

PSYCHOPATHY AND JUVENILE HOMICIDE

by

TODD VINCENT WILLOUGHBY

B.A. (Honours), The University of Calgary, 1991

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

(Department of Psychology)

We accept this thesis as conforming  
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April 1996

© Todd Vincent Willoughby, 1996

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Psychology

The University of British Columbia  
Vancouver, Canada

Date April 22, 1996

### Abstract

The study of the phenomena of juvenile homicide has led some researchers to hypothesize the existence of two types of juvenile murderers. The personality and behavioural traits of the first type resemble the characteristics of the psychopath, whereas traits of the second type resemble the characteristics of the nonpsychopath. The current study was designed to assess the strength of the relationship between psychopathy and behavioural/criminological variables related to homicidal behaviour. Psychopathy was measured by the Hare Psychopathy Checklist - Revised (PCL-R), and homicidal variables involved the Cornell Coding Guide for Instrumental versus Hostile/Reactive Aggression and a variable list (e.g., demographics, psychiatric history, index offense details, institutional misbehaviour). Subjects were 41 male and 3 female juvenile murderers (mean age of 16.3 years) who received psychiatric assessments at Youth Forensic Psychiatric Service between 1986 and 1994.

Results indicated that the prevalence of psychopathy in the current sample was similar to the prevalence of psychopathy in other studies using juvenile offenders. Psychopathy was not significantly associated with an instrumental style of aggression, suggesting that juvenile psychopaths do not use a planful, cold blooded approach to homicidal violence. Both psychopaths and nonpsychopaths predominantly victimized strangers or acquaintances which may be explained by the socialization styles of juveniles. Nonpsychopaths were more likely to be drunk prior to the index offense and use a weapon during the homicidal event, whereas psychopaths were more likely to kill their victims by brute physical force (i.e., beating and kicking). Although both psychopaths and nonpsychopaths experienced emotional/physiological arousal during the incident, nonpsychopaths were more likely to experience arousal in connection with intoxication whereas psychopaths experienced arousal in connection with a perceived threat

from the victim. Psychopathy was associated with greater misbehaviour in juvenile institutions but not adult institutions, which may mean psychopathic young offenders are either intimidated by adult inmates or they ally themselves with powerful inmates in order to escape institutional repercussions for misbehaviour.

## Table of Contents

1. Abstract	ii
2. Table of Contents	iv
3. List of Tables	vi
4. Introduction	1
5. Rates of Homicide in Canada and British Columbia	1
6. Types of Juvenile Murderers	2
7. Psychopathy	5
a) Psychopathy, Crime, and Violence	7
b) Psychopathy and Types of Violence	10
c) Psychopathy and Juvenile Offenders	11
d) Rates of Psychopathy in Juvenile Populations	12
e) Estimated Rates of Psychopathy in Homicide Studies	12
8. Approaches to the Phenomenon of Juvenile Homicide	13
9. The Role of Psychotic Processes	13
10. The Role of Neurological Impairment	14
11. Family Background of Juvenile Killers	15
12. Homicidal Incidents	16
a) Victim - Offender Relationship	16
b) Motives for Murder	17
c) The Role of Substance Abuse	18
d) The Use of Weapons	18
e) The Presence of Accomplices	19
13. Follow-up of Juvenile Murderers	20
14. Hypotheses	21
15. Method	22
a) Subjects	22
b) Materials	22
i) the Psychopathy Checklist - Revised	22
ii) Instrumental versus Hostile/Reactive Aggression scale	24
iii) Variable list	24
c) Procedure	24
16. Results	26
a) Hypothesis 1: Comparisons of PCL-R scores	26
b) Hypothesis 2 a): PCL-R and Instrumental/Reactive Aggression	26
c) Hypothesis 2 b) i): PCL-R and Relationship to Victim	27
d) Hypothesis 2 b) ii): PCL-R and Motives	27
e) Hypothesis 2 b) iii): PCL-R and Substance Abuse	27
f) Hypothesis 2 b) iv): PCL-R, Weapons, and Threats	28
g) Hypothesis 2 b) v): PCL-R and Accomplices	29

h) Hypothesis 3: PCL-R and Institutional Misbehaviour	30
i) Hypothesis 4: PCL-R and Other Psychiatric Diagnoses	31
j) Exploratory Analyses: PCL-R and Violence	31
h) Exploratory Analyses: Hierarchical Multiple Regression	32
17. Discussion	33
18. References	47
19. Appendix A: PCL-R for Young Offenders (Item Alterations)	54
20. Appendix B: Cornell's Coding Guide for Instrumental vs Hostile/Reactive Aggression	56
21. Appendix C: Adolescent Homicide Variable Sheet	63
22. Appendix D: Non-significant Research Findings	71
23. Appendix E: Descriptive Statistics for Juvenile Murderers	75
24. Appendix F: Descriptive Statistics for Juvenile Murderers by Psychopathy Group	90

## List of Tables

<u>Table 1:</u> Items in the Hare Psychopathy Checklist - Revised (PCL-R)	23
<u>Table 2:</u> Correlations between PCL-R Total score and Violence	29
<u>Table 3:</u> Correlations between PCL-R Total score and Institutional Misbehaviour	30
<u>Table 4:</u> Chi-square Analyses 1: PCL-R and Violence	31
<u>Table 5:</u> Multiple Regression Analyses: PCL-R Factors and Violence	32

## Psychopathy and Juvenile Murderers

Society's concerns regarding violent juvenile crime, especially homicide, are reaching an all-time high. A recent Maclean's article entitled "Kids who kill" conveyed the public's conception of the character of the homicidal adolescent as "predatory and wildly unpredictable" (Kaihl, 1994, p.32). It could be argued that the public's concern about juvenile homicide is unwarranted since homicide is a statistically rare occurrence. For example, homicides and attempted homicides by juveniles comprised only 0.7% of all crimes of violence committed by juveniles in Canada in 1992 (Statistics Canada, 1993). However, these statistics do not take into account the suffering experienced by the victim's family, or the fear and shock that grip a community after an adolescent has committed homicide. Juvenile homicide creates a concern because society's beliefs that adolescents are innocent and unblemished by the outside world are shown to be incorrect. Homicide carries an impact far in excess of its occurrence.

### Rates of Homicide in Canada and British Columbia

From 1986 to 1992, there was a total of 4081 homicides and 5335 attempted homicides in Canada, with an average of 583 homicides and 762 attempted homicides per year (Statistics Canada, 1987; 1988; 1989; 1990; 1991; 1992; 1993). Juvenile offenders (as identified by the Young Offenders Act) committed 333 homicides and 469 attempted homicides in Canada between 1986 and 1992, with an average of 48 homicides and 67 attempted homicides per year.

In British Columbia, a total of 549 homicides and 628 attempted homicides occurred between 1986 and 1992, with an average of 78 homicides and 90 attempted homicides per year (Statistics Canada, 1987; 1988; 1989; 1990; 1991; 1992; 1993). Juvenile offenders committed 45 homicides and 37 attempted homicides in British Columbia



between 1986 and 1992, with an average of 6 homicides and 5 attempted homicides per year.

Given that juvenile homicide is a relatively rare occurrence, what light does the research literature shed on the types of adolescents who commit homicide?

### Types of Juvenile Murderers

A number of researchers have proposed the existence of certain types of juvenile murderers. After examining these hypothetical categories, a constellation of personality traits and behaviours might emerge to indicate that certain adolescents may be more likely to engage in the type of violence that would result in homicide.

Miller and Looney (1974) hypothesized there are three types of murderers. The low risk murderer would only kill when he/she experienced discrete periods of episodic dyscontrol and obtained explicit or implicit validation of murderous behaviour from a peer group (e.g., being part of a gang slaying). The medium risk murderer would commit murder when he/she experienced episodic dyscontrol and temporarily "dehumanized" the victim (i.e., perceived another individual as a non-person) during a "crime of passion." The high risk murderer would completely dehumanize others on a regular basis and have no emotional attachments to other people. This type of murderer demonstrates only superficial warmth, is coldly egotistical and narcissistic, has feelings of grandiosity, and accepted violence towards others.

Corder, Ball, Haizlip, Rollins, and Beaumont (1976) investigated the differences among adolescent murderers who killed their parents, family members or close acquaintances, or strangers. First, adolescents who killed their parents reported an extensive history of chronic abuse by both parents, and rarely acted aggressively towards others. Second, adolescents who killed other family members or close acquaintances did so in the context of chronic interpersonal conflict. This group had a parental history of psychotic disturbance. As a group, these killers tended to be slightly more aggressive and

impulsive than adolescents who committed parricide. Third, adolescents who killed strangers had a history of poor impulse control and aggressive behaviour, a history of substance abuse, and a prior history of contact with juvenile courts. They viewed their victims as obstacles to be overcome in order to achieve some type of immediate goal. This group was more likely to have planned the murder than the other two groups of killers, and their parents were more likely to have served time in adult prisons.

Zenoff and Zients (1979) divided juvenile murderers into three groups: sexual-identity conflict murderers, "innocent" murderers, and non-empathic murderers. The sexual-identity conflict murderers killed their victims impulsively, in response to a perceived provocation which threatened the murderers' sense of emerging masculinity. The murderers felt it was necessary to prove their masculinity through shows of aggression. The "innocent" murderers killed their victims either in self-defense or by accident. Non-empathic murderers had histories of prior assaultive behaviour and property crimes, became violent and unpredictable when frustrated, were psychologically primitive and narcissistic, experienced little guilt, and lacked feelings of empathy. This group appears similar to Miller and Looney's (1974) high-risk murderer category. They would kill strangers, either during the course of a robbery or for no apparent reason. Zenoff and Zients (1979) mention that this third group is often diagnosed as sociopathic.

Sorrells (1980) proposed the existence of three types of juvenile murderers: pre-psychotic, neurotically fearful, and non-empathic. The pre-psychotic murderers killed as a "cry for help." They felt trapped by chaotic family situations and were isolated from peers. Neurotically fearful murderers lacked a sense of security and overreacted with deadly force to conflict situations. This type of murderer is similar to Zenoff and Zients' (1979) sexual-conflict murderer. Non-empathic murderers, similar to Zenoff and Zients' (1979) type of the same name, lacked empathy, saw other people as objects to be manipulated, were willing to kill during the course of a criminal act, and did not see themselves as requiring treatment for their behaviour.

Solway, Richardson, Hays, and Elion (1981) described three types of murderers: emotionally disturbed, "innocent" murderers, and psychopathic-like murderers. Emotionally disturbed killers were juveniles who were psychiatrically disturbed (i.e., behaved in a paranoid or schizoid manner). "Innocent" murderers killed their victims accidentally or in the course of self-defense, similar to Zenoff and Zients' (1979) "innocent" murderers. Solway et al. (1981) describe one-third of their subjects as a psychopathic-like or heavily delinquent group of offenders who killed strangers during the course of another crime.

Cornell (Cornell, 1990; Cornell, Benedek, & Benedek, 1987a; Cornell, Benedek, & Benedek, 1987b; Cornell, Miller, & Benedek, 1988; Greco & Cornell, 1992) proposed that two different types of juvenile murderers exist: a crime group, who killed during the course of another crime, and a conflict group, who killed due to extreme emotional arousal. The crime group was more likely than the conflict group to kill strangers with the aid of an accomplice, usually without weapons, and was more likely to be intoxicated or on drugs at the time of the offense (Cornell et al., 1987b). In comparison to the conflict group, the crime group had a longer history of prior delinquent behaviour and lower frequencies of stressful life events (Cornell et al., 1987b). Toupin's (1994) study with 60 adolescent Canadian murderers replicated Cornell et al.'s (1987b) results. Research using the MMPI with the crime group and the conflict group showed that members of the crime group exhibited poor psychological insight, denied responsibility for their actions, and had a greater tendency to malingering than did the conflict group (Cornell et al., 1988). Using the Rorschach Ink Blot Test, Greco and Cornell (1992) found that the crime group's greater aggressiveness may be due to their inability to perceive others as human beings, which is similar to Zenoff and Zients' (1979) hypothesis about dehumanization. Cornell et al. (1987a) indicated that their crime group murderers resembled Zenoff and Zients' (1979) non-empathic murderers.

Thus two general types of adolescent murderers are apparent. One type kills as a response to provocation or threat, which may be exacerbated by a predisposition to psychotic disturbance. The second type of adolescent murderer is egotistical, accepting of violence, dehumanizes others, experiences little guilt or empathy, is narcissistic, and may have a long juvenile criminal history. This group can be likened to Miller and Looney's (1974) high risk murderers, Corder et al.'s (1976) stranger killers, Zenoff and Zients' (1979) and Sorrells' (1980) non-empathic murderers, Solway et al.'s (1981) psychopathic-like murderers, and Cornell et al.'s (1987b) crime group murderers. It is this second type that better fits the public's conception of predatory murderers. They may pose a larger threat to the general population because their homicidal actions are part and parcel of a general lifestyle of callousness, manipulation, and violence. The personality traits and behaviours of the second group of adolescent murderers resemble a personality disorder intensely studied by Hare (1991; 1993): psychopathy.

### Psychopathy

Psychopathy is a chronic personality disorder described by a constellation of affective, interpersonal, and behavioural traits (Hare, 1991). Affectively, the psychopath displays only shallow, fluctuating emotions, lacks genuine empathy, remorse, or anxiety, and is unable to form lasting relational bonds with others. Interpersonally, the psychopath is glib, grandiose, manipulative, deceitful, irresponsible, egocentric, and cold hearted. Behaviourally, the psychopath is impulsive and sensation seeking and tends to violate social norms, which may result in frequent contact with the criminal justice system. These personality traits and behaviours can be reliably and validly measured in criminal and forensic populations using the Hare Psychopathy Checklist - Revised (PCL-R; Hare, 1991).

The psychometric properties of the PCL-R are well established. PCL-R total scores can range from 0 to 40, indicating how well a particular subject fits the characteristics of

the prototypical psychopath. Thus, scores from the PCL-R can be considered to be either dimensional (0 to 40) or categorical, where a score of 30 or above warrants a diagnosis of psychopathy. In adult male criminal populations, the average PCL-R score is 23.6, with a standard deviation of 7.9, and in male forensic populations, the average PCL-R score is 20.6, with a standard deviation of 7.8 (Hare, 1991). Hare (1991) states that approximately 20 to 25% of adult male prison inmates and 15% of adult male forensic patients warrant a diagnosis of psychopathy.

While the PCL-R clearly measures an unidimensional construct ( $\alpha = .88$ ; Hare, 1991), the items on the checklist can be separated into two distinct components: Factor 1, which measures the interpersonal and affective traits; and Factor 2, which measures antisocial behaviour and social deviance (Harpur, Hare, & Hakstian, 1989; Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990). These two factors correlate approximately .5 with each other (Hare, 1991). Factor 1 correlates positively with measures of narcissism and machiavellianism, but negatively with measures of anxiety and empathy (Hare, 1991). Factor 2 correlates positively with antisocial personality disorder and measures of substance abuse, impulsivity, and sensation seeking (Hare, 1991). The PCL-R possesses excellent content, criterion, and construct validity and high interrater, internal, and test-retest reliability (see Fulero, 1995).

A frequent error is made in equating psychopathy with Antisocial Personality Disorder (APD) as defined by the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychological Association, 1995). Although the text of the APD section mentions PCL-R Factor 1 items (e.g., grandiosity, superficial charm, lack of empathy), the diagnostic criteria of APD focus on PCL-R Factor 2 items (e.g., aggressiveness, irresponsibility, impulsivity, failure to conform to social norms). A diagnosis of APD indicates that the subject exhibits antisocial behaviours, but fails to capture the affective or interpersonal traits that form the core of psychopathy (e.g., Hare, 1996; Hart & Hare, in press). As a comparison to the 20-25% of adult prison inmates

who receive a diagnosis of psychopathy, approximately 80% of inmates receive a diagnosis of APD (Hare, 1991). This indicates that APD reflects a heterogeneous population, which seriously weakens the utility of the diagnosis for predictions of violent behaviour. The PCL-R, on the other hand, has been proven an excellent tool for studying and predicting violent behaviour.

### Psychopathy, Crime, and Violence

The personality of the psychopath seems tailor-made for a violent criminal lifestyle. For example, during a long-term follow-up of 521 subjects, Hare, Forth, and Strachan (1992) found that the conviction rates of psychopaths for nonviolent crimes decreased after age 40, but conviction rates for violent crimes remained stable over time. The authors interpreted this as indicating that the propensity for aggressive behaviour is persistent throughout the life span of the psychopath.

Research with adult male inmates clearly shows that psychopaths are more violent than nonpsychopaths. Hare (1981), divided 243 adult male inmates into high, medium, and low psychopathy groups using a 7-point psychopathy rating scale based on the prototypical "Cleckley" psychopath (e.g., Cleckley, 1976). He found that 97% of subjects in the high group, 78% of subjects in the medium group, and 74% of the low group in an adult male prison setting had received at least one prior conviction for violent behaviour. The rates of the high and low group were significantly different.

Hare and Jutai (1983) compared the criminal behaviours of 97 psychopaths and 96 nonpsychopaths, using the same 7-point psychopathy scale as Hare (1981). They found that the mean number of violent offenses per year free was more than three times higher for psychopaths than for nonpsychopaths. The mean number of all offenses per year free was one and a half times higher for psychopaths than nonpsychopaths.

Hare and McPherson (1984) divided 227 adult male inmates into high, medium, and low psychopathy groups using the Psychopathy Checklist (PCL; Hare, 1985), the

immediate predecessor of the PCL-R. The correlation between PCL and PCL-R total scores is .88, indicating that the two instruments measure the same psychological construct (Hare, 1991). They found that members of the high group (psychopaths) were significantly more likely to have been convicted of a violent crime than members in the medium or low groups (nonpsychopaths). While not incarcerated, psychopaths committed approximately three times more violent offenses than did nonpsychopaths. In addition, psychopaths were significantly more likely to possess and use weapons during the course of a crime. In addition, the researchers found that, while psychopaths constituted only 32% of the sample, they received 60% of convictions for both violent and nonviolent offenses.

Kosson, Smith, and Newman (1990) investigated the relationship between psychopathy and crime in a sample of 369 white adult inmates and 116 black adult inmates using the PCL-R. They found that psychopathic adult inmates committed significantly more violent and nonviolent offenses than did nonpsychopaths. In addition, psychopaths were charged with a significantly greater number of types of violent and nonviolent crimes than were nonpsychopaths.

Forth, Hart, and Hare (1990) studied a sample of 75 juvenile offenders and found that PCL-R scores were significantly correlated ( $r = .27$ ) with the number of previous violent offenses. In addition, they found that PCL-R scores were significantly correlated ( $r = .46$ ) with the number of institutional charges for violent behaviour.

Adult psychopaths are also more likely to engage in a variety of aggressive acts while incarcerated. In a sample of 87 adult inmates, Serin (1991) found that, in prison, psychopaths were significantly more likely to use weapons or threaten than were nonpsychopaths. Hare and McPherson (1984) found that significantly more psychopaths than nonpsychopaths engaged in violent institutional misbehaviour (e.g., verbal abuse, fighting, threatening others).

Psychopathy is also an excellent predictor of post-release violence. Hart, Kropp, and Hare (1988) assessed the relationship between previous PCL-R scores on 231 adult inmates and subsequent post-release behaviour. They found that PCL-R scores were significantly correlated ( $r = .33$ ) with violence subsequent to release from prison. In fact, when the authors ran a hierarchical logistic regression analysis with post-release behaviour as the dependent variable, the PCL-R significantly improved the prediction of failure or success after release from prison, over and above that of relevant criminal history and demographic variables. Similarly, Forth et al. (1990) found that PCL-R scores were significantly correlated ( $r = .26$ ) with post-release violent behaviour in 75 juvenile offenders.

Harris, Rice, and colleagues have carried out a series of studies investigating the relationship of psychopathy and recidivism. Rice, Harris, and Quinsey (1990) found that PCL-R scores significantly predicted post-release sexual offenses ( $r = .31$ ) and post-release violent offenses ( $r = .35$ ) in a sample of 54 rapists. In a sample of 176 mentally disordered offenders, Harris, Rice, and Cormier (1991) found that 77% of 52 offenders diagnosed as psychopathic by the PCL-R reoffended violently, as compared to 21% of 114 nonpsychopaths. They concluded that the PCL-R could predict violent recidivism better than any other set of demographic/criminal variables. Rice, Harris, and Cormier (1992) found that psychopaths who were treated in a therapeutic community setting committed significantly more violent post-release crimes than psychopaths who had not been treated. In general, there was a significantly higher recidivism rate for psychopaths than nonpsychopaths. Harris, Rice, and Quinsey (1993) found that the PCL-R was the best predictor of violent recidivism ( $r = .34$ ) in a sample of 618 adult males, half of whom were treated in a psychiatric institution and the other half briefly assessed before serving prison sentences.



### Psychopathy and Types of Violence

In a study by Williamson, Hare, and Wong (1987), it was found that while the victims of nonpsychopaths tended to be women who were known to them, the victims of psychopaths were men who were strangers. Psychopaths' motives tended to be material gain, whereas the nonpsychopaths' motives centered around strong emotional arousal. Both groups were equally likely to use knives (25%) or guns (25%). Psychopaths showed a trend to be less intoxicated than nonpsychopaths. In short, the violence of psychopaths appeared to be callous and cold-blooded or part of a 'macho' display.

The above study indicated that since it is known that psychopaths are more violent than nonpsychopaths, it is also important to know what type of violence psychopaths engage in. Instrumental (or predatory) violence is unemotional or cold-blooded aggression which is planned in advance in order to achieve a goal (beyond that of injuring someone) (Cornell, 1993b; Vitiello, Behar, Hunt, Stoff, & Ricciuti, 1990). Reactive (or affective) violence is impulsive, emotionally driven aggression which is committed in response to a provocation or threat (Cornell, 1993b; Vitiello et al., 1990). Meloy (1988) hypothesized that psychopathy "predisposes, precipitates and perpetuates the expression of predatory violence" (p. 191).

Two studies have provided tentative support for the psychopathy - instrumental violence link. Serin (1991) found that psychopaths were more likely to admit to the use of "instrumental aggression" towards others in a prison setting (i.e., for purposes of control or material gain). A study by Cornell, Warren, Hawk, Stafford, Oram, Pine, Weitzner, and Griffith (1993) investigated the link between the PCL-R and instrumental - reactive violence in a sample of 124 adult inmates. They found that instrumentally violent offenders were significantly more psychopathic than reactively violent offenders or nonviolent offenders.

It is interesting to note that Corder et al.'s (1976) stranger murderers, who show some similarity to psychopaths, were significantly more likely to plan the murder they engaged in, as compared to adolescents who killed their parents or close acquaintances.

### Psychopathy and Juvenile Offenders

Investigation of psychopathy with adolescents stems from the belief that psychopathy is a life-long disorder discernible at an early age. Two studies have used the full PCL-R scoring procedure, based on both an interview and review of collateral file information. Forth et al. (1990) studied a group of 75 male juvenile offenders. The mean PCL-R score was 26.2 (SD = 7.5). PCL-R scores were significantly correlated to the number of conduct disorder symptoms exhibited by the subject ( $r = .64$ ), number of previous violent offenses ( $r = .27$ ), number of institutional charges for violent behaviour ( $r = .46$ ), and number of charges or convictions for post-release violent offenses ( $r = .26$ ). In Lewis' (1995) sample of 210 juvenile offenders, the mean PCL-R score was 25.1 (SD = 5.63).

Two studies have used PCL-R scores based on review of file information alone. This method has been shown to be reliable (Wong, 1988). Lewis, Gretton, Willoughby, McBride, O'Shaughnessy, and Hare (1994) studied 30 juvenile offenders whose mean PCL-R score was 23.2 (SD = 5.75). In O'Shaughnessy's (1994) sample of 263 juvenile sexual offenders, the mean PCL-R score was 21.4 (SD = 7.25). Utilizing a subsample of O'Shaughnessy's (1994) data, Gretton, McBride, Lewis, O'Shaughnessy, and Hare (1994) found that psychopathic juvenile sex offenders were more likely to use a weapon and to make threats than nonpsychopaths. In addition, both psychopaths and nonpsychopaths knew 80% of their victims prior to the sexual offense (Gretton et al., 1994). Perhaps this similarity is due to the type of crime committed and may not be found in other groups of offenders.

### Rates of Psychopathy in Juvenile Populations

Using the PCL-R, Forth et al. (1990) found the rate of psychopathy in a sample of 75 general juvenile offenders to be 36%. Using both file-only PCL-R ratings and the full PCL-R procedure, Lewis et al. (1994) found the rate of psychopathy in a sample of 30 juvenile offenders to be 25%. Using file-only PCL-R ratings, O'Shaughnessy (1994) found the rate of psychopathy in a juvenile sexual offender population to be 23 %. Lewis (1995) found the rate of psychopathy in a sample of 210 juvenile offenders to be 23%.

### Estimated Rates of Psychopathy in Homicide Studies

From an inspection of the data, it is clear that psychopaths form a core group of general offenders and juvenile sexual offenders. What is the rate of psychopathy in a sample of juvenile murderers? Where it was possible to estimate rates of psychopathic traits, it ranged from 80% (Hellsten & Katila, 1965) to 25% (Easson & Steinhilber, 1961). Hellsten and Katila (1965) described four subjects as "psychopathic," who possessed characteristics of emotional coldness and egocentricity. Two of Easson and Steinhilber's (1961) eight subjects had explosive tempers, frequently assaulted others (even family members), stole money from home, were cruel to animals, and were frequently expelled from school. Half of Russell's (1965) subjects shared traits of manipulateness, narcissism, egocentricity, impulsiveness, irresponsibility, and a lack of emotions. In terms of Antisocial Personality Disorder diagnoses, reported rates varied from one quarter (Russell, 1979) to one half of subjects (Cornell et al., 1988). Rates of conduct disorder, when reported, ranged from one third (Cornell et al., 1988) to 86% of subjects (Myers & Kempf, 1990). It is reasonable to assume that applying the PCL-R to a group of juvenile murderers should uncover a core group of psychopaths, which other researchers have labeled non-empathic (Zenoff & Zients, 1979; Sorrells, 1980), high risk murderers (Miller & Looney, 1974) or the crime group (e.g., Cornell et al., 1987a).

### Approaches to the Phenomenon of Juvenile Homicide

It is important to compare the typological oriented research with other research about juvenile homicide. In general, past research has focused on medical issues (psychiatric disturbance or neurological impairment) and/or the social background of offenders.

### The Role of Psychotic Processes

Both Sorrells' (1980) and Solway et al.'s (1981) typologies included a psychotic or psychiatrically disturbed group of adolescent murderers. However, other research, which did not try to differentiate between murderers, showed widely varying rates of psychotic disturbance in juvenile murderers. Lewis, Moy, Jackson, Aaronson, Restifo, Serra, and Simos (1985) found that all nine of their subjects suffered from psychotic symptoms (e.g., paranoid ideation, hallucinations, previous diagnosis of schizophrenia). Lewis, Pincus, Bard, Richardson, Pichep, Feldman, and Yeager (1988) discovered that seven of their 14 subjects were psychotic at the time of the offense (e.g., paranoia, hallucinations). Six of Sendi and Blomgren's (1975) ten juveniles were diagnosed as schizophrenic after a post-offense psychiatric interview.

Other research has found far lower rates of psychosis or schizophrenia in their samples. Bender (1959) diagnosed 12 of her 33 subjects as schizophrenic. Lewis, Shanok, Grant, and Ritvo (1983) found that 38% of their 21 homicidally aggressive children warranted a diagnosis of some type of psychosis (e.g., psychotic episode, childhood schizophrenia); however, this rate was not significantly different from the rate of psychosis in a group of violent but non-homicidal children (40%).

Additional research has found the levels of psychotic behaviour in juvenile murderers to be extremely low or non-existent. Only five of Cornell et al.'s (1987b) 72 juvenile murderers exhibited clear psychotic symptoms consistent with DSM-III criteria. Malmquist (1971) diagnosed three of his 20 subjects as schizophrenic. Only one of Russell's (1973) ten males was definitely schizophrenic. Hellsten and Katila (1965),

Labelle, Bradford, Bourget, Jones, and Carmichael (1991), Myers and Kempf (1990), Sorrells (1977), and Walshe-Brennan (1977) did not find a single instance of psychotic behaviour in their samples of murderous adolescents.

These discrepant rates are probably due to the widely divergent settings this research has occurred in, that is, private practice, forensic settings, and psychiatric hospitals (Cornell et al., 1987a). Clearly, though, there is a type of adolescent murderer who is psychotically disturbed (supporting Sorrells' (1980) and Solway et al.'s (1981) typologies). However, research also shows that psychotic processes cannot explain the actions of the majority of juvenile murderers. Thus, there must be at least one other type of adolescent murderer who is not psychotic.

#### The Role of Neurological Impairment

Neurological impairment failed to feature prominently in research discussing the demographics of juvenile murderers. Only three of Bender's (1959) 33 subjects experienced epilepsy. Hellsten and Katila (1965) found nothing indicative of epilepsy in their sample. Busch, Zagar, Hughes, Arbit, and Bussell (1990) had a seven percent rate of epilepsy. In contrast, Lewis et al. (1983) found that 29% of their subjects suffered from seizures.

Findings of EEG abnormalities have not figured prominently in the literature. Labelle et al. (1991) found two subjects to suffer from epilepsy; ten others had normal EEGs. Sendi & Blomgren (1975) found two abnormal EEG ratings in their group of ten murderers. Walshe-Brennan (1977) reported no abnormal EEG findings during routine examinations. However, Lewis et al. (1983) found that 38% of their juvenile murderers suffered from EEG abnormalities, although this rate was not significantly different from that of a non-homicidal group (48%).

Previous typology-driven work failed to mention the utility of neurological impairment in differentiating between types of murderers. Future research needs to take this variable into account.

### Family Background of Juvenile Killers

The family background of juvenile killers falls toward the disturbed end of the spectrum. Infrequently, studies like Walshe-Brennan's (1977) reported that all of the offenders came from a relatively stable family situation, free of abuse and deprivation. More frequently, the family backgrounds of offenders were of a variable nature. For example, Fiddes (1981) found that one quarter of her murderers reported that other family members engaged in criminal activity; conversely, another quarter reported no family criminality whatsoever. Two of Russell's (1973) six subjects reported "disadvantaged" upbringings.

Usually, the majority of offenders reported a substantially disturbed home life. Some families experienced multiple stressors including parental brutality and criminality, parental psychiatric disturbance, alcoholism, and/or low socioeconomic status (Bender, 1959; Busch et al., 1990; Corder et al., 1976; Goetting, 1989; Sendi & Blomgren, 1975; Sorrells, 1977; 1980; Zagar, Arbit, Sylvies, Busch, & Hughes, 1990).

Other families experienced only a few of these problems. Hellsten and Katila (1965) reported that all of their subjects experienced poor emotional environments. Thirty to 88% of juveniles were seriously physically abused, and 62% witnessed their fathers physically assaulting their mothers (Labelle et al., 1991; Lewis et al., 1985; Lewis et al., 1988; Lewis et al., 1983; Sorrells, 1980). Approximately 60% of juveniles had alcoholic fathers (Corder et al., 1976; Lewis et al., 1983), and 50% of juvenile murderers had family members who abused drugs (Labelle et al., 1991). Finally, approximately half of juveniles reported some history of family psychiatric problems (Labelle et al., 1991; Lewis et al., 1983).

In terms of differentiating adolescent killers into groups, family background variables have only limited utility. Over 75% of subjects in Sorrells' (1980) study came from violent or chaotic homes. A high level of family violence and disorganization was present in all three types of killers in Corder et al.'s (1976) study. Cornell et al. (1987b) found that there was no difference between their crime group and conflict group in terms of family dysfunction. The experience of a dysfunctional family background is common to otherwise heterogeneous groups of murderers. Thus, family dysfunction/background may not differentiate among different types of adolescent killers.

### Homicidal Incidents

There are five major aspects of the homicide incident itself that are needed to complete the picture of the typical youth homicide: the relationship between the victim and the killer; the motives for the killing; the presence of drugs and /or alcohol; the weapons used (if any); and the number of offenders present at the scene. These variables are important to take into account because they aid in determining whether these proposed types of killers behave in different ways during the homicide itself. It is a necessary step because some studies that proposed typologies did not address the issue of behaviour during the homicide (i.e., Miller & Looney, 1974; Sorrells, 1980).

### Victim - Offender Relationship

Research has shown that one-third to two-thirds of victims were strangers to their killers (Cormier & Markus, 1980; Fiddes, 1981; Goetting, 1989; Lewis et al., 1985). Other studies reported that approximately half of victims were acquaintances (Cornell, 1993a; Meloff & Silverman, 1992; Rowley, Ewing, & Singer 1987). Sometimes there was an approximately even mix of victims being family, friends, or strangers (e.g. Myers & Kempf, 1990; Sendi & Blomgren, 1975). Thus, there is a definite trend toward victims and killers to be only slightly acquainted or complete strangers to one another.

Four of the typology-driven studies directly addressed this issue. By definition, Corder et al.'s (1976) stranger murderers killed strangers. Non-empathic murderers (Zenoff & Zients, 1979; Sorrell, 1980) were more likely to kill strangers, and American crime group murderers killed strangers 57% of the time (Cornell et al., 1987b). Canadian crime group murderers killed strangers 44% of the time (Toupin, 1994). The other types of killers in the above typologies were more likely to kill family members or persons known to themselves. Since Rowley et al. (1987) believed that there may be "important psychological differences" (p.9) between adolescents who kill strangers and those who kill intimates, the findings of the typology-driven studies suggest that psychopathy may be that important mediating variable. This idea is further supported by Williamson et al.'s (1987) finding that the victims of adult psychopaths were more likely to be strangers.

#### Motives for Murder

In terms of motives, there is no clear picture. Easson and Steinhilber (1961) stated that homicides by children and young adults often fell under the rubric of "without motive." Stearns (1957) and Fiddes (1981) both found that their subjects could not give a motive or reason for the murder. Cornell (1993a) stated that most juvenile homicides involve little planning or thinking about the murder itself. However, Sendi and Blomgren (1975) found that most of the murders committed by their subjects were intentional, but did not state for what reason the murder was committed. Myers and Kempf (1990) found that the murder was most often a violent solution to an argument, or was committed during the course of another crime ("crime-based homicides"). Meloff and Silverman (1992) found that 70% of their crime-based homicides were related to theft and 21% were related to sexual offenses.

In terms of motives, the psychopathic-like group of killers in Zenoff and Zients' (1979), Solway et al.'s (1981), Cornell et al.'s (1987b), and Toupin's (1994) studies were similar. Non-empathic killers killed during the course of a robbery (material gain) or for no



discernible reason (Zenoff & Zients, 1979). Solway et al.'s (1981) psychopathic-like killers committed homicide for no particular reason, usually during the course of another crime. The crime group killers, by definition, murdered during the course of another crime, usually robbery (Cornell et al., 1987b; Toupin, 1994). In the above studies, the motives usually espoused by the other types of killers were self-defense or intense interpersonal conflict.

### The Role of Substance Abuse

A number of studies reported that a substantial number of juvenile murderers abused alcohol (e.g. Busch et al., 1990; Labelle et al., 1991; Zagar et al., 1990). At the time of the homicide itself, one quarter to one half of offenders were drunk or drinking (Fiddes, 1981; Phillips & Spears, 1987; Sorrells, 1977). Drug use was also prevalent among young killers. Between one-fifth and three quarters of killers were under the influence of drugs during the murder (Labelle et al., 1991; Phillips & Spears, 1987; Sorrells, 1977).

Cornell et al.'s (1987b) and Toupin's (1994) study involving the crime and conflict group killers were the only typology studies to address the issue of substance abuse during the time of the homicidal offense. Seventy three percent of American crime group killers, and 60% of Canadian crime group killers, were under the influence of substances (either alcohol or drugs) previous to or during the offense. Seventy percent of American conflict group killers, and 65% of Canadian conflict group killers, had not consumed any alcohol or drugs.

### The Use of Weapons

American data show that young killers used firearms in approximately 60 to 75% of homicides (Cornell, 1993a; Goetting, 1989). Canada's stricter gun control laws may be reflected in the findings that the rates of firearms used in homicides involving adolescents are lower in Canada than in the United States. Cormier and Markus' (1980) data on

Canadian murderers indicates that 28% used knives, 24% used guns and 24% used clubs. Meloff and Silverman's (1992) data on Canadian murderers showed 35% of killers used guns, 30% used knives, and 22% used fists or clubs.

There is no discernible pattern in the results of the typology studies. Solway et al (1981) did not present exact results but reported that psychopathic-like killers did not favor any particular type of weapon. Cornell et al. (1987b) found that their American crime group killers did not possess a weapon during 35% of the offenses. Roughly equal numbers used guns, clubs, or knives. The conflict group killers used guns (47%), knives (27%), or clubs (20%). Toupin's (1994) Canadian crime group killers did not possess a weapon 30% of the time. Thirty percent of Canadian crime group killers had knives, 26% had guns, and 15% had clubs. Canadian conflict group killers used knives (50%), guns (32%), or clubs (10%). Thus, crime group killers were more likely to carry out homicide with their bare hands. According to Williamson et al. (1987), one quarter of both psychopaths and nonpsychopaths used guns, and another quarter of both used knives.

### The Presence of Accomplices

Most research shows that juvenile homicide is primarily a one-on-one situation (Goetting, 1989; Meloff & Silverman, 1992; Rowley et al., 1987). Other research has shown that more than one offender is present from 78% (Zimring, 1981) to 36% (Cornell, 1993a; Fiddes, 1981) of the time. Thus, in contrast to Zimring's (1981) belief, adolescents do not necessarily commit all their crimes in groups. In addition, Meloff and Silverman (1992) found that the probability of being killed by a group of offenders decreases as the victims' relationship towards the offender becomes more intimate, and that crime-based homicide victims were most likely to have been killed by multiple offenders.

Cornell et al. (1987b) found 57% of their American crime group killers had accomplices, as compared to only 13% of conflict group killers. Toupin (1994) found

60% of Canadian crime group killers had accomplices, and 7% of conflict group killers had accomplices.

#### Follow-up of Juvenile Murderers

Russell (1965) reported that of his fifteen juvenile murderers, six made "good adjustment," four made only a "borderline adjustment," and five have remained unchanged, possibly retaining murderous potential. Unfortunately, Russell (1965) did not report what his adjustment criteria were. Cormier and Markus (1980) reported the follow-ups of four studies. In Bender's (1959) study, seven subjects were still in prison, two made a "good adjustment," three were thought to be "doing well," and the remaining four had only made a "borderline adjustment." Gardiner (1976) reported that, of five adolescent murderers, four had been released from prison after serving 10 to 20 years and had apparently made a good social adjustment. Mohr and McKnight (1971) reported that two of their three subjects had been released from hospital and were doing well, while the third subject was still in hospital suffering from a manipulative character disorder. Duncan and Duncan (1971) reported that after a ten year follow-up four of their five cases had not committed further offenses. Cormier and Markus (1980) commented that of their own subjects followed up longitudinally, the rate of recidivistic homicide was low. Unfortunately, it is unclear what the recidivism rate for other crimes was.

There is no information regarding the prison behaviour of different types of juvenile murderers. Psychopathic murderers may behave differently from nonpsychopathic murderers while institutionalized. If this is true, it will lend more credence to the hypothesis that two different types of juvenile murderers exist.

### Hypotheses

By collating data on adult psychopaths and certain types of juvenile murderers, I propose:

1. The rate of psychopathy in this sample will not differ significantly from that of other studies using the PCL-R.

2. a). There will be a significant positive correlation between PCL-R total score and level of instrumental violence, planning, goal-directedness, severity of violence, and intoxication. PCL-R scores will correlate negatively with provocation, arousal, and psychosis.

2. b). i). There will be a significant negative correlation between PCL-R total score and degree of relationship between offender and victim. As PCL-R scores increase, the more distant the relationship between offender and victim.

ii). PCL-R total score will be significantly positively correlated with the presence of motives like material gain and "no reason."

iii). PCL-R total score will be significantly positively correlated with substance abuse (alcohol and drugs) in the past and during the index offense.

iv). PCL-R total score will be significantly positively correlated with weapon use, physical violence, and verbal threats in the past and during the index offense

v). PCL-R total score will be significantly negatively correlated with the presence of accomplices. However, if more than one offender is present, PCL-R scores will correlate positively with dominant behaviour (i.e. instigating the homicide), because of psychopaths' tendencies towards interpersonal dominance (e.g. Harpur, Hare, & Hakstian, 1989).

3. During the follow-up period, PCL-R total score will be significantly positively correlated with the number of institutional offenses committed.

4. PCL-R total score will not be significantly correlated to any principal Axis I diagnoses, with the exception of substance abuse and conduct disorder, both positively

(e.g. Forth et al., 1990; Hart & Hare, 1989; Hemphill, Hart, & Hare, 1994; Smith & Newman, 1990). In addition, the only Axis II diagnoses the PCL-R will significantly correlate with are Antisocial (positive), Avoidant (negative), Histrionic (positive), and Narcissistic Personality Disorders (positive) (e.g. Hart & Hare, 1989).

## Method

### Subjects

The subjects were 44 juvenile offenders (41 males, 3 females) with a mean age of 16 years 4 months ( $SD = 12$  months) at the time of the offense, with an age range of 13 years 6 months to 17 years 11 months. These subjects represented the entire population of juveniles charged with murder (29), attempted murder (11), manslaughter (3), and accessory to murder (1) who were referred to Youth Forensic Psychiatric Services, Burnaby, B.C., Canada, for psychiatric assessments between January 1986 and January 1994. Fifty-two percent of offenders were Caucasian, 34% were Native Indian, 5% were East Indian, 5% were Asian, 2% were Black, and 2% were Middle Eastern. The mean full IQ score was 95.1 ( $SD = 16.8$ ), with a range of 71 to 137. The mean PCL-R score was 21.8 ( $SD = 6.8$ ), with a range of 9.3 to 33.8.

### Materials

The Psychopathy Checklist - Revised (Hare, 1991) is the instrument which best measures Cleckley's (1976) conception of psychopathy. The full procedure involves a semi-structured biographical interview with the subject, followed by a comprehensive review of collateral information. This information is then used to make three point Likert-type scale ratings (0 = item does not apply, 1 = item applies somewhat, 2 = item definitely applies) on 20 items designed to assess the fundamental personality traits and behaviours

of psychopathy. The 20 checklist items are shown in Table 1. These item scores are totaled to yield an overall score between 0 and 40 which reflects how well the subject matches the characteristics of the prototypical psychopath. For purposes of this study, a cutoff score of 28 or over is indicative of psychopathy. Research has shown that valid and reliable ratings can be made on the basis of file information alone (e.g. Lewis et al., 1994; Wong, 1988), and this procedure was used in the current study.

Some of the 20 items were modified to reflect a juvenile rather than an adult orientation, specifically items 1, 2, 3, 5, 9, 11, 13, 15, 17, 18, 19, and 20. These modifications are shown in Appendix A.

Table 1

Items in the Hare Psychopathy Checklist - Revised (PCL-R)

1. Glibness/Superficial Charm <sup>1</sup>	11. Promiscuous Sexual Behaviour
2. Grandiose Sense of Self-worth <sup>1</sup>	12. Early Behaviour Problems <sup>2</sup>
3. Need for Stimulation <sup>2</sup>	13. Lack of Realistic Long-term Goals <sup>2</sup>
4. Pathological Lying <sup>1</sup>	14. Impulsivity <sup>2</sup>
5. Conning/Manipulative <sup>1</sup>	15. Irresponsibility <sup>2</sup>
6. Lack of Remorse or Guilt <sup>1</sup>	16. Failure to Accept Responsibility <sup>1</sup>
7. Shallow Affect <sup>1</sup>	17. Many Short-term Relationships
8. Callous/Lack of Empathy <sup>1</sup>	18. Juvenile Delinquency <sup>2</sup>
9. Parasitic Lifestyle <sup>2</sup>	19. Revocation of Conditional Release <sup>2</sup>
10. Poor Behavioural Controls <sup>2</sup>	20. Criminal Versatility

Note. <sup>1</sup> Loads on Factor 1. <sup>2</sup> Loads on Factor 2.

Cornell's (1993b) Instrumental versus Hostile/Reactive Aggression scale consists of 9 items: global instrumental vs. reactive/hostile aggression; planning (degree of premeditation or preparation for aggression); goal-directedness (degree to which aggression is motivated by some external gain or incentive); provocation (degree of provocation from the victim); arousal (degree of arousal experienced by the offender); severity of violence (degree of injury to the victim); relationship with victim (closeness of relationship between victim and offender); intoxication (intoxicated by drugs or alcohol during incident); and psychosis (presence of psychotic symptoms during incident). Each item is rated on the basis of a four-, five-, or seven-point Likert-type scale based on file information for the index offense. The coding guide is presented in Appendix B.

An eight page variable list was completed for each subject. The variable list includes information regarding demographics (e.g. age, gender, race), psychiatric history of subject and his/her family (type and severity), abuse of subject (physical, emotional, sexual, neglect), the criminal history of the subject and his/her family, the details of the homicide incident, and the resulting institutional behaviour of the subject. The variable list is presented in Appendix C.

### Procedure

Subjects for the study were gathered when the Director of Clinical Services for Youth Forensic Psychiatric Services, Burnaby, retrieved the names of all offenders from the institutional computerized database who were charged with murder, attempted murder, or accessory to murder, and who were assessed at Youth Forensic Psychiatric Services between January 1986 and January 1994. File information (involving psychological interviews, social history, and treatment notes) for all subjects were gathered from the Medical Records Department at Youth Forensic Psychiatric Services. All files were read on institutional property, and none were removed from the institution.

PCL-R ratings, based on file information alone, were completed for all subjects by the experimenter. Eighteen of these subjects received a second PCL-R file-only rating from one of three trained PCL-R raters (a university professor, a doctoral level graduate student, or a research assistant). Interrater reliability was computed by an intraclass correlation ( $r = .93$ ). The experimenter read through subjects' files and completed Cornell's Coding Guide for Instrumental versus Hostile/Reactive Aggression for all subjects and the eight page variable list for 28 subjects. An undergraduate psychology student completed a second Cornell's Coding Guide for all subjects and the variable list (except the Institutional Behaviour section) for 31 subjects. Interrater reliabilities for the nine Cornell's Coding Guide subscales, computed by intraclass correlations, ranged from .61 to .91 (Dempster, 1995). Overall, 15 subjects were double-rated using the variable sheets. Only the experimenter had access to the disciplinary files for subjects raised to adult court (through Correctional Services of Canada) or those who remained in juvenile court (through institutional disciplinary files at Willingdon Youth Detention Centre, Burnaby).

The Institutional Behaviour section for 11 subjects who served time in adult prisons was completed by the experimenter through access to the computerized Offender Management System (OMS) operated by Correctional Services of Canada (CSC). The experimenter accessed OMS from a personal computer at CSC Headquarters located in Abbotsford, British Columbia. The experimenter received clearance to use OMS from Dr. Carson Smiley, Regional Psychiatric Centre, Abbotsford. This database is able to access file information for all adult inmates across Canada who have been incarcerated, and thus includes institutional disciplinary files. Relevant information (type and date of incident) was then coded onto the variable sheet.

The Institutional Behaviour section for 29 subjects who served time in youth detention centres was completed by the experimenter. For these subjects, the experimenter was allowed access to the juvenile's files at Willingdon Youth Detention Centre and located



the disciplinary section in each subject's file. All types of institutional incidents and the dates of these incidents were recorded. All files were read on institutional property, and none were removed from the institution.

## Results

### Hypothesis 1: Comparisons of PCL-R scores for juvenile samples

The rate of psychopathy of the current sample (27.3%) was compared with Forth et al. (1990; 36%), O'Shaughnessy (1994; 22.8%), and Lewis (1995; 23.3%) using chi-square goodness of fit analysis. The prevalence of psychopathy in the current sample did not differ significantly from the prevalence of psychopathy in the other four studies.

The mean total PCL-R score from the current sample (21.8) was compared with that of Forth et al. (1990; 26.2), O'Shaughnessy (1994; 21.4), and Lewis (1995; 25.1) using t-tests. The current study's mean total was significantly lower than Forth et al.'s (1990) mean total ( $t(117) = -3.27, p = .005$ ) and Lewis' (1995) mean total ( $t(56) = -3.01, p = .004$ ).

In every Hypothesis section where PCL-R total scores were correlated with violence variables, items 10, 18, and 20 from the PCL-R (which involve violent behaviour) were omitted from the total scores of all subjects. Due to the large number of correlations and chi-squares computed, each calculation was tested at the .01 level of significance (the standard Bonferroni correction was rejected as being too conservative). Thus, only statistically significant values ( $p < .01$ ) or trends ( $p < .05$ ) are reported in tables; all other results are listed in Appendix D.

### 2 a): PCL-R and Instrumental/Reactive Aggression

Pearson  $r$  correlational analysis was conducted to test the strength of the relationship between PCL-R total score and scores from the nine instrumental/reactive aggression scales. The strongest trend was a minimal correlation between PCL-R total score and the

Psychosis subscale ( $r = -.23$ ,  $p = .07$ ). Thus, psychopathy was not significantly associated with the commission of a particular type of aggression.

#### Hypothesis 2 b) i): PCL-R and Relationship to Victim

The Pearson  $r$  correlation between PCL-R total score and victim - offender relationship was not significant ( $r = -.10$ ,  $p = .26$ ). Overall, 15% of all victims were family members, 38% of all victims were acquaintances, and 46% of all victims were strangers to their murderers. Sixty-four percent of all victims were males, and 36% were females. Psychopathy was not significantly associated with a minimal/nonexistent prior relationship to the victim.

#### Hypothesis 2 b) ii): PCL-R and Motives

A point-biserial correlation was computed to examine the relationship between PCL-R total score and whether the homicidal motive was “psychopathic” (i.e. for material gain or “no reason”; score = 2) or “nonpsychopathic” (all other reasons; score = 1). The correlation was not significant ( $r = .18$ ,  $p = .30$ ). Overall, 44% of all offenders’ motives were material gain or “no reason”, and 56% involved all other motives. Psychopathy was not significantly associated with a particular kind of motivation for homicide.

#### Hypothesis 2 b) iii): PCL-R and Substance abuse (past and index offense)

Point biserial correlational analyses were conducted to examine the relationship between PCL-R total score and substance abuse during the index offense (use of alcohol before or during the offense and whether the offender was intoxicated; use of drugs before or during the offense and whether the offender was intoxicated). Pearson  $r$  correlational analyses were conducted to examine the relationship between PCL-R total score and past substance abuse (amount of alcohol consumed and how frequently; amount of drugs consumed and how frequently). No correlations were significant, but there were

nonsignificant trends for PCL-R total scores to correlate moderately with the amount of drugs taken in the past ( $r = .33$ ,  $p = .02$ ) and the frequency of drug use in the past ( $r = .29$ ,  $p = .03$ ). Sixty seven percent of psychopaths and 74% of nonpsychopaths used alcohol frequently in the past, and 83% of psychopaths and 55% of nonpsychopaths used drugs frequently in the past. Eleven percent of psychopaths and 53% of nonpsychopaths were intoxicated before or during the index offense, and no psychopaths and 12% of nonpsychopaths were on drugs before or during the index offense.

Hypothesis 2 b) iv): PCL-R, Weapons, and Threats (past and index offense)

Point biserial correlational analyses were conducted to examine the relationship between PCL-R total score and past weapon use (possession of weapon; threatens with weapon; use of weapon). Pearson  $r$  correlational analyses were conducted to examine the relationship between PCL-R total score and past weapon use (severity of threats with weapons; severity of injury caused by weapon) and past violent behaviour (degree and frequency of past violent behaviour; degree and frequency of past verbal threats). Significant results and nonsignificant trends are shown at the top of Table 2. Psychopathy was associated with the possession and use of weapons, and was also associated with the frequent commission of physical aggression.

Point biserial correlational analyses were conducted to examine the relationship between PCL-R total score and weapons use during index offense (possession of weapon; threaten with weapon; use of weapon) and if victim was killed at long range (i.e., shooting or arson; score = 1) or close range (i.e., beating, stabbing, strangulation, suffocation, and drowning; score = 2). Pearson  $r$  correlational analyses were conducted to examine the relationship between PCL-R total score and weapon use during index offense (severity of threats with weapon; severity of injury caused by weapon) and violent behaviour during index offense (degree of verbal threats; physical harm inflicted on victim prior to homicide/attempted homicide). Significant and marginally significant results are shown at

the bottom of Table 2. In an unexpected twist, psychopathy was inversely associated with the possession and use of a weapon during the index offense. Ninety-one percent of psychopaths and 72% of nonpsychopaths chose a close range method of killing.

Table 2

Correlations between PCL-R Total score and Violence

	PCL-R
Weapons in past:	
possession of (n=26)	.57 **
use of (n=24)	.35 *
Physical violence towards others in past:	
degree of (n=41)	.45 **
frequency of (n=38)	.48 **
Weapons in index:	
possession of (n=41)	-.33 (*)
severity of threats (n=35)	-.33 (*)
use of (n=41)	-.33 (*)
Range at which victim was killed (n=40)	.50 **

(\*)  $p < .05$  (although not in predicted direction), \*  $p < .05$ , \*\*  $p < .01$

Hypothesis 2 b) v): PCL-R and Accomplices

Point biserial correlational analyses were conducted to examine the relationship between PCL-R total score and whether offenders were alone during the index offense (1

= yes, 2 = no) and if the subject was passive (score = 1) or dominant (score = 2) in the presence of accomplices. PCL-R total score did not significantly correlate with the presence of accomplices ( $r = .10$ ,  $p = .27$ ) or behaviour with accomplices ( $r = .40$ ,  $p = .04$ ). Thus psychopathy was not related to committing the homicide alone but it was associated with a trend toward dominating accomplices during the offense.

### Hypothesis 3): PCL-R and Institutional Misbehaviour

Pearson  $r$  correlational analyses were conducted to examine the relationship between PCL-R scores and institutional misbehaviour in adult and juvenile prisons (total number of incidents per month; number of violent incidents per month; number of nonviolent incidents per month). Significant results and nonsignificant trends are shown in Table 3. Psychopathy was associated with misbehaviour in juvenile prisons but not adult prisons.

Table 3

### Correlations between PCL-R Total score and Institutional Misbehaviour

	PCL-R
Juvenile:	
total number of incidents/month (n=29)	.43 **
total number of violent incidents/month (n=29)	.35 *
total number of nonviolent incidents/month (n=29)	.40 *

\*  $p < .05$     \*\*  $p < .01$

#### Hypothesis 4): PCL-R and Other Psychiatric Diagnoses

Point biserial correlational analyses were conducted to examine the relationship between Axis I, II, and III diagnoses and total PCL-R scores. PCL-R total score was significantly associated with a diagnosis of conduct disorder ( $r = .53$ ,  $p = .001$ ), and showed a nonsignificant trend toward a diagnosis of a sexual disorder ( $r = .34$ ,  $p = .05$ ).

#### Exploratory Analyses 1: PCL-R and Violence

Chi-square analyses were conducted to determine if instrumental/reactive violence, offense characteristics, and institutional misbehaviour depended on whether subjects were psychopaths or nonpsychopaths. Scores on the variables were not dependent on subjects' psychopathy levels; nonsignificant trends are shown in Table 4. Nonpsychopaths were more likely to have and use a weapon during the index offense than psychopaths (90% vs. 55%).

Table 4

#### Chi-Square Analyses: PCL-R Total score and Offense Characteristics

	PCL-R
Weapons:	
possession of (n=41)	6.44 *
use of (n=41)	6.44 *
* $p < .05$	

### Exploratory Analyses 2: Hierarchical Multiple Regression

To test the importance of the interaction of the PCL-R factors in postdicting violence variables, a hierarchical multiple regression equation was constructed, entering Factor 2 first, followed by Factor 1, and the interaction term (F1\*F2) (see Harpur & Hare, 1991). This will show if Factor 1 accounts for significant variance independent of Factor 2, and if the interaction term accounts for significant variance independent of Factors 1 and 2. Results were tested at a  $0.05/21 = .002$  level of significance. Significant results and nonsignificant trends are presented in Table 5.

Table 5

#### Multiple Regression Analyses: PCL-R Factors and Violence

	Factor 2	Factor 1	Interaction
Past Weapon use:			
threatens with weapon (n=21)	.02	.21**	.05
Degree of Verbal Threats:			
in index (n=30)	.04	.10**	.04
Instrumental vs. Reactive Aggression:			
global aggression (n=43)	.00	.01**	.04**
severity of violence (n=43)	.00	.03**	.01*
* p < .01      ** p < .001			

For the majority of violence variables, Factor 1 and the interaction term did not account for significant amounts of variance independent of Factor 2. Factor 1 added significant additional variance when the variable in question was related to verbal or

physical threatening. The interaction term accounted for significant variance in some of the instrumental/reactive aggression variables, but its contribution is difficult to interpret given the small magnitude of the variance.

### Descriptive Data

The descriptive statistics for the current study's juvenile murderers are shown in Appendix E. Descriptive data for the hypotheses presented by psychopathy group (low = lowest 15 scores on PCL-R, medium is middle 15 scores on PCL-R, and high is 14 highest scores on PCL-R) is shown in Appendix F. Psychopathy groups were constructed in this manner to equalize the number of subjects in each group.

### Discussion

This was the first study to investigate the relationship between juvenile homicide and psychopathy. Each of the nine experimental hypotheses will be discussed in turn.

The rate of psychopathy in the current study did not differ from the rate of psychopathy in other studies of juvenile offenders. The range of psychopathy rates in the four studies (23% to 36%) was probably due to the divergent settings in which research occurred. Forth et al.'s (1990) rate may be the highest because their subjects were incarcerated in a youth detention centre which contained "the most serious and persistent offenders in the province" (p. 342). Subjects from the remaining studies were sampled from either a juvenile outpatient or inpatient unit. These samples would have included a wider range of offenders, from the very psychopathic to the relatively nonpsychopathic. The results of these studies suggest that the rate of psychopathy in the overall juvenile



offender population is approximately 25%, which is essentially equivalent to the prevalence of psychopathy in adult male institutions (Hare, 1991).

The current sample had a significantly lower mean PCL-R total score than Forth et al.'s (1990) and Lewis' (1995) samples of general juvenile offenders. The large standard deviation of 6.8 in the current study indicated the presence of a number of low PCL-R scorers. This standard deviation was significantly higher than Lewis' (1995) standard deviation of 5.6 for general offenders. However, Forth et al.'s (1990) sample also had a large standard deviation (7.5), but their low PCL-R scorers were counterbalanced by the presence of a substantial number of very psychopathic subjects. The presence of any nonpsychopaths in a homicide sample was disconcerting until the events surrounding the index offense were considered. Outside of state-sanctioned activities (e.g. the armed forces), nonpsychopaths probably do not engage in extreme acts of violence unless they are emotionally aroused, intoxicated, and/or a weapon is present; these circumstances existed in many of the index offenses. As will be discussed below, the homicides committed by nonpsychopaths were generally unprovoked and not carried out to satisfy any kind of goal, and nonpsychopaths were usually highly aroused and/or under the influence of alcohol. Theirs were not premeditated crimes but rather spur of the moment actions, carried out during an alcoholic haze while they possessed a weapon. In such a situation, emotionally upset and intoxicated nonpsychopaths were capable of the acts of violence one usually attributes to psychopaths.

PCL-R total scores were not significantly associated with the instrumental/reactive aggression subscales; however, the pattern of positive and negative correlations was essentially as predicted. The strongest correlation indicated that as subjects' PCL-R total scores decreased, there was an increased chance that their behaviour seemed erratic or psychiatrically disturbed. The strongest chi-square trends indicated nonpsychopaths were almost twice as likely to be intoxicated during the index offense than psychopaths (53%

vs. 30%), nonpsychopaths were more likely to be aroused than psychopaths (85% vs. 70%), and psychopaths were more likely to be provoked than nonpsychopaths (50% vs. 38%). Thus, both groups experienced high levels of emotional/physiological arousal but it occurred in psychopaths in response to a perceived threat and in nonpsychopaths due to alcohol consumption. Although the research linking violence to alcohol is equivocal (e.g., Lang & Sibrel, 1989; Murdoch, Pihl, & Ross, 1990; Shepherd, 1994), it is interesting to note that Holcomb and Adams (1985) found that men who committed homicide while sober were more "psychopathic" (as determined by MMPI Pd scale) than men who committed homicide while intoxicated. Holcomb and Adams (1985) concluded that alcohol may be a catalyst for violence in nonpsychopathic personalities. Psychopaths, on the other hand, do not need an alcohol catalyst and will respond to any kind of provocation by losing control and becoming either verbally or physically abusive towards others.

The small correlations between psychopathy and instrumental violence did not match the findings of past research (e.g., Williamson et al., 1987; Cornell et al., 1993). The maturity level of the subjects may be the reason why psychopathy and aggression scores were not highly correlated. Past research on psychopathy and instrumental violence has not focused on adolescents. Juvenile males may not plan crimes in order to achieve specific antisocial goals in the manner of adults. If this hypothesis is true, psychopathic adolescents would behave more like nonpsychopathic adolescents than psychopathic adults. As psychopaths age, their life experiences and emotional detachment from others may foster a more goal-oriented, planful approach to violence. In addition, this study was the first time (to the author's knowledge) that the Cornell Coding Guide for Instrumental versus Hostile/Reactive Aggression was used with adolescents; the present design of the coding guide may lack sensitivity to detect differences which actually exist.

The results of the chi-square analyses generally did not support the typologically-oriented theorists. The typology theorists hypothesized that the nonpsychopathic

murderers killed in response to provocation and psychopathic murderers were more likely to be intoxicated during the offense; this study found the opposite. However, the current study's results did indicate that nonpsychopaths were seen to be more psychiatrically disturbed than psychopaths (6% vs. 0%). This finding was a minor validation of the typological-oriented approach.

PCL-R total scores were not significantly related to the closeness of the relationship between the murderer and the victim. Both psychopaths and nonpsychopaths overwhelmingly victimized either strangers or acquaintances who were male. This contradicted Williamson et al.'s (1987) finding that psychopaths were more likely to victimize male strangers and nonpsychopaths to victimize familiar females. The age difference between Williamson et al.'s (1987) sample and the current sample may be the reason for this finding. Adult male nonpsychopaths are likely to commit violence in the home environment against the person they associate with the most (i.e., a wife or girlfriend). Adult male psychopaths are more likely to spend time in areas frequented by unknown males (e.g., a bar) where they are more likely to victimize male strangers. Adolescent males probably spend a large proportion of their time away from home and frequent areas where there are other unknown males (e.g., sporting events, drinking parties, gang hang-outs), which increases the chances of victimizing male strangers. Thus, the environments of adolescent males (regardless of degree of psychopathy) may more closely approximate those of the adult psychopath than the adult nonpsychopath.

The findings of typology-driven homicide research were not supported. These studies have shown "psychopathic" murderers (e.g., crime group murderers) kill strangers, but the "nonpsychopathic" types of murderers (e.g., conflict group murderers) were more likely to kill family members or friends. In the current study both psychopaths and nonpsychopaths victimized strangers and acquaintances approximately 85% of the time. Past researchers (e.g., Cornell et al., 1987b; Toupin, 1994) may have found the results

they did because their groups were defined on the basis of homicide details (e.g., motive for homicide) and personality traits of groups were subsequently inferred. Conversely, the current study defined groups on the basis of personality traits and then focused on the details of the homicide. Cornell et al. (1987b) specifically stated that offense characteristics were not independent of group classification; thus, it is expected that their groups differ with regards to the identity of the victims. This methodological difference may be responsible for a number of differences between the results of the current study and those which were typology-driven. However, the current study's results did support the findings of homicide research which is not tied to typologies. Cornell (1993), Fiddes (1981), Lewis et al. (1985), Meloff and Silveman (1992), and Rowley et al. (1987) all found the majority of their subjects killed either strangers or acquaintances.

PCL-R total scores did not significantly correlate with the presence of homicidal motives like material gain and "no reason." Approximately half of psychopathic and nonpsychopathic murderers espoused reasons like material gain or "no reason", and the other half acted for reasons of strong emotional arousal, revenge, opportunism, or sexual gratification. The current study contradicted Williamson et al.'s (1987) finding that psychopaths committed an index offense for material gain, and nonpsychopaths because of strong emotional arousal. Maturity level is probably a major factor in this difference. All adolescents are frequently bombarded with messages about the attractiveness of greed and material possessions. Newspapers and television news continually report instances where adolescents attack and rob each other for jackets with the logos of professional sports teams or shoes endorsed by superstar athletes. Many juveniles, regardless of their degree of psychopathy, may be susceptible to these advertisements and subtle messages; nonpsychopaths may be motivated to fit in with peers and psychopaths may be motivated to "look cool" or to be admired by others. Therefore, material gain can be conceptualized as an enduring motivation in both psychopaths and nonpsychopaths. Motives like

emotional arousal or revenge, on the other hand, are more acute or short-lived motivations. As mentioned above, the arousal of nonpsychopaths was associated with substance use whereas psychopaths were more likely to be responding to some kind of threat. Unfortunately, the reliance upon file information to record motivation is undoubtedly too insensitive a method to capture any true differences which existed between psychopaths and nonpsychopaths. Future endeavours to uncover motivation for behaviours should rely upon both face-to-face questioning of the offender and extensive file review.

The current study's findings also differed from the typology-driven research which reported that the "psychopathic" murderers acted for material gain or no reason, whereas the "nonpsychopathic" murderers acted in self-defense or due to chronic interpersonal conflict. In the current study, both psychopaths and nonpsychopaths acted for material gain, and psychopaths were more likely to be responding to provocation. As mentioned above, these differences may be due to the procedure which was used by typology-driven approaches to generate murderer types (i.e., personality being deduced from motives and offending styles). If the current study had used this method, the results may have been more similar to those of the typology-driven studies.

PCL-R total scores were significantly correlated to past drug use, but not to past alcohol use. This result was similar to Hemphill et al.'s (1994) finding with adults that drug abuse but not alcohol abuse correlated positively with PCL-R scores. Alcohol was something desired and easily obtainable by both psychopathic and nonpsychopathic adolescents (67% of psychopaths and 74% of nonpsychopaths use alcohol frequently in the past). However, psychopathic juveniles were more likely to have the connections or daring which is required to procure drugs (83% of psychopaths and 55% of nonpsychopaths used drugs frequently in the past). Ironically, both groups may decrease their alcohol use as they age. Many nonpsychopaths will realize that excessive alcohol

intake is detrimental and curtail its use. Adult psychopaths may find that alcohol does not satisfy their needs anymore, and make the switch to harder substances. Psychopaths may be more likely than nonpsychopaths to use drugs at any age due to the novelty or intense sensations associated with drug usage.

In terms of the index offense, there was no significant correlation between substance use and psychopathy. However, as mentioned above, nonpsychopaths were more likely to have been intoxicated on alcohol or drugs prior to the index offense. Eleven percent of psychopaths and 53% of nonpsychopaths were intoxicated prior to the homicide. This was similar to Williamson et al.'s (1987) finding that psychopaths were slightly less likely to be intoxicated during their index offense, and Holcomb and Adams' (1985) study which found that "psychopathic" males who committed homicide were more likely to be sober than nonpsychopaths who committed homicide. It can be hypothesized that substance use and physiological arousal may act to level the playing field for violence between psychopaths and nonpsychopaths. However, it is unclear why so few of the psychopaths were intoxicated. Since half of the psychopaths were responding to provocation, psychopaths may intuit that they were in some type of danger and refrained from alcohol so they would be prepared in case a confrontation occurred. Alternatively, psychopaths may be in situations in which substances were not readily available. There is also the possibility that this finding was an artifact of focussing on a specific situation; in general, psychopaths may be more likely to use drugs and alcohol, but not in certain incidents.

The findings involving substance abuse during the index offense are the opposite of what Cornell et al. (1987b) and Toupin (1994) found. Their crime group murderers ("psychopaths") were far more likely to have been intoxicated at the time of the offense than conflict group murderers ("nonpsychopaths"). This disagreement may be the inevitable result of the different methods the current study and Cornell used to determine their groups. As stated above, offense characteristics for Cornell's typology were not necessarily independent of group classification.

PCL-R total scores correlated significantly with weapons use and physical violence in the past, but not with making threats in the past. These findings generally support previous research which showed that psychopathy was highly related to the commission of violence (e.g., Forth et al., 1990; Hare & McPherson, 1984; Serin, 1991) and typology-driven homicide research which has shown that "psychopathic" murderers have extensive histories of violent behaviour (e.g., Corder et al., 1976; Cornell et al., 1987b; Zenoff & Zients, 1979). Interestingly, the severity of both verbal threats and threats with weapons were only minimally correlated to PCL-R scores. This can be interpreted in the light of research which indicates that psychopaths demonstrate an inability to process emotional information (e.g., Williamson, Harpur, & Hare, 1991). Psychopaths may use threats in an indiscriminate manner instead of tailoring them to match the emotional intensity of the situation. For example, in an extremely tense and confrontational situation a psychopath may be just as likely to say "I'll do something bad to you" to his opponent as threatening "I'm going to slice you into little pieces." The difference in the intensity of the threats is apparent to nonpsychopaths. Thus, psychopaths may see all verbal threats as equally effective (i.e., "a threat is a threat") due to their own inability to understand what would truly affect another person.

However, results for violence during the index offense were the opposite of what was expected. Correlations between PCL-R scores and weapons use were moderately negative, and chi-square analyses showed a trend for nonpsychopaths to make greater use of weapons during the homicide. Fifty-five percent of psychopaths and 90% of nonpsychopaths used a weapon during the index offense. In comparison, Williamson et al. (1987) found that psychopaths and nonpsychopaths were equally likely to have weapons (approximately 50% of the time). There are different reasons why nonpsychopaths were more likely to have a weapon. Nonpsychopaths may have had weapons due to their extensive use of alcohol prior to the index offense. Alcohol may have lowered their

inhibitions about carrying weapons and so when the homicidal event began, nonpsychopaths had weapons at the ready. Alternatively, the presence of a weapon may be the factor which determined the occurrence of homicidal violence with nonpsychopaths. In other words, nonpsychopaths may have felt less inhibited about committing violence because they had a weapon which would facilitate the resolution of violence in their favour. If these nonpsychopathic subjects had not had a weapon, they might not have committed homicide. Psychopaths, on the other hand, may have thought they could handle the situation without a weapon (e.g., grandiosity) or they might not have thought of using a weapon (e.g., impulsivity), and the absence of weapons would not deter them from seriously injuring or killing someone.

As a result of the weapon disparity, there was a strong correlation between PCL-R total scores and the range of killing, either short range (i.e., killing by beating or stabbing) or long range (i.e., killing by gunfire or arson). Ninety-one percent of psychopaths and 72% of nonpsychopaths chose a method of close range killing. Since 45% of psychopaths did not have weapons, they had to kill their victims by kicking or punching which brought them into intimate contact with their victims. Typological-driven homicide research also showed that “psychopathic” murderers were more likely than “nonpsychopathic” murderers to use their hands during the index offense (e.g., Cornell et al., 1987b; Toupin, 1994). This finding in the current study was partly due to necessity (i.e., no weapon), but it was probably also associated with psychopaths’ desire to control others. A person has greater control over another in a situation where one decides if the other lives or dies, and the ultimate “kick” for psychopaths may come from looking their victim in the eye prior to death.

PCL-R total scores did not significantly correlate with committing murder without accomplices. However, high PCL-R total scores were related to dominating accomplices and instigating homicidal activity. The domination of accomplices supports Harpur et al.’s



(1989) finding that psychopaths scored highly on measures of interpersonal dominance (e.g. being cold-hearted). Half of psychopaths and nonpsychopaths in the present study had an accomplice present. Cornell et al. (1987) and Toupin (1994) found their conflict group murderers ("psychopaths") were much more likely to act alone than with an accomplice. Why would the psychopaths in the present study want others around during a homicide? Psychopaths may want others to tell him how tough or brave they are, or so they have someone else to blame for the event. Instead of being loners like adult psychopaths, juvenile psychopaths may actually be magnets for other adolescents. Psychopathic juveniles are the "bad friends" who provide adventure for their comrades (e.g., providing liquor or a car for joyriding). Due to their dominant behaviour, they act as the ringleaders for mischievous activity. This "young psychopath magnet" theory presupposes that friendships become qualitatively different over time; youngsters favour excitement and adventure while adults value stability and trustworthiness. The psychopath can provide the former but not the latter, so as he ages he has fewer and fewer friends.

In juvenile institutions higher PCL-R scores were associated with higher levels of institutional misbehaviour. Forth et al. (1990) also found that PCL-R scores were highly correlated with misbehaviour in a juvenile institution. This is expected because psychopaths were the "big fish in a little pond" and could resort to violence or manipulation in order to satisfy their needs. The adult system, however, is a much different environment. PCL-R total scores were related to a lower level of misbehaviour, which was counterintuitive. This relationship (albeit a weak one) may exist for a number of different reasons. Due to news coverage these young offenders may have had reputations when they reached adult institutions, and psychopaths may have appeared especially bold or arrogant. Older inmates may have then specifically targeted the psychopathic juveniles in order to teach them their place in the prison hierarchy. Thus,

these young psychopaths did not misbehave in prison due to intimidation by other inmates. On the other hand, this statistical finding may have been an artifact of how incidents were reported in adult prisons. With their powers of manipulation, young psychopaths may have allied themselves with powerful inmates. They would then be free to commit institutional infractions and had other inmates take "the rap" for them. Although it is an interesting result, one cannot emphasize it too much due to the weakness of the association. It would be interesting to see what other research with young offenders in adults prisons will find in the future.

The final hypothesis, regarding the association of PCL-R total scores with certain psychiatric diagnoses, was partly supported. Conduct disorder was significantly correlated with PCL-R total scores, as in Forth et al's (1990) study. The pattern of positive and negative correlations of PCL-R total scores with other Axis I diagnoses made theoretical sense. Anxiety and mood disorders correlated negatively with PCL-R total scores. A diagnosis of substance abuse was not highly associated with psychopathy, perhaps due to the extensive use of alcohol in both psychopaths and nonpsychopaths. Psychopathy was highly correlated with being diagnosed sexually disordered. This may be due to the fact that 20% of the victims of psychopaths were young girls who could not sexually defend themselves, or because psychopaths were more likely to touch female victims after overpowering them. Psychopaths were more likely than nonpsychopaths to kill for reasons of sexual gratification (18% vs. 8%). No Axis II disorder correlated significantly with PCL-R total score, but the pattern of positive and negative correlations made theoretical sense. PCL-R total scores correlated negatively with eccentric (schizoid) and anxious (dependent) personality traits and positively with dramatic and erratic (antisocial and borderline) personality traits. The only exception was a lack of association with narcissistic personality traits. This could have occurred because many murderers, both psychopaths and nonpsychopaths, displayed narcissistic traits as a result of the notoriety

of their crime (e.g., believing they were special, feeling self-important). Psychiatrically speaking, psychopaths presented as conduct disordered, sexually oriented adolescents who did not display symptoms of anxiety or psychotic behaviour. However, these results must be interpreted with care since the diagnoses were not established by using a structured clinical interview.

The results of the multiple regression analyses suggested that Factor 2 accounted for most of the variance in violence variables. Factor 1 added significant additional variance when the variable in question was related to verbal or physical threatening. This makes sense because these variables involve affective processes (e.g., callousness), which are associated with Factor 1 rather than Factor 2. Although the interaction of Factor 1 and Factor 2 accounted for significant variance in some of the violence variables, the magnitude of the variance accounted for was quite small. Thus, the present study did not find convincing evidence for Harpur and Hare's (1991) hypothesis that it is the interaction between high Factor 1 scores and high Factor 2 scores which makes psychopaths uniquely dangerous.

Was there evidence of a typology for juvenile murderers? The results of the current study suggest that while researchers reliably differentiated between psychopathic and nonpsychopathic juvenile murderers based on their life histories, the predictions of typology theorists were generally inaccurate. Psychopathic and nonpsychopathic subjects were generally indistinguishable from one another on the variables for which typology theorists predicted large differences between the two groups. Both psychopaths and nonpsychopaths endorsed similar motives for committing murder. They both had accomplices present approximately half of the time. Both groups overwhelmingly chose strangers and acquaintances as their victims. For other variables, psychopaths and nonpsychopaths behaved in a manner opposite than expected. Results indicated that

nonpsychopaths were more likely to be intoxicated prior to the offense and psychopaths were more likely to be responding to provocation. However, psychopaths and nonpsychopaths behaved similarly to their typological counterparts in terms of weapons use, and nonpsychopaths were more likely to appear psychiatrically disturbed. Although the current study did not attempt to conclusively test the typological approach, results suggested that there was not much evidence for the proposed homicide typologies.

There are a number of improvements which could be made to the current study. One improvement would be to interview all subjects prior to scoring the PCL-R. Even though the PCL-R can be scored from files, it would be a decided improvement to use interview data as well (e.g., inquiring about motive). Second, not all subjects' files have comprehensive information regarding the index offense. Ensuring that this information is present would make scoring the index offense variables easier. This information may be found in adult prison files or through access to police records for every subject. The third major improvement would be to have a larger number of subjects in order to increase power. This could have been done by using files of juveniles charged with murder prior to 1986, by travelling to other inpatient assessment units in the province (e.g., Victoria) to collect more files of juvenile murderers within the 1986-1994 time frame, or by utilizing institutional files from other provinces. Another way to increase the number of subjects would have been to collect a sample of juvenile offenders who had been charged with aggravated assault or assault causing bodily injury. A fourth improvement would be the ability to directly compare the psychopathic and nonpsychopathic murderers to psychopathic and nonpsychopathic groups of general offenders or members of the public.

It is clear that future research should move toward determining causal factors of homicidal behaviour and how to prevent it, but a major question is "is this possible?". Juvenile homicide is an area of research in which even the descriptive data from studies

are widely divergent (e.g., the presence of psychoses). In order to overcome this problem, research must be carried out utilizing a large sample (e.g., the 333 juvenile murderers and 469 attempted juvenile murderers from 1986-1992), in multiple settings (e.g., closed custody institutions, psychiatric hospitals, outpatient programs) across Canada, while making use of multiple sources of information (e.g., file information, questionnaire data, clinical interviews). Access to therapy records would be helpful to find out what may have caused some adolescents' murderous behaviour. Future research on juvenile homicide must focus on prevention issues, through the development of sophisticated causal models based on empirical evidence. It would be next to impossible to develop a specific anti-homicide treatment program, so prevention should be aimed at how to reduce youth violence (e.g., offenses like assault and robbery), since murder lies at one end of a continuum of violent behaviour and does not exist as a totally unique phenomenon. Should clinical researchers attempt to develop a homicide-prone personality type? Given the low base rate of homicide, this is undoubtedly a dead-end street, and the ethical implications of such research would be highly controversial. Instead, clinical researchers should continue to focus on constellations of traits (e.g., substance abuse) which put adolescents at risk for committing acts of extreme violence, and how to reduce these risk factors.

## References

- American Psychiatric Association. (1995). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.
- Bender, L. (1959). Children and adolescents who have killed. American Journal of Psychiatry, 116, 510-513.
- Busch, K. G., Zagar, R., Hughes, J. R., Arbit, J., & Bussell, R. E. (1990). Adolescents who kill. Journal of Clinical Psychology, 46(4), 472-485.
- Cleckley, H. (1976). The Mask of Sanity (5th ed.). St. Louis: Mosby.
- Corder, B. F., Ball, B. C., Haizlip, T. M., Rollins, R., & Beaumont, R. (1976). Adolescent patricide: A comparison with other adolescent murder. American Journal of Psychiatry, 133(8), 957-961.
- Cormier, B. M., & Markus, B. (1980). A longitudinal study of adolescent murderers. Bulletin of the American Academy of Psychiatry and Law, 8, 240-260.
- Cornell, D. G. (1990). Prior adjustment of violent juvenile offenders. Law and Human Behaviour, 14(6), 569-577.
- Cornell, D. G. (1993a). Juvenile homicide: A growing national problem. Behavioural Sciences and the Law, 11, 389-396.
- Cornell, D. G. (1993b). Coding Guide for Instrumental versus Hostile/Reactive Aggression. Unpublished manuscript.
- Cornell, D. G., Benedek, E. P., & Benedek, D. M. (1987a). Characteristics of adolescents charged with homicide: Review of 72 cases. Behavioural Sciences and the Law, 5(1), 11-23.
- Cornell, D. G., Benedek, E. P., & Benedek, D. M. (1987b). Juvenile homicide: Prior adjustment and a proposed typology. American Journal of Orthopsychiatry, 57(3), 383-393.
- Cornell, D. G., Miller, C., Benedek, E. P. (1988). MMPI profiles of adolescents charged with homicide. Behavioural Sciences and the Law, 6(3), 401-407.
- Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, G., Pine, D., Weitzner, I., & Griffith, R. (1993, August). Psychopathy and Anger among Instrumental and Reactive Violent Offenders. Poster presented at the American Psychological Association Annual Convention, Toronto, Canada.

- Dempster, R. J. (1995). Utility of the FBI's Crime Classification Manual: Coverage, Reliability, and Validity for Adolescent Murderers. Unpublished Honour's Thesis, Department of Psychology, Simon Fraser University, Burnaby, B.C.
- Easson, W. M., & Steinhilber, R. M. (1961). Murderous aggression by children and adolescents. Archives of General Psychiatry, 4, 27-35.
- Fiddes, D. O. (1981). Scotland in the seventies - adolescents in care and custody. A survey of adolescent murder in Scotland. Journal of Adolescence, 4, 47-65.
- Forth, A. E., Hart, S. D., & Hare, R. D. (1990). Assessment of psychopathy in male young offenders. Psychological Assessment, 2(3), 342-344.
- Fulero, S. M. (1995). Review of the Hare Psychopathy Checklist - Revised. In J.C. Conoley & J. C. Impara (Eds.), Twelfth Mental Measurements Yearbook. (pp. 453-454). Lincoln, NE: Buros Institute.
- Goetting, A. (1989). Patterns of homicide among children. Criminal Justice and Behaviour, 16(1), 63-80.
- Greco, C. M., & Cornell, D. G. (1992). Rorschach object relations of adolescents who committed homicide. Journal of Personality Assessment, 59(3), 574-583.
- Gretton, H., McBride, M., Lewis, K., O'Shaughnessy, R., & Hare, R. D. (1994, March). Patterns of violence in adolescent sexual offenders. Poster presented at the meeting of the American Psychology and Law Association, Sante Fe, NM.
- Hare, R. D. (1981). Psychopathy and violence. In J.R. Hayes, T.K. Roberts, & K.S. Solway (Eds.), Violence and the Violent Individual. (pp. 53-74). New York: Spectrum Publications.
- Hare, R. D. (1985). The Psychopathy Checklist. Unpublished manuscript, University of British Columbia, Vancouver, Canada.
- Hare, R. D. (1991). The Psychopathy Checklist - Revised. Toronto: Multi-Health Systems.
- Hare, R. D. (1993). Without conscience. Toronto: Pocket Books.
- Hare, R. D. (1996). Psychopathy and antisocial personality disorder: A case of diagnostic confusion. Psychiatric Times, 13, 39-40.

- Hare, R. D., Forth, A. E., & Strachan, K.E. (1992). Psychopathy and crime across the life span. In R. DeV. Peters, R. J. McMahon, & V. L. Quinsey (Eds.), Aggression and violence throughout the life span. Newbury Park: Sage Publications.
- Hare, R. D., Harpur, T. J., Hakstian, A. R., Forth, A. E., Hart, S. D., & Newman, J.P. (1990). The Revised Psychopathy Checklist: Reliability and factor structure. Psychological Assessment, 2(3), 338-341.
- Hare, R. D., & Jutai, J. W. (1983). Criminal history of the male psychopath: Some preliminary data. In K. T. Van Dusen & S. A. Mednick (Eds.), Prospective Studies of Crime and Delinquency. (pp. 225-236). Boston: Kluwer-Nijoff.
- Hare, R. D., & McPherson, L. M. (1984). Violent and aggressive behaviour by criminal psychopaths. International Journal of Law and Psychiatry, 7, 35-50.
- Harpur, T. J., & Hare, R. D. (August, 1991). Psychopathy and violent behaviour: Two factors are better than one. Paper presented at the 99th Annual Meeting of the American Psychological Association, San Francisco, CA.
- Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. Psychological Assessment, 1(1), 6-17.
- Harris, G. T., Rice, M. E., & Cormier, C. A. (1991). Psychopathy and violent recidivism. Law and Human Behaviour, 15(6), 625-637.
- Harris, G. T., Rice, M. E., & Quinsey, V. L. (1993). Violent recidivism of mentally disordered offenders: The development of a statistical prediction instrument. Criminal Justice and Behaviour, 20(4), 315-335.
- Hart, S. D., & Hare, R. D. (1989). Discriminant validity of the Psychopathy Checklist in a forensic psychiatric population. Psychological Assessment, 1(3), 211-218.
- Hart, S. D., & Hare, R. D. (in press). Psychopathy: Assessment and criminal conduct. In D. Stoff, J. Maser, & J. Breiling (Eds.), Handbook of Antisocial Behaviour.
- Hart, S.D., Kropp, P. R., & Hare, R. D. (1988). Performance of male psychopaths following conditional release from prison. Journal of Consulting and Clinical Psychology, 56, 227-232.
- Hellsten, P., & Katila, O. (1965). Murder and other homicide, by children under 15 in Finland. Psychiatric Quarterly Supplement, 39, 54-74.
- Hemphill, J. F., Hart, S. D., & Hare, R. D. (1994). Substance use by criminal psychopaths. Journal of Personality Disorders, 8(3), 169-180.



- Kaihla, P. (1994, August). Kids who kill. Maclean's, 107(33). 32-33.
- Kosson, D. S., Smith, S. S., & Newman, J. P. (1990). Evaluating the construct validity of psychopathy in black and white male inmates: Three preliminary studies. Journal of Abnormal Psychology, 99(3), 250-259.
- Labelle, A., Bradford, J. M., Bourget, D., Jones, B., & Carmichael, M. (1991). Adolescent murderers. Canadian Journal of Psychiatry, 36(8), 583-587.
- Lewis, D. O., Moy, E., Jackson, L. D., Aaronson, R., Restifo, N., Serra, S., & Simos, A. (1985). Biopsychosocial characteristics of children who later murder: A prospective study. American Journal of Psychiatry, 142(10), 1161-1167.
- Lewis, D. O., Pincus, J. H., Bard, B., Richardson, E., Prichep, L. S., Feldman, M., & Yeager, C. (1988). Neuropsychiatric, psychoeducational, and family characteristics of 14 juveniles condemned to death in the United States. American Journal of Psychiatry, 145(5), 584-589.
- Lewis, D. O., Shanok, S. S., Grant, M., & Ritvo, E. (1983). Homicidally aggressive young children: Neuropsychiatric and experiential correlates. American Journal of Psychiatry, 140(2), 148-153.
- Lewis, K. (1995). Psychopathy in a Juvenile Inpatient Assessment Unit. [Unpublished raw data].
- Lewis, K., Gretton, H., Willoughby, T., McBride, M., O'Shaughnessy, R., & Hare, R. D. (1994, March). Reliability of the Psychopathy Checklist - Revised in a Juvenile Population With and Without the Interview. Poster presented at the meeting of the American Psychology and Law Association, Sante Fe, NM.
- Malmquist, C. P. (1971). Premonitory signs of homicidal aggression in juveniles. American Journal of Psychiatry, 128(4), 93-97.
- Meloff, W., & Silverman, R. A. (1992). Canadian kids who kill. Canadian Journal of Criminology, 34(1), 15-34.
- Meloy, J. R. (1988). The Psychopathic Mind: Origins, Dynamics, and Treatment. Northvale, NJ: Jason Aronson Inc.
- Miller, D., & Looney, J. (1974). The prediction of adolescent homicide: Episodic dyscontrol and dehumanization. The American Journal of Psychoanalysis, 34, 187-198.

- Myers, W. C., & Kempf, J. P. (1990). DSM-III-R classification of murderous youth: Help or hindrance? Journal of Clinical Psychiatry, 51(6), 239-242.
- O'Shaughnessy, R. (1994 ). British Columbia Adolescent Sex Offender Project. [Unpublished raw data].
- Phillips, M. S., & Spears, C. (1987). Young patients detained under the Lieutenant Governor warrant in Ontario. Adolescence, 22(87), 719-727.
- Rice, M. E., Harris, G. T., & Cormier, C. A. (1992). An evaluation of a maximum security therapeutic community for psychopaths and other mentally disordered offenders. Law and Human Behaviour, 16(4), 399-412.
- Rice, M. E., Harris, G. T., & Quinsey, V. L. (1990). A follow-up of rapists assessed in a maximum security psychiatric facility. Journal of Interpersonal Violence, 4, 435-448.
- Rowley, J. C., Ewing, C. P., & Singer, S.I. (1987). Juvenile homicide: The need for an interdisciplinary approach. Behavioural Sciences and the Law, 5(1), 3-10.
- Russell, D. H. (1965). A study of juvenile murderers. Journal of Offender Therapy, 9(3), 55-86.
- Russell, D. H. (1973). Juvenile murderers. International Journal of Offender Therapy and Comparative Criminology, 17(3), 235-239.
- Russell, D. H. (1979). Ingredients of juvenile murder. International Journal of Offender Therapy and Comparative Criminology, 23, 65-72.
- Sendi, I. B., & Blomgren, P. G. (1975). A comparative study of predictive criteria in the predisposition of homicidal adolescents. American Journal of Psychiatry, 132(4), 423-427.
- Serin, R. C. (1991). Psychopathy and violence in criminals. Journal of Interpersonal Violence, 6, 423-431.
- Smith, S. S., & Newman, J. P. (1990). Alcohol and drug abuse-dependence disorders in psychopathic and nonpsychopathic criminal offenders. Journal of Abnormal Psychology, 99(4), 430-439.
- Solway, K. S., Richardson, L., Hays, J. R., & Elion, V. H. (1981). Adolescent murderers: Literature review and preliminary research findings. In J. R. Hays, T. K. Roberts, & K. S. Solway (Eds.), Violence and the Violent Individual. Jamaica, NY: Spectrum Publications.

- Sorrells, J. (1977). Kids who kill. Crime & Delinquency, July, 312-320.
- Sorrells, J. (1980). What can be done about juvenile homicide? Crime & Delinquency, April, 152-161.
- Statistics Canada. (1987). Canadian Crime Statistics: 1986. Ottawa: Ministry of Supply and Services.
- Statistics Canada. (1988). Canadian Crime Statistics: 1987. Ottawa: Ministry of Supply and Services.
- Statistics Canada. (1989). Canadian Crime Statistics: 1988. Ottawa: Ministry of Supply and Services.
- Statistics Canada. (1990). Canadian Crime Statistics: 1989. Ottawa: Ministry of Supply and Services.
- Statistics Canada. (1991). Canadian Crime Statistics: 1990. Ottawa: Ministry of Supply and Services.
- Statistics Canada. (1992). Canadian Crime Statistics: 1991. Ottawa: Ministry of Supply and Services.
- Statistics Canada. (1993). Canadian Crime Statistics: 1992. Ottawa: Ministry of Supply and Services.
- Stearns, A. W. (1957). Murder by adolescents with obscure motivation. American Journal of Psychiatry, 114, 303-305.
- Toupin, J. (1994). Adolescent murderers: Validation of a typology and study of their recidivism. Effervescence, 1(2), 8-16.
- Vitiello, B., Behar, D., Hunt, J., Stoff, D., & Ricciuti, A. (1990). Subtyping aggression in children and adolescents. Journal of Neuropsychiatry and Clinical Neurosciences, 2, 189-192.
- Walshe-Brennan, K. S. (1977). A socio-psychological investigation of young murderers. British Journal of Criminology, 17(1), 58-63.
- Williamson, S., Hare, R. D., & Wong, S. (1987). Violence: Criminal psychopaths and their victims. Canadian Journal of Behavioural Science, 19(4), 454-462.
- Williamson, S., Harpur, T., & Hare, R.D. (1991). Abnormal processing of affective words by psychopaths. Psychophysiology, 28(3), 260-273.

- Wong, S. (1988). Is Hare's Psychopathy Checklist reliable without the interview? Psychological Reports, 62, 931-934.
- Zagar, R., Arbit, J., Sylvies, R., Busch, K. G., & Hughes, J. R. (1990). Homicidal adolescents: A replication. Psychological Reports, 67, 1235-1242.
- Zenoff, E. H., & Zients, A. B. (1979). Juvenile murderers: Should the punishment fit the crime? International Journal of Law and Psychiatry, 2, 533-553.
- Zimring, F. E. (1981). Kids, groups and crime: Some implications of a well-known secret. The Journal of Criminal Law and Criminology, 72(3), 867-885.

## Appendix A

## PCL-R for Young Offenders (Item alterations)

- 1) Glibness/ superficial charm: Whether or not the youth succeeds at being charming is not as important as his/her **attempt**, even if he/she only ends up being annoying to others.
- 2) Grandiose sense of self-worth: Less emphasis on long term occupational goals, more emphasis on **short term** (i.e. the next six months). In general, focus on family, schooling, personal abilities, and friendships. For example, what do peers think of him/her? How does he/she manage to get a date? What does he/she say? To get a sense of this, it might be useful to ask, "what do girls/boys think of you," "do you get nervous talking to the opposite sex." He/she might give the impression that everything is under control now, and that there's nothing to worry about.
- 3) Proneness to boredom: Excessive use of caffeine may be present. Hyperactivity is a **part** of this item, but look beyond the motor symptoms for other evidence in order to give a score of 2. For example, risk taking, the use of many different types of drugs, high speed car chases, and living life on the edge.
- 5) Conning and manipulativeness: Look for small-scale cons and hustles. There is manipulation for prestige among peers and attention seeking, not simply for power or monetary gain. A history of bullying behaviour (i.e. implicit threats) can be used as evidence toward a score of 1. Using actual physical force (e.g. hitting) to gain favours is **not** considered manipulative.
- 9) Parasitic lifestyle: Look for an attitude that exceeds a youth's **normal** expectation for provisions. He/she may have an overly entitled attitude that others should cater to his/her needs without regard to inconvenience or sacrifice that others are making.
- 11) Promiscuous sexual behaviour: Look for sexual activity (not simply intercourse) with numerous partners, and for casual sexual activity without commitment. For research purposes, a score of 2 is automatically given if the subject is a sex offender.
- 13) Lack of realistic long-term goals: The emphasis is on whether goals are consistent with school performance. If the person has not thought of any long term goals at all about where they are going to be or what he/she will be doing over the next 2-3 years, score a 1. This includes not worrying about what is going to happen to him, and believing that the system will look after them until they are 19 years old.
- 15) Irresponsibility: Look for an ability to be responsible in such areas as babysitting and other jobs, school, and keeping curfews.

17) Many short term relationships: The emphasis here is on the number and stability of the relationships that the individual has had. Look at both friendships and intimate relationships; however, relationships carry more weight than friendships, and friendship information alone is insufficient to score this item.

OMIT = individual has never established a sexual relationship (intercourse is not necessary)

- 0 = if relationship(s) are stable and long term (four months or longer)
- 1 = if individual has significant stability problems with sexual relationships
- 2 = if individual has had three or more short term sexual relationships or if long term relationships are extremely unstable (e.g. many break-ups, verbal or physical violence)

18) Juvenile delinquency: Includes only **formal** charges or convictions

- 0 = no charges or convictions as a young offender
- 1 = one or more nonviolent offenses (all other offenses)
- 2 = one or more violent offenses (murder, manslaughter, sexual assault, assault, robbery, kidnapping, arson)

19) Revocation of conditional release:

- 0 = no violations
- 1 = minor violation of the rules of passes or legal requirements which result in disciplinary action
- 2 = commission of another offense (does not have to be charged), AWOL, escape, or violation that results in reinstitutionalization for an extended period of time (e.g. three months).

20) Criminal versatility: Does **not** have to be a formal charge or conviction in order to be included, unless it is drug use or fighting (there must be a charge for these). Firesetting is included if it could be classified as arson (i.e. property damage), and not just "playing with matches." Likewise, minor one-time thefts (e.g. theft of 1 chocolate bar at age four) are not counted.

- 0 = 2 or fewer types of offenses
- 1 = 3 types of offenses
- 2 = 4 or more types of offenses

## Appendix B

### CODING GUIDE FOR INSTRUMENTAL VERSUS HOSTILE/REACTIVE AGGRESSION

Dewey G. Cornell  
University of Virginia

These coding guidelines were developed with grant support of the Harry Frank Guggenheim Foundation. Project researchers include Drs. Dewey Cornell, Gary Hawk, and Janet Warren. These guidelines are subject to revision and should not be used without permission. September 1, 1993.

## CODING GUIDE FOR INSTRUMENTAL VS. HOSTILE/REACTIVE AGGRESSION

The primary distinction in this study is between instrumental and reactive/hostile aggression. Coders will make primary ratings of each aggressive incident as representing either instrumental or reactive/hostile aggression. This will be a global rating based on the rater's overall evaluation of the incident. Incidents can be rated as clearly instrumental, clearly reactive/hostile, or (in unusual cases) a combination of the two. In addition, the coders will make secondary ratings of these specific aspects of the aggressive act:

- 1) Planning - degree of premeditation or preparation for aggression
- 2) Goal-directedness - degree to which aggression is motivated by some external gain or incentive such as money
- 3) Provocation - degree of provocation, frustration or threat from the victim
- 4) Arousal - degree of anger experienced by aggressor
- 5) Severity of violence - degree of injury to the victim
- 6) Relationship to victim - closeness of relationship between victim and aggressor
- 7) Intoxication - intoxication on drugs or alcohol during incident
- 8) Psychosis - presence of psychotic symptoms during incident

These secondary ratings reflect aspects of the aggressive act which are not necessarily independent of one another. For example, planning and goal-directedness may be correlated. However, each of the components can be distinguished conceptually from the others and we are able to identify specific cases which support these distinctions.

In our discussion of various aggressive acts, the secondary ratings (especially the first four) seem to tap characteristics which contribute to the primary distinction between reactive and instrumental aggression, but these ratings are not equivalent to it. We will use the secondary ratings to examine several questions:

- 1) Is there a stable combination or set of decision rules for the secondary ratings which is equivalent to the primary distinction?
- 2) Do the secondary ratings permit a sub-classification or refinement of the primary distinction which improves upon it?

Subject may be dishonest, inaccurate, or incomplete in their account of the offense. Consider all available sources. Code what you believe to be true, what actually happened. If the subject claims self-defense, but all other available information indicates otherwise, and the subject is of doubtful credibility, code what you believe to be true.



### Instrumental Aggression

The two cardinal characteristics of instrumental aggression are goal-directedness and planning. The instrumental aggressor acts to obtain a readily apparent goal such as power, money, sexual gratification, or some other objective beyond inflicting injury on the victim. Examples of instrumental aggression include shooting a police officer in the course of a bank robbery, stabbing a homeowner during a burglary, and strangling a rape victim. Sadistic aggression is a special form of instrumental aggression in which the objective is some form of pleasure (e.g., power or sexual gratification) that stems from the infliction of pain or attainment of dominance over the other person. Instrumental aggression is initiated as a means to an end rather than as an act of retaliation or self-defense.

Instrumental aggression often involves planning or preparation. However, in some cases instrumental aggression involves relatively little planning, such as in the case of a criminal who engages in an opportunistic offense (e.g., unexpected opportunity to rob someone that involves assaulting the victim). In some cases, a subject may plan a robbery or burglary, and when something goes wrong, engages in an act of aggression, such as shooting someone in order to get away. In these cases the coder should consider that the subject's plans included the possibility of violence, even if there was no specific plan to shoot someone.

Instrumental aggression usually involves little or no provocation by the victim. In some cases subjects may be "provoked" into violence in the course of another crime, e.g., a robbery victim who insults the subject or resists the robbery in some way. These acts are still considered instrumental acts of aggression.

Instrumental aggressors are motivated by goals, not emotions. It follows that their level of emotional arousal, especially anger, is relatively low or is secondary to the act. Some instrumental aggressors try to calm themselves prior to an offense through drug use or drinking. In extreme cases, instrumental aggressors are not angry toward their victims and may have a cold, "business-like" attitude about their behaviour. Nevertheless, many less hardened instrumental aggressors are nervous and highly aroused while committing a crime, even though it is not their arousal which motivates their actions.

The term "instrumental" should not be defined so broadly that it encompasses all aggressive behaviour simply because there is a definable goal or desired outcome to the aggression, such as warding off an attacker or taking revenge on someone. Aggressive behaviour whose purpose is to defend against a threat or in some way respond to provocation is defined as reactive/hostile aggression. If the subject is engaged in some form of criminal activity, such as a drug deal, associated violence is almost always instrumental.

### Reactive/Hostile Aggression

The two cardinal characteristics of reactive/hostile aggression are reaction to provocation and arousal of hostility. Aggressive behaviour represents reactive hostility to the extent that the aggressor reacts to perceived provocation or threat by the victim. The provocation may include insults, threats of aggression, or other acts that frustrate and anger the aggressor. The objective of the aggressive act is to harm or injure the victim, in response to feelings of hostility that may include a mixture of anger, resentment, fear, or other distress aroused by the victim's actions. Typically, there should be some form of interpersonal conflict (argument, dispute, prior aggression) between aggressor and victim. In many cases the aggressor and victim have a prior relationship as relatives or acquaintances, but in other cases there is not prior relationship and the parties are strangers to one another.

Bear in mind that reactive/hostile aggression can involve extended time-frames. For example, an abused family member may plan an ambush to rid the family of the abuser. The most recent episode of abuse could be long before the aggressive reaction. The critical issue is that the reactive/hostile subject is reacting to an interpersonal conflict that arouses hostility.

- 4 - Clearly instrumental aggression
- 3 - Primarily instrumental, some reactive qualities
- 2 - Primarily reactive hostile aggression, some instrumental qualities
- 1 - Clearly reactive hostile aggression

### SECONDARY SCALES FOR AGGRESSIVE INCIDENTS

#### Planning

How much did the subject plan or prepare for the aggressive action? Consider both the length of time involved in preparation and the amount of preparatory activity.

- 4 - extensive planning (detailed plan or preparation, rehearsal)
- 3 - moderate planning (contemplation of action for more than 24 hours)
- 2 - some planning (action within 24 hours, some plan or preparation)
- 1 - very little or no planning (acts during argument or fight, no preparation)

### Goal-Directedness

How much is the subject motivated by an external incentive, goal, or objective beyond just responding to provocation or threat? Readily apparent goals include money, power, sexual gratification, or some other external goal of benefit to the aggressor. Do not include such goals as self-defense, escaping harm, taking revenge for previous aggression, or acting out of frustration.

- 4 - Clear, unequivocal goal-directedness (include shooting during crimes)
- 3 - Primary goal-directedness, with presence of other motives
- 2 - Secondary goal-directedness, in presence of other primary motives
- 1 - No apparent goal-directedness (motive to injure victim, retaliate, defend)

### Provocation

Did the victim's actions provoke the subject's aggression? Include provocation that occurred prior to the incident (e.g., prior abusive treatment).

- 5 - Severe provocation (repeated assault, severe abuse)
- 4 - Strong provocation (assault)
- 3 - Moderate provocation (serious argument or dispute, threat of assault)
- 2 - Mild provocation (insult, minor argument, confrontation with police)
- 1 - No apparent provocation

### Arousal

How much emotional arousal, especially anger, did the subject experience at the time of the aggressive act?

- 4 - Enraged, furious, described as "out of control" or "irrational"
- 3 - Angry, mad
- 2 - Excited, very nervous, anxious
- 1 - Calm or tense at most

### Severity of violence

- 7 - Extreme homicide (multiple killing, mutilation)
- 6 - Homicide
- 5 - Severe injury (e.g., lasting impairment or life-threatening injury)
- 4 - Serious injury, requiring substantial hospitalization (e.g., broken limbs)
- 3 - Minor injury (e.g., bruises, minor medical treatment)
- 2 - Assault without injury
- 1 - No assault (e.g., threatened with weapon)

### Relationship with victim

Code the degree of contact or closeness between aggressor and victim. The scores listed here are typical scores. Some relationships may require higher or lower scores than indicated. Generally give maximum scores to immediate family members, unless there has been prolonged separation or lack of contact that substantially alters the relationship (e.g., father who never lived in the home, mother who turned over care of child to grandmother). A step-parent may receive the same score as a parent if there appears to have been similar bonding and contact since early childhood. Code based on duration and closeness of relationship.

- 5 - Very close relationship (immediate family member, romantic partner)
- 4 - Close relationship (friend, relative, dating partner, etc.)
- 3 - Specific relationship (teacher, babysitter, etc.)
- 2 - Acquaintance
- 1 - Stranger

### Intoxication

Code whether the subject was intoxicated at the time of the aggressive incident. Consider alcohol and other drugs. Primary concern is degree to which the person is impaired or has clouded consciousness.

- 4 - Severe intoxication (large quantities of alcohol or drugs)
- 3 - Intoxicated
- 2 - Mild intoxication (e.g., 1 or 2 drinks)
- 1 - Not intoxicated

### Psychosis

- 4 - Substantial psychotic symptoms (e.g., bizarre or pervasive delusions)
- 3 - Moderate psychotic symptoms (intermittent voices or delusions)
- 2 - Non-psychotic disturbance (e.g., depersonalized)
- 1 - Not psychotic

Subject:  
Incident:

## AGGRESSIVE INCIDENT CODING SHEET

**Coder:**

**Instrumental vs. Hostile/Reactive** (code actual event, not just subject's claim)

- 4 - Clearly instrumental aggression  
3 - Primarily instrumental, some reactive qualities  
2 - Primarily reactive hostile aggression, some instrumental qualities  
1 - Clearly reactive hostile aggression

**Planning (include plans for robbery, burglary, etc.)**

- 4 - extensive planning (detailed plan or preparation, rehearsal)  
3 - moderate planning (contemplation of action for more than 24 hours)  
2 - some planning (action within 24 hours, some plan or preparation)  
1 - very little or no planning (acts during argument or fight, no preparation)

**Goal-Directedness** (consider goals like financial gain, not just revenge)

- 4 - Clear, unequivocal goal-directedness (include shooting during crimes)  
3 - Primary goal-directedness, with presence of other motives  
2 - Secondary goal-directedness, in presence of other primary motives  
1 - No apparent goal-directedness (motive to injure victim, retaliate, defend)

Provocation (includes provocation prior to incident, use subject's perception)

- 5 - Severe provocation (repeated assault, severe abuse)  
4 - Strong provocation (assault)  
3 - Moderate provocation (serious argument or dispute, threat of assault)  
2 - Mild provocation (insult, minor argument, confrontation with police)  
1 - No apparent provocation

**Arousal (primarily code anger, but also consider other affects like fear)**

- 4 - Enraged, furious, described as "out of control" or "irrational"  
3 - Angry, mad  
2 - Excited, very nervous, anxious  
1 - Calm or tense at most

Severity of violence (consider actual harm to victim, not subject's intention)

- 7 - Extreme homicide (multiple killing, mutilation)
- 6 - Homicide
- 5 - Severe injury (e.g., lasting impairment or life-threatening injury)
- 4 - Serious injury, requiring substantial hospitalization (e.g., broken limbs)
- 3 - Minor injury (e.g., bruises, minor medical treatment)
- 2 - Assault without injury
- 1 - No assault (e.g., threatened with weapon)

Relationship with victim (if 2 or more victims, code highest)

- 5 - Very close relationship (immediate family member, romantic partner)  
4 - Close relationship (friend, relative, dating partner, etc.)  
3 - Specific relationship (teacher, babysitter, etc.)  
2 - Acquaintance  
1 - Stranger

## Intoxication

- 4 - Severe intoxication (large quantities of alcohol or drugs)  
3 - Intoxicated  
2 - Mild intoxication (e.g., 1 or 2 drinks)  
1 - Not intoxicated

## Psychosis

- 4 - Substantial psychotic symptoms (e.g., bizarre or pervasive delusions)  
3 - Moderate psychotic symptoms (intermittent voices or delusions)  
2 - Non-psychotic disturbance (e.g., depersonalized)  
1 - Not psychotic

## Appendix C

Adolescent Homicide Variable Sheet

SUBJECT #

DEMOGRAPHIC:

age at index offense: \_\_\_\_ yrs \_\_\_\_ months

gender: male \_\_\_\_ female \_\_\_\_

race: Caucasian \_\_\_\_ Native Indian \_\_\_\_ East Indian \_\_\_\_ Oriental \_\_\_\_

Black \_\_\_\_ other \_\_\_\_

education level achieved: \_\_\_\_

occupation of mother: \_\_\_\_ occupation of stepmother: \_\_\_\_

occupation of father: \_\_\_\_ occupation of stepfather: \_\_\_\_

has subject immigrated from another area of Canada? yes \_\_\_\_ If yes, from where? \_\_\_\_  
no \_\_\_\_ When?has subject immigrated from another country? yes \_\_\_\_ If yes, from where? \_\_\_\_  
no \_\_\_\_ When?

PSYCHIATRIC:

Full scale IQ \_\_\_\_ Verbal IQ \_\_\_\_ Performance IQ \_\_\_\_

DSM-3 and 3-R diagnoses: Axis I \_\_\_\_  
Axis II \_\_\_\_Evidence of neuropsychological impairment yes \_\_\_\_ no \_\_\_\_  
if yes, specify (e.g. seizures, blackouts, abnormal EEG, FAS )  
\_\_\_\_\_

Psychiatric history of family:

	none	type	mild	moderate	severe
mother:	____	_____	____	____	____
stepmother:	____	_____	____	____	____
father:	____	_____	____	____	____
stepfather:	____	_____	____	____	____

specify individual:

sibling(s): \_\_\_\_\_

stepsibling(s) \_\_\_\_\_

	none	type	mild	moderate	severe
mother's family:	_____	_____	_____	_____	_____

stepmother's family:	_____	_____	_____	_____	_____
----------------------	-------	-------	-------	-------	-------

father's family:	_____	_____	_____	_____	_____
------------------	-------	-------	-------	-------	-------

stepfather's family:	_____	_____	_____	_____	_____
----------------------	-------	-------	-------	-------	-------

Alcoholism in family:	none	mild	moderate	severe
mother:	_____	_____	_____	_____

stepmother:	_____	_____	_____	_____
-------------	-------	-------	-------	-------

father:	_____	_____	_____	_____
---------	-------	-------	-------	-------

stepfather:	_____	_____	_____	_____
-------------	-------	-------	-------	-------

specify individual:

sibling(s): \_\_\_\_\_

stepsibling(s): \_\_\_\_\_

mother's family: \_\_\_\_\_

stepmother's family: \_\_\_\_\_

father's family: \_\_\_\_\_

stepfather's family: \_\_\_\_\_

Drug use in family:	none	mild	moderate	severe
mother:	_____	_____	_____	_____

stepmother:	_____	_____	_____	_____
-------------	-------	-------	-------	-------

father:	_____	_____	_____	_____
---------	-------	-------	-------	-------

stepfather:	_____	_____	_____	_____
-------------	-------	-------	-------	-------

specify individual:

sibling(s): \_\_\_\_\_

stepsibling(s): \_\_\_\_\_

mother's family: \_\_\_\_\_

stepmother's family: \_\_\_\_\_

father's family: \_\_\_\_\_

stepfather's family: \_\_\_\_\_

Physical abuse:

none\_\_\_ mild\_\_\_ moderate\_\_\_ severe\_\_\_

by whom \_\_\_\_\_

self-report\_\_\_ file report\_\_\_ both\_\_\_

Sexual abuse:

none\_\_\_ mild\_\_\_ moderate\_\_\_ severe\_\_\_

by whom \_\_\_\_\_

self-report\_\_\_ file report\_\_\_ both\_\_\_

Emotional abuse:

none\_\_\_ mild\_\_\_ moderate\_\_\_ severe\_\_\_

by whom \_\_\_\_\_

self-report\_\_\_ file report\_\_\_ both\_\_\_

Neglect:

none\_\_\_ mild\_\_\_ moderate\_\_\_ severe\_\_\_

by whom \_\_\_\_\_

self-report\_\_\_ file report\_\_\_ both\_\_\_

Does subject engage in violent fantasy activities?

none \_\_\_\_\_

interest in Satanism/occult \_\_\_\_\_

listening to heavy metal rock/gangster rap \_\_\_\_\_

playing fantasy games (e.g. Dungeons & Dragons) \_\_\_\_\_

reading violent books (e.g. 'Soldier of Fortune' magazine) \_\_\_\_\_

other (specify) \_\_\_\_\_



## CRIME (General)

Previous offense history:

PERSON			# of						
type	#	age	victims	age	race	sex	admit	charge	convict
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___

## PROPERTY

___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___
___	___	___	___	___	___	___	___	___	___

Age of first contact with the law: \_\_\_\_\_

type: \_\_\_\_\_

Age of first misbehaviour at school involving teacher/parent action: \_\_\_\_\_

doing what?: \_\_\_\_\_

Violent behaviour (e.g. fighting, cruelty to animals)

none \_\_\_\_\_ mild (e.g. push) \_\_\_\_\_ moderate (e.g. injure) \_\_\_\_\_ severe (e.g. hospitalize) \_\_\_\_\_

never \_\_\_\_\_ rarely \_\_\_\_\_ occasional \_\_\_\_\_ often \_\_\_\_\_

Threats:

none \_\_\_\_\_ mild (e.g. push) \_\_\_\_\_ moderate (e.g. injure) \_\_\_\_\_ severe (e.g. kill) \_\_\_\_\_

never \_\_\_\_\_ rarely \_\_\_\_\_ occasional \_\_\_\_\_ often \_\_\_\_\_

## Weapons :

possession of: none \_\_\_\_\_ gun \_\_\_\_\_ knife \_\_\_\_\_ club \_\_\_\_\_ other \_\_\_\_\_  
 threatens with: none \_\_\_\_\_ gun \_\_\_\_\_ knife \_\_\_\_\_ club \_\_\_\_\_ other \_\_\_\_\_  
 severity of threats with a weapon:  
 none \_\_\_\_\_ mild (e.g. injure) \_\_\_\_\_ moderate (e.g. hospitalize) \_\_\_\_\_ severe  
 (e.g. death) \_\_\_\_\_  
 use of: none \_\_\_\_\_ gun \_\_\_\_\_ knife \_\_\_\_\_ club \_\_\_\_\_ other \_\_\_\_\_  
 resulting injury: none \_\_\_\_\_ mild \_\_\_\_\_ moderate \_\_\_\_\_ severe \_\_\_\_\_

## Alcohol use:

none \_\_\_\_\_ social drinker \_\_\_\_\_ heavy drinker \_\_\_\_\_  
 never \_\_\_\_\_ rarely \_\_\_\_\_ occasional \_\_\_\_\_ often \_\_\_\_\_  
 use before/during an offense yes \_\_\_\_\_ if yes, what type(s) of offense?  
 no \_\_\_\_\_

## Drug use:

none \_\_\_\_\_ social user \_\_\_\_\_ heavy user \_\_\_\_\_  
 never \_\_\_\_\_ rarely \_\_\_\_\_ occasional \_\_\_\_\_ often \_\_\_\_\_  
 type \_\_\_\_\_  
 use before/during an offense yes \_\_\_\_\_ if yes, what type(s) of offense?  
 no \_\_\_\_\_

Hangs out with a group? yes \_\_\_\_\_ no \_\_\_\_\_  
 if yes, what type of group? organized gang \_\_\_\_\_  
 friends \_\_\_\_\_  
 acquaintances \_\_\_\_\_  
 strangers \_\_\_\_\_

## Family history of criminal behaviour:

	type	violent behaviour in general	
mother	_____	yes _____	no _____
stepmother	_____	yes _____	no _____
father	_____	yes _____	no _____
stepfather	_____	yes _____	no _____

specify individual

sibling(s) \_\_\_\_\_ yes \_\_\_\_ no \_\_\_\_

stepsibling(s) \_\_\_\_\_ yes \_\_\_\_ no \_\_\_\_

mother's family \_\_\_\_\_ yes \_\_\_\_ no \_\_\_\_

stepmother's family \_\_\_\_\_ yes \_\_\_\_ no \_\_\_\_

father's family \_\_\_\_\_ yes \_\_\_\_ no \_\_\_\_

stepfather's family \_\_\_\_\_ yes \_\_\_\_ no \_\_\_\_

CRIME (index offense):

Alcohol:

use before/during index offense yes \_\_\_\_ no \_\_\_\_

intoxicated ? yes \_\_\_\_ no \_\_\_\_

self report \_\_\_\_ file report \_\_\_\_ both \_\_\_\_

Drugs:

use before/during index offense yes \_\_\_\_ no \_\_\_\_

intoxicated ? yes \_\_\_\_ no \_\_\_\_

self report \_\_\_\_ file report \_\_\_\_ both \_\_\_\_

Level of violence inflicted on victim before the killing act:

none \_\_\_\_ mild(e.g. push) \_\_\_\_ moderate(punch, kick) \_\_\_\_ severe (e.g.  
torture) \_\_\_\_

Victim killed how?

shooting \_\_\_\_

beating \_\_\_\_

stabbing \_\_\_\_

strangulation \_\_\_\_

suffocation \_\_\_\_

drowning \_\_\_\_

arson \_\_\_\_

other \_\_\_\_

## Weapons:

possession of: none\_\_\_ gun\_\_\_ knife\_\_\_ club\_\_\_ other\_\_\_  
 threatens with: none\_\_\_ gun\_\_\_ knife\_\_\_ club\_\_\_ other\_\_\_  
 severity of threats with weapon:  
     none\_\_\_ mild\_\_\_ moderate\_\_\_ severe\_\_\_  
 use of: none\_\_\_ gun\_\_\_ knife\_\_\_ club\_\_\_ other\_\_\_  
     resulting injury: none\_\_\_ mild\_\_\_ moderate\_\_\_  
                         severe\_\_\_

## Threats:

none\_\_\_ mild(e.g. push)\_\_\_ moderate(e.g. injure)\_\_\_ severe(e.g.  
     kill)\_\_\_

Offender-Victim relationship, and Number of Victims: (specify e.g. mother,  
 girlfriend)

parent(s): \_\_\_  
 sibling(s): \_\_\_  
 other family member: \_\_\_  
 friend (include boyfriend/girlfriend): \_\_\_  
 acquaintance (i.e. not an intense or close relationship): \_\_\_  
 stranger: \_\_\_

## Motive:

material gain \_\_\_  
 opportunistic \_\_\_  
 strong emotional arousal \_\_\_  
 revenge \_\_\_  
 sexual gratification \_\_\_  
 self-defense \_\_\_  
 none \_\_\_  
 no information \_\_\_

## Victim:

# of victims___	
gender___	gender___
age___	age___
race___	race___

## Group affiliation:

was offender alone? yes \_\_\_\_ no \_\_\_\_

if no, what type of group?

organized gang \_\_\_\_

friends \_\_\_\_

acquaintances \_\_\_\_

strangers \_\_\_\_

how many others? \_\_\_\_

offender's role in index offense: passive \_\_\_\_

dominant \_\_\_\_

## CRIME (institutional behaviour)

date of entry into adult prison/juvenile custody: \_\_\_\_\_

behaviour while incarcerated:

Offense type: \_\_\_\_\_

Date of offense: \_\_\_\_\_

Offense type: \_\_\_\_\_

Date of offense: \_\_\_\_\_

Offense type: \_\_\_\_\_

Date of offense: \_\_\_\_\_

## offense types:

1. theft
2. robbery
3. drugs/alcohol (e.g. possession of)
4. assault (e.g. fighting, threatening)
5. murder
6. weapons (e.g. possession of)
7. sexual offense (e.g. aggressive homosexuality)
8. escape
9. arson
10. miscellaneous (e.g. vandalism)
11. attempted suicide
12. self-mutilation
13. disobeys regulations
  - a) disrespectful language (e.g. verbal abuse of others)
  - b) refusal to work
  - c) disobey a lawful order
  - d) disruption of order
14. other (specify)

## Appendix D

### Non-significant Research Findings

#### A. Correlations between PCL-R total scores and Instrumental/Reactive Aggression Scale

	<u>PCL-R</u>
Global instrumental/reactive aggression (n=44)	.08
Planning (n=43)	.07
Goal-directedness (n=44)	.04
Provocation (n=44)	-.01
Arousal (n=37)	-.03
Severity of violence (n=44)	.08
Intoxication (n=42)	.01

#### B. Correlations between PCL-R total score and substance use

	<u>PCL-R</u>
Amount of alcohol in past (n=43)	-.06
Frequency of alcohol in past (n=43)	.03
Use of alcohol before/during index offense (n=37)	.08
Intoxicated before/during index offense (n=37)	.05
Use of drugs before/during index offense (n=33)	.00
Intoxicated before/during index offense (n=33)	.16

#### C. Correlations between PCL-R total score and past violence

	<u>PCL-R</u>
Threatens with weapon (n=26)	.34
Severity of threats with weapons (n=20)	.07
Severity of injuries inflicted (n=24)	.32
Degree of verbal threats towards others (n=22)	.15
Frequency of verbal threats towards others (n=21)	.30

## D. Correlations between PCL-R and violence during index offense

	<u>PCL-R</u>
Threatens with weapon (n=35)	-.27
Severity of injury inflicted (n=41)	-.23
Physical harm inflicted on victim before death (n=42)	.12
Degree of verbal threats (n=30)	-.02

## E. Correlations between PCL-R total score and other psychiatric diagnoses

	<u>PCL-R</u>
Axis I:	
ADHD (n=35)	.05
Substance abuse (n=35)	.11
Schizophrenia (n=35)	-.16
Depression (n=35)	-.14
Obsessive-Compulsive Disorder (n=35)	-.12
Post-traumatic Stress Disorder (n=35)	-.07
Axis II:	
Schizoid Personality traits (n=35)	-.31
Dependent Personality Traits (n=35)	-.29
Narcissistic Personality traits (n=35)	-.09
Borderline Personality traits (n=35)	.25
Antisocial Personality traits (n=35)	.07
Mental Retardation (n=35)	-.01
Axis III:	
Seizure Disorder (n=35)	.20
Organic Brain Syndrome (n=35)	-.12

## F. Correlations between PCL-R total scores and institutional misbehaviour

Adult:	
total number of incidents/month (n=11)	-.22
total number of violent incidents/month (n=11)	-.19
total number of nonviolent incidents/month (n=11)	-.10

G. Chi-square analyses: PCL-R total score and Instrumental/Reactive Aggression

	<u>PCL-R</u>
Global instrumental/reactive aggression	0.02
Planning	0.36
Goal-directedness	0.02
Provocation	0.56
Arousal	1.10
Severity of violence	2.29
Relationship with victim	0.62
Intoxication	1.63
Psychosis	0.79

H. Chi-square analyses: PCL-R total score and offense characteristics

	<u>PCL-R</u>
Threatens with weapons	0.88
Severity of threats	2.90
Severity of injuries inflicted	2.66
Physical harm inflicted on victim before death	1.54
Degree of verbal threats	0.01
How victim was killed	1.56
Motive	0.30
Presence of accomplices	0.24
Passive/dominant behaviour with accomplices	0.69
Use of drugs before/during index offense	0.16
Intoxicated before/during index offense	1.26
Use of alcohol before/during index offense	2.66
Intoxicated before/during index offense	3.61



## I. Chi-square analyses: PCL-R total score and institutional misbehaviour

	<u>PCL-R</u>
Juvenile:	
total number of incidents/month	1.77
number of violent incidents/month	1.77
number of nonviolent incidents/month	0.28
Adult:	
total number of incidents/month	0.75
number of violent incidents/month	0.75
number of nonviolent incidents/month	0.02

## J. Multiple regression analyses: PCL-R factors and violence

	Factor 2	Factor 1	Interaction
Violence in past:			
degree of violence (n=41)	.24	.00	.00
frequency of violence (n=37)	.37	.00	.00
degree of threats (n=22)	.08	.10	.00
frequency of threats (n=21)	.18	.00	.01
Past Weapon use:			
use of weapon (n=24)	.11	.01	.00
possession of weapon (n=26)	.16	.13	.00
severity of weapon threat (n=20)	.02	.11	.00
injure with a weapon (n=24)	.13	.01	.00
Weapon use during index:			
possession of weapon (n=41)	.11	.01	.03
use of weapon (n=41)	.11	.01	.03
threaten with weapon (n=35)	.17	.03	.00
severity of threats (n=35)	.20	.01	.00
injure with weapon (41)	.07	.00	.01
Institutional violence:			
juvenile institutions (n=29)	.08	.04	.00
adult institutions (n=11)	.02	.02	.00

## Appendix E

### Descriptive Statistics for Juvenile Murderers

\*Note: columns may not always sum to 100% due to rounding error

#### A. Psychiatric data

1. Verbal IQ (n=38): mean = 94.5 (SD = 15.6)  
range = 67 to 136

Performance IQ (n=38): mean = 96.2 (SD = 16.9)  
range = 71 to 136

Full IQ (n=38): mean = 95.1 (SD = 16.8)  
range = 71 to 137

2. Psychiatric Diagnoses (n=35)

##### Axis I:

conduct disorder	65.9%
attention deficit hyperactivity disorder	15.9%
substance abuse	18.2%
major depression	4.5%
obsessive-compulsive disorder	2.3%
post-traumatic stress disorder	2.3%
sexual disorder	4.5%
schizophrenia	4.5%

##### Axis II:

schizoid personality traits	4.5%
narcissistic personality traits	4.5%
dependent personality traits	2.3%
borderline personality traits	4.5%
antisocial personality traits	2.3%
mental retardation	2.3%

##### Axis III:

organic brain syndrome	2.3%
seizure disorder	2.3%
any neurological impairment	6.8%

## B. Abuse of subjects

### 1. Physical abuse:

none	61.4 %
mild	9.1 %
moderate	18.2 %
severe	2.3 %
unknown	9.1 %

#### By whom:

mother	11.7%
father	29.4%
stepfather	17.6%
acquaintance	11.7%
unknown	29.4%

### 2. Sexual abuse:

none	63.6%
mild	6.8%
moderate	15.9%
severe	2.3%
unknown	11.4%

#### By whom:

stepmother	6.3%
stepfather	6.3%
maternal aunt	6.3%
paternal uncle	6.3%
acquaintance	12.5%
stranger	6.3%
unknown	56.3%

### 3. Emotional abuse:

none	38.6%
mild	13.6%
moderate	6.8%
severe	0%
unknown	40.9%

#### By whom:

mother	7.4%
stepmother	3.7%
father	11.1%
stepfather	7.4%
unknown	70.3%

4. Neglect:
- |          |       |
|----------|-------|
| none     | 40.9% |
| mild     | 13.6% |
| moderate | 9.1%  |
| severe   | 11.4% |
| unknown  | 25.0% |
- By whom:
- |              |       |
|--------------|-------|
| mother       | 38.5% |
| father       | 15.4% |
| both parents | 3.8%  |
| unknown      | 42.3% |

### C. Past Criminal Behaviour

1. Age at first contact with the law  
 mean = 14 years ( $SD = 2$  years)  
 range = 9 to 17 years old

#### Type of offense at first contact

theft	43.2%
robbery	4.5%
assault	13.6%
murder	20.5%
weapons	2.3%
sex offense	2.3%
escape	2.3%
arson	2.3%
miscellaneous	6.8%
unknown	2.3%

2. Age at first major school misbehaviour (n=30)  
 mean = 10 years, 3 months ( $SD = 3$  years, 11 months)  
 range = 5 to 16 years old

#### Type of first major school misbehaviour

fighting	27.3%
swearing	4.5%
refusal to work	2.3%
truancy	11.4%
disruptive in class	22.7%
weapons	2.3%
none	4.5%
unknown	25.0%

## 3. Degree of physical violence towards others

none	20.5%
mild	40.9%
moderate	25.0%
severe	6.8%
unknown	6.8%

## Frequency of physical violence towards others

never	20.5%
rarely	13.6%
occasional	22.7%
often	29.5%
unknown	13.6%

## 4. Degree of verbal threats towards others

none	13.6%
mild	2.3%
moderate	22.7%
severe	11.4%
unknown	50.0%

## Frequency of verbal threats towards others

never	13.6%
rarely	11.4%
occasional	13.6%
often	9.1%
unknown	52.3%

## 5. Possession of a weapon

none	20.5%
gun	4.5%
knife	15.9%
other	2.3%
multiple	15.9%
unknown	40.9%

## Threatens with a weapon

none	8.5%
gun	8.5%
knife	14.3%
other	2.9%
unknown	65.7%

## Severity of threats with a weapon

mild	12.5%
moderate	0%
severe	12.5%
unknown	75.0%

## Use of a weapon

none	28.6%
gun	2.9%
knife	5.7%
other	2.9%
multiple	2.9%
unknown	57.1%

## Severity of injury inflicted with a weapon

none	4.0%
mild	4.0%
moderate	8.0%
severe	4.0%
unknown	80.0%

## 6. Alcohol use

none	6.8%
social drinker	40.9%
heavy user	50.0%
unknown	2.3%
never	9.1%
rarely	18.2%
occasionally	50.0%
often	20.5%
unknown	2.3%

## Drug use

none	18.2%
social user	31.8%
heavy user	43.2%
unknown	6.8%
never	18.2%
rarely	15.9%
occasionally	13.6%
often	45.5%
unknown	6.8%

## D. Index Offense Behaviour:

## 1. Alcohol use before/during the offense

yes	47.7%
no	36.4%
unknown	15.9%

## Intoxicated at time of offense

yes	31.8%
no	52.3%
unknown	15.9%

## Drug use before/during the offense

yes	18.2%
no	63.6%
unknown	18.2%

## Intoxicated at time of offense

yes	6.8%
no	75.0%
unknown	18.2%

## 2. Level of violence inflicted on victim prior to death

none	22.7%
mild	9.1%
moderate	52.3%
severe	11.4%
unknown	4.5%

## 3. Methods use to murder (or attempt to murder) victims

shooting	15.9%
beating	20.5%
beating (attempted)	4.5%
stabbing	22.7%
stabbing (attempted)	15.9%
strangulation	4.5%
drowning	2.3%
arson	4.5%

## 4. Possession of a weapon

none	18.2%
gun	18.2%
knife	34.1%
club	4.5%
other	13.6%
multiple	4.5%
unknown	6.8%

## Threatens with a weapon

none	55.6%
gun	5.6%
knife	11.1%
multiple	2.8%
unknown	25.0%

## Severity of threats with weapons

mild	6.3%
moderate	0%
severe	37.5%
unknown	56.3%

## Use of weapons

gun	22.2%
knife	41.7%
club	5.6%
other	16.7%
multiple	5.6%
unknown	8.3%

## Severity of injury inflicted with a weapon

mild	8.3%
moderate	13.9%
severe	69.4%
unknown	8.3%

## 5. Degree of verbal threats

none	52.3%
mild	6.8%
moderate	2.3%
severe	6.8%
unknown	31.8%

## 6. Relationship to victim(s)

mother	1.8%
stepmother	3.6%
stepfather	3.6%
brother	3.6%
stepbrother	1.8%
stepsister	1.8%
acquaintance	38.2%
stranger	45.5%



7.	Motive	
	material gain	27.3%
	opportunistic	6.8%
	strong emotional arousal	15.9%
	revenge	15.9%
	sexual gratification	9.1%
	none	9.1%
	unknown	15.9%
8.	Gender of victims	
	male	63.6%
	female	36.4%
	Age of victims	
	0-12	9.1%
	13-17	18.2%
	18-40	38.2%
	41-60	20.0%
	61 and over	12.7%
	unknown	1.8%
9.	Presence of accomplices	
	offender alone	47.7%
	offender with others	52.3%
	Number of accomplices	
	1	34.7%
	2	21.7%
	3	13.0%
	5	4.3%
	6	4.3%
	8	4.3%
	15	4.3%
	unknown	13.0%
	Type of accomplices	
	organized gang	13.0%
	friends	78.3%
	acquaintances	8.7%
	Behaviour of subject during homicide with accomplices	
	passive	43.5%
	dominant	47.8%
	unknown	8.6%

## E. Instrumental/Reactive Aggression during Index Offense

1. Global instrumental vs. reactive (n=44)
 

clearly reactive	34.1%
primarily reactive	9.1%
primarily instrumental	22.7%
clearly instrumental	34.1%
  
2. Planning (n=43)
 

no planning	43.2%
some planning	34.1%
moderate planning	13.6%
extensive planning	6.8%
unknown	2.3%
  
3. Goal-directedness (n=44)
 

no apparent goals	56.8%
secondary goal-directedness	0%
primary goal-directedness	9.1%
clear, unequivocal goals	34.1%
  
4. Provocation (n=44)
 

no apparent provocation	59.1%
mild provocation	11.4%
moderate provocation	22.7%
strong provocation	6.8%
severe provocation	0%
  
5. Arousal (n=37)
 

calm or tense	15.9%
excited, very nervous	27.3%
angry, extremely scared	34.1%
enraged, panicked	6.8%
unknown	15.9%
  
6. Severity of violence (n=44)
 

no assault	4.5%
assault without injury	2.3%
minor injury	2.3%
serious injury	9.1%
severe injury	18.2%
homicide	50.0%
extreme homicide	13.6%

7. Relationship with victim (n=43)
 

stranger	45.5%
acquaintance	13.6%
specific relationship	13.6%
close relationship	13.6%
very close relationship	11.4%
unknown	2.3%
  
8. Intoxication (n=42)
 

not intoxicated	50.0%
mild intoxication	22.7%
intoxicated	18.2%
severe intoxication	4.5%
unknown	4.5%
  
9. Psychosis (n=44)
 

not psychotic	95.5%
non-psychotic disturbance	0%
moderate psychotic symptoms	4.5%
substantial psychotic symptom	0%

#### F. Institutional Misbehaviour

Overall (n=35)		
mean number of incidents/month		.86
mean number of violent incidents/month		.58
mean number of non-violent incidents/month		.28
Juvenile (n=29)		
mean number of incidents/month		1.08
mean number of violent incidents/month		.76
mean number of non-violent incidents/month		.31
Adult (n=11)		
mean number of incidents/month		.30
mean number of violent incidents/month		.12
mean number of non-violent incidents/month		.18

## G. History of family members

### 1. Mother

#### a. Psychiatric history

yes	9.1%
no	54.5%
unknown	36.4%

#### b. Type of psychiatric problem

depression	25.0%
unknown	75.0%

#### c. Alcoholism

yes	34.1%
no	43.2%
unknown	22.7%

#### d. Drug abuse

yes	11.3%
no	36.4%
unknown	52.3%

#### e. Criminal history

none	38.7%
drug offense	2.3%
assault	2.3%
murder	2.3%
prostitution	2.3%
major driving offense	2.3%
fraud	2.3%
unknown	47.7%

#### f. Violent behaviour in general

yes	2.3%
no	43.2%
unknown	54.5%

### 2. Father

#### a. Psychiatric history

yes	4.5%
no	50.0%
unknown	45.5%

b. Type of psychiatric problem	
schizophrenia	100 %
c. Alcoholism	
yes	43.2%
no	29.6%
unknown	27.3%
d. Drug abuse	
yes	6.9%
no	29.5%
unknown	63.6%
e. Criminal history	
none	18.2%
theft	2.3%
robbery	2.3%
drug offenses	2.3%
assault	25.0%
major driving offenses	6.8%
unknown	43.2%
f. Violent behaviour in general	
yes	29.5%
no	25.0%
unknown	45.5%
3. Stepmother	
a. Psychiatric history	
yes	11.1%
no	22.2%
unknown	66.6%
b. Type of psychiatric problem	
depression	100 %
c. Alcoholism	
yes	11.1%
no	33.3%
unknown	55.5%

d. Drug abuse	
yes	0%
no	33.3%
unknown	66.6%

e. Criminal history	
none	11.1%
fraud	11.1%
unknown	77.7%

f. Violent behaviour in general	
yes	0%
no	0%
unknown	100%

#### 4. Stepfather

a. Psychiatric history	
yes	0%
no	31.5%
unknown	68.4%

b. Alcoholism	
yes	31.4%
no	42.0%
unknown	26.3%

c. Drug abuse	
yes	5.3%
no	36.8%
unknown	57.9%

d. Criminal history	
none	10.5%
assault	26.3%
sexual offense	10.5%
unknown	47.4%

e. Violent behaviour in general	
yes	15.7%
no	31.6%
unknown	52.6%

5. Siblings
  - a. Psychiatric history
 

yes	0%
no	43.6%
unknown	56.4%
  - b. Alcoholism
 

yes	10.3%
no	38.5%
unknown	51.3%
  - c. Drug abuse
 

yes	12.8%
no	25.6%
unknown	61.5%
  - d. Criminal history
 

none	30.8%
theft	15.4%
assault	5.1%
sexual offense	2.6%
unknown	46.2%
  - e. Violent behaviour in general
 

yes	2.6%
no	41.0%
unknown	56.4%
6. Mother's family
  - a. Psychiatric history
 

yes	0%
no	20.5%
unknown	79.5%
  - b. Alcoholism
 

yes	13.6%
no	18.2%
unknown	68.2%
  - c. Drug abuse
 

yes	2.3%
no	11.4%
unknown	86.4%

d. Criminal history	
none	2.3%
assault	6.8%
sexual offense	2.3%
unknown	88.6%

e. Violent behaviour in general	
yes	9.1%
no	0%
unknown	90.9%

7. Father's family

a. Psychiatric history	
yes	4.5%
no	15.9%
unknown	79.5%

b. Type of psychiatric problem	
depression	50.0%
schizophrenia	50.0%

c. Alcoholism	
yes	13.6%
no	6.8%
unknown	79.5%

d. Drug abuse	
yes	0%
no	6.8%
unknown	93.2%

e. Criminal history	
none	2.3%
assault	2.3%
unknown	95.5%

f. Violent behaviour in general	
yes	2.3%
no	2.3%
unknown	95.5%



## Appendix F

## Descriptive Statistics for Juvenile Murderers by Psychopathy Group

All numbers are expressed as percentages. Columns may not total to 100% due to rounding error.

A. Instrumental vs. Hostile/Reactive Aggression		<u>PCL-R Group</u>		
		Low	Medium	High
1. Global instrumental vs. reactive				
	clearly reactive	40	20	43
	primarily reactive	7	13	7
	primarily instrumental	13	33	21
	clearly instrumental	40	33	29
2. Planning				
	no planning	47	47	36
	some planning	33	40	29
	moderate planning	7	13	21
	extensive planning	13	0	7
	unknown	0	0	7
3. Goal-directedness				
	no apparent goals	53	53	64
	secondary goal-directedness	0	0	0
	primary goal-directedness	13	13	0
	clear, unequivocal goals	33	33	36
4. Provocation				
	no apparent provocation	60	73	43
	mild provocation	13	13	7
	moderate provocation	13	13	43
	strong provocation	13	0	7
	severe provocation	0	0	0
5. Arousal				
	calm or tense	13	13	21
	excited, very nervous	33	40	7
	angry, extremely scared	40	20	43
	enraged, panicked	7	7	7
	unknown	7	20	21

		<u>PCL-R group</u>		
		Low	Medium	High
6. Severity of violence				
	no assault	7	0	7
	assault without injury	7	0	0
	minor injury	7	0	0
	serious injury	13	13	0
	severe injury	13	20	21
	homicide	33	53	64
	extreme homicide	20	13	7
7. Relationship with the victim				
	stranger	53	47	36
	acquaintance	0	27	14
	specific relationship	7	7	29
	close relationship	13	20	7
	very close relationship	27	0	7
	unknown	0	0	7
8. Intoxication				
	not intoxicated	47	47	57
	mild intoxication	33	20	14
	intoxicated	13	27	14
	severe intoxication	7	7	0
	unknown	0	0	14
9. Psychosis				
	not psychotic	93	93	100
	non-psychotic disturbance	0	0	0
	moderate psychotic symptoms	7	7	0
	substantial psychotic symptoms	0	0	0

#### B. Relationship with victim

mother	5	0	0
stepmother	5	0	6
stepfather	0	6	6
brother	10	0	0
stepbrother	0	0	6
stepsister	0	0	6
acquaintance	29	38	50
stranger	52	56	28

		<u>PCL-R group</u>		
		Low	Medium	High
<b>C. Motives</b>				
	material gain	33	27	21
	opportunistic	7	13	0
	strong emotional arousal	20	7	21
	revenge	7	13	29
	sexual gratification	0	13	14
	none	13	7	7
	unknown	20	20	7
<b>D. Substance Use in Past and Index Offense</b>				
Alcohol use in past				
	none	7	0	14
	social drinker	40	53	29
	heavy user	47	47	57
	unknown	7	0	0
	never	7	0	21
	rarely	27	20	7
	occasionally	47	53	50
	often	13	27	21
	unknown	7	0	0
Drug use in past				
	none	20	27	7
	social user	40	27	29
	heavy user	27	40	64
	unknown	13	7	0
	never	20	27	7
	rarely	27	13	7
	occasionally	13	0	29
	often	27	53	57
	unknown	13	7	0
Alcohol use before/during the offense				
	yes	53	60	29
	no	40	27	43
	unkown	7	13	29

	<u>PCL-R group</u>		
	Low	Medium	High
Intoxicated at time of offense			
yes	40	40	14
no	53	47	57
unknown	7	13	29
Drug use before/during the offense			
yes	13	13	7
no	73	60	57
unknown	13	27	36
Intoxicated at time of offense			
yes	13	7	0
no	73	80	71
unknown	13	13	29

#### E. Violent behaviour in past and during index

Degree of physical violence in past			
none	27	33	0
mild	60	20	43
moderate	13	27	36
severe	0	7	14
unknown	0	13	7
Frequency of physical violence in past			
never	27	33	0
rarely	27	7	7
occasionally	27	13	29
often	13	20	57
unknown	7	27	7
Degee of verbal threats in past			
none	20	13	7
mild	0	0	7
moderate	13	27	29
severe	13	7	14
unknown	53	53	43

	<u>PCL-R group</u>		
	Low	Medium	High
Frequency of verbal threats in past			
never	20	13	7
rarely	20	7	7
occasionally	0	13	29
often	7	7	14
unknown	53	60	43
Possession of weapon in past			
none	47	7	7
gun	0	7	7
knife	0	20	29
other	7	0	0
multiple weapons	13	13	21
unknown	33	53	36
Threatens with weapon in past			
none	47	13	21
gun	0	7	14
knife	7	13	14
other	7	0	0
unknown	40	67	50
Severity of threats with weapon in past			
none	47	13	21
mild	7	7	14
moderate	0	0	0
severe	13	7	7
unknown	33	73	57
Use of weapon in past			
none	67	20	43
gun	0	7	0
knife	13	13	0
other	0	0	7
multiple	0	0	7
unknown	33	60	43

PCL-R group  
Low    Medium    High

Severity of injury inflicted with weapon in past

none	67	27	43
mild	0	0	7
moderate	0	7	7
severe	0	7	0
unknown	33	60	43

Level of violence inflicted on victim prior to death

none	27	20	21
mild	13	13	0
moderate	40	60	57
severe	13	7	14
unknown	7	0	7

Method used to murder (or attempt to murder) victim

shooting	40	7	0
beating	7	13	43
beating (attempted murder)	0	7	7
stabbing	13	40	14
stabbing (attempted murder)	20	20	7
strangulation	0	0	14
drowning	0	7	0
arson	0	7	7

Degree of verbal threats

none	53	53	50
mild	13	7	0
moderate	0	0	7
severe	7	13	0
unknown	27	27	43

Possession of weapon in index offense

none	7	13	36
gun	40	13	0
knife	27	60	14
club	0	0	14
other	27	0	14
multiple weapons	0	7	7
unknown	0	6	14

	<u>PCL-R group</u>		
	Low	Medium	High
Threatens with weapon in index offense			
none	53	67	71
gun	13	0	0
knife	13	13	0
multiple	0	0	7
unknown	20	20	21
Severity of threats with weapon in index offense			
none	53	67	71
mild	0	0	7
moderate	0	0	0
severe	27	13	0
unknown	20	20	21
Use of weapons in index			
none	7	13	36
gun	40	13	0
knife	27	60	14
club	0	0	14
other	27	0	14
multiple weapons	0	7	7
Severity of injury inflicted with a weapon			
none	7	13	36
mild	20	0	0
moderate	13	13	7
severe	60	67	43

#### F. Presence of Accomplices

Offender alone			
yes	53	47	43
no	47	53	57
Behaviour of subject during homicide			
passive	71	38	33
dominant	29	62	67

PCL-R group  
Low    Medium    High

G. Institutional Misbehaviour/Month

Juvenile institutions

mean number of total offenses	.45	.81	1.75
mean number of violent offenses	.34	.56	1.23
mean number of nonviolent offenses	.11	.22	0.51

Adult institutions

mean number of total offenses	.55	.13	.19
mean number of violent offenses	.21	.05	.08
mean number of nonviolent offenses	.34	.08	.11

H. Psychiatric Diagnoses

Axis I:

conduct disorder	60	82	100
ADHD	20	9	29
substance abuse	20	9	36
major depression	10	9	0
obsessive-compulsive disorder	10	0	0
post-traumatic stress disorder	0	9	0
sexual disorder	0	0	14
schizophrenia	10	9	0

Axis II:

schizoid personality traits	20	0	0
narcissistic personality traits	10	0	7
dependent personality traits	10	0	0
borderline personality traits	0	0	14
antisocial personality traits	0	9	0
mental retardation	0	9	0

Axis III:

organic brain syndrome	10	0	0
seizure disorder	0	0	7
any neurological impairment	0	17	17

type of neurological impairment:

FAS	0	50	0
seizures (in remission)	0	50	100