other adolescent samples (Brandt et. al., 1997;
Gretton, 1998). A history of physical abuse was significantly and positively associated
with PCL:YV Total and Factor scores. A history of sexual abuse was also significantly
and positively associated with PCL:YV Total and Factor 2 scores. However, PCL:YV
Table 4
Correlations Between PCL:YV Scores and Adolescent and Parental Background Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adolescent characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIA</td>
<td>27.5</td>
<td></td>
<td></td>
<td></td>
<td>.40***</td>
<td>.32***</td>
</tr>
<tr>
<td>IQ</td>
<td>94.62</td>
<td>11.74</td>
<td></td>
<td>-.01</td>
<td>.04</td>
<td>-.08</td>
</tr>
<tr>
<td><strong>Abuse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>33.9</td>
<td></td>
<td></td>
<td>.24***</td>
<td>.18**</td>
<td>.24***</td>
</tr>
<tr>
<td>Sexual</td>
<td>22.3</td>
<td></td>
<td></td>
<td>.16*</td>
<td>.11</td>
<td>.19***</td>
</tr>
<tr>
<td>Emotional</td>
<td>22.3</td>
<td></td>
<td></td>
<td>.07</td>
<td>.06</td>
<td>.11</td>
</tr>
<tr>
<td><strong>Parental Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal social deviance</td>
<td>0.49</td>
<td>0.80</td>
<td></td>
<td>.24***</td>
<td>.14*</td>
<td>.32***</td>
</tr>
<tr>
<td>Paternal social deviance</td>
<td>0.81</td>
<td>0.93</td>
<td></td>
<td>.23***</td>
<td>.12</td>
<td>.25***</td>
</tr>
</tbody>
</table>

*Note. N = 233. PCL:YV = Psychopathy Checklist: Youth Version; HIA = Hyperactivity-Impulsivity-Attention problems. Maternal and paternal social deviance, possible range of scores was 0 - 3.

*p < .05. **p < .01. ***p < .005.
scores were not significantly associated with a history of emotional abuse. PCL:YV Total and Factor scores were correlated positively and significantly with an index of maternal social deviance. Similar results were obtained for the index of paternal social deviance, however paternal social deviance was not significantly associated with Factor 1. In addition, it is interesting to note that both maternal and paternal social deviance scores were positively associated with child physical abuse ($r = .17, p < .01; r = .15, p < .05$, respectively).

Multiple regression analyses were used to determine which background variables made independent contributions to the prediction of PCL:YV Total and Factor scores. Those background variables shown to be significantly associated with PCL:YV Total scores, by way of previous correlational analyses, were used as predictors. Thus, for each PCL:YV score (Total, Factor 1, Factor 2), relevant background variables (physical abuse, sexual abuse, maternal social deviance, paternal social deviance, and HIA) were entered into a separate stepwise regression analysis in which alpha to enter or remove was set at .05 and .1 respectively. Table 5 displays the standardized regression coefficients, $R$, and $R^2$ for each analysis. Results indicated that HIA, maternal social deviance, and physical abuse each contributed uniquely to PCL:YV Total scores, yielding a multiple $R$ of $$.46, F (3, 229) = 20.81, p < .001$. For Factor 1, only HIA and physical abuse contributed independently to outcome, multiple $R = .34, F (2, 230) = 15.32, p < .001$. Factor 2 was predicted by HIA, maternal social deviance, paternal social deviance, and physical abuse, multiple $R$ of $$.48, F (4, 228) = 17.01, p < .001$.\(^8\)

\(^8\) In a separate analysis 6 two-way interaction terms were entered in a second block: HIA X Physical Abuse, HIA X Maternal Social Deviance, HIA X Paternal Social Deviance, Physical Abuse X Maternal Social Deviance, Physical Abuse X Paternal Social Deviance, and Maternal Social Deviance X Paternal
Table 5

*Standardized Beta Coefficients for Multiple Regression Analyses Predicting PCL:YV Scores Using Adolescent and Parental Characteristics*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIA</td>
<td>.35***</td>
<td>.30***</td>
<td>.26***</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>.15*</td>
<td>.13*</td>
<td>.13*</td>
</tr>
<tr>
<td>Maternal social deviance</td>
<td>.17**</td>
<td>.08</td>
<td>.24***</td>
</tr>
<tr>
<td>Paternal social deviance</td>
<td>.11</td>
<td>.04</td>
<td>.14*</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td>.03</td>
<td>.01</td>
<td>.07</td>
</tr>
</tbody>
</table>

| F                              | 20.81***| 15.32***| 17.01*** |
| R                              | .46     | .34      | .48      |
| R²                             | .21     | .18      | .23      |


*p<.05. **p<.01. ***p<.001.

Social Deviance. None of these interactions significantly contributed to the prediction of Total PCL:YV scores after the variance contributed by main effects was accounted for.
In order to examine whether other study variables may have functioned as suppressor variables a second set of stepwise regressions was conducted. These analyses were identical to the preceding analyses except that emotional abuse, IQ, and number of years with both parents were forced into the regression equations first. Results were highly similar to those obtained previously, suggesting that none of these additional variables functioned as a suppressor variables.

Categorical Analyses

The results presented so far have focused on the PCL:YV as a dimensional measure; however, researchers often use a dichotomous measure of psychopathy for the purposes of statistical analyses. In order to assess whether those background variables which accounted for unique variance in PCL:YV scores are also associated with a categorical diagnosis of psychopathy, the following analyses were performed. Subjects were assigned to psychopathy groups using a PCL:YV cutoff score of 30. Fifty-four subjects were classified as psychopaths and 179 as nonpsychopaths. The relationships between psychopathy groups and background variables were determined using chi-square statistics for dichotomous variables (HIA, physical abuse), and t-tests for continuous variables (maternal and paternal social deviance). Results, as shown in Table 6, indicate that significant between-groups differences were obtained for each variable. The psychopaths were more likely to have received a psychiatric diagnosis of HIA than the nonpsychopaths (57% vs. 18%, respectively), $\chi^2 (1, N = 233) = 31.62, p < .001$. In
Table 6
Background Variables as a Function of Psychopathy Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>NP (n = 179)</th>
<th>P (n = 54)</th>
<th>χ² or χ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIA (%)</td>
<td>18.4</td>
<td>57.4</td>
<td>31.62***</td>
</tr>
<tr>
<td>Physical abuse (%)</td>
<td>29.1</td>
<td>50.0</td>
<td>8.12***</td>
</tr>
<tr>
<td>Maternal social deviance</td>
<td>0.40 (0.70)</td>
<td>0.81 (1.03)</td>
<td>2.80**</td>
</tr>
<tr>
<td>Paternal social deviance</td>
<td>0.74 (0.88)</td>
<td>1.04 (1.06)</td>
<td>2.08*</td>
</tr>
</tbody>
</table>

Note. PCL:YV = Psychopathy Checklist: Youth Version; NP = Nonpsychopaths; P = Psychopaths; HIA = Hyperactivity-Impulsivity-Attention problems; Maternal and paternal social deviance, possible range of scores was 0 - 3; Values enclosed in parentheses represent standard deviations. *p< .05. **p< .01. ***p< .005.
addition, psychopaths were more likely to have a history of physical abuse than the nonpsychopaths (50% vs. 29%, respectively), $\chi^2 (1, N = 233) = 8.12, p < .005$. Finally, psychopaths had significantly higher maternal, $t (231) = 2.80, p < .01$, and paternal, $t (231) = 2.08, p < .05$, social deviance scores than did nonpsychopaths.

D. Discussion

The results of the current study are consistent with those of earlier studies (Brandt et al. 1997; Forth et al., 1990) and also provide evidence that psychopathy is associated with a number of adverse family and individual characteristics. The PCL:YV had high internal consistency and was shown to be stable across raters. The average PCL:YV score of about 21 in the current sample was somewhat lower than those obtained in other adolescent offender samples. Forth et al. (1990) and Brandt et al. (1997) report means of 24 and 25, respectively; however both those samples consisted of severely delinquent incarcerated offenders. In contrast, many of the subjects in the present study had no previous formal charges and had attended the treatment program on an outpatient basis. Consistent with research in adults (Wong, 1985), no difference was found between Native and Caucasian offenders in mean psychopathy scores. Similarly, Brandt et al. (1997) found no difference in PCL:YV scores between African-American and Caucasian subjects in an adolescent sample. Overall, these results suggest that PCL:YV scores are not related to the race of the offender.
The present results extend the findings of research on psychopathy in adult sexual offenders (Brown & Forth, 1995; Quinsey, Rice, & Harris, 1995; Serin, Malcolm, Khanna, & Barbaree, 1994) and indicate that the PCL:YV can be used to make reliable and valid assessments in adolescent sexual offenders. Research with adult sexual offenders has demonstrated a positive relationship between psychopathy and nonsexual offending, but not between psychopathy and general sexual offending (Brown & Forth, 1995; Quinsey et al., 1995). In the current sample, psychopathy was related to age at first arrest and number of prior nonviolent and violent offences, but not to number of prior sexual offences. It is important to note that the association with violence persisted even when items that are directly and indirectly associated with violence were omitted from PCL:YV scores. Overall, research suggests that psychopathy is consistently associated with both violent and general offending regardless of the population in which it is measured (e.g., sexual offenders, females, and adolescents).

The relationships between PCL:YV scores and other criterion variables were generally consistent with those found in other offender samples. As predicted, Total PCL:YV scores were not associated with full scale IQ scores or with SES. Although some studies have shown a negative relationship between Factor 2 scores and measures of intelligence in adult inmates (e.g., Harpur et al., 1989), such a relationship was not observed in the current or other (Brandt et al., 1997) adolescent samples.

With respect to developmental risk factors for psychopathy, the current results suggest that psychopathy is associated with HIA, parental antisocial characteristics, and a history of physical abuse. The most striking finding was the relationship between HIA

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9 However, a considerable literature indicates that, among sexual offenders, rapists have higher PCL-R scores than do child molesters and incest offenders (for review, see Hart & Hare, 1997).
and psychopathy. In the current sample, the rate of psychiatric diagnoses of HIA was three times higher in the psychopathic group than in the nonpsychopathic group, and HIA accounted for unique variance across PCL:YV Total and Factor scores. Although a relationship between HIA and Factor 2 scores is not surprising (given that Factor 2 includes items such as impulsivity and a high need for stimulation), it is notable that HIA showed an equally robust association with Factor 1 scores. This latter relationship is consistent with models of personality development which suggest that children who are fearless and impulsive develop feelings of guilt and empathy less readily than do other children (Kochanska, 1991; Lykken, 1995). For example, Kochanska (1991) showed that skillful, sensitive parenting at age 2 predicted the development of conscience in 8- to 10-year-olds, but not for children characterized by a fearless and impulsive temperament.

The relationship between parental social deviance and PCL:YV Total scores appeared to be primarily mediated by Factor 2. These results are consistent with a body of research which has demonstrated an association between parental antisocial characteristics and behavioural deviance in children and adolescents (Frick et al. 1992; Lahey et al., 1988; Lahey et al., 1995; Loeber & Stouthamer-Loeber, 1986; Robins, 1966; Stewart, DeBlois, & Cummings, 1980). In general, psychopathy appeared to be more strongly related to maternal than to paternal social deviance. These findings are consistent with research indicating that adolescent delinquency is more strongly associated with maternal than paternal criminality (see Loeber & Stouthamer-Loeber, 1986). It is likely that parental social deviance is also related to quality of caregiving practices (Haapasalo & Tremblay, 1994). If the link between psychopathy and parental
social deviance is mediated by quality of parenting, then a stronger association with maternal, relative to paternal, social deviance would be expected, given that mothers are the primary caregivers in most families.

The current results indicated that a history of physical abuse was positively associated with both Factor 1 and Factor 2 scores. In contrast, although a history of sexual abuse was positively correlated with Total PCL:YV scores, this variable did not contribute uniquely to the variance in PCL:YV Total or Factor scores. Similarly, a history of emotional abuse was not associated with PCL:YV Total or Factor scores. These findings are consistent with research indicating that such forms of maltreatment are differentially associated with externalizing (e.g., conduct problems, impulsivity) and internalizing (e.g., anxiety, depression) behaviour problems, which in turn are differentially associated with psychopathy (Brandt et al., 1997; Harpur et al., 1989). That is, a large body of literature attests to a relationship between early physical abuse and child/adolescent externalizing problems, a form of problem behaviour also associated with psychopathy. In contrast, some research suggests that early sexual and emotional abuse are associated with child/adolescent internalizing problems, which in turn are not associated with psychopathy. For example, Williamson, Borduin, and Howe (1991) compared the effects of physical and sexual abuse in an adolescent sample. They found that a history of physical abuse was associated with indices of general conduct problems and adolescent antisocial behaviour; while a history of sexual abuse was associated with internalizing problems, such as anxiety and withdrawal. Other research, as well, has demonstrated a relationship between sexual abuse and internalizing problems. Kendall-

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10 The relationship between abuse and behaviour problems will be further addressed in the general discussion.
Tackett, Williams, and Finkelhor (1993) reviewed the literature and found that, for adolescents, sexual abuse was not only associated with antisocial behaviour but also with depression, withdrawn behaviour, and somatic complaints. Research also suggests that rejecting or emotionally abusive caregiving styles are related to child internalizing problems. For example, studies have shown an association between childhood depression and parental rejection, anger, detachment, and negative verbal behaviour toward the child (for review, see Chiariello & Orvaschel, 1995). Overall, the finding that psychopathy was differentially related to physical, emotional, and sexual abuse underscores the importance of distinguishing among different forms of maltreatment in studies of abuse (Williamson et al., 1995).

These results should be interpreted in light of several methodological limitations. For example, the current research focused on a sample of adolescent sexual offenders. Although the majority of the sample had also been charged or convicted of a nonsexual offence, the possibility remains that the results may not generalize to a more heterogeneous adolescent offender population. In addition, a number of limitations stem from the nature of the archival files used in this research. Although family and abuse variables were assessed by social workers on the basis of a semi-structured interview with one or both parents in a fairly systematic manner, there was no way to establish the reliability of their findings. That is, interrater reliability of social workers’ designation of abuse or parental characteristics could not be assessed. Similarly, although the diagnoses of ADD and ADHD were made by experienced psychiatrists, the specific basis for and reliability of individual intake diagnoses could not be established. In addition, the range of measurement of most study variables was restricted, resulting in a loss of information.
that might have affected results. Finally, the archival files did not include data pertaining to adverse or ineffective parenting strategies, a variable shown in several studies to be a key risk factor for chronic delinquency (for reviews, see Loeber & Stouthamer-Loeber, 1986; Yoshikawa, 1994).
III. STUDY 2

A. Purpose of Research

The second study was designed to address several limitations of Study 1. In this study, the relationships between physical abuse, maternal social deviance, parenting strategies, and adolescent psychopathy were assessed in a sample of adolescent offenders. Rather than relying on archival files, information regarding such background characteristics was based on maternal report, as assessed through questionnaires. Another purpose of this study was to test two specific questions regarding developmental risk factors to psychopathy that arose from the literature review and that could not be evaluated in Study 1. First, measures of HIA and conduct problems (CP) were included in order to address Lynam's (1996) contention that adolescent psychopathy is associated with the condition of comorbid HIA and CP. Second, the Psychopathy Screening Device (PSD), a measure of psychopathy in children, was also completed by mothers in order to test its concurrent validity with the PCL:YV. The validity of the PSD is relevant to the current investigation in that it (a) purportedly measures psychopathic features in children and presumably is also thought to assess risk for the disorder in adulthood, and (b) has been used in a number of studies to investigate risk factors (e.g., parental characteristics, parenting) to psychopathy (see Frick, 1998; Frick et al., 1994). Results from Study 2 were expected to replicate those from Study 1. That is, it was hypothesized that psychopathy would be associated with HIA, a history of physical...
abuse, and maternal social deviance. Based on research showing that severely delinquent subgroups tend to come from families with high levels of adversity, including poor parenting, a relationship between ineffective parenting strategies and psychopathy was also predicted. In addition, given the previously described parallels between the CP/HIA subgroup and adult psychopaths, it was predicted that psychopaths would have higher levels of HIA and conduct problems than would nonpsychopaths. Finally, the PSD was expected to show low concurrent validity with the PCL:YV. The dissimilarities between the PCL-R and the PSD with respect to item content, factor structure, and associations with external criteria formed the basis for that prediction.

B. Method

1. Subjects

The participants were 74 male young offenders and their mothers. The young offenders were either undergoing court-ordered assessments at Youth Court Services (58%) or were incarcerated at Youth Detention Center (42%) as a result of their criminal offending. Adolescents known to have an IQ below the average range and those for whom file information was insufficient to assess psychopathy were not included in the sample. Mother-child dyads must have lived together a minimum of 10 years. The sample represented a heterogeneous group of offenders: 25% had a history of only

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11 These two samples did not differ significantly with respect to PCL:YV scores, t (72) < 1 or having come from a broken home, χ² (1, N=74) = .58. They also did not differ significantly on the following study variables (which are described below): Negative Parenting, t (72) = 1.57, Positive Parenting, t (72) < 1, Physical Abuse by Father, t (72) = 1.50, Physical Abuse by Mother, t (72) < 1, and Maternal Self-Report Psychopathy, t (72) < 1.
property-related offences, 10% had a history of sexual offending, and 65% had committed at least one violent offence, but not a sexual offence. The mean age of offenders was 15.4 years (SD = 1.13; range = 12-18 years). The majority of the subjects were Caucasian (86.5%); while the rest were Asian (5.4%), Native Canadians (4.1%), East-Indian (2.7%), and Hispanic (1.4%). Each mother signed a consent form that allowed access to her child’s institutional file. Ethical approval for the study was obtained from the University of British Columbia’s ethics committee. Agency permission to conduct this research was obtained from the Directors of Youth Court Services (YCS) and Youth Detention Center (YDC) in Burnaby, BC.

2. Procedure

Mothers attending YCS for social worker appointments and those attending visiting hours at YDC were asked to participate in the research. Data were collected over a 2-year period because the monthly rate of parental visits to YCS, where the bulk of the data were collected, was low. The purposes and time requirements of the project were explained to all potential participants and they were assured that a choice not to participate would in no way influence their child’s treatment at the institution. They were also assured that all results would be kept confidential and used strictly for research purposes. Mothers who agreed to participate were placed in a quiet area of either institution to fill out a packet of questionnaires that required approximately 30 minutes to complete. A research assistant was available to answer any questions. Due to a variety of reasons, a total of five
questionnaires were not completed. Missing data were replaced using sample means (Tabachnick & Fidell, 1989).

As in Study 1, PCL:YV scores were completed on the basis of extensive file information. In order to assess interrater reliability, 23 files were independently coded for psychopathy by a second rater. As in Study 1, PCL:YV scores were used to classify subjects into psychopathic and nonpsychopathic groups using the recommended cutoff score of 30 (Hare, 1991). The base rate for psychopathy in this sample was 27%, which is comparable to base rates reported for adult samples (Hare, 1991) but lower than those found in some other adolescent samples (Forth et al., 1990; Brandt et al., 1997).

Measures

Alabama Parenting Questionnaire (APQ; Frick, 1991). This 42-item questionnaire was specifically designed to assess a number of parenting practices that have been associated with conduct problems in previous research. Items from these scales have been used across a variety of studies with school-aged children and adolescents, as reviewed by Loeber and Stouthamer-Loeber (1986). Parents are asked to rate how often each parenting behaviour is typically used in the home on a 5-point frequency scale (1 = Never to 5 = Always). The APQ yields the following 5 parenting scales: parental involvement (e.g., “You have a friendly talk with your child”; “Your child helps plan family activities”), positive parenting (e.g., “You compliment your child when he does something well”; “You reward or give something extra to your child for obeying you or behaving well”), monitoring and supervision (e.g., “Your child stays out in the evening past the time he is supposed to be home”; “You get so busy that you forget where your
child is and what he is doing”), inconsistent discipline (e.g., “You threaten to punish your child and then do not actually punish him”; “You feel that getting your child to obey you is more trouble than it’s worth”), and use of corporal punishment (e.g., “You slap your child when he has done something wrong”; “You hit your child with a belt or other object when he has done something wrong”). The scales have been shown to have adequate internal consistency and to be uncorrelated with empirical indices of socially desirable responding (Wootton et al., 1997).

For the purposes of the present study, the parental involvement and positive parenting scales were combined to yield an overall positive parenting scale (cf. Wootton et al., 1997). The poor monitoring and supervision, inconsistent discipline, and corporal punishment scales were combined to form an overall negative parenting scale. All scales were converted to standard scores (z-scores) before the composite scales were formed. In the present sample, alpha coefficients for the positive and negative parenting scales were .83 and .86, respectively.

Conners’ Parent Rating Scales-48 (CPRS; Conners, 1989). This behaviour rating scale is the most widely-used measure in research with behaviourally disordered youths (McMahon & Forehand, 1988). The 48-item measure is completed by the adolescent’s parent and yields scales for conduct problems and impulsive-hyperactive problems. This measure has excellent psychometric properties, and extensive normative data are available on children 3 to 17 years by age and gender. This measure has been shown to discriminate among Conduct Disordered and Attention Deficit Hyperactivity Disordered children and adolescents. In addition, it is considered an appropriate measure to use with
populations characterized by both conduct disorder and impulsivity (McMahon & Forehand, 1988).

T-scores of greater than 70 on the conduct problems and impulsive-hyperactive scales were used to form conduct problem (CP) and impulsive-hyperactive (HIA) groups. Conners (1989) recommends the use of this cutoff in high base-rate samples.

Conflict Tactics Scales (CTS; Straus, 1979). The CTS have been widely used in both clinical and research studies to assess verbal and physical aggression between parents and their children (Wolfe, 1988). It is a 19-item standardized scale which measures the frequency and severity of rational and abusive tactics that may be employed in interpersonal conflict. Items from the CTS that reflect tactics resulting in physical contact were used to assess physical abuse. These items included: “pushed, grabbed, or shoved”; “slapped”; “kicked, bit, or hit with a fist”; “hit or tried to hit with something”; and “beat up”. Each behaviour is rated on a 7-point scale of occurrence ranging from 0 = “never” to 6 = “more than 20 times” in the past year. In the current study, mothers reported the frequency of tactics used with their sons and also completed the same scales for tactics used between their husbands (or partners) and sons. Mother-to-son violence and father-to-son violence items were summed to create separate scales for physical abuse by the mother and physical abuse by the father. Alpha coefficients for the maternal and paternal physical abuse scales were .69 and .68, respectively.

Self Report Psychopathy-Scale-II (SRP-II; see Hare, 1985). The SRP-II is a 60-item empirically derived self-report version of the PCL-R. It has been shown to have good psychometric properties and moderate concurrent validity with the PCL-R (Hare, 1985;
Harpur & Hare, 1990; Widiger et al., 1996; Zagon & Jackson, 1994). In the current sample the alpha coefficient for the SRP-II was .84.

**Psychopathy Screening Device (PSD: Frick et al., 1994).** The PSD is a 20-item parental report measure that was designed to be a childhood extension of the PCL-R. It yields two factors. The Callous/Unemotional factor consists of 6 items that assess lack of guilt and empathy as well as emotional constrictedness. The Impulsivity/Conduct Problems factor is made up of 10 items that assess low impulse control and conduct problems. Scores range from 0-40. In the current sample the alpha coefficient was .91.

Subjects were assigned to high and low groups using a cutoff score of 28. This cutoff designated those falling in the upper 30% of the sample as high-scorers.

C. Results

Psychopathy

As in Study 1, interrater reliability for the PCL:YV was assessed by computing intraclass correlation coefficients (Shrout & Fleiss, 1979). Reliabilities for single ratings (ICC$_1 = .86$) and double ratings (ICC$_2 = .88$) were high. The Kappa coefficient for the psychopathy group classifications was .79, indicating excellent agreement. Cronbach's alpha for the PCL:YV ratings was .80 and the mean item-total correlation was .41, suggesting that internal consistency was relatively high. PCL:YV scores ranged from 9 to 38, with a mean of 24.76 (SD =6.6). The mean of the sample was comparable to those
found in other studies of adolescent offender samples (Brandt et al., 1997; Forth et al., 1990).

Psychopathy and Background Characteristics

Pearson correlations between PCL:YV scores and CPRS impulsive-hyperactive scores, APQ negative and positive parenting scores, CTS physical abuse scores (by mother, by father), and SRP-II maternal psychopathy scores are presented in Table 7. Because specific predictions were made regarding the relationship between these background variables and psychopathy, one-tailed tests of significance were employed. The impulsive-hyperactive scores were positively associated with PCL:YV Total and Factor 2 scores; however the relationship with PCL:YV Total scores did not reach statistical significance (p = .056). There was virtually no association between Factor 1 and impulsive-hyperactive scores. Correlations between PCL:YV scores and level of physical abuse by father were significant and in the positive direction. However, there was no relationship between level of physical abuse by mother and PCL:YV scores. PCL:YV Total and Factor scores were each significantly and positively associated with negative parenting scores. Overall, correlations between PCL:YV scores and positive parenting scores were in the negative direction, but were not significant. Finally, maternal psychopathy scores were positively and significantly associated with Total and Factor 2 PCL:YV scores, but not with Factor 1 scores.12

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12 Two scatterplots, the first between PCL:YV Total and physical abuse by mother scores, and the second between PCL:YV Total and positive parenting scores, were examined. This was done in order to assess the possibility of existing nonlinear relationships between these variables. However, these variables appeared to be distributed across PCL:YV Total scores in a relatively normal manner.
Table 7

Correlations Between PCL:YV Scores and Measures of Background Variables

<table>
<thead>
<tr>
<th>Background Variable</th>
<th>M</th>
<th>SD</th>
<th>Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsive-Hyperactive (CPRS)</td>
<td>6.62</td>
<td>3.04</td>
<td>.18</td>
<td>.03</td>
<td>.27**</td>
</tr>
<tr>
<td>Physical abuse (CTS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By father</td>
<td>0.36</td>
<td>1.00</td>
<td>.22*</td>
<td>.24*</td>
<td>.21*</td>
</tr>
<tr>
<td>By mother</td>
<td>1.22</td>
<td>2.30</td>
<td>.04</td>
<td>.05</td>
<td>.02</td>
</tr>
<tr>
<td>Parenting scales (APQ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative parenting (z-score)</td>
<td>0</td>
<td>1</td>
<td>.26*</td>
<td>.22*</td>
<td>.28**</td>
</tr>
<tr>
<td>Positive parenting (z-score)</td>
<td>0</td>
<td>1</td>
<td>-.13</td>
<td>-.14</td>
<td>-.12</td>
</tr>
<tr>
<td>Maternal psychopathy (SRP-II)</td>
<td>177.56</td>
<td>31.41</td>
<td>.25*</td>
<td>.16</td>
<td>.22*</td>
</tr>
</tbody>
</table>

Note. N = 74. PCL:YV = Psychopathy Checklist: Youth Version; CPRS = Conners’ Parent Rating Scales; CTS = Conflict Tactics Scale; APQ = Alabama Parenting Questionnaire; SRP-II = Self Report Psychopathy Scale. *p < .05. **p < .01. (one-tailed).
Multiple regression analyses were used to determine which background variables made independent contributions to the prediction of PCL:YV Total and Factor scores. As in Study 1, those variables shown to be correlated with PCL:YV scores were used as predictors. Impulsive-hyperactive scores were included in the analyses because of their relationship with Factor 2 and marginal relationship with Total PCL:YV scores.

Therefore, the following independent variables were used to predict PCL:YV Total and Factor scores: impulsive-hyperactive, physical abuse by father, negative parenting, and maternal psychopathy. Age was entered as a first block in each regression to control for a relationship between age and parenting strategy. One-tailed tests of significance were used for all analyses. In the first regression equation, physical abuse by father and maternal psychopathy each predicted significant variance in PCL:YV Total scores. The multiple $R$ for the equation was $0.44$, $F(5, 68) = 3.21, p < .01$. For Factor 1 scores, only physical abuse contributed significantly to outcome. The multiple $R$ was $0.36$, $F(5, 68) = 2.06, p < .05$. In contrast, Factor 2 scores were significantly predicted by impulsive-hyperactive, physical abuse, and negative parenting scores. In addition, there was a trend for maternal psychopathy to predict Factor 2, $p = 0.053$. Multiple $R$ for the equation was $0.44$, $F(5, 68) = 3.27, p < .01$. Table 8 displays the standardized regression coefficients, $R$, and $R^2$ for each analysis.

As in Study 1, supplementary analyses were conducted to determine if the relationship between psychopathy and family background variables would be replicated when psychopathy was measured as a dichotomous variable (e.g., psychopaths vs. nonpsychopaths). Twenty subjects (27%) were classified as psychopaths (PCL:YV score
Table 8

Standardized Beta Coefficients for Multiple Regression Analyses Predicting PCL:YV Scores Using Background Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.14</td>
<td>-0.08</td>
<td>-0.05</td>
</tr>
<tr>
<td>Impulsive-hyperactive (CPRS)</td>
<td>0.10</td>
<td>-0.04</td>
<td>0.19*</td>
</tr>
<tr>
<td>Physical abuse by father (CTS)</td>
<td>0.21*</td>
<td>0.25*</td>
<td>0.20*</td>
</tr>
<tr>
<td>Negative parenting (APQ)</td>
<td>0.19</td>
<td>0.18</td>
<td>0.19*</td>
</tr>
<tr>
<td>Maternal psychopathy (SRP-II)</td>
<td>0.23*</td>
<td>0.15</td>
<td>0.19</td>
</tr>
<tr>
<td>F</td>
<td>3.21**</td>
<td>2.06*</td>
<td>3.27**</td>
</tr>
<tr>
<td>R</td>
<td>0.44</td>
<td>0.36</td>
<td>0.44</td>
</tr>
<tr>
<td>R²</td>
<td>0.19</td>
<td>0.13</td>
<td>0.19</td>
</tr>
</tbody>
</table>

Note. N = 74. Refer to results section for details of analyses. PCL:YV = Psychopathy Checklist: Youth Version; CPRS = Conners' Parent Rating Scales; CTS = Conflict Tactics Scale; APQ = Alabama Parenting Questionnaire; SRP-II = Self Report Psychopathy Scale. *p < .05. **p < .01. (one-tailed).
of 30 or greater) and 54 subjects (73%) as nonpsychopaths. One-tailed t-tests were used to assess group differences in impulsive-hyperactive, physical abuse by father, negative parenting, and maternal psychopathy scores. Results are presented in Table 9. As compared to nonpsychopaths, psychopaths had higher impulsive-hyperactive scores, $t(72) = 2.45, p < .01$, higher negative parenting scores, $t(72) = 2.87, p < .01$, and higher maternal psychopathy scores, $t(72) = 1.82, p < .05$. However, psychopaths and nonpsychopaths did not differ significantly with respect to physical abuse by father scores, $p = .07$.

The Relationship between Psychopathy and Comorbid HIA and CP

In order to test the prediction that adolescent psychopathy would be associated with comorbid HIA and CP, the following procedure was employed. First, subjects were divided into psychopathy groups as described above. Next, using the relevant scales from the CPRS, dichotomous variables for impulsive-hyperactive (HIA) and conduct problems (CP) were computed. T-scores of 70, from age-appropriate population norms, were used as cutoff scores (cf. Conners, 1989). Overall, 68% of the sample scored above the cutoff for CP, while 50% of the sample scored above the cutoff for HIA. Finally, HIA, CP, and a HIA X CP interaction term were entered into a stepwise logistic regression to predict psychopathy group. From this analysis, a main effect for HIA was found (Wald $\chi^2 (1, N = 74) = 4.18, p < .05$) but there was no significant main effect for CP nor was there a significant interaction between HIA and CP. Psychopaths were more likely to have
Table 9

Background Variables as a Function of Psychopathy Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>NP (n = 54)</th>
<th>P (n = 20)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsive-hyperactive (CPRS)</td>
<td>6.07 (3.15)</td>
<td>7.98 (2.44)</td>
<td>2.45**</td>
</tr>
<tr>
<td>Physical abuse by father (CTS)</td>
<td>0.20 (0.56)</td>
<td>0.80 (1.64)</td>
<td>ns</td>
</tr>
<tr>
<td>Negative parenting (z-score) (APQ)</td>
<td>-0.19 (0.92)</td>
<td>0.52 (1.03)</td>
<td>2.87**</td>
</tr>
<tr>
<td>Maternal psychopathy (SRP-II)</td>
<td>172.67 (25.39)</td>
<td>190.75 (41.73)</td>
<td>1.82*</td>
</tr>
</tbody>
</table>

Note. PCL:YV = Psychopathy Checklist: Youth Version; NP = Nonpsychopaths; P = Psychopaths; CPRS = Conners' Parent Rating Scales; CTS = Conflict Tactics Scale; APQ = Alabama Parenting Questionnaire; SRP-II = Self Report Psychopathy Scale.
*p < .05. **p < .01. (one-tailed).
scored above the HIA cutoff than were nonpsychopaths (70% vs. 43% respectively). In a further exploratory analysis, a chi-square was used to assess the relationship between psychopathy group and subjects who scored above (46%) and below (54%) the cutoff on both HIA and CP. Psychopaths were more likely to have high scores on measures of both CP and HIA problems than were nonpsychopaths (65% vs. 39%, respectively), \( \chi^2 \) (1, \( N = 74 \)) = 4.01, \( p < .05 \).

The Relationship between the PSD and the PCL:YV

In order to test the prediction that the Psychopathy Screening Device (PSD) would demonstrate low concurrent validity with the PCL:YV, Pearson correlations were computed. Table 10 shows the correlations between the PSD and PCL:YV Total and Factor scores. Recall that the Callous Unemotional (CU) factor and Impulsivity/Conduct Problems (I/CP) factor of the PSD are meant to correspond to Factor 1 and Factor 2 of the PCL:YV, respectively. Correlations between the Total and Factor scores of the two measures do not support the concurrent validity of PSD Total and Factor scales. The correlation between PSD and PCL:YV Total scores was .35. The PSD CU factor scores were not significantly associated with PCL:YV Factor 1 scores. The strongest correlation was obtained between PSD I/CP factor scores and PCL:YV Factor 2 scores, \( r = .43 \).

Next, diagnostic agreement between the two measures was examined using a Kappa coefficient. Reliability between PCL:YV group (nonpsychopath vs. psychopath) and PSD group (lower 70% vs. upper 30% of sample) classifications was low, Kappa = .34.
Table 10
Concurrent Validity of the Psychopathy Screening Device (PSD): Correlations with PCL:YV Scores

<table>
<thead>
<tr>
<th>PSD Score</th>
<th>Total</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.35**</td>
<td>.17</td>
<td>.40**</td>
</tr>
<tr>
<td>Callous/Unemotional factor (CU)(^a)</td>
<td>.29*</td>
<td>.16</td>
<td>.28*</td>
</tr>
<tr>
<td>Impulsivity/Conduct problems factor (I/CP)</td>
<td>.37**</td>
<td>.19</td>
<td>.43**</td>
</tr>
</tbody>
</table>

**Note.** N = 74. PCL:YV = Psychopathy Checklist: Youth Version; PSD = Psychopathy Screening Device.
\(^a\) CU factor corresponds to PCL:YV Factor 1, while I/CP factor corresponds to PCL:YV Factor 2.
*\(p < .05\). **\(p < .01\).
When the PSD cutoff score was raised (lower 80% vs. upper 20%) reliability between PSD and PCL:YV classifications was even lower, Kappa = .27.

D. Discussion

The purpose of Study 2 was to (a) determine if findings from Study 1 would be replicated in a general offender sample, (b) test the prediction that adolescent psychopathy would be associated with ineffective parenting strategies, (c) determine if adolescent psychopathy would be associated with high levels of CP and HIA, and (d) test the prediction that the Psychopathy Screening Device (PSD), a measure of psychopathy in children, would show low concurrent validity with the PCL:YV.

On the whole, results from Study 1 were replicated and extended in Study 2. As in Study 1, PCL:YV ratings were shown to be stable across raters, and indices of internal consistency demonstrated that the PCL:YV functioned as a homogeneous measure. The mean PCL:YV score in Study 2 was higher than that in Study 1 (25 vs. 21) and, as expected, was consistent with mean scores found in other general adolescent offender populations (e.g., Brandt et al., 1997; Forth, 1995; Forth et al., 1990). Most importantly, the overall pattern of risk factors for psychopathy was replicated across studies. In the general young offender sample (Study 2), correlational analyses indicated that Total PCL:YV scores were associated with physical abuse by father, maternal psychopathy, and were marginally associated with HIA (impulsive-hyperactive).13 Similarly, in the adolescent sex offender sample (Study 1), the highest correlations between Total

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13 For the sake of simplicity the term HIA will be used to refer to the impulsive-hyperactive scale of the CPRS.
PCL:YV scores and background characteristics were obtained for physical abuse, an index of maternal social deviance, and HIA. These findings are particularly impressive given the fact that they were replicated across two fairly different offender samples using different methodologies.

The relationships among background characteristics and PCL:YV Total and Factor scores, as assessed with regression analyses, were also fairly consistent across Study 1 and Study 2. In both studies, physical abuse accounted for independent variance in the prediction of PCL:YV Total, Factor 1 and Factor 2 scores. In Study 1, maternal social deviance predicted Total PCL:YV and Factor 2 scores. In Study 2, maternal psychopathy predicted Total PCL:YV scores and a trend was indicated for predicting Factor 2 scores. Results for HIA were less consistent across studies. Recall that in Study 1, HIA was the strongest predictor of PCL:YV Total and Factor scores, as compared to other variables. In Study 2, however, HIA predicted only Factor 2 scores. This difference could reflect true differences between samples with respect to the relationships between HIA and psychopathy. However, there are at least two alternative explanations for the discrepancy. First, it is possible that a ceiling effect for HIA could have masked its relationship to psychopathy in Study 2. In this regard, half of the sample in Study 2 obtained HIA scores which fell in the “very much above average” range as compared to population norms (Conners, 1989); whereas in Study 1, only 27.5% of the sample received psychiatric diagnoses of HIA. Second, the difference between studies could be due to error introduced by a bias in mothers’ perceptions of their children’s behaviour in Study 2. That is, mothers may have overestimated the extent of their children’s behavioural deviance. Some support for this hypothesis comes from studies
demonstrating that parents of children with behavioural disorders are more likely than are other parents to perceive neutral child behaviours as deviant (Barkley, 1988; Edwards, Schulz, & Long, 1995). In addition, Edwards, et al. (1995) reviewed the literature on the reliability of parental ratings of HIA behaviours and found that agreement between mothers and other informants, such as mental health workers and teachers, was low. They reported an average correlation of .27 across 10 studies.

Regardless of this discrepancy, the findings of Study 2 were consistent with those of Study 1 in that psychopaths as a group were more likely than nonpsychopaths to have high HIA scores. They were also more likely to be characterized by high levels of both HIA and conduct problems (CP) than were nonpsychopaths, a finding that provides some support for the hypothesis that comorbid HIA and CP is a likely risk factor for psychopathy (McBurnett & Pfiffner, 1998; Lynam, 1996). However, when HIA, CP, and an interaction term for the two variables were considered together, only HIA predicted psychopathy group classification. This finding must be interpreted in light of the fact that almost 70% of the sample received scores in the “very much above average range” on the conduct problem scale. Thus, a ceiling effect for conduct problems in the current sample precluded a strict evaluation of the relationship between adolescent psychopathy and comorbid HIA and CP.

Study 2 was also instrumental in demonstrating a relationship between parental socialization practices and adolescent psychopathy. A composite measure of negative parenting strategies was correlated with Total PCL:YV scores. However, that measure accounted for a significant degree of variance only in Factor 2 scores. In contrast, a composite measure of positive parenting strategies was not significantly associated with
PCL:YV scores. These results are consistent with those of recent studies in which adolescent deviance was found to be associated with parental monitoring, but not parent-child communication (Forehand, Miller, Dura, & Chance, 1997) or involvement (Smith & Krohn, 1995, cited in Forehand et al., 1997) in Caucasians.\textsuperscript{14} Forehand et al. (1997) suggest that monitoring may have a direct relationship with antisocial behaviour in that it serves to control adolescent activity. In contrast, positive parenting strategies, such as communication and involvement, may contribute to the internalization of prosocial parental values, and thereby affect antisocial behaviour only indirectly. As the purpose of the current research was to assess a variety of risk factors for psychopathy, discrete types of parenting strategies were collapsed in order to maintain a reasonable ratio of variables to subjects (Tabachnick & Fidell, 1989). Therefore, the relationships between discrete parenting strategies and psychopathy were not assessed. However, the finding that psychopathy was differentially associated with global indices of positive and negative parenting strategies warrants further investigation.\textsuperscript{15}

The findings of this study were revealing, not only with respect to developmental risk factors for psychopathy, but also with respect to the validity of the PSD which, presumably, is also meant to reflect risk for later development of the disorder. As predicted, the PSD demonstrated low concurrent validity with the PCL:YV. Although a correlation between Total scores on the two measures was significant, the low magnitude of the correlation suggests that the measures are not assessing the same underlying

\textsuperscript{14} Recall that in the current study low parental monitoring was one component of the negative parenting scale; while involvement, which included communication, was one component of the positive parenting scale.

\textsuperscript{15} It would have been interesting to compare mean levels of positive and negative parenting strategies observed in the current investigation with those observed in other studies in which the APQ was employed (see Wootton et al., 1997). Unfortunately, the manner in which results were reported in other studies precluded direct comparisons between results.
Instead, an examination of associations between PSD Total scores and PCL:YV Factor scores indicates that the PSD is related to the behavioural but not the personality characteristics that underlie the PCL:YV. Given that Frick and colleagues are primarily interested in assessing psychopathic personality traits in children, and have relied, almost exclusively, on the PSD’s Callous/Unemotional factor (analogous to Factor 1) as an index of psychopathy across studies (for review, see Frick, 1998), its lack of association with PCL:YV Factor 1 scores is of considerable import. It could be argued that the PSD was designed for use with children and that its lack of association with PCL:YV scores of adolescents is, therefore, irrelevant. However, it is important to note that (a) most PSD items are superficially similar to their corresponding PCL-R/PCL:YV items, and (b) items that were modified or added to increase relevance to a younger sample do not appear to be any more applicable to children than they do to adolescents (see Table 2).

16 It is interesting to note that the correlation between PSD and PCL:YV Total scores (.35) was even lower than those found between PCL-R total scores and Antisocial Personality Disorder diagnosis or symptom counts (r = .55 to .65) (Hart & Hare, 1997).
General Discussion

Previous research with adult and adolescent samples suggests that psychopaths represent a unique group of offenders characterized by a propensity for violent and persistent offending as well as poor treatment prognosis. In an effort to identify risk factors that may aid in early identification and treatment of those at risk for the disorder, developmental correlates to psychopathy were investigated in two studies using different samples of adolescent offenders. The assessment of risk factors was based on file and collateral information, not on self-reports. Results from both studies indicate that psychopathy in adolescent offenders is associated with HIA, a history of physical abuse, parental antisocial characteristics, and ineffective parenting strategies. Results from Study 2 also suggest that the PCL:YV is only weakly associated with the PSD, a measure of psychopathy in children. In addition, findings from Study 1 extend those of other studies (Brandt et al., 1997; Forth et al., 1990) by demonstrating that psychopathy in adolescent sex offenders shows associations with criterion variables (offending patterns, IQ, SES) similar to those observed in adult offender samples. Results regarding risk factors to psychopathy are discussed individually below.

A. Psychopathy and Abuse

The most consistent finding across Studies 1 and 2 was the association between a history of physical abuse and psychopathy. This finding is consistent with a body of evidence that physical abuse is a risk factor for aggression, violence (Dodge, Lochman,
Harnish, Bates, & Petite, 1997; Egeland & Sroufe, 1981; Rivera & Widom, 1990; Weiss, Dodge, Bates, & Pettit, 1992) and early onset of offending (Rivera & Widom, 1990), all of which are strongly associated with psychopathy in adolescent and adult offenders. As in the current investigation, assessment of a history of physical abuse in the above-cited studies was based on collateral information as opposed to self-report. Previous researchers, however, have generally not assessed the effects of abuse as a function of parental status of the abuser (Minuchin, 1992). In Study 2, paternal but not maternal physical abuse was associated with PCL:YV scores, suggesting that this may be an important variable to consider. These differential associations could be due to the possibility that fathers employ greater force when dealing with their children than do mothers. In this regard, some research suggests that severity of abuse is positively associated with degree of aggression in children (Weiss et al., 1992) and degree of violence in juvenile offenders (Geller & Ford-Somma, 1984, cited in Widom, 1989).

Maternal and paternal abuse may also be differentially associated with other important factors within the family, which in turn are associated with adolescent PCL:YV scores. For example, research suggests that parents who abuse their children are significantly more aggressive towards each other than are other parents (see, Minuchin, 1992). Perhaps paternal, but not maternal, physical abuse is an indicator of aggression between parents. If so, this third variable (aggression between parents) may explain part of the correlation between paternal abuse and psychopathy. Regardless, these data suggest that failure to distinguish between maternal and paternal abuse may obscure important differences between the effects of these forms of maltreatment.
Results from the current investigation indicate that a history of physical abuse is associated with both the behavioural (Factor 2) and core personality (Factor 1) characteristics that underlie psychopathy. The latter association is of particular interest in that, of all the family variables considered herein, only physical abuse accounted for unique variance in Factor 1 scores. In addition, research in adult offender populations has demonstrated that social factors tend to be associated only with Factor 2 scores (Harpur et al., 1989). Thus, the relationship between Factor 1 and physical abuse is singular and somewhat surprising. However, there is evidence within the child abuse literature that is consistent with a relationship between physical abuse and the interpersonal and affective traits reflected in Factor 1 scores. In a review of the literature, Wolfe, Wekerle, and McGee (1990) noted that abused children have been found to demonstrate deficits in social sensitivity, perspective-taking, and empathy. For example, Main and George (1985) compared the reactions of abused and non-abused children to distress in playmates. They found that abused children generally responded with less concern to distress in their peers than did other children. Moreover, some abused children responded to peer distress with fear, hostility, and even physical attack.

Dodge, Pettit, Bates, and Valente (1995) assessed social information-processing patterns in physically abused (n = 69) and non-abused (n=515) children. Children were presented with a series of vignettes depicting problematic social situations which resulted in a negative outcome for the protagonist. The intention of the peer who caused the outcome systematically varied across vignettes as hostile, benign, or ambiguous. In order to assess whether children attended to appropriate and relevant social cues, they were

17 Recall that Factor 1 reflects low empathy, a tendency to externalize blame, and emotional detachment.
questioned regarding the content of the vignettes. The children were also questioned regarding the intention of the peer and asked how they would respond if they were the protagonist in the story. Results indicated that abused children were less likely to attend to relevant interpersonal cues, and more likely to interpret the intentions of the peer as hostile, and to say that they would use aggressive strategies to solve hypothetical social problems, than were nonabused children. Results also indicated that early abuse increased the risk of externalizing outcomes by four-fold.

It is important to note that a history of abuse is not exclusively associated with psychopathy-related personality and behavioural characteristics. For example, some research has shown that children and adults who have a history of abuse suffer from low self-esteem, depression, and anxiety—characteristics that are unrelated to psychopathy (for reviews, see Malinosky-Rummell & Hansen, 1993; Minuchin, 1992). In addition, a history of abuse is not associated with violence in most individuals (Widom, 1989). In the end, the relationships between physical abuse and affective, interpersonal, and behavioural characteristics of the abused individual are not well understood (Malinosky-Rummell & Hansen, 1993; Widom, 1989; Wolfe et al., 1990). However, in a review of the literature on the consequences of physical abuse, Malinosky-Rummell and Hansen (1993) suggest that long-term effects may ultimately depend on factors which reside within the abused individual. Perhaps personality variables associated with psychopathy mediate the relationship between past physical abuse and aggression. If so, future research on the relationship between psychopathy and physical abuse may benefit not only our understanding of psychopathy but also our understanding of the link between abuse and physical aggression in general.
B. Psychopathy, Parenting, and Parental Characteristics

The current results are consistent with a body of research that has found a high rate of parental social deviance and inadequate parenting strategies in the parents of children and adolescents with severe conduct problems (Faraone, Biederman, Keenan, & Tsuang, 1991; Frick et al., 1992; Haapasalo & Tremblay, 1994; Lahey et al., 1988; Lahey et al., 1995; Loeber et al., 1991; Moffitt, 1990, 1993; Nagin et al., 1995). In an often cited and thorough meta-analysis of the role of family factors in delinquency, Loeber and Stouthamer-Loeber (1986) found that ineffective parenting strategies and parental variables, such as parental criminality, were systematically associated with aggression and delinquency across both predictive and concurrent studies. They also reported a direct relationship between the number and severity of adverse family factors and the severity of child antisocial behaviour. In the current investigation, adolescent psychopaths were differentiated from other offenders on the basis of global indices of maternal and paternal social deviance (Study 1) and negative parenting strategies (Study 2). These results, in combination with other research, suggest that although psychopaths are similar to other offenders with respect to these risk factors, they appear to have been exposed to such factors to a greater degree.

The current results indicate that adolescent psychopathy is associated not only with general parental social deviance but also with a more specific form of maternal social deviance, maternal psychopathy as assessed by the SRP-II. As noted above, the SRP-II has moderate concurrent validity with the PCL-R. For example, in a sample of 100 male
offenders SRP-II scores were found to be correlated with PCL-R Total scores as well as both Factor 1 and Factor 2 scores ($r = .54, .50, \text{ and } .44, \text{ respectively}$) (Harpur & Hare, 1990). However, the SRP-II has not been validated in a female population. Even so, such findings suggest that maternal SRP-II scores likely reflect a form of social deviance that is qualitatively different from that typically assessed in parents (e.g., criminality, substance abuse, ASPD) and found to be associated with adolescent antisocial behaviour. Thus, it is possible that maternal psychopathy, unlike general parental deviance, may represent a risk factor uniquely associated with adolescent psychopathy. This possibility is intriguing and warrants further investigation.

C. Psychopathy and Hyperactivity-Impulsivity-Attention Problems

Across both studies the proportion of psychopaths classified as HIA was significantly higher than that of nonpsychopaths. In Study 1, 57% of the psychopaths, but only 18% of the nonpsychopaths, received diagnoses of HIA. Similarly, in Study 2, 70% of the psychopaths and 43% of the nonpsychopaths, scored in the “very much above average range” for HIA. These results are consistent with research demonstrating an association between psychopathy and measures of impulsivity in adult offenders (Harpur et al., 1989; Patrick, 1994). However, the results from Study 1 are the first to demonstrate a relationship between psychiatric diagnoses of HIA-related childhood disorders and psychopathy. The results are interesting given the parallels that have been drawn between psychopaths and delinquents characterized by HIA, particularly in terms of offending patterns (early onset, aggression, versatility, persistence).
The current results suggest that adolescent psychopaths are also similar to the HIA-CP subgroup, in that they can be differentiated from other delinquents on the basis of family background characteristics. Like the psychopaths in the current study, delinquents with HIA have higher levels of general family adversity and parental social deviance than do other delinquents (Lahey et al., 1988; Moffitt, 1990). Similarly, when compared with HIA-only individuals, those with HIA and CP have higher rates of parental negativity and hostility (Fletcher, Fischer, Barkley, and Smallish, 1996) and paternal social deviance (Faraone et al., 1991; Stewart et al., 1980). Overall, the similarity between psychopaths and the HIA/CP subgroup, in terms of patterns of family background characteristics and comorbid HIA, supports the view that children with comorbid HIA and CP may be at high risk for psychopathy (Lynam, 1996; McBurnett & Pfiffner, 1998).

D. Interpreting the Relationship between Psychopathy and Adverse Family Factors

Results from the current investigation provide strong evidence for a link between adverse family factors and psychopathy in adolescent offenders; however, given the correlational nature of the data, there are a number of ways in which this relationship can be interpreted. The relationship between family adversity and child deviant behaviour has been typically interpreted from a parent or family effects model (Forehand et al., 1997; Lytton, 1990; Loeber & Stouthamer-Loeber, 1986; Maccoby & Martin, 1983). From this view, children who are exposed to parental aggression, criminality, or substance abuse may come to model and value these behaviours (cf. Bandura, 1973; Loeber-Stouthamer Loeber, 1986). Similarly, if parents fail to adequately monitor their
children or are inconsistent in their use of punishment, normative childhood conduct problems may develop into deviant antisocial behaviour. Parenting is thought to affect not only the development of behaviour but also the development of prosocial emotions (Lykken, 1995; Maccoby & Martin, 1983). Lykken (1995) speculates that “if bad behaviour is not detected, or if it is not consistently punished, then we are less likely to develop an effective repertoire of potential guilt reactions - unlikely, that is, to develop an effective conscience” (p. 62). In addition, Lykken cites evidence to show that overly harsh punishment can also interfere in the development of guilt (see, Lykken, 1995). Thus, high levels of adverse family background characteristics may play a causal role in the development of psychopathy.

A second possible interpretation is that the relationship between adverse family background and psychopathy could be attributed to child effects. That is, characteristics of the “prepsychopathic” child could cause the adverse family characteristics. In a review of the relevant literature, Lytton (1990) presents compelling evidence to support an argument that ineffective or harsh parenting is a response to noncompliance in delinquent children. Lytton (1990) contends that many delinquent children are temperamentally predisposed to fearlessness and underresponsiveness to punishment, making them resistant to parental demands, and generally difficult to socialize. With respect to psychopathy, Cleckley (1976) stated that, due to an “inability” to learn from experience, “no punishment is likely to make the psychopath change his ways” (p. 346). In support of this view, a wealth of research demonstrates that psychopaths have difficulty acquiring a conditioned fear response and avoiding punishment in passive avoidance learning paradigms (Hare 1998; Lykken, 1995; Newman & Kosson, 1986; Newman & Wallace,
1983). Other research, using a startle blink paradigm, demonstrates that psychopaths do not show the expected potentiation of the startle blink reflex (a fear response) that occurs in normal controls when they are faced with unpleasant stimuli (for review, see Patrick, 1994). These results, in combination with the present and other findings, suggest that the prepsychopathic child may well be characterized by fearlessness, an underresponsiveness to punishment, and externalizing behaviours (i.e., HIA, early conduct problems).

It is reasonable to assume that children with such attributes would likely represent an ongoing source of difficulty for their parents. In an effort to socialize such children, parents may resort to increasingly harsh and coercive parenting strategies (Lykken, 1995; Lynam, 1996). Persistent noncompliance could cause parents to become angry and even abusive. Alternatively, such behaviour could serve to reduce parents' motivation, such that they leave the children to act as they please, or perhaps administer punishment inconsistently. Possibly, the struggle associated with raising a fearless and noncompliant child could also contribute to parental substance abuse or other antisocial behaviours. For example, a recent experimental study by Pelham et al. (1997) demonstrated that child behaviour can cause both hostility and alcohol abuse on the part of parent subjects. In that study, parents of normal children interacted with boys trained to enact behaviours characteristic of either normal children or deviant (Conduct Disordered and ADHD) children. Interactions with deviant confederates produced more self-reported anxiety, depression, and hostility in parents, relative to interactions with normal confederates. After the interactions, parents were given the opportunity to consume as much of their preferred alcoholic beverage while anticipating a second interaction with the same child.
Those who had been exposed to the deviant confederate consumed significantly more alcohol as compared to those exposed to the normal confederate.

A third possible interpretation of the current results is that heritable traits shared by parents and their adolescent children may contribute to a coexistence of psychopathy in an adolescent and adverse conditions in the family. Indeed, as stated in the introduction, there is evidence for a significant genetic component to psychopathy (Livesley, 1998) as well as to antisocial behavioural and personality characteristics in general (DiLalla, Carey, Gottesman, & Bouchard, 1996; DiLalla & Gottesman, 1989).

Ultimately, many argue that parent, child, and genetic factors, act together in contributing to deviant developmental outcomes, including psychopathy (af Klinteberg, 1998; Lynam, 1996; Lykken, 1995; Lytton, 1990; Moffitt, 1993; Rothbaum & Weisz, 1994). Here, underlying genetic factors may predispose both the child and the parent to deviant behaviour. The maladaptive behaviours of the parent and child may interact to exacerbate the behaviour of all parties. From this view, child and parental effects are seen to act in a reciprocal and cumulative manner to influence child outcome (Bell & Chapman, 1986; Lytton, 1990).

While the current results do not have implications for causal factors in the development of psychopathy, they do add uniquely to our understanding of antecedents of the disorder in adolescence. In addition, as argued previously, the identification of antecedents of psychopathy in adolescence is only one of many steps towards understanding causal factors. Once the nature and developmental correlates of psychopathy in adolescents have been systematically established and validated, they may be used to guide and anchor research in a younger population. Eventually, if this process
is repeated in successively younger populations, the manner in which psychopathy is expressed in children may be determined. Presumably, once children at risk for the disorder can be identified, an informed prospective study would serve to disentangle causal relations among risk factors to the disorder. Clearly, the proposed approach constitutes a long-term endeavor. However, quick fixes, such as premature attempts to directly assess psychopathy in children, run the risk of yielding invalid results. This point is exemplified by the finding that the PSD appears to be only weakly related to psychopathy in adolescents, as measured by the PCL:YV.

E. Implications for Intervention

As noted in the Introduction, adult psychopaths have been shown to be particularly recalcitrant to treatment efforts. The widely-held belief that early intervention might present our only hope for dealing with these individuals has been, to a large degree, the catalyst for interest and research on developmental aspects of psychopathy. The current research suggests that adolescent psychopaths can be differentiated from other young offenders on the basis of a number of developmental risk factors. These findings are important to prevention and intervention efforts for two reasons. First, knowledge of risk factors can be used for the early identification of children at risk for psychopathy. If children at risk can be identified early, presumably, appropriate intervention would help to curtail their developmental course towards chronic offending. Second, risk factors provide useful information regarding potential treatment targets. As noted, a causal
relationship between risk factor and outcome need not be demonstrated for a risk factor to be a useful treatment target.

If the child at risk for psychopathy can be identified at a malleable age, then perhaps family-based interventions, including parent training, parental anger management, and family communication components, may be instrumental in indirectly modifying his or her behaviour. The effectiveness of family-based interventions has been demonstrated in a number of treatment outcome studies (Kazdin, 1987; Tolan et al., 1995; Yoshikawa, 1994). Recently, for example, Borduin et al. (1995) compared the long-term effects of individual therapy vs. a more comprehensive family-based treatment in a sample of serious juvenile offenders (offenders were randomly assigned to treatment conditions). Results indicated that family-based treatment resulted in increased supportiveness and decreased conflict-hostility in families. In addition, young offenders in the family based treatment condition were significantly less likely than those in the individual therapy condition to have committed a nonviolent or violent offence 4 years later.

F. Limitations and Future Directions

The current results should be interpreted in light of several methodological problems. First, the samples used in both studies were drawn from an all-male offender population, making generalization of findings to females and community samples tenuous. Second, the degree to which the samples are representative of all young offenders is unknown. This is a particular problem in Study 2, as many parents refused to participate and information to determine whether they differed from the participating parents was
 unavailable. However, the fact that results were largely replicated across two dissimilar samples using different methodologies provides some evidence for their generalizability to other male young offender samples. Third, the parenting and abuse measures used in Study 2 relied on maternal self-report, and their correspondence with actual parent behaviour is open to question. It is possible that mothers of psychopathic children, who appeared to be more socially deviant than did mothers of nonpsychopaths, may have underreported their own use of physically abusive tactics in conflict situations. However, if a bias against reporting socially unacceptable parenting practices existed for those mothers, then it should also extend to their reports of negative parenting; instead they reported higher levels of negative parenting than did other mothers. It is noteworthy that both the parenting (APQ) (Wootton et al., 1997) and self-report psychopathy (SRP-II) (see, Forth, 1995) measures have been found to be unrelated to measures of socially-desirable responding. Fourth, fathers were not included in the study because they were less available than were mothers. Unfortunately, fathers, and particularly those associated with deviant samples, are difficult to recruit (Dobkin, Tremblay, & Sacchitelle, 1997). Finally, only a select number of background and parenting variables were included in the current research. Possibly, some other aspects of family life could be risk factors to psychopathy.

An immediate priority in future research should be a replication and extension of the current studies in larger and perhaps less criminal male and female populations. Possible populations might include adolescents who are on probation or participating in outpatient treatment programs. By employing a less deviant sample the chances of recruiting both mothers and fathers might be maximized and the use of multiple informants would likely
serve to increase the validity of the data (Edwards et al., 1995; Farrington & Loeber, 1994). In addition, the link between psychopathy and comorbid HIA and CP might be better evaluated in a sample with a lower rate of conduct problems than that found in the Study 2 sample.

Long term implications for future research have been discussed throughout this thesis. One problem with working developmentally backwards from criminal populations lies in the difficulty of generalizing to non-criminal populations. Indeed, research and clinical experience suggests that psychopaths, or those with psychopathic traits, may be functioning well outside the criminal justice system (Babiak, 1995; Cleckley, 1976; Levenson, Kiehl, & Fitzpatrick, 1995; Lillienfeld & Andrews, 1996; Hare, 1993). It is possible that such socialized psychopaths, as a group, have not been exposed to the risk factors identified in the current studies. If so, the presence of adverse developmental factors may be seen as affecting the expression but not the presence of psychopathic traits. However, an initial step in delineating risk factors to a low base-rate disorder, is to work systematically backward from a validated adult or adolescent population. Once the manifest symptoms of psychopathy can be identified in a young sample, then perhaps prospective studies may reveal pathways to alternative non-criminal expressions of the disorder.

G. Conclusion

Although more research remains to be done, results from the present investigation indicate that we may eventually be successful in differentiating potential psychopaths
from others early in development. Future efforts toward delineating a developmental trajectory to psychopathy are important, not only for our understanding of the disorder but also for designing treatment and prevention programs. Ultimately such efforts may help to reduce the personal, societal, and economic costs associated with psychopathy.


behavior on parental distress and alcohol consumption in laboratory interactions. 


Quinsey (Eds.), *Aggression and violence throughout the life span* (pp. 31-51). Newbury Park, CA: Sage.


