

**TEENAGE KILLERS: A COMPREHENSIVE EXAMINATION OF CANADIAN
YOUTH-PERPETRATED HOMICIDE, PSYCHOPATHY, MOTIVATION, VIOLENCE,
AND THE NUMBER OF PERPETRATORS**

by

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Abstract

Homicide is, arguably, the most extreme type of criminal behaviour. Despite its obvious importance, relatively little empirical research has been conducted on youth homicide—with even less focusing on Canadian data. Recent research on Canadian adult-perpetrated homicides (e.g., M. Juodis, M. Woodworth, S. Porter, & L. ten Brinke, in press; M. Woodworth & S. Porter, 2002) indicates that homicides can be reliably differentiated across particular offence characteristics (i.e., motivation, psychopathy, and the number of perpetrators). Therefore, the purpose of the present study was to examine the potential differences in the characteristics of Canadian youth-perpetrated homicide across motivation, psychopathy, and the number of perpetrators. Clinical files ($N=105$) of youth charged with homicide between 1990 and 2008 were coded across a number of items designed to capture youth-specific variables. Results revealed important significant differences. Specifically, youth were more likely to commit instrumental than reactive homicides ($p < .001$). However, low psychopathy youth were 4 times more likely to commit reactive homicides when acting alone ($p < .01$), whereas youth scoring high on psychopathy showed a preference for instrumental homicides, regardless of the number of perpetrators. Additionally, only the affective component of psychopathy predicted instrumentality ($p < .05$). Gratuitous and sexual violence were also more likely when a high psychopathy youth was involved in the homicide ($p < .01$). Finally, youth committed substantially more homicides with accomplices and against strangers than previously reported. Implications for prevention, treatment, and criminal investigation of youth-perpetrated homicides are discussed.

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love, strength, and encouragement throughout
the bleakest and the most buoyant of times.*

Thank you.

“Violence isn't always evil. What's evil is the infatuation with violence” – Jim Morrison (1981)

1 Introduction

Homicide is the most serious of criminal offences in terms of its costs to society, extending beyond the criminal justice system, treatment programs, and victims to the victims' families and friends. As a result of the considerable impact homicide has on society, it is important to understand the correlates of homicidal behaviour in order to develop prevention tactics and enhance treatment efforts aimed at reducing offence and recidivism and to increase investigative knowledge. However, the infrequent occurrence of this type of violent crime has previously prevented detailed quantitative investigation of the phenomenon, which has led to the perception that homicide is a poorly understood, heterogeneous offence (Daly & Wilson, 1988). Recently, researchers studying adult-perpetrated homicides (e.g., Juodis, Woodworth, Porter, & ten Brinke, in press; Salfati & Dupont, 2006; Woodworth & Porter, 2002) have suggested particular offender and offence characteristics, such as psychopathy, motivation, and the number of perpetrators, may define subtypes of homicides. To date, these characteristics have not been explored in the context of youth-perpetrated homicides. As one of the most comprehensive empirical investigations of youth homicide, both in Canada and in North America, the current study represents an important missing piece of the youth homicide literature.

1.1 Overview of Youth Violence and Homicide

Between 1961 and 2001, the rate of Canadian youth homicide generally declined, reaching a 30-year low in 2001 at a rate of 1.21 per 100,000 (Dauvergne, 2002; Li,

2007). However, in 2006 Canadian youth homicide rates increased to 3.29 homicides per 100,000, reaching a 35-year high with 85 youth implicated in 54 homicides (Li, 2008). Despite a slight decrease in 2007 to 2.86 homicides per 100,000 ($N = 74$), the current rate of youth homicide is still the second highest since Statistics Canada data were first collected in 1961 (Li, 2008). Although these most recent data indicating youth-perpetrated homicides are on the rise are concerning, it is important to understand that the frequency of youth homicide is still relatively low. For example, at their peak, youth-perpetrated homicides represented just 15% of all homicide offences in Canada (Li, 2007) and just 0.5% of all youth-perpetrated violent crimes (Taylor-Butts & Bressan, 2006). Given that youth homicide occurs relatively infrequently, our knowledge of this offence and its associated characteristics is still limited. As a result, research has historically focused on more general forms of youth violence and aggression.

1.1.1 Violence and Aggression

A plethora of research suggests there are different subtypes of aggression that are associated with distinctive development pathways (e.g., Coie, Dodge, & Kupersmidt, 1990; Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Loeber & Hay, 1997). For example, research has demonstrated that while most children learn to regulate their emotions and aggressive responding during preschool ages, children who do not are the most at risk for committing future violent behaviour (Tremblay et al., 2004). In fact, the severity of aggression increases as a function of the age of onset of aggression; specifically, earlier onset is associated with greater severity (Loeber & Hay, 1997). Generally, the prevalence of aggressive physical fighting decreases with age, with the

greatest decrease occurring between ages 14 and 16 (Loeber & Smith, 1996, as cited in Lober & Hay, 1997); however, more serious forms of violence increase with age, reaching a zenith in late adolescence to young adulthood (Terlouw & Bruinsma, 1994; Tremblay et al., 2004).

Early precursors that are associated with emotional dysregulation and later violent aggression include early onset maternal childbearing, low parental income, and poor parental relationships marked by conflict and violence (Tremblay et al., 2004). Other risk factors such as poor parental skills and attitudes, particularly poor supervision and harsh attitudes regarding discipline, have also been associated with increased violence in adolescence (Farrington, 1978). Further, exposure to parental aggression has been found to predict aggression in youth (e.g., McCord & McCord, 1963; Moretti, Obsuth, Odgers, & Reebye, 2006). In fact, Huesmann, Eron, Lefkowitz, and Walder (1984) found antisocial behaviour was more stable from generation to generation (grandparent to parent to child) than antisocial behaviour within individuals from ages 8 to 30. Similarly, Moretti et al. (2006) found that girls who witnessed aggression perpetrated by their mothers and boys who witnessed aggression perpetrated by their fathers were more likely to use aggression in their interactions with peers.

These studies provide evidence for Bandura's (1977) social learning theory, which proposes that behaviour is learned, and vicariously reinforced, through the observation of models. As such, Bandura (1983) posited that aggression is primarily a learned behaviour, which is goal-driven (i.e., instrumental) and generally associated with rewards and reinforcement. However, modeled aggression can also be learned in the

absence of rewards and reinforcement (Bandura, 1977). This addendum helps to explain why, despite legal consequences and incarceration, children of criminal parents are more likely to become criminals themselves (Huesmann et al., 1984; McCord & McCord, 1958, 1963).

In contrast to Bandura's assertion that nearly all aggression is instrumental (i.e., reward/goal motivated), other researchers previously proposed a melding of Freudian and Hullian principles by way of the frustration-aggression hypothesis (Dollard, Doob, Miller, Mowrer, & Sears, 1939). This hypothesis posits that nearly all aggression is reactive, caused by the need for cathartic relief of frustration or anger. However, this hypothesis has not been well supported, with some researchers finding that frustration produces a readiness for aggression, but rarely leads to overt aggression in the absence of a nonaggressive goal (Rule & Hewitt, 1971). Still other researchers (e.g., Berkowitz, 1962, 1965; Berkowitz & Buck, 1967; Cornell et al., 1996; Dodge, 2006; Feshbach, 1964) suggest that although some aggressive behaviour is instrumental, the most common form of aggressive behaviour is hostile; that is, instinctive, automatic, and impulsive, occurring in response to perceived threats or frustrations that lead to extreme anger. In this view, intense frustration or high levels of emotional arousal, which—importantly—limit cognitive intervention, produce a readiness for aggression that will be acted upon, regardless of gains or goals, given a suitable target (Berkowitz, 1993).

It has also been argued that aggression is a multifarious phenomenon, not well described by the dichotomous instrumental-reactive distinction. Specifically, Rule and Nesdale (1974) contend that the instrumental-reactive dichotomy is artificially

constraining and that there may be many motivations behind some forms of violence. In line with Maslow's (1943) position that acts generally have more than one motivation, researchers have argued that some aggressive acts contain elements of both instrumentality *and* reactivity (Bushman & Anderson, 2001; Rule & Hewitt, 1971; Rule & Nesdale, 1974). Consequently, some modern models of instrumental and reactive violence (e.g., Woodworth & Porter, 2002) differentiate between acts that are *primarily* instrumental and those that are *primarily* reactive. In this model, purely instrumental and purely reactive violence represent the polar ends of a continuum of motivation. However, these extremes are separated by violence that is primarily driven by instrumental gain, but has some elements of reactivity, and violence that is primarily driven by reactive emotionality, but has some elements of instrumentality.

Classically, reactive aggression has been conceptualized as aggression that is often characterized by anger, committed for the purpose of harming the target. In contrast, instrumental aggression has been conceptualized as aggression committed to obtain a nonaggressive reward or reinforcement from a target (Buss, 1971; Feshbach, 1970; Hartup, 1974; Rule & Nesdale, 1974). Recently, however, researchers have argued there are different subtypes of instrumental aggression that do not fit with the classic conceptions of aggression. For example, aggression can be committed to intentionally victimize a target (i.e., to cause emotional or physical pain) for one's own pleasure or status (i.e., instrumental motivations) (Campbell & Muncer, 1994; Cornell et al., 1996; Indermaur, 1996; Santtila, Canter, Elfgren, & Häkkänen, 2001). As a result, some researchers have differentiated between instrumental aggression and reactive aggression

according to three main characteristics: (a) presence of gain or goal, (b) presence of anger, *and* (c) the level of planning, forethought, or premeditation (Bushman & Anderson, 2001; Woodworth & Porter, 2002). The latter dimension creates a parallel between instrumental-reactive aggression and legal taxonomies of homicide.

1.1.2 Canadian Youth Homicide

Though general characteristics of Canadian homicides have been described by researchers (e.g., Moyer, 1992, Li, 2007, 2008), a very limited number of studies have specifically examined youth-perpetrated homicide in Canada (e.g., Kelly & Totten, 2002; Meloff & Silverman, 1992; Toupin, 1988, as cited in Meloff & Silverman, 1992). Despite important shortcomings, these studies have identified potentially relevant characteristics, providing impetus for the current investigation. For example, Kelly and Totten (2002) qualitatively studied 19 offenders convicted of youth homicide between 1977 and 2001, finding that 12 of these offenders reportedly lacked homicidal intent, considering the violence they perpetrated to be ‘ordinary.’ Further, the offenders described a variety of motivations for the homicide, ranging from power or status, to responding to challenges, retribution, anger, frustration, and excitement. Only four offenders appeared to have planned to commit homicide. In contrast, Meloff and Silverman (1992) examined national Statistics Canada data for 990 youth-perpetrated homicides committed between 1961 and 1983. Although their study provided a limited description of general youth homicide characteristics, some interesting findings are worth mentioning here. For example, nine times as many homicides were committed by youth aged 17 compared to those aged 13. The majority of homicides were intra-ethnic and

same-gendered. Differences were also observed between homicides committed by individual perpetrators (IP) and multiple perpetrators (MP; i.e., involving two or more offenders) and between Canadian and American homicides. Greater social distance between the victim and offender was associated with MP homicides. And, Canadian youth engaged in more IP homicides (80%) than American youth (54%; Rowley, Ewing, & Singer, 1987).

Unfortunately, these previous Canadian studies have major methodological shortcomings. For instance, offenders participating in Kelly and Totten's (2002) study represented a range of cohorts spanning more than 25 years and all information was self-reported, retrospective, and post-incarceration. Further, this study was limited to qualitative data, providing descriptive rather than explanatory information. Conversely, Meloff and Silverman's (1992) study was quantitative but limited by Statistics Canada data, which includes only basic characteristics such as age, gender, and ethnicity and is not a rich source of detailed offender, victim, and offence information. Moreover, these data are outdated: It is probable that Canadian youth-perpetrated homicides have changed over the 46 years since the data were initially collected. Nonetheless, both studies identified potentially important variables, such as motivation and the number of perpetrators, which require further quantitative investigation with more recent homicide data.

1.1.3 American Youth Homicide

Much of what is known about homicide in general comes from research conducted in other countries, often the United States where the rate of homicide is nearly

three times higher than that reported in Canada (Li, 2007). Unfortunately, this homicide research tends to focus on even more rare subtypes of youth-perpetrated homicide such as parricide (Bourget, Gagné, & Labelle, 2007; Corder, Ball, Haizlip, Rollins, & Beaumont, 1976; Marleau & Webanck, 1997; Post, 1982), sexual homicide (Hill, Habermann, Berner, & Briken, 2006; Myers, 2002, 2004; Roberts & Grossman, 1993), or serial or mass homicide (Hempel, Meloy, & Richards, 1999; Salfati & Bateman, 2005; Warren, Hazelwood, & Dietz, 1996). Moreover, homicide research often uses a case study approach (e.g., Kelly & Totten, 2002; Myers, 2002, 2004; Myers & Blashfield, 1997), which provides qualitative descriptions that explain individual homicides but fails to illuminate more general patterns of homicide offences and the youth offenders who commit them. Additionally, a limited number of studies have focused on youth-perpetrated homicides and these often use inappropriately defined age ranges, such as ages 10 to 24 (Rosenfeld, Bray, & Egley, 1999) or 15 and younger (Goetting, 1989). As a result, this literature review discusses adult and 'youth' homicide research as well as research that fails to disaggregate homicide by offender age.

It is also important to note some potential problems with applying the results of United States research to Canada. For example, Canada has rates of violent youth crime and youth-perpetrated homicides that are two to three times lower than the United States (see e.g., Baum, 2005; Bureau of Justice Statistics, 2007; Dauvergne, 2008; Li, 2008). The United States also has more lenient gun policies, which influence the methods youth use to commit crimes (Sloan et al., 1988). Lastly, United States research focuses more on African and Latino or Hispanic descendents, whereas Canadian research generally

includes more First Nations descendents (Meloff & Silverman, 1992; Moyer, 1992). The extent to which these differences limit the generalizability of results is unknown; however, previous research suggests there are important differences in the characteristics of homicides committed within both countries (Meloff & Silverman, 1992). Clearly, new research specific to Canadian youth homicide offences is warranted. Nonetheless, American homicide research has uncovered variables that are potentially cross-culturally relevant to the study of youth homicide.

1.1.3.1 General characteristics. According to 2007 United States national homicide data, 93% of homicide offenders under the age of 18 were boys, 63% were African American, and 35% were Caucasian (Federal Bureau of Investigation, 2008). Further, victims of youth-perpetrated homicides were most likely to be adults aged 18 or older (68%). Regrettably, American national data do not further disaggregate homicides according to offender age and, therefore, little else is known about the national characteristics of United States youth homicide offences. Similar to American data, Statistics Canada data indicate Canadian youth offenders are also predominantly boys (89%) (Li, 2008). Further, Canadian youth, as compared to Canadian adults, commit more multiple perpetrator (MP) offences (57% and 17%, respectively) and they commit nearly three times as many gang-related homicides (32% and 11%, respectively) (Li, 2008). However, national data, while statistically impressive, fail to expose the specific contexts of youth homicides that are potentially useful for prevention and treatment, making it necessary for researchers to conduct smaller-scale—but exceedingly more detailed—analyses.

1.1.3.2 Motivation. Owing largely to the work of Cornell and colleagues, differences in the characteristics of homicides have been explored across motivation. Specifically, Cornell, Benedek, and Benedek (1987a, 1987b) compared 72 youth homicide offenders and 35 youth who committed theft, and found the motivations for the homicide group were notably different. Loosely paralleling the instrumental and reactive types of aggression, a substantial portion of Cornell et al.'s sample committed homicide for gain during the course of another crime (e.g., robbery, sexual assault, etc.) and a substantial portion committed homicide in response to conflict. Researchers have noted differences in offender and offence characteristics across these two types of homicides. For example, crime-motivated homicide offenders victimized more strangers, adults, and elderly (Myers, Scott, Burgess, & Burgess, 1995). Interestingly, Cornell (1993) also found that, across an American national sample of youth-perpetrated homicides spanning 1984 to 1991, homicides committed for gain (crime-motivated) increased 200% compared to just 83% for homicides committed in response to disagreements or discord (conflict-motivated).

A more recent typology proposed by Cornell and colleagues (1996) builds on the crime- and conflict-motivated homicides as well as the plethora of youth aggression research (see Berkowitz, 1993). Cornell et al. (1996) placed particular emphasis on the goals or gains and the affective nature of the violence offenders committed. Consequently, this typology adopts the terminology used in youth aggression research; namely, instrumental aggression (goal-motivated or offensive) and reactive aggression (emotionally-motivated or defensive). Cornell et al. again found evidence of two types of

violent offenders. The first type committed only reactive violence; the second committed both reactive *and* instrumental violence. Variations of Cornell et al.'s instrumental-reactive dichotomy have since been applied to homicide. Specifically, it has been argued that the instrumental-reactive distinction is extremely useful for measuring motivation and aggression in a way that is meaningfully different from legal conceptions of murder and manslaughter (Fontaine, 2007). Moreover, the characteristics of these two types of homicides have been found to reliably differentiate between particular crime-scene characteristics. For example, Salfati and Dupont (2006), in a sample of 75 adult Canadian IP homicide offenders, found that instrumental homicides were most often associated with manual killings (e.g., strangulation), partial undressing, and sexual assault; whereas, reactive homicides were associated with the use of guns, bindings, and gratuitous violence or "overkill." Further, these characteristics appear to be remarkably stable across different cultures (see e.g., Salfati, 2000; Santtila et al., 2001). The potential applied value of these typologies for identifying adult offenders who may be at greater risk for committing these particular types of homicides and for criminal investigation of homicide has only recently begun to be explored (e.g., Meloy, 2006; Porter & Woodworth, 2007; Salfati, 2000; Salfati & Bateman, 2005; Woodworth & Porter, 2002).

1.1.3.3 Number of perpetrators. Many studies have found that youth commit a high rate of multiple perpetrator (MP) homicides (e.g., Dolan & Smith, 2001; Snyder & Sickmund, 1995), particularly in comparison to adults (Cornell, 1993; Li, 2008). Further, older adolescents are much more likely to commit homicides alone than younger adolescents, (e.g., Meloff & Silverman, 1992; Zimring, 1981). Within youth-perpetrated

homicides, the number of perpetrators is also thought to change the dynamics of the victim, offender, and offence characteristics. For example, MP youth homicides are more often committed against strangers and involve increased violence against victims and other simultaneous offences (Block, 1990; Holstrom, & Burgess, 1980; Klein & Maxson, 1989; Rowley et al., 1987; Wolfgang, 1958). Clark (1995) found MP homicides were more likely to involve strangers, felonies, younger perpetrators (less than 18 years of age), a greater variety of homicide methods, and victims who were male and younger than the offenders. IP homicides, on the other hand, were more likely to involve known victims and involve victim precipitation. Although the discussion was not developed specifically in terms of instrumental and reactive motivation, Clark's results suggest that MP homicides are more instrumental in nature in that they most often occur as a secondary goal (concurrent with a felony) and are not victim precipitated, whereas IP homicides are more reactive in nature in that they most often occur in response to a known victim's actions. However, to date, no research has examined the relationship between instrumentality and number of perpetrators specifically in youth and how these factors relate to other homicide characteristics. Accordingly, the failure to compare homicides by motivation and other variables of importance, such as the number of perpetrators, as well as the reliance on small samples of youth-perpetrated homicides, has likely contributed to the perception that homicide is a heterogeneous offence that is not well understood (Cornell et al., 1987b; Daly & Wilson, 1988; Heide, 1999; Kelly & Totten, 2002). Nonetheless, despite this perception of heterogeneity, all homicides are acts of the most severe violence and aggression (Wolfgang & Ferracuti, 1967).

1.2 Psychopathy

One construct empirically linked to severe forms of violence and aggression is psychopathy (Porter & Woodworth, 2006). Psychopaths are defined by a unique constellation of interpersonal, affective, impulsive, and behavioural characteristics. For example, they are superficial, manipulative, deceitful, remorseless, impulsive, irresponsible individuals who lack empathy and insight and tend to express both early behavioural problems and adult antisocial behaviour (Hare, 1999, 2003). The Hare Psychopathy Checklist–Revised (PCL-R; Hare, 2003), the gold-standard measure of psychopathy (Acheson, 2005), suggests that psychopathy is composed of two broad—but distinct—clusters, or factors, of personality traits, each further representing two facets. Factor 1 includes personality traits describing interpersonal (Facet 1) and affective (Facet 2) deficits, such as lack of affect, selfishness, manipulativeness, callousness, and remorselessness. Factor 2 includes personality traits describing unstable, impulsive (Facet 3), and antisocial (Facet 4) behaviours, such as early behavioural problems and disregard for individual rights and social rules (Harpur, Hakstian, & Hare, 1988). Moreover, although Factor 2 represents general social deviance and is highly correlated with antisocial personality disorder (Widiger, 2006), Factor 1 is thought to represent the core features of psychopathy, distinguishing this personality disorder from other less severe disorders common to offender populations.

Clearly, given interpersonal characteristics and affective deficits such as a lack of empathy, guilt, and fear, psychopathic individuals are without many of the traits essential to inhibiting antisocial and violent behaviour (Hare, 2006). Not surprisingly, a large body

of research demonstrates a link between psychopathy and increased risk for general and violent offending (Bolt, Hare, Vitale, & Newman, 2004; Hart & Dempster, 1997; Hart & Hare, 1997; Hemphill, Hare, & Wong, 1998; Hill, Neumann, & Rogers, 2004; Porter & Porter, 2007; Serin, 1991; Sreenivasan, Walker, Weinberger, Kirkish, & Garrick, 2008; Vitacco, Neumann, & Jackson, 2005; Walsh & Kosson, 2007, 2008). Psychopaths not only commit more violence but they also have more diverse violent offence histories than nonpsychopaths (Hart, 1998). In fact, although psychopaths represent an estimated 1% of the population (Hare, 2006), they are responsible for more than 50% of all crime (Hare, 1993). Further, approximately one quarter of prison inmates score above the cutoffs defined by the PCL-R, while an additional 44% have a significant number of psychopathic traits (Hare, 2003).

Psychopathy, as measured by the PCL-R, has become a widespread tool for violence prediction and risk assessment. Comparing effect sizes from meta-analyses, Hart (1998) concluded the PCL-R is a more accurate predictor of risk for future violence than some medical techniques for predicting survival (e.g., cardiac bypass surgery prevents untimely death less often than psychopathy predicts risk). Psychopathy has also been associated with worse treatment outcomes (Barbaree, 2005; Porter, Birt, & Boer, 2001; Serin & Amos, 1995). A considerable body of research indicates that psychopaths are more likely to recidivate, and to recidivate more often and more violently (Blackburn, 1998; Dolan & Doyle, 2000; Ells, 2005; Langton, Barbaree, Harkins, & Peacock, 2006; Salekin, Rogers, & Sewell, 1996). Naturally, the relationship between recidivism and psychopathy, combined with evidence suggesting psychopaths' behavioural problems

and criminal careers begin in early adolescence, has led to the downward extension of psychopathy to youth.

1.2.1 Psychopathy in Youth

With a general goal of creating targeted preventative strategies and earlier, more specific, treatments aimed at reducing recidivism, the study of youth psychopathy has flourished (Frick, 2004; Frick, Cornell, Barrt, Bodin, & Dane, 2003; Marshall, Egan, English, & Jones, 2006; Vasey, Kotov, Frick, & Loney, 2005). Multiple youth psychopathy measurement tools are available, including an adapted version of the PCL-R known as the Psychopathy Checklist: Youth Version (PCL: YV). Specifically, item-level changes were made to the PCL-R to more accurately reflect psychopathy in youth aged 12 to 18 (Forth, Kosson, & Hare, 2003).

Despite its potential utility for identifying youth at increased risk for future violent offending, it is important to acknowledge the potential problems associated with the measurement of youth psychopathy, as this construct arguably has implications for legal policy, prevention, and treatment (see e.g., Edens, Skeem, Cruise, & Cauffman, 2001; Gretton, Hare, & Catchpole, 2004; Seagrave & Grisso, 2002; Skeem & Cauffman, 2003). Three primary critiques have been put forth. First, Seagrave and Grisso (2002) contend that psychopathic personality disorder diagnoses are inappropriate for persons whose personalities are still arguably developing (i.e., adolescents). Second, some have suggested that, because many indicators of youth psychopathy reflect transitory and normative characteristics of adolescence, there may be a high rate of false positive diagnoses (Edens, Skeem, et al., 2001; Skeem & Cauffman, 2003). Last, youth

psychopathy diagnoses may have grave legal and treatment implications. For instance, research indicating that adult psychopaths have poorer treatment and recidivism prognoses (e.g., Douglas, Yeomans, & Boer, 2005; Laurell & Daderman, 2005; Seto & Barbaree, 1999) has formed the basis of death penalty arguments in America (Edens, Petrila, & Buffington-Vollum, 2001).

In light of recent research, however, it has been argued that these critiques are not well supported. For example, longitudinal studies suggest psychopathic traits are indeed stable (see Frick, Kimonis, Dandreaux, & Farell, 2003; Lynam, Caspi, & Moffitt, 2007). Frick, Kimonis, et al. (2003) found evidence of stability across a 4-year period in two cohorts of late childhood and early adolescent youth. Similarly, Lynam et al. (2007) found psychopathic traits were stable from early adolescence to young adulthood, even after controlling for important related age-13 variables (e.g., socioeconomic status, parenting, peer delinquency). The interested reader is referred to Frick and White (2008) for a review of the literature supporting the stability of this construct across youth to adulthood. In response to the second critique, although individual characteristics of psychopathy may be normal features of adolescence, proponents of youth psychopathy contend it is the particular constellation of these characteristics (Frick, 2002) and their severity (Hare, 2003) that define psychopathy. Lastly, the limited research on treatment for psychopathic youth suggests that, in contrast to adults, high psychopathy youth's risk for recidivism can be reduced in intensive treatment programs (Caldwell, Skeem, Salekin, & Van Rybroek, 2006).

Researchers have noted that high psychopathy scores in youth are associated with more criminal activity and more externalizing problems (Brandt, Kennedy, Patrick, & Curtin, 1997) as well as conduct disorder (Myers, Burket, & Harris, 1995). Moreover, Frick and White (2008) argue some of the most severely violent and aggressive youth are distinguished by highly callous-unemotional interpersonal styles—a feature often considered to be the trademark of psychopathy (Cleckley, 1976) and represented by Factor 1 and Facets 1 and 2 of the PCL-R and PCL: YV (Hare, 1993). Indeed, high callous-unemotional traits, particularly when combined with conduct problems, are not only related to increases in overall levels of aggression, but specifically to increases in proactive (instrumental) aggression (Frick, Cornell, et al., 2003; Frick & White, 2008; Waschbusch & Willoughby, 2008). Other research has also found a strong association between interpersonal/affective deficits and the perpetration of instrumental violence in both adults (Cornell et al., 1996; Woodworth & Porter, 2002) and youth (Flight & Forth, 2007).

Additional research indicates that youth psychopathy, like adult psychopathy, is a useful predictor of risk for violence. For example, using a modified PCL-R for youth, Forth et al. (1990) found youth with high PCL-R scores were similar to high-scoring adults in that both groups committed more violence during and post-incarceration. Multiple other researchers have replicated these results, supporting both the concurrent and predictive (and postdictive) utility of psychopathy for violence assessment in youth (Frick, O'Brien, Wooton, & McBurnett, 1994; Fritz, Wiklund, Kuposov, Klinteburg, & Ruchkin, 2008; Lynam, 1997; Toupin, Mercer, Déry, Côté, & Hodgins, 1995; Vitacco &

Vincent, 2006). Consequently, despite the aforementioned potential problems, the construct of youth psychopathy is useful for identifying youth who are at greater risk for more severe and persistent, life-course violence (Frick & White, 2008; Gretton et al., 2004).

1.2.2 Psychopathy and Homicide

1.2.2.1 Motivation. Although there is a long tradition of examining the relationship between psychopathy and general criminal offending, a limited amount of research has focused on the specific crimes psychopaths and nonpsychopaths are more likely to commit (e.g., Cornell et al., 1996; Flight & Forth, 2007; Williamson, Hare, & Wong, 1987). One method of considering crime typologies is to divide the offences into the aforementioned instrumental and reactive categories of motivation for aggression. Applied to psychopathy—a personality disorder defined by a pervasive lack of affect—we would expect psychopaths to commit fewer reactive (or emotionally-driven) crimes and more instrumental (or goal-driven) crimes. Studies investigating a variety of violent crimes have provided support for this argument (e.g., Block & Block, 1992; Cornell et al., 1996; Loper & Cornell, 1996; Porter & Woodworth, 2007; Williamson et al., 1987). Indeed, the violence committed by psychopaths is generally goal-motivated, committed for purposes such as material gain, opportunism, and sadism (Hart, 1998). As a result of this combination of opportunism and gain, the violence of psychopaths has been described as “impulsively instrumental” (Hart, 1998, p. 121).

Williamson et al. (1987) found that psychopaths were more likely to commit crimes involving serious violent assaults and crimes for the purposes of material gain or

revenge/retribution. In contrast, nonpsychopaths were more likely to commit all violent crimes while in a state of strong emotional arousal. The authors concluded psychopaths commit calculated, or “cold-blooded,” violent crimes as “part of an aggressive display” (p. 460). In a similar study, Cornell and colleagues (1996) investigated motivation across the violent offence histories of psychopathic and nonpsychopathic offenders and found that offenders who engaged in instrumental violence had higher psychopathy scores. Further, these offenders had significantly higher Factor 2 scores, as well as significantly higher scores on many of the individual PCL-R items, such as lack of empathy and impulsivity. Higher callousness/lack of empathy scores were thought to particularly reflect the generally cold, calculated nature of instrumental violence. Additionally, the finding that these offenders were also more impulsive fits well with Hart’s (1998) view that psychopaths are impulsive in their instrumental violence. However, Cornell et al.’s study (1996) had methodological flaws that make it difficult to determine life-long patterns of violence motivations. Specifically, offender motivations were not coded on a continuum in terms of the number of instrumental versus reactive offences they committed. Rather, the authors argued that reactive violence represents a broader, more prevalent phenomenon and instrumental violence represents a less common form of aggression, indicative of more severely violent offenders; therefore, all offenders who committed at least one instrumental crime were coded as instrumental, regardless of the number of reactive offences they committed. Further, the criteria the authors used to classify reactive and instrumental violence did not adhere to the three defining features of aggression (i.e., the presence/absence of goals, affect, and planning) proposed by

Bushman and Anderson (2001). For example, 45.5% of the 'reactive' offenders showed evidence of planning/premeditation across their offence histories, which is inconsistent with a truly 'reactive' act. Finally, although motivation was assessed across offender history and a variety of different offences, no information about motivation for specific types of violent offences was recorded. Thus, little is known regarding the motivational patterns of the most severely violent offenders: those who commit homicide. Only one study has explicitly investigated the relationship between psychopathy and *homicide* motivation.

Woodworth and Porter (2002) investigated the relationship between psychopathy and motivation within a large sample of adult homicide offenders. In response to contentions that the instrumental-reactive dichotomy is limiting and artificial (Bushman & Anderson, 2001; Dempster et al., 1996; Hart & Dempster, 1997), instrumentality was conceptualized on a four-point continuum, reflecting the assertion that although the primary motivation of a crime may be instrumental (reactive), there may also be reactive (instrumental) elements. Moreover, in contrast to Cornell et al.'s (1987b, 1996) typologies, Woodworth and Porter's (2002) model of instrumental-reactive violence incorporated premeditation and spontaneity into their coding criteria. This had specific, theoretically relevant, benefits: By associating instrumentality with premeditation, the authors were able to differentiate between revenge-motivated homicides that were "cold-blooded," occurring after a distinct period of time from the original conflict, and revenge-motivated homicides that were "hot-blooded," occurring in the moments during or immediately after the conflict. The results of Woodworth and Porter's (2002) study

demonstrated that purely instrumental homicides occurred most often (45%), followed by instrumental/reactive (20%), reactive/instrumental (12.8%), and purely reactive homicides (8%). Across psychopathy, interesting patterns emerged. The majority of psychopaths (93.3%) committed primarily instrumental homicides, whereas a minority (6.7%) committed primarily reactive homicides. In contrast, nonpsychopaths committed nearly equal rates of instrumental and reactive homicides.

Finally, sexual and sadistic violence often tends to be goal-driven and planned or premeditated through sexual and sadistic fantasies (Deu & Edelman, 1997; MacCulloch, Snowden, Wood, & Mills, 1983). Further, the psychopathic personality disorder is closely associated with both sadistic personality disorder and the use of sexual violence (Knight & Guay, 2007; Myers, 2002). As a result, Woodworth (2001) investigated the relationships between psychopathy and motivation and the use of gratuitous (excessive), sadistic, and sexual violence in this same sample of 125 adult homicide offenders. In contrast to Salfati and Dupont (2006), Woodworth (2001) found instrumental homicides involved markedly more gratuitous and sadistic violence than reactive homicides. Further, psychopathic adults committed all types of violence (i.e., gratuitous, sadistic, and sexual) more often than their nonpsychopathic counterparts. Additionally, in a subset of this sample of offenders who committed only sexual homicides, Porter, Woodworth, Earle, Drugge, and Boer (2003) found sexual homicides committed by psychopaths involved more gratuitous and more sadistic violence. Although the work of Woodworth and colleagues has provided valuable insight into the motivations of adult homicide offenders, no research has explored these relationships in youth homicide offenders.

Nonetheless, researchers have examined the relationship between motivation and psychopathy in various types of youthful violent offenders (e.g., Flight & Forth, 2007; Kruh, Frick, & Clements, 2005; Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004) and across various PCL: YV factor structures (e.g., Victacco, Neumann, Caldwell, Leistico, & Van Rybroek, 2006). For example, Kruh et al. (2005) found that youth aged 14 to 21 who engaged in unprovoked violence had higher psychopathy scores than youth who engaged in provoked violence. Similarly, Murrie et al. (2004), in a sample of 113 violent and nonviolent youth offenders, found that youth with higher PCL: YV scores committed more instrumental violence and more serious types of violence (i.e., requiring medical attention). Finally, improving upon Cornell et al.'s (1996) methodology, Flight and Forth (2007) separately coded instrumental and reactive violence across the offence histories of 51 violent youth offenders. Psychopathy scores predicted significantly more frequent use of both instrumental violence and reactive violence. Further, the magnitude of the relationship between psychopathy and instrumentality was comparable to Woodworth and Porter's (2002) findings with adult homicide offenders. Moreover, each PCL: YV factor was related to different violent motivation: Factor 1 predicted instrumental violence, whereas Factor 2 predicted reactive violence. Unfortunately, this sample consisted of only a small number of violent offenders and, like Cornell et al. (1996), Flight and Forth (2007) neglected to examine whether particular types of violent offences were more or less likely to be instrumental across psychopathy. Consequently, it is yet unknown if the motivational patterns of psychopathic and nonpsychopathic youth homicide offenders will conform to those found in adult homicide offenders.

1.2.2.2 Number of perpetrators. Another avenue of adult homicide research that has recently been pursued is the dynamics of psychopathy and MPs. Juodis et al. (in press) examined psychopathy in 124 adult Canadian offenders who committed either IP or MP homicides. Results revealed some interesting differences. For example, MP homicides committed by psychopaths were more likely to involve younger victims and the use of drugs prior to the offence; whereas, in IP homicides, psychopaths were more likely to select victims who were strangers, to use strangulation, and to involve both sadistic and sexual violence. Further, when they considered the complex relationships between psychopathy, motivation, and the number of perpetrators, the authors found that psychopaths who committed IP homicides were more likely to do so for instrumental reasons than nonpsychopaths who committed IP homicides. Unfortunately, the few studies examining the impact of the number of perpetrators in youth homicides often fail to include measures of psychopathy (e.g., Klein & Maxson, 1989; Rosenfeld et al., 1999; Meloff & Silverman, 1992). As a result, it is unclear how psychopathy, motivation, and the number of perpetrators influence the characteristics of youth-perpetrated homicides.

1.3 Purpose of the Current Study

Overcoming the pervasive problem of small sample size by assessing 105 homicides across approximately two decades, the present study was designed to address three main objectives. First, based on previous adult homicide offender research (e.g., Woodworth & Porter, 2002) and generally violent youth offenders (e.g., Flight & Forth, 2007), we argue that psychopathy and motivation may help to clarify the perceived heterogeneity of youth homicide offences through the categorization of homicides

according to subtypes. Of primary interest is whether or not motivation for psychopaths and nonpsychopaths is consistent between youth and adult samples and between generally violent youth offenders and youth homicide offenders. Specifically, it is hypothesized that high psychopathy youth will commit more primarily instrumental homicides whereas low psychopathy youth will commit more primarily reactive homicides. Second, given the research indicating psychopaths engage in more excessive violence (e.g., Huss & Langhinrichsen-Rohling, 2000) and the conflicting results from Salfati and Dupont's (2006) and Woodworth and colleagues' (e.g., Porter et al., 2003; Woodworth, 2001) investigations of gratuitous violence, the current study examines the relationship between psychopathy, motivation, and the level and type of violence. Specifically, it is expected that instrumentally motivated homicides will be more likely to involve gratuitous, sadistic, and sexual violence. Further, it is also hypothesized that homicides committed by high psychopathy youth will more often involve all three forms of violence than those committed by low psychopathy youth. Third, potential differences in homicides will be explored across IP and MP homicides and compared to patterns found in adult homicide offender populations (e.g., Clark, 1995; Juodis et al., in press). Of particular interest is whether the motivations of youth and the amount of violence they use change as a function of the number of perpetrators and psychopathy.

2 Method

2.1 Sample

The current sample was obtained from Youth Forensic Psychiatric Services (YFPS) Inpatient Assessment Unit, in Burnaby, British Columbia. YFPS provides court-ordered assessments and treatment to young offenders, aged 12 to 17. Assessments are conducted by a multidisciplinary team, which includes psychiatrists, psychologists, social workers, nursing staff, and probation officers. Under Tri-Council guidelines, permission for file review was granted by the ethics boards of the University of British Columbia and YFPS. As part of the assessment process at YFPS, youth consented to allow their information to be used for any and all future research projects approved by the institution's ethics board. As a result, all available, inactive files of youth who were charged with homicide between 1990 and 2008 were reviewed.¹

The YFPS research department generated an initial list of 132 homicide offenders. However, records that were poorly maintained ($n = 21$) or otherwise lost ($n = 6$) were not reviewed. The final sample consisted of 105 youth offenders (92 boys and 13 girls). Twenty-one offenders were charged with first degree murder, 61 with second degree murder, 17 with manslaughter, 3 with attempted murder, and 3 with both first and second degree murder. As most files were pre-trial court-ordered assessments,

¹ Data storage systems were updated in 2002; as a result, files from 2002 to 2005 were inaccessible. This system change coincided with the introduction of the Youth Criminal Justice Act (YCJA), therefore pre- and post-YCJA offences were compared on our main variables of interest. No significant differences were found between files from 1990 to 2001 and those from 2006 to 2008.

information on convictions was infrequently available.² Files were, however, generally extremely detailed and included information from a variety of official sources, including police records (official police reports, witness statements, juvenile records), coroner's reports, court records, school records, psychiatric and psychological evaluations, psychometric test results, social services records, and social worker and probation officer reports. Available sources of information for each of the files were recorded. In all but one case, police reports or detailed summaries of the homicide offence were provided in the files. This one file was reviewed and included in only the descriptive analyses.

2.2 *Measures*

2.2.1 *Motivation*

Woodworth and Porter's (2002) instrumental-reactive coding scheme was employed in the current study as this measure has been used in multiple studies with violent adult offenders (e.g., Meloy, 2006; Porter & Woodworth, 2007; Woodworth & Porter, 2002). Moreover, Meloy (2006) suggests this coding scheme is particularly relevant and useful for applied forensic settings. Using this coding scheme has the benefit of ensuring comparability of our results to those found in the aforementioned adult Canadian studies. As indicated earlier, unlike previous conceptualizations of instrumentality (e.g., Cornell et al., 1987a, 1987b; Cornell et al., 1996), this coding scheme specifically emphasizes three distinct facets of instrumental-reactive motivations: (a) premeditation/impulsivity, (b) affect, and (c) gain. Moreover, Woodworth and

² Statistics Canada provides youth-perpetrated homicide rates based on youth accused rather than convicted of homicide (see Li, 2008). Moreover, YFPS assessments are conducted assuming youth are guilty of the charges. Further, only 10.6% of the sample denied any responsibility. For consistency, youth accused of murder are referred to as offenders in this paper.

Porter's instrumentality-reactivity motivation reflects Bushman and Anderson's (2001) contention that many acts of violence have multiple motives. Expanding on previous dichotomous models, four separate subtypes of motivation are considered: instrumental, instrumental/reactive, reactive/instrumental, and reactive. See Appendix A for detailed descriptions of these categories and coding instructions. More detailed, graphic case examples of actual homicides that were considered in this study are provided in Appendix B.

In addition to coding overall motivation, each of the three defining aspects of instrumental-reactive motivation was coded separately (i.e., premeditation/impulsivity, affect, and gain). See Appendix A for further descriptions of these items. Further, in keeping with Woodworth and Porter's (2002) study, specific types of motivation were also recorded in addition to the general type of motivation. This was based on Hervé, Petitclerc, and Hare's (1999, as cited in Woodworth, 2001) contention that categorizing specific types of instrumental homicides may be beneficial for forming comprehensive theories of motivation. As a result, the specific instrumental motives, for all homicides that included any element of instrumentality, were recorded (e.g., monetary gain, drugs/alcohol, revenge, nonconsensual sex, or other). These specific types of instrumental violence were then collapsed into either primary or secondary instrumental violence to differentiate between instrumental violence committed for the purpose of inflicting harm upon the victim(s) and violence committed for the purpose of material gain. Adding to Woodworth and Porter's (2002) original coding scheme, the specific type of reactive violence was also recorded for all homicides that included any element

of reactivity (e.g., revenge or retribution for physical assault, revenge or retribution for verbal abuse, jealousy, rejection, or lover's quarrel, self-defense/accident, or caught in the act of concurrent crimes).

2.2.2 *Violence*

The levels and types of violence were also considered using Woodworth and Porter's (2002) coding scheme. Gratuitous violence is defined as overkill or violence that exceeds the level that is necessary to kill. This violence is normally inflicted to increase the pain and suffering of the victim and can often include posing or staging of the crime scene. Gratuitous violence was coded on a 4-point scale (0 = *No gratuitous violence* to 3 = *Major amount of gratuitous violence*). Sadistic violence was coded separately because, although sadistic violence and gratuitous violence are linked, they are not equivalent. The primary difference is that sadistic violence involves the offender receiving some pleasure from the excessive violence and from causing the victim's unnecessary pain and suffering. As a result, sadistic violence is defined as gratuitous violence that is intended to cause pain and/or embarrassment to the victim for purpose of the offender's own pleasure. Sadistic violence was coded on a 3-point scale (0 = *No evidence*, 1 = *Some evidence*, 2 = *Concrete evidence*). Evidence for both violence variables was coded according to official reports (e.g., police reports, witness statements, offender statements, etc.). Each variable was coded for overall level of violence, taking into consideration the violence perpetrated by all offenders, and for the specific level of violence perpetrated by the youth offender being reviewed. This was done to assess differences in the level of participation for offenders who committed multi-perpetrator homicides. Appendix A

provides further details regarding how these variables were coded and Appendix B provides explicit examples of each variable from the youth offences in this study.

2.2.3 *Psychopathy Checklist: Youth Version*

The PCL: YV, like the adult version (i.e., PCL-R), is the gold-standard assessment tool designed specifically to assess the construct of psychopathy in youth offenders aged 12 to 18 (Forth et al., 2003). This measure includes 20 items measured on a 3-point scale (0 = *item does not apply* to 2 = *item applies completely*). In contrast to the PCL-R, the PCL: YV was designed for clinical use, although it is often used for research purposes (Forth et al., 2003). The PCL: YV is conducted using file review and clinical interview.³ Across multiple studies of youth offenders, the PCL: YV has shown moderate to high reliability and validity (e.g., Campbell, Pulos, Hogan, & Murry, 2005; Forth et al., 2003; Schmidt, McKinnon, Chattha, & Brownlee, 2006). Like the PCL-R, the factor structure of the PCL: YV has been debated, with exploratory factor analyses of the PCL-R (Neumann, Kosson, & Salekin, 2007) and the PCL: YV (Forth et al., 2003) suggesting between two and five factors.⁴ Neumann, Kosson, Forth, and Hare (2006) compared the 2-, 3-, and 4-Factor models and concluded that the 4-Factor model was optimal because it adequately captured all the dimensions of the construct of psychopathy, including antisocial behaviour which many consider a defining feature of psychopathy (Hare, 1999;

³ The PCL: YV can also be conducted based only on detailed file review. Given the large amount of time elapsed since many of the homicide offences had occurred, clinical interviews were not conducted.

⁴ Although item response theory analyses supported the 2-Factor structure of the PCL-R (Cooke & Michie, 1997), confirmatory factor analysis (CFA) conducted by Cooke and Michie (2001) did not. The latest edition of the PCL-R proposed a 2-Factor/4-Facet model (Hare, 2003); however, a 3-Factor (Cooke & Michie, 2001) and a 4-Factor model (Hare & Neumann, 2005) have also been proposed. CFA comparisons of the 2-, 3-, 4-, and 2-Factor/4-Facet models supported both the 3-Factor and the 2-Factor/4-Facet models (Weaver, Meyer, Van Nort, & Tristan, 2006).

2003). However, to ensure comparability with previous adult and youth research using the 2-Factor model, this study employed the 2-Factor/4-Facet model proposed by Forth et al. (2003) in the official PCL: YV manual. Specifically, Facet 1 describes interpersonal characteristics, Facet 2 describes affective characteristics, Facet 3 describes lifestyle behaviours, and Facet 4 describes antisocial behaviours. Facets 1 and 2 combine to generate a Factor 1 (interpersonal/affective) score, while Facets 3 and 4 combine to generate a Factor 2 (impulsive/antisocial) score.

Like the PCL-R, scores on the PCL: YV range from 0 to 40, with scores above 30 denoting psychopathy. However, some researchers have suggested it is inappropriate to use an artificially imposed cut-score (Harris, Rice, & Quinsey, 1994), whereas others investigating the taxometric properties of psychopathy suggest offenders who score above 30 represent a distinct class (Hart & Hare, 1997; Skilling, Harris, Rice, & Quinsey, 2002). Nonetheless, recent taxometric investigations have failed to support the taxonomy of psychopathy; instead, these studies indicate psychopathy is a continuous (dimensional) construct (Guay, Ruscio, Knight, & Hare, 2007; Hare & Neumann, 2008; Walters, Duncan, & Mitchell-Perez, 2007). Analyses in this study reflect this newer research; however, where appropriate, the dichotomous variable will be used to ensure comparability with previous psychopathy research.

2.2.4 Demographics, Offender History, and Offence Characteristics

Additional information including basic demographics, offender history, and offence characteristics was also coded. Many of the variables recorded were based on Heide's (1999, 2003) reviews of the youth homicide literature as well as Schwartz,

Cavanaugh, Pimental, and Prentky's (2006) study of familial background and caregiving stability in violent offenders. Offence characteristics, such as weapon use and type, number of accomplices and their respective roles in the homicides, as well as substance use at the time of the homicide were also recorded. Detailed information was collected regarding offender's history of abuse, cognitive, and behavioural disorders (see Borum, 2000), and police records. Gang membership and delinquent subculture group membership were also recorded. Youth who belonged to either a gang or delinquent group were classified according to White and Mason's (2006) four gang subtypes: criminal, conflict, retreat, and street culture.⁵ See Appendix A for further descriptions of these categories and a detailed list of all demographic, offender history, and offence variables.

2.3 Procedure

Court-ordered assessments were conducted by the multidisciplinary team at YFPS and included multiple reports. For each offender, every effort was made by the teams to contact family members and caregivers to obtain detailed histories and various perspectives. File reviews were conducted by the primary researcher at the YFPS research lab in Burnaby, British Columbia, using the coding scheme provided in Appendix A. In all cases where there were discrepancies in the files regarding the events pre-, peri-, and post-homicide, the researcher deferred to the official police records. Information for all other variables was primarily obtained from the three main court assessment reports conducted by qualified mental health professionals.

⁵ Although the delinquent subculture offenders did not belong to gangs, their behaviours could be classified according to White and Mason's (2006) coding scheme.

Analyses were conducted with the Statistical Package for the Social Sciences version 17, using a Type I error rate of .05. No corrections were made for familywise Type I error to ensure any new and relevant relationships would not be disregarded (see Baumeister, Wotman, & Stillwell, 1993; Juodis et al., in press). Additionally, although not considered significant, analyses with $p \leq .10$ were cautiously explored to identify variables for future study. These decisions were justified given that many of the analyses had never been examined in a Canadian youth sample and that the sample size was in absolute terms small (resulting in reduced power), despite being large relative to this particular area of study.

Reliability coding was conducted on 20% of the sample for PCL: YVs and instrumental, gratuitous, and sadistic violence ratings. Both raters for the PCL: YV were trained research assistants at YFPS. Absolute agreement internal consistency correlations were computed for total ($\alpha = .91$), Factor 1 ($\alpha = .94$), Factor 2 ($\alpha = .95$), Facet 1 ($\alpha = .77$), Facet 2 ($\alpha = .93$), Facet 3 ($\alpha = .87$), and Facet 4 ($\alpha = .91$) scores ($ps \leq .001$). Overall PCL: YV mean scores were also compared between rater 1 ($M = 21.96$, $SD = 8.75$) and rater 2 ($M = 20.69$, $SD = 8.98$), $t(19) = 1.09$, $p = .29$. Cohen's Kappa was computed to compare the raters' agreement on the classification of high and low psychopathy according to a cut-score of 30 on the PCL: YVs. This value indicated good agreement between the two raters, $k = .69$, $p = .002$.

Both the primary researcher and an additional interrater were kept blind to the PCL: YV scores of the offenders during the coding process.⁶ The primary researcher and the interrater were trained in the use of Woodworth and Porter's (2002) coding scheme by the first author of the coding scheme. Cohen's Kappas were produced for all categorical offence variables. For the four-category instrumental-reactive ratings agreement was good, $k = .74, p < .001$. For the two-category instrumental-reactive ratings agreement was perfect, $k = 1.00, p = .002$. Agreement on the type of instrumental violence was also perfect, $k = 1.00, p = .03$. Finally, there was good agreement for the presence of overall, $k = .74, p < .001$, and fair agreement for offender-specific, $k = .52, p = .02$ gratuitous violence. Similarly, there was perfect agreement for both the presence of overall, $k = 1.00, p = .001$, and offender-specific, $k = 1.00, p = .001$ sadistic violence.

⁶ All PCL: YV scores were stored electronically and were not included in any of the offender files in order to ensure the primary researcher was not biased during the coding process for all other variables of interest.

3 Results

3.1 Descriptive Statistics

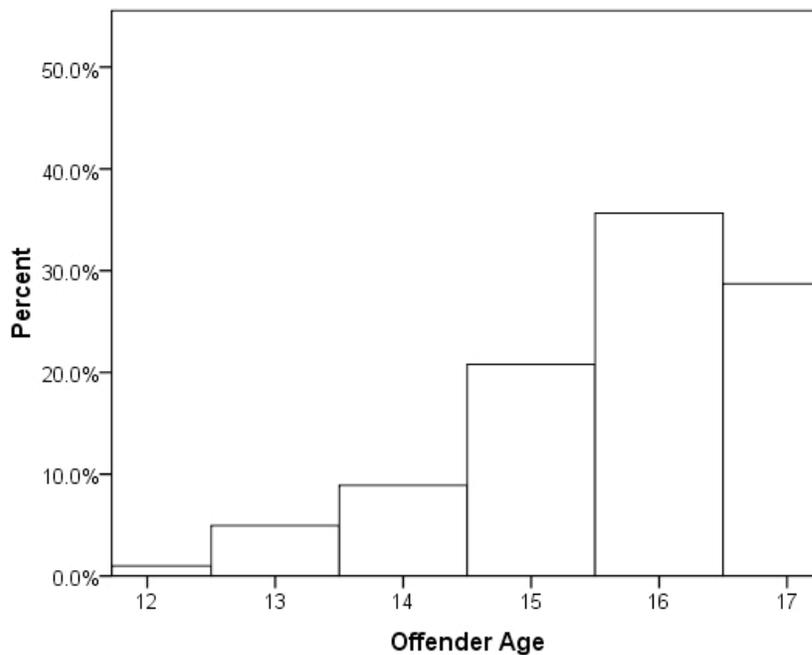
3.1.1 Offender Characteristics

A total of 105 youth homicide offender files from YFPS British Columbia were coded.⁷ The majority of offenders were boys (87.6%, $n = 92$). Age at the time of offence ranged from 12 to 17 ($M = 15.71$, $SD = 1.18$). Nearly two-thirds of offenders (64.3%) were aged 16 or 17 at the time of the offence. Indeed, the percentage of homicides increased with offender age, with most homicides occurring at age 16 (see Figure 1). Nearly half (44.9%) of the offenders were raised in the Lower Mainland of British Columbia, 20.6% in Northern British Columbia, 15.9% in or around the Vancouver Islands, 12.1% in the Interior/Thompson Okanagan, and 3.7% in the Kootenays. Caucasian and First Nations offenders were nearly equally represented (43.1% and 44.1%, respectively), whereas few offenders were from other ethnic backgrounds (12.7%), of which the majority ($n = 9/13$) were Asian/South Asian.

Two-thirds (65.7%) of the biological/adoptive parents were divorced, 21.2% were married, 7.1% were never married, and 6.1% were widowed. Despite the high level of parental divorce or separation, 63.0% of the offenders had been raised in a two-parental figure household. Only 32.4% of youth had been placed in foster care preceding the homicide. Additionally, 8.0% had lived in one group home and 10.0% had lived in two or more group homes before the homicide offence. Further, one fifth (21.8%) of

⁷ Four files contained limited demographic, familial, and historical information but had sufficient information to code the details of the homicide.

Figure 1. Percentage of homicides by offender age.



offenders had lived without a primary caregiver (i.e., lived on the streets, alone, or with friends) for longer than a period of one month. At the time of the offence, 17.6% of offenders were residing with their biological/adoptive mother and father, 18.6% were residing with their biological/adoptive mothers, 7.8% were residing with a biological/adoptive father, 15.7% were residing with a biological/adoptive parent and a stepparent, 16.7% were residing with other relatives, 2.9% were in foster homes, 6.9% were in group homes, 9.8% were living on the streets, and 3.9% were living independently.

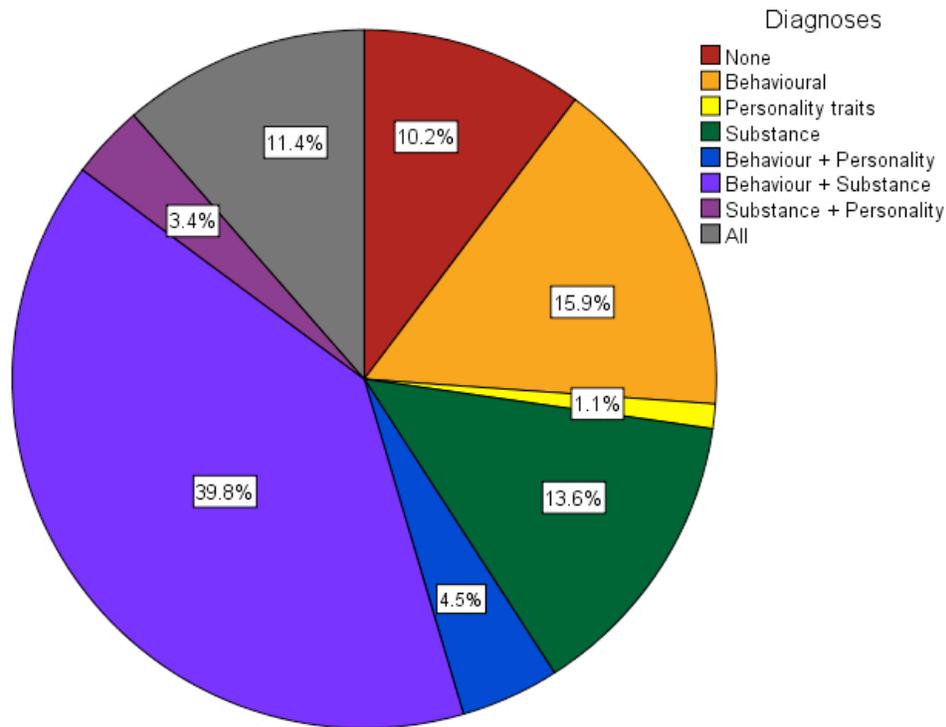
Only 36.6% of offenders had not been exposed to some form of sexual or physical abuse. A large percentage (40.6%) were exposed to only physical abuse, 1.0% were exposed to only sexual abuse, and 21.8% were exposed to both physical and sexual

abuse. More specifically, 42.1% of all offenders were victims of physical abuse, 19.6% were perpetrators of physical abuse, and 42.6% witnessed physical abuse.⁸ Of offenders who were exposed to sexual abuse, all were victims and none were perpetrators prior to the homicide. Thirteen percent of offenders were sexually abused by biological fathers, 21.7% by stepfathers or father figures, 8.7% by step or biological siblings, 34.8% by nonimmediate relatives, and 43.5% by nonrelatives.

For offenders who agreed to psychological testing ($n = 89$), the average intelligence score was 91.94 ($SD = 13.69$). Nearly all offenders met criteria for at least one mental health diagnosis, whereas only 10.2% did not have any behavioural, personality, or substance use diagnoses. Substance abuse (70.6%) was the most prevalent diagnosis, followed by conduct disorder (65.7%), attention deficit/hyperactivity disorder (19.6%), fetal alcohol effect (10.8%), antisocial personality traits (10.8%), narcissistic personality traits (5.9%), borderline personality traits (4.9%), and schizophrenia (2.9%). Figure 2 displays the breakdown of comorbid diagnoses according to the general categories of behavioural, substance, and personality disorders. The most common combination of diagnoses was substance abuse and at least one behavioural diagnosis (39.8%). Interestingly, 11.4% of the sample had a substance abuse disorder, at least one behavioural diagnosis, and at least one personality disorder. Parental substance use was also common: 17.6% of mothers used substances during pregnancy, 45.9% of mothers abused substances after pregnancy, and 59.3% of fathers abused substances.

⁸ Percentages do not add to 100 as some offenders were exposed to physical and/or sexual abuse involving more than one individual and were involved in multiple roles (i.e., as victims, perpetrators, and witnesses).

Figure 2. Percentage of offenders according to comorbid diagnoses.



Only 27.2% of all offenders had no prior formal or informal contact with authorities.^{9,10} Just over one out of every six (17.5%) offenders had at least one violent charge, whereas 40.8% had at least one nonviolent charge at the time of the homicide. One third (35.0%) of offenders had at least one previous violent conviction and 53.4% had at least one nonviolent conviction. Nearly half (46.7%) of all offenders did not belong to a delinquent subculture group or to a gang, whereas 35.6% belonged to a delinquent subculture group and 17.8% were gang members. Of these latter two groups

⁹ Formal contact refers to charges and/or convictions. Informal contact refers to police suspicion of crime, for which the offender was not formally charged. This is particularly relevant given the emphasis on alternative sentencing methods (e.g., more police warnings for less serious offences, direct referrals from police to community programs) emphasized by the *Youth Criminal Justice Act*.

¹⁰ The total number of offenders who had no prior legal contact is likely an underestimate, as some files did not include information about informal police contact.

of youth, 73.3% belonged to criminal groups, 20.0% to conflict groups, 6.7% to retreat groups, and 0.0% to street culture groups (definitions for each of these groups are provided in Appendix A).

3.1.2 *Victim Characteristics*¹¹

There were 119 victims across the 105 offenders: 8 offenders were responsible for the deaths of two victims and two offenders were responsible for the deaths of four victims. The majority of victims were male (76.1%), Caucasian (60.2%), adolescents (30.6%) or young adults (42.3%). The median age was 34.00 ($M = 35.34$, $SD = 20.39$; $n = 111$). Over half (53%) of the victims were strangers and 24.3% were acquaintances. Of the 15.7% ($n = 18$) victims who were family members, five were parents, two were stepparents, one was a biological sibling, three were stepsiblings, four were aunts/uncles, and two shared other familial relationships. Three Pearson chi-squares were conducted to determine if victim gender was related to general age category, ethnicity, and relationship to offender. Table 1 displays the results of these analyses. Logistic regressions were then conducted to assess differences ($p \leq .10$). Compared to female victims, male victims were over six times more likely to be young adults, $OR = 6.25$, $95\% CI = 1.37 - 28.52$, $p = .02$, Nagelkerke $R^2 = .134$, and nearly five times more likely to be teenagers, $OR = 4.82$, $95\% CI = 1.02 - 22.84$, $p = .05$, than to be seniors.

¹¹ These analyses include all victims; however, in cases of multiple victims, only the victim who shared the closest relationship with the offender was included in all further analyses. This was done to avoid violations of independence of data.

Table 1. Victim ethnicity, general age, and relationship to offender by victim gender.

Victim Characteristics	Victim Gender			χ^2	<i>N</i>	Cramer's	<i>p</i>
	Male	Female	Total				
	(%)	(%)	(%)			s	
General Age				11.95	93	.328	.02
12 and under	1.2	11.5	3.6				
13 – 19	31.8	26.9	30.6				
20 – 39	47.1	26.9	42.3				
40 – 64	14.1	15.4	14.4				
65+	5.9	19.2	9.0				
Ethnicity				5.40	93	.241	.07
Caucasian	55.1	75.0	60.2				
First Nations	26.1	4.2	20.4				
Other	18.8	20.8	19.4				
Victim Relationship				2.73	115	.154	<i>ns</i>
Stranger	56.3	42.9	53.0				
Acquaintance	16.1	14.2	15.7				
Friend	6.9	7.1	7.0				
Family	20.7	35.7	24.3				

ns = nonsignificant.

3.1.3 Offence Characteristics

Weapons were used in 78.6% of the homicides. The most common weapon was a knife (34.0%), followed by either a traditional (e.g., bat) or nontraditional (e.g., dumbbell) weapon (30.1%). Nearly one in six (14.6%) homicides involved the use of a firearm. Of the 21.4% of homicides involving no weapons, 4.9% involved the use of alternate means (e.g., arson) and 16.5% involved beatings with hands/feet. Nonetheless, 49.4% of the offences involved severe beatings, although the cause of death was attributed to a weapon. Homicides occurred most often in a public place (e.g., streets,

city parks; 39.7%), followed by the victim's home (35.0%), wooded/nonresidential areas (20.4%), and least often in the offender's home (4.9%).

Offender substance use at the time of the offence likely played a role in a considerable number of the homicides, with 68.0% of offenders reporting drugs and/or alcohol use prior to the homicide. More specifically, 33.0% of all youth reported using alcohol and minor/major drugs, 28.0% reported using only alcohol, and 7.0% reported using minor/major drugs. Of the 40 offenders who used drugs, 62.5% were under the influence of minor drugs, such as marijuana, hashish, or light prescription drugs (e.g., Tylenol 3), 7.5% were under the influence of major drugs, such as cocaine, heroin, methylamphetamine, or heavy prescription drugs (e.g., Demerol), 20.0% were under the influence of a combination of both minor and major drugs, and 10.0% were under the influence of unspecified drugs. Of the 61 offenders who consumed alcohol prior to the offence, only 8.2% were under the influence of a minor amount of alcohol, having consumed approximately one to two drinks; another 8.2% were under the influence of a moderate amount of alcohol, having consumed approximately three to six drinks; and, 62.3% were under the influence of an extreme amount of alcohol, having consumed over six drinks or having been binge drinking. For 16.4% of offenders the amount of alcohol consumed could not be determined. Finally, alcohol played some role in 4.9% of offenders' homicides, although it was clear from case evidence that the offenders were not intoxicated during the offence.

3.2 Primary Analyses

3.2.1 Principal Variables of Interest

3.2.1.1 *Psychopathy.* Psychopathy was assessed for 101 offenders.¹² Scores ranged from 4 to 37.9 ($M = 20.59$, $SD = 8.71$). Half (49.5%) of the offenders had scores within the low range (1 to 19), 28.7% of offenders had scores within the moderate range (20-29), and 21.8% of offenders had scores within the high range (30-40). These proportions approximate those found in other samples of youth (see Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002).

3.2.1.2 *Motivation.* Motivation was coded for 104 offenders; however, the motivations for six homicides were unclear.¹³ Of the remaining 98 homicides, 36.7% were purely instrumental, 33.7% were instrumental/reactive, 6.1% were reactive/instrumental, and 23.5% were purely reactive. A second variable was created by collapsing the instrumental and instrumental/reactive categories to form a primarily instrumental category and collapsing the reactive and reactive/instrumental categories to form a primarily reactive category. A nonparametric chi-square revealed that youth committed significantly more primarily instrumental homicides than primarily reactive homicides, $\chi^2(1, N = 98) = 16.33, p < .001$.

The three main aspects of instrumental-reactive motivation were considered separately. Over half (56.2%) of the offenders displayed a low level of emotional arousal during the homicide, 16.4% displayed a moderate level of emotional arousal, and 27.4% displayed a high level of emotional arousal. Just under one third (30.2%) of the

¹² Scores for four offenders could not be calculated because of limited information for PCL: YV items.

¹³ Homicide details, including motivation, were not provided for one file.

homicides were devoid of impulsivity, 45.8% had impulsive elements, and 24.0% were highly impulsive. The majority (76.5%) of homicides had evidence of gain. Correlations between each of the facets of motivation indicated affect was negatively correlated with gain, $r(78) = -.32, p = .005$, and positively correlated with impulsivity, $r(78) = .48, p < .001$. Impulsivity was also significantly negatively correlated with gain, $r(98) = -.61, p < .001$. Additionally, correlations between the dimensional instrumental-reactive rating and each facet of motivation were conducted, revealing that affect, $r(73) = -.50, p < .001$, and impulsivity, $r(96) = -.72, p < .001$, were significantly negatively associated with instrumentality whereas gain was significantly positively associated with instrumentality, $r(98) = .88, p < .001$. Finally, a simultaneous multiple regression indicated all three variables contributed significantly to the prediction of instrumentality, $R^2 = .83, R^2_{adj} = .82, F(3, 69) = 111.11, p < .0001$. Semipartial correlations indicated gain, $r_{sp} = .80$, was most strongly related to instrumentality, followed by affect, $r_{sp} = -.34$, and impulsivity, $r_{sp} = -.30$.

3.2.1.3 Number of perpetrators. In 49.5% of the homicides, the offender under review was primarily responsible for the homicide. An additional 44.7% contributed substantially to the homicide, while 4.9% had a minor role.¹⁴ Offenders were significantly more likely to commit multiple perpetrator (MP) offences than to commit individual perpetrator (IP) offences, $\chi^2(1, N = 104) = 8.65, p = .003$. Just over one third (36.2%) of offences involved one offender, 26.7% involved two offenders, 15.2% involved three offenders, 5.7% involved four offenders, and 16.2% involved five or more

¹⁴ The role of one offender was completely unclear based on available file information.

individuals. Two thirds (66.7%) of MP homicides involved at least one youth accomplice, 16.7% involved at least one adult, and 16.7% involved at least one youth and one adult. Further, MP homicides involved male accomplices most frequently (89.6%; $n = 60$), while just 6.0% involved female accomplices, and 4.5% involved at least one male and one female accomplice. From these data, two variables were created for analyses: A discrete variable distinguished between IP offences (36.2%) and MP offences (63.8%) in which there were two or more offenders, whereas a continuous variable ranged from one to six perpetrators.

3.2.1.4 Gratuitous violence. Overall, only 36.3% of the offences did not involve gratuitous violence, whereas 23.5% involved a minor amount, 16.7% involved a medium amount, and 23.5% involved an excessive amount of gratuitous violence. However, more than half (51.0%) of the offenders reviewed did not use gratuitous violence, whereas 19.6% perpetrated a minor amount, 11.8% perpetrated a medium amount, and 17.6% perpetrated a major amount of gratuitous violence. From information collected on gratuitous violence, two variables were produced for both overall and offender-specific violence: dimensional gratuitous violence (none to major) and categorical gratuitous violence (no evidence versus evidence).

3.2.2 Multivariate Analyses of Motivation by Psychopathy, Number of Perpetrators, and Gratuitous Violence

The dynamics between motivation and psychopathy, number of perpetrators, and gratuitous violence were explored using a multivariate analysis of variance (MANOVA). The dichotomous instrumental-reactive variable was entered as the independent variable

(IV) and PCL: YV total scores, number of perpetrators, and overall level of gratuitous violence were entered as the dependent variables (DVs). The analysis was significant, $F(3, 89) = 5.20, p = .002$. Partial eta squared indicated 14.9% of the variance in motivation was accounted for by the linear combination of dependent variables.

Discriminant analysis was used to determine which dependent variables contributed most to the prediction of motivation. The analysis produced an overall discriminant function which was significant, Wilks's $\Lambda = .85, \chi^2(3, N = 93) = 14.44, p = .002$. All correlation coefficients between predictors and the discriminant function were greater than $\pm .30$ and were, therefore, interpreted. The number of perpetrators ($r = .72$) was most strongly related to the discriminant function, followed by the level of gratuitous violence ($r = .54$), and total psychopathy scores ($r = .46$). Standardized coefficients of .76, .52, and .38, respectively, supported this interpretation. Functions at group centroids revealed offenders who committed primarily instrumental homicides had higher means on the discriminant function ($M = .27$) than offenders who committed primarily reactive homicides ($M = -.65$), indicating that primarily instrumental homicides involved more perpetrators, increased gratuitous violence, and offenders with higher psychopathy scores. Further, based on the discriminant function, prediction of group membership to each motivation category was successful for 66.7% of the current sample. A kappa coefficient was computed to account for chance prediction; this value was fair ($k = .28$), indicating a level of prediction significantly above chance.

To corroborate the MANOVA and discriminant analysis results, a hierarchical logistic regression predicting primary motivation based on the correlation coefficients

produced by the discriminant analysis was conducted.¹⁵ Both step one with the number of perpetrators, OR = 1.69, 95% CI = 1.14 – 2.52, $p = .01$, Nagelkerke $R^2 = .131$, and step two with the number of perpetrators, OR = 1.67, 95% CI = 1.13 – 2.47, $p = .01$, Nagelkerke $R^2 = .190$, and level of gratuitous violence, OR = 1.52, 95% CI = 1.01 – 2.29, $p = .04$, were significant. At step three, psychopathy was not significant after removing the effects of the number of perpetrators and gratuitous violence, OR = 1.04, 95% CI = 0.98 – 1.10, $p = .19$, Nagelkerke $R^2 \Delta = .023$.¹⁶ Further analyses were next conducted to explore univariate relationships between these variables.

3.2.3 Psychopathy

3.2.3.1 Motivation. The relationship between the dimensional instrumental-reactive variable and total psychopathy scores was significant, $r(94) = .25$, $p = .02$, indicating that increased instrumentality was associated with higher psychopathy scores. Two hierarchical multiple regressions were conducted to determine the contributions of each of the factors and facets of the PCL: YV to the prediction of instrumentality. Based on results of previous research (i.e., Flight & Forth, 2007; Woodworth & Porter, 2002), we expected Factor 1 and Facets 1 and 2 to be stronger predictors of instrumentality. Therefore, in the first multiple regression analysis, Factor 1 was entered in block one, while Factor 2 was entered into the model in block two. The results of this regression

¹⁵ A simultaneous logistic regression indicated only the number of perpetrators contributed significantly to prediction of instrumentality, OR = 1.66, 95% CI = 1.12 – 2.47, $p = .01$, Nagelkerke $R^2 = .213$; however, due to shared variance between the dependent variables, hierarchical logistic regression was viewed as optimal.

¹⁶ Logistic regression only partially supported the discriminant analysis results; however, discrepancies between the techniques may be attributable to reduced power associated with the logistic regression (Tabachnick & Fidell, 2007).

analysis indicated Factor 1 accounted for a significant proportion of the instrumentality of the homicide, $R^2 = .08$, $R^2_{adj} = .07$, $F(1, 83) = 7.30$, $p = .008$. In step two, Factor 2 did not contribute significantly to the prediction of instrumentality, $R^2 \Delta = .00$, $R^2_{adj} = .06$, $F(1, 82) = 0.05$, $p = .83$. Nonetheless, the overall model with both factors entered was significant, $F(4, 82) = 3.63$, $p = .03$. See Table 2 for zero-order and semipartial correlations.

Table 2. Zero-order (lower diagonal) and partial (upper diagonal) correlations between dimensional motivation and the facets, factors, and total scores of the PCL: YV.

Variables	1.	2.	3.	4.	5.	6.	7.
1. Type of homicide (Reactive = 1)		-.01	.23*	.02	-.07	.23*	-.02
2. Facet 1	.21*						
3. Facet 2	.31**	.68***					
4. Facet 3	.16	.51***	.57***				
5. Facet 4	.08	.44***	.52***	.58***			
6. Factor 1	.29**	.90**	.91***	.61***	.53***		
7. Factor 2	.16	.58***	.64***	.88***	.89***	.68***	
8. Total PCL: YV	.25*	.79***	.83***	.82***	.78***	.90***	.92***

Note. * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Similarly, the regression analysis results comparing the four facets indicated Facets 1 and 2 accounted for a significant proportion of instrumentality, $R^2 = .09$, $R^2_{adj} = .07$, $F(2, 84) = 4.05$, $p = .02$. As shown by the zero-order correlations in the lower diagonal of Table 2, offenders with lower Facet 1 and 2 scores committed more reactive crimes. However, when partialling out the effects of each facet from motivation, only the

relationship between Facet 2 and motivation remained significant, $r_{sp} = .23$, $t(87) = 2.12$, $p = .04$, while the effect for Facet 1 disappeared, $r_{sp} = -.01$, $t(87) = 0.10$, $p = .92$. In step two, Facets 3 and 4 were added to the equation but did not significantly contribute to the prediction of motivation, $R^2 \Delta = .01$, $R^2_{adj} = .05$, $F(2, 82) = 0.23$, $p = .80$. Despite a nonsignificant second step, the overall model with all four facets entered into the equation approached significance, $F(4, 82) = 2.10$, $p = .09$, although this was still primarily owing to the contribution of Facet 2, $r_{sp} = .23$, $t(87) = 2.11$, $p = .04$.¹⁷ The upper diagonal of Table 2 displays the semipartial correlations between each facet and motivation at step two.

Using the dichotomized motivation variable, a logistic regression predicting motivation from total PCL: YV scores approached significance, indicating that the odds of instrumentality increased by 5% with each unit increase in psychopathy scores, OR = 1.05, 95% CI = 1.00 – 1.11, $p = .07$, Nagelkerke $R^2 = .053$. However, using dichotomized psychopathy scores, logistic regression indicated psychopathy did not influence the odds of instrumental homicide, OR = 1.38, 95% CI = 0.45 – 4.24, $p = .57$, Nagelkerke $R^2 = .001$. That is, low and high psychopathy youth were equally likely to commit instrumental homicides. Next, a hierarchical logistic regression was performed to predict

¹⁷ Based on these analyses, Facet 2 scores were substituted for total psychopathy scores in a second MANOVA, $F(3, 87) = 5.86$, $p = .001$, $\eta^2 = .168$, and discriminant analysis, Wilks's $\Lambda = .83$, $\chi^2(3, N = 91) = 16.11$, $p = .001$. The number of perpetrators still shared the most variance with the discriminant function ($r = .66$); however, Facet 2 scores ($r = .59$) contributed more to prediction than gratuitous violence ($r = .45$). Group centroid means remained stable. A hierarchical logistic regression was conducted to corroborate these results. Step one results for the number of perpetrators were identical to the previous hierarchical logistic regression; at step two, each additional offender increased the odds of instrumentality by 81% (95% CI = 1.17 – 2.80, $p = .008$, Nagelkerke $R^2 = .227$) and each unit increase in Facet 2 PCL: YV scores increased the odds of instrumentality by 34%, 95% CI = 1.07 – 1.68, $p = .01$. Gratuitous violence was nonsignificant in step 3, OR = 1.29, 95% CI = 0.84 – 1.98, $p = .25$, Nagelkerke $R^2 = .244$.

motivation from the four PCL: YV facets, entered based on the semipartial correlations presented in Table 2.¹⁸ Results indicated that only the affective traits contributed to prediction of motivation. Specifically, the odds of instrumentality increased by 28% with each unit increase in Facet 2 psychopathy scores, OR = 1.28, 95% CI = 1.04 – 1.58, $p = .02$, Nagelkerke $R^2 = .087$. A second hierarchical logistic regression was conducted to predict motivation from factor scores. Again, only the interpersonal/affective traits of psychopathy were significant. The odds of instrumentality increased by 13% with each unit increase in Factor 1 scores, OR = 1.13, 95% CI = 1.01 – 1.28, $p = .04$, Nagelkerke $R^2 = .074$.

It was hypothesized that the number of perpetrators may influence the motivations of high and low psychopathy youth. Selecting only low psychopathy youth, a chi-square revealed a significant relationship between motivation and number of perpetrators, $\chi^2(1, N = 73) = 7.57, p = .006$, Cramer's V = .32. MP homicides were more likely to be instrumental (80.9%) whereas IP homicides were equally likely to be instrumental (50.0%) and reactive (50.0%) (see Figure 3). Indeed, low psychopathy youth were 4.22 times more likely to commit instrumental homicides when they committed MP offences, 95% CI = 1.47 – 12.16, $p = .008$, Nagelkerke $R^2 = .137$. In other words, low psychopathy youth were over four times more likely to commit primarily reactive homicides when alone. A second chi-square analysis, revealed that high psychopathy youth engaged in instrumental homicides more often in both IP (83.3%) and

¹⁸ Simultaneous logistic regression indicated no facets were significant predictors. This was hypothesized to be due to substantial overlap in variance, leading to a hierarchical logistic regression based on semipartial correlations.

MP homicides (73.3%), $\chi^2(1, N = 21) = 0.24, p = .63$, Cramer's $V = .106$ (see Figure 4). Logistic regression confirmed this finding, $OR = 0.55, 95\% CI = 0.05 - 6.23, p = .63$, Nagelkerke $R^2 = .018$. As a final step, the motivations of high and low psychopathy youth were compared across only IP homicides. An independent-samples t test revealed that, in IP homicides, instrumental youth had higher psychopathy scores ($M = 22.92, SD = 8.08$) than reactive youth ($M = 16.17, SD = 8.53$), $t(30) = 2.29, p = .03, \eta^2 = .38.6$, further indicating that the number of perpetrators obscures the relationship between motivation and psychopathy.

Figure 3. Percentage of instrumental and reactive homicides by number of perpetrators for low psychopathy youth.

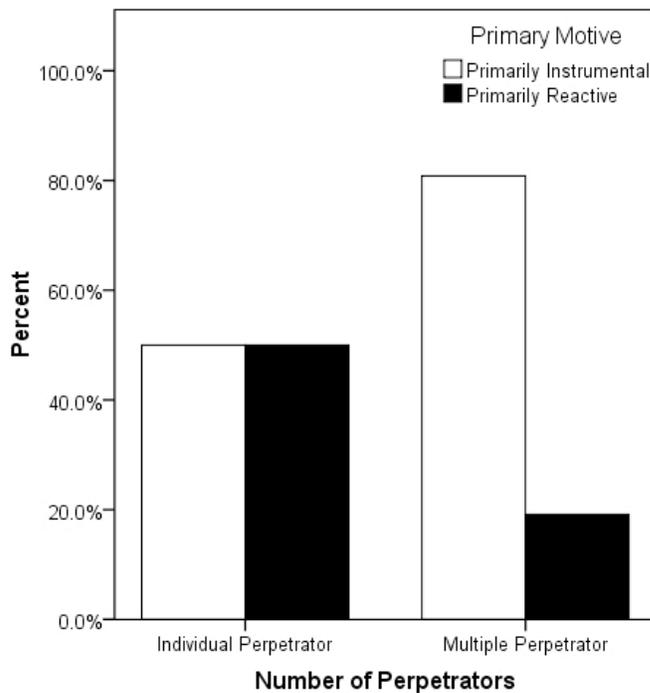
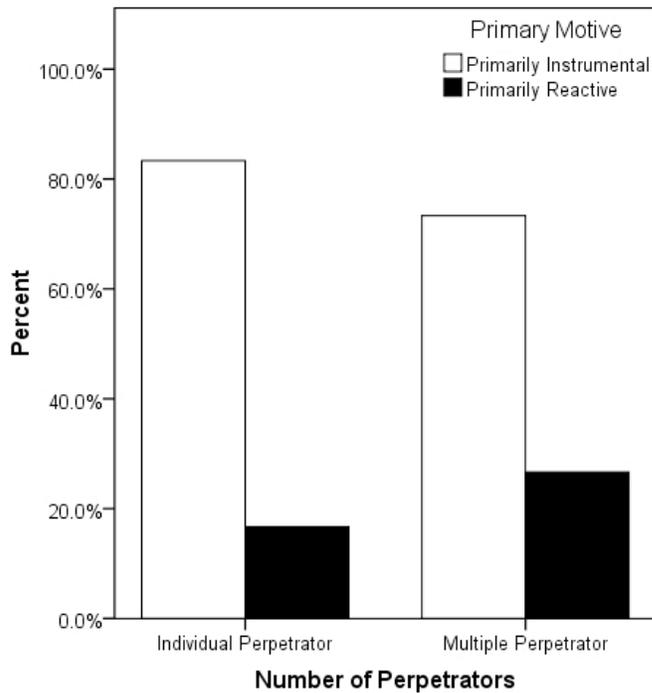


Figure 4. Percentage of instrumental and reactive homicides by number of perpetrators for high psychopathy youth.



3.2.3.2 *Number of perpetrators.* A Pearson correlation was conducted to assess the relationship between the absolute number of perpetrators and offenders' continuous psychopathy scores. Results indicated there was no relationship between psychopathy scores and number of perpetrators, $r(101) = .08, p = .41$. Logistic regression produced consistent findings when attempting to predict IP and MP offences from total psychopathy scores, $OR = 0.61, 95\% CI = 0.22 - 1.74, p = .36, Nagelkerke R^2 = .012$. Simultaneous logistic regression with each PCL: YV facet score, however, revealed relationships approaching significance. Specifically, each unit increase in Facet 1 scores

was associated with a 32% increase in the odds of MP homicide, OR = 1.32, 95% CI = 1.00 – 1.75, $p = .05$, Nagelkerke $R^2 = .092$, whereas each unit increase in Facet 2 scores was associated with a 31% increase in the odds of IP homicide, OR = 1.31, 95% CI = 0.99 – 1.74, $p = .06$. As a final step, sexual homicides were removed from the analyses because of the relationship between psychopathy and IP sexual homicides (see Juodis et al., in press). Despite reduced power resulting from lowered sample size, the analysis predicting nonsexual IP and MP offences across low ($n = 72$) and high ($n = 14$) psychopathy youth approached significance. The odds of MP homicide increased by 3.82 when a highly psychopathic youth was involved, 95% CI = 0.79 – 18.34, $p = .09$, Nagelkerke $R^2 = .055$.

3.2.3.3 *Gratuitous violence.* Pearson correlations were computed between overall and offender-specific gratuitous violence and psychopathy. Psychopathy was significantly positively related to the level of overall, $r(99) = .25$, $p = .006$ (one-tailed), and offender-specific, $r(99) = .21$, $p = .02$ (one-tailed), gratuitous violence. Logistic regressions predicting the use (i.e., presence or absence) of overall and offender-specific gratuitous violence from total psychopathy scores were next conducted. The odds of overall gratuitous violence increased by 7% with each unit increase in psychopathy scores, OR = 1.07, 95% CI = 1.02 – 1.13, $p = .009$, Nagelkerke $R^2 = .098$. Offender-specific gratuitous violence approached significance: The odds of gratuitous violence increased by 5% with each unit increase in psychopathy scores, OR = 1.05, 95% CI =

1.00 – 1.10, $p = .06$.¹⁹ Analyses examining the contribution of each factor and facet score to the use of gratuitous violence were next conducted. Examination of factor scores revealed that only Factor 1 scores were significantly associated with the use of overall gratuitous violence, OR = 1.18, 95% CI = 1.02 – 1.38, $p = .02$, Nagelkerke $R^2 = .131$. In contrast, Facets 2, 3, and 4 were significant predictors of the presence of overall gratuitous violence. Specifically, each increase in Facet 2 scores was associated with a 51% increase in the odds of gratuitous violence, OR = 1.51, 95% CI = 1.10 – 2.05, $p = .01$, Nagelkerke $R^2 = .240$, and each increase in Facet 3 scores was associated with a 38% increase in the odds of gratuitous violence, OR = 1.38, 95% CI = 1.03 – 1.85, $p = .03$. In contrast, each increase in Facet 4 scores was associated with a 30% increase in the odds that overall gratuitous violence was absent, OR = 1.30, 95% CI = 1.01 – 1.67, $p = .04$. Similarly, for offender-specific gratuitous violence, only Factor 1 was significant: Each unit increase in Factor 1 scores was associated with a 22% increase in the odds of offender-specific gratuitous violence, OR = 1.22, 95% CI = 1.05 – 1.42, $p = .01$, Nagelkerke $R^2 = .114$. Further, facet analyses indicated that each unit increase in Facet 2 scores was associated with a 45% increase in the odds of offender-specific gratuitous violence, OR = 1.45, 95% CI = 1.07 – 1.95, $p = .02$, Nagelkerke $R^2 = .160$. Further, the relationship for Facet 4 scores approached significance: Each unit increase in Facet 4 scores was associated with a 26% increase in the odds that offender-specific gratuitous violence was absent, OR = 1.26, 95% CI = 0.99 – 1.61, $p = .06$.

¹⁹ Logistic regressions predicting gratuitous violence from the dichotomous psychopathy variable were nonsignificant ($p > .10$).

Additional separate analyses with dichotomized psychopathy scores were conducted for IP and MP offences. The analysis for offender-specific gratuitous violence in IP homicides approached significance, indicating high psychopathy youth involved in IP homicides were seven and one half times more likely than low psychopathy youth to use gratuitous violence, $OR = 7.50$, $95\% CI = 0.78 - 72.44$, $p = .08$, Nagelkerke $R^2 = .141$. In contrast, offender-specific gratuitous violence in MP homicides did not vary according to the level of psychopathy, $OR = 1.34$, $95\% CI = 0.43 - 4.20$, $p = .61$, Nagelkerke $R^2 = .087$.

3.2.4 *Motivation*

3.2.4.1 *Number of perpetrators.* A Pearson correlation was conducted between the continuous number of perpetrators and the dimensional instrumental-reactive variables. This analysis approached significance, $r(98) = .14$, $p = .09$, with more perpetrators being weakly associated with higher levels of instrumental violence. A t test revealed instrumental homicides involved more offenders ($M = 2.74$, $SD = 1.72$) than reactive homicides ($M = 1.86$, $SD = 0.95$), $t(88.69) = 3.22$, $p = .002$, $\eta^2 = .105$. In addition, a logistic regression revealed a relationship approaching significance between the dichotomous motivation and number of perpetrator variables. MP homicides were nearly two and one half times more likely to be primarily instrumental ($OR = 2.41$, $95\% CI = 0.98 - 5.92$, $p = .06$, Nagelkerke $R^2 = .052$).²⁰

²⁰ The significant logistic regression predicting primary motivation from the continuous number of perpetrators variable is reported elsewhere (see step one of the hierarchical logistic regression predicting motivation from the number of perpetrators, gratuitous violence, and psychopathy).

3.2.4.2 *Gratuitous violence.* The relationship between the overall level of gratuitous violence and dimensional instrumentality was significant, $r(96) = .28$, $p = .003$, indicating increased instrumentality was associated with higher levels of gratuitous violence. Offender-specific gratuitous violence and dimensional instrumentality were also significantly positively correlated, $r(96) = .23$, $p = .01$. Further, the odds of primary instrumental violence increased over 50% with each unit increase in both overall, OR = 1.67, 95% CI = 1.11 – 2.53, $p = .01$, Nagelkerke $R^2 = .094$, and offender-specific, OR = 1.54, 95% CI = 1.00 – 2.36, $p = .05$, Nagelkerke $R^2 = .063$, gratuitous violence. When predicting motivation from the use (i.e., presence or absence) of gratuitous violence, an even stronger relationship was found for overall gratuitous violence. The odds of instrumentality increased 5.36 times when there was overall gratuitous violence, 95% CI = 2.09 – 13.80, $p < .001$, Nagelkerke $R^2 = .176$. The prediction of motivation from the presence of offender-specific gratuitous violence approached significance, with the odds of instrumental motivation increasing 2.28 times when the offender used gratuitous violence, 95% CI = 0.93 – 5.57, $p = .07$, Nagelkerke $R^2 = .049$. Finally, analyses across the number of perpetrators revealed that for MP homicides the presence of overall gratuitous violence was associated with a nearly six-fold increase in the odds of primary instrumental violence, OR = 5.71, 95% CI = 1.61 – 20.29, $p = .007$, Nagelkerke $R^2 = .146$. In contrast, the relationship between motivation and the presence of offender-specific gratuitous violence was not significant for MP homicides, OR = 1.77, 95% CI = 0.55 – 5.76, $p = .34$, Nagelkerke $R^2 = .022$, and only approached significance in IP homicides, OR = 3.90, 95% CI = 0.91 – 16.79, $p = .07$, Nagelkerke $R^2 = .136$.

3.2.5 *Number of Perpetrators*

3.2.5.1 *Gratuitous violence.* Pearson correlations were conducted to assess the relationship between both dimensional measures of gratuitous violence (i.e., overall and offender-specific) and continuous number of perpetrators. The level of overall gratuitous violence was not significantly related to the absolute number of perpetrators, $r(102) = -.02, p = .85$. However, the level of offender-specific gratuitous violence was, $r(102) = -.21, p = .04$, such that as the number of perpetrators increased, the level of offender-specific gratuitous violence decreased. However, nominal chi-square analyses revealed fewer IP homicides (48.6%) involved overall gratuitous violence than MP homicides (72.3%), $\chi^2(1, N = 102) = 5.71, p = .02$, Cramer's $V = .237$. Interestingly, MP homicides were nearly three times more likely to involve overall gratuitous violence than IP homicides, $OR = 2.76, 95\% CI = 1.19 - 6.40, p = .02$, Nagelkerke $R^2 = .074$. In contrast, analysis of the use of offender-specific gratuitous violence revealed that offenders were equally likely to engage in gratuitous violence in IP (48.6%) and MP (49.2%) homicides, $\chi^2(1, N = 102) = 0.00, p = .96$, Cramer's $V = .006$. Logistic regression results supported this finding, $OR = 1.02, 95\% CI = 0.46 - 2.30, p = .96$, Nagelkerke $R^2 = .000$.

3.3 *Secondary Analyses*

3.3.1 *Sadistic Violence*

Sadistic violence occurred in 28 offences. However, sadistic violence was examined in only those offences in which gratuitous violence was present. Of the 65 homicides with evidence of overall gratuitous violence, 56.9% had no evidence, 36.9% had some evidence, and only 6.2% had concrete evidence of overall sadistic violence. Of

the 50 cases in which there was offender-specific gratuitous violence, more than half (56.0%) had no evidence, 36.0% had some evidence, and 8.0% had concrete evidence of offender-specific sadistic violence.

3.3.1.1 *Psychopathy*. Pearson correlations revealed no significant differences between total scores on the PCL: YV and both overall, $r(66) = -.07, p = .28$ (one-tailed), and offender-specific, $r(52) = .03, p = .42$ (one-tailed), sadistic violence.²¹

3.3.1.2 *Motivation*. Pearson correlations revealed no significant relationship between the dimensional measure of instrumentality and overall sadistic violence, $r(66) = -.07, p = .56$, as well as offender-specific violence, $r(52) = .03, p = .84$.²²

3.3.1.3 *Number of perpetrators*. Pearson correlation revealed a significant relationship between the absolute number of perpetrators and the dimensional measure of overall sadistic violence, $r(66) = .35, p = .004$. Further, the relationship between the absolute number of perpetrators and the dimensional measure of offender-specific sadistic violence approached significance, $r(52) = .25, p = .08$. However, chi-square analyses examining the number of perpetrators and overall, $\chi^2(1, N = 65) = 0.02, p = .89$, Cramer's V = .017, and offender-specific, $\chi^2(1, N = 50) = 0.00, p = .96$, Cramer's V = .007, sadistic violence were not significant.²³

²¹ Correlations between facet and factor scores and sadistic violence were also not significant ($p > .10$) as were the results of independent samples t tests predicting PCL: YV total, facet, and factor scores from the presence or absence of sadistic violence. Chi-square analyses between dichotomized psychopathy (low and high) and sadistic violence (present and absent) confirmed these nonsignificant relationships ($p > .10$). No differences between psychopathy and sadistic violence emerged across IP and MP homicides ($p > .10$). Finally, the relationship between psychopathy and sadistic violence was assessed in only sexual homicides; this was also not significant ($p > .10$).

²² Chi-square analyses confirmed these nonsignificant relationships ($p > .10$). Additionally, no differences in motivation and sadistic violence emerged across IP and MP offences ($p > .10$).

²³ Logistic regressions confirmed these nonsignificant relationships ($p > .10$).

3.3.2 Sexual Violence

Overall only 15 (14.6%) offences involved sexual violence; specifically, 12 offenders engaged in sexual violence against the victims, while three offenders participated in homicides in which their accomplices perpetrated sexual violence against the victim.

3.3.2.1 *Psychopathy*. Chi-square analyses revealed both overall, $\chi^2(1, N = 100) = 11.72, p = .001$, Cramer's $V = .342$, and offender-specific, $\chi^2(1, N = 100) = 18.53, p < .001$, Cramer's $V = .431$, sexual violence were more likely when a highly psychopathic youth was *involved* in the homicide. Overall sexual violence occurred in 36.4% of the homicides in which a high psychopathy youth was involved compared to just 7.7% of the homicides in which a low psychopathy youth was involved. Further, the odds of overall sexual violence increased 13% with each unit increase in psychopathy scores, $OR = 1.13$ 95% $CI = 1.04 - 1.22, p = .004$, Nagelkerke $R^2 = .180$. Similarly, the odds of offender-specific sexual violence increased 16% with each unit increase in psychopathy scores, $OR = 1.16$, 95% $CI = 1.05 - 1.28, p = .004$, Nagelkerke $R^2 = .214$.²⁴ Using dichotomized psychopathy scores, the odds of overall sexual violence increased by a factor of nearly seven when a highly psychopathic youth was *involved* in the homicide, $OR = 6.86$, 95% $CI = 2.06 - 22.84, p = .002$, Nagelkerke $R^2 = .169$. Further, the odds of offender-specific sexual violence increased more than 14 times when the offender was highly psychopathic, $OR = 14.29$, 95% $CI = 3.37 - 60.56, p < .001$, Nagelkerke $R^2 = .279$. In IP homicides, high psychopathy was associated with a 28-fold increase in the odds of sexual

²⁴ None of the PCL: YV facets individually contributed significantly to the prediction of sexual violence ($p > .10$).

violence, OR = 28.00, 95% CI = 3.03 – 258.42, $p = .003$, Nagelkerke $R^2 = .412$. In MP homicides, high psychopathy increased the odds of sexual violence by a factor of nearly 16, OR = 15.67, 95% CI = 1.60 – 153.35, $p = .02$, Nagelkerke $R^2 = .258$. Finally, the relationship between overall sexual violence and psychopathy approached significance in MP homicides, OR = 3.67, 95% CI = 0.80 – 16.86, $p = .10$, Nagelkerke $R^2 = .078$.

3.3.2.2 *Motivation.* Chi-square analyses indicated that motivation was not related to overall, $\chi^2(1, N = 97) = 0.56, p = .45$, Cramer's V = .076, and offender-specific sexual violence, $\chi^2(1, N = 97) = 0.04, p = .84$, Cramer's V = .021. As a result, no follow-up logistic regressions were conducted to predict motivation from the use (i.e., presence or absence) of sexual violence.²⁵

3.3.2.3 *Number of perpetrators.* There was no significant difference in overall sexual violence across IP and MP homicides, $\chi^2(1, N = 103) = 0.88, p = .35$, Cramer's V = .092. However, the analysis of offender-specific sexual violence across IP and MP homicides approached significance, $\chi^2(1, N = 103) = 2.96, p = .09$, Cramer's V = .170. While sexual violence was uncommon, over twice as many IP homicides (18.9%) involved offender-specific sexual violence compared to 7.6% of MP homicides. Further, prediction of offender-specific sexual violence from the number of perpetrators also approached significance, OR = 2.85, 95% CI = 0.83 – 9.72, $p = .10$, Nagelkerke $R^2 = .053$, indicating that offenders were nearly three times more likely to commit sexual violence in IP homicides.

²⁵ Logistic regressions supported this finding ($p > .10$). There were no significant differences across motivation for offender-specific sexual violence in IP homicides or across motivation for offender-specific and overall sexual violence in MP homicides ($p > .10$).

4 Discussion

Homicide researchers have long acknowledged that the seemingly diverse and unpredictable nature of homicides described in the literature has resulted from a lack of relevant categorizations of homicide offences. Specifically, Zahn (1992) and Cornell et al. (1987b) suggested that the lack of theoretically guided research contributes to heterogeneous results. Consequently, they contend that increased understanding of homicide requires researchers to delineate theoretically relevant subtypes of offences. Accordingly, the majority of recent homicide research has focused on discovering meaningful subtypes of homicides according to both offence and offender characteristics. Acknowledging the importance of delineating subtypes of homicide, this study is the first to simultaneously examine the relative contributions of psychopathy, number of perpetrators, and gratuitous violence to the prediction of motivation.

Results revealed that instrumental youth-perpetrated homicides were significantly more likely to involve an increased number of perpetrators, more gratuitous (excessive) violence, and higher psychopathy scores. Moreover, these characteristics accounted for 14.9% of the variance of motivation. This is considered a large effect size in social science research (Cohen, 1988). A follow-up multivariate analysis (i.e., discriminant analysis) assessed the relative contribution of each of these factors to the prediction of motivation. Interestingly, instrumental motivation was most associated with more perpetrators, followed by increased gratuitous violence, and higher total psychopathy scores. These results fit well with Clark's (1995) finding that youth homicides involving

accomplices were more likely to be committed concurrent to another crime (i.e., robbery, sexual assault, etc.) and to involve greater levels of violence.

Of primary interest in the current study was the relationship between psychopathy and motivation. As predicted, psychopathy scores were significantly associated with the continuous measure of instrumental violence, such that increases in total PCL: YV scores were associated with increases in the likelihood of instrumentality. These results complement previous research with adult offenders (e.g., Cornell et al., 1996; Williamson et al., 1987) and provide support for Woodworth and Porter's (2002) theory of selective impulsivity. Specifically, although highly psychopathic individuals often behave impulsively, riskier behaviours (e.g., homicide) that are associated with greater consequences (e.g., longer incarceration) seem to involve more conscious impulse control. That is, when the stakes are higher, psychopathic individuals appear to engage in more calculated and premeditated violence in order to attain their goals. Interestingly, although childhood and adolescence have generally been associated with decreased executive control (i.e., increased impulsivity) and sensation seeking (Jonkman, 2006; Steinberg et al., 2008), the high percentage of instrumentally-motivated homicides in this sample also suggests that most youth, regardless of psychopathy, are capable of engaging in selective impulsivity when it comes to more serious offences such as homicide.

The disproportionately instrumental nature of these youth homicides is in accordance with Cornell's (1993) observation that American youth were committing increasingly more crime-motivated, instrumental homicides than conflict-motivated, reactive homicides. The current study lends support to this observation. Specifically, the

results of this and Woodworth and Porter's (2002) study indicate that the majority of homicides are instrumental in nature. Moreover, although most crime may be reactive (Cornell et al., 1996), the current results suggest that the most severe offences with the most serious legal consequences (i.e., homicide) are more likely to be instrumental. Accordingly, the lower overall prevalence of instrumental violence found in mixed groups of offenders (e.g., Cornell et al., 1996) could be accounted for by the fact that violent offences occur less frequently than nonviolent offences, with offence severity inversely associated with offence frequency (see Dauvergne, 2008). Finally, the relationship between instrumentality and severity of the offence may be, as Woodworth and Porter (2002) proposed, amplified in the presence of psychopathy.

The relationship between psychopathy and motivation was less pronounced than previously reported in the literature (e.g., Flight & Forth, 2007; Woodworth & Porter, 2002). As such, we conducted a more detailed analysis of the relationship between motivation and the various features of psychopathy. Specifically, granted the early age of homicide perpetration in the current sample and that homicide by its very nature is an extremely antisocial act, we reasoned that the majority of offenders would score higher on the impulsive/behavioural dimensions of psychopathy, regardless of their motivations for homicide. In contrast, because the interpersonal/affective characteristics of psychopathy arguably distinguish psychopathy from comparatively less severe antisocial disorders (Hare, 1996, 2006; Rogstad & Rogers, 2008), we reasoned that those who engaged in instrumental homicide would score higher on the interpersonal/affective dimensions of psychopathy. As expected, results indicated that only the interpersonal and

affective components of psychopathy (i.e., Facets 1 and 2 and Factor 1) were significantly correlated with instrumentality, such that as these scores increased the instrumentality of the homicide also increased. Further, compared to total PCL: YV scores, increases in Facet 2 and Factor 1 scores were associated with greater increases in the odds of instrumental violence. These analyses replicated the results of previous research that has found Factor 1 scores are uniquely associated with instrumental violence (e.g., Flight & Forth, 2007; Woodworth & Porter, 2002). Moreover, the current results also complement Kimonis et al.'s (2008) finding that, although there was a relationship between callous-unemotional traits and both proactive (instrumental) and reactive aggression, proactive aggression was more strongly related to affect deficits. Finally, the examination of psychopathy facet scores provides evidence supporting the utility of differentiating between the components of the PCL: YV factors. Specifically, our results demonstrate that “cold blooded” instrumental violence is uniquely related to the affective deficits, rather than the interpersonal traits, of psychopathy.

For ease of comparisons with adult homicide research (e.g., Juodis et al., in press; Woodworth & Porter, 2002), we also examined the relationship between motivation and psychopathy using dichotomized variables. Unexpectedly, our results did not replicate Woodworth and Porter's (2002) findings. In particular, youth homicide offenders committed primarily instrumental homicides, regardless of psychopathy. Compared to Woodworth and Porter's (2002) sample, however, the current sample had a much higher proportion of MP homicides. Importantly, research with adults has found that both motivation and psychopathic offenders' behaviours change as a function of the number

of perpetrators (Juodis et al., in press). Further, given that our previous analysis revealed that the number of perpetrators contributed more to the prediction of instrumentality than psychopathy, the motivations of high and low psychopathy youth were examined independently across the number of perpetrators. Significant differences emerged: Low psychopathy youth were four times more likely to commit reactive homicides when alone compared to when with accomplices. In contrast, high psychopathy youth were consistently instrumental in their motivations, regardless of whether they were alone or with accomplices. Moreover, examination of only IP homicides revealed a much stronger relationship between instrumentality and psychopathy. Indeed, in single offender homicides, psychopathy scores accounted for 38.6% of the variance in instrumentality. Taken together, these results suggest that the high prevalence of MP homicides in youth obscured the strong relationship between psychopathy and instrumental motivation.

Our results differ somewhat with those found in adults. Specifically, Juodis et al. (in press) found that adult psychopaths were more likely to engage in instrumental violence when acting alone but not when with accomplices. However, there are some possible explanations for this difference. Compared to any other point in development, adolescence is more markedly influenced by peer relationships (Muñoz, Kerr, & Besic, 2008; Scott, 2000; Steinberg & Schwartz, 2000). Not surprisingly, peers have consistently been found to have a considerable influence on delinquent behaviours (Matsueda & Anderson, 1998; Shader, 2001; Warr & Stafford, 1991). In terms of psychopathy, researchers have found that the peers of high psychopathy youth, compared to low psychopathy youth, are more likely to frequently engage in antisocial activities

(Muñoz et al., 2008). The authors suggest that high psychopath youth base friendship selection on their peers' willingness to engage in antisocial behaviours. Further, normative socialization theory posits that youth who are developing friendships will attempt to emulate the attitudes, behaviours, and values of their peers and eliminate any differences between themselves and their peers (Haynie & Osgood, 2005). Given the interpersonal traits associated with psychopathy, such as glibness and superficial charm, it seems probable that high psychopathy youth can have increased influence on the behaviours of peers who are low in psychopathy. Thus, it may be that high psychopathy youth select peers who are easily "romanced" by the psychopaths' glib and grandiose personality and who are easily manipulated into engaging in particular types of antisocial behaviours through normative socialization. This may explain why low psychopathy youth commit more reactive homicides when alone but more instrumental homicides when with other offenders; that is, low psychopathy youth may be more likely to emulate both the behaviours of their peers as well as adopt the motivations of those peers. Further, this may also explain why high psychopathy youth consistently commit instrumental homicides—they may simply be less likely to be influenced by peers. Providing some support for this hypothesis, we found increases in Facet 1 and 2 scores were associated with increased odds of MP homicide, suggesting that the more interpersonally charming, charismatic, callous, and manipulative an offender is, the more likely he or she is to engage accomplices in instrumental homicides. Finally, although no research has evaluated psychopathic and nonpsychopathic offenders' underlying motivations for committing MP homicides, it seems reasonable to suggest that high

psychopathy youth commit MP homicides because the inclusion of more offenders diffuses the responsibility of the individual offender while it still enables that youth to achieve his or her instrumental goals (Henderson & Hewstone, 1984; Worchel, Cooper, Goethals, & Olson, 2000).

Another aspect of homicide that is inextricably linked to motivation, psychopathy, and the number of perpetrators is gratuitous violence (i.e., “overkill”). Research investigating the relationship between motivation and gratuitous violence is conflicted. Some researchers have found that the use of excessive violence does not differ across instrumental and reactive offenders (e.g., Cornell et al., 1996), whereas others have linked excessive violence to the loss of control and rage in emotionally charged homicides (Salfati & Dupont, 2006). Still others have found gratuitous violence often coincides with premeditated, goal-oriented murders (Porter et al., 2003; Woodworth, 2001). The results of the current study support this latter view. Specifically, instrumental homicides were five times more likely to involve overall gratuitous violence and over two times more likely to involve offender-specific gratuitous violence. Moreover, the likelihood that the homicide was instrumental increased 50% with each increase in the absolute level of gratuitous violence (i.e., from no gratuitous violence to minor, medium, and major amount). One potential explanation for this finding is that the definitions of both gratuitous violence and motivation used in the current study, as well as the studies by Porter et al. (2003) and Woodworth (2001), differ from those used by Salfati and colleagues (2000, 2006). First, our definition of instrumental motivation includes revenge or retribution motivated homicides that have been committed after a

cooling-off period. Second, gratuitous violence was directly measured using specific criterion such as violence that went beyond that necessary to kill, violence committed to intentionally cause the victim unnecessary pain and suffering, and post-mortem acts of violence or body-posing. In contrast, the conclusions of Salfati and colleagues were based solely on the distribution of wounds on the victims' bodies, which may be confounded by the amount of resistance presented by the victim. Given the arguably more holistic measure of gratuitous violence used in the present study, the current results may provide a more accurate picture of gratuitous violence. Indeed, this "overkill" behaviour, traditionally regarded as indicative of emotionally charged, frenzied, and disorganized violence, may reflect increased planning and more predatory, goal-oriented, and affectless violence.

Importantly, we also investigated whether or not the number of perpetrators plays a role in the use of gratuitous violence. This was of particular interest given that the majority of our offenders committed MP acts and that peer groups, especially in adolescence, have the potential to encourage behaviour that an individual may not otherwise engage in when alone (Festinger, Pepitone, & Newcomb, 1952; Zimbardo, 1995). Based on this theory of de-individuation, it was expected that MP homicides would involve more excessive violent behaviour than IP homicides. However, results only partially confirmed our prediction. Interestingly, MP homicides were three times more likely to involve an overall level of gratuitous violence, but the likelihood of offender-specific gratuitous violence was equal across IP and MP homicides. This suggests that perpetrators do not contribute increasing amounts of violence when they are

in group contexts, but that “overkill” in MP offences occurs as a result of the additive effects of each perpetrator’s assaultive behaviour. Contrary to expectations, the violence of adolescents did not appear to be influenced by their peers; that is, group dynamics did not lead to more irrational behaviour or additional violence outside of what these youth likely would have used in a lone-perpetrator context. Nonetheless, the “violence-as-normal” nature of MP homicides is concerning, suggesting adolescents did not calibrate the level of violence they used according to the number of individuals involved in the homicide. The results of our analysis of overall gratuitous violence (in combination with the psychopathy results above) suggest that youth and adults behave differently in MP contexts. For example, Juodis et al. (in press) found that gratuitous violence occurs equally as often in IP and MP homicides committed by adults. In contrast, the present work is consistent with Clark’s (1995) finding that MP homicides committed by youth often included additional overall violence against victims. Moreover, when considering motivation, instrumental MP homicides were six times more likely to involve gratuitous violence. Again, these results confirm Clark’s finding that youth who engaged in MP homicides often committed more violence when the homicide was concurrent to other crimes (i.e., had additional criminal goals such as theft, robbery, or sexual assault).

Consistent with previous research, psychopathy scores also independently predicted gratuitous violence, with higher scores associated with increased gratuitous violence. Moreover, higher Factor 1 as well as higher Facet 2 (affective) and 3 (impulsive) scores were related to increased odds of both overall and offender-specific gratuitous violence; whereas, higher Facet 4 (antisocial) scores were related to decreased

odds of overall gratuitous violence. Interestingly, Woodworth (2001) found that only Factor 2 scores were more important in predicting the use of gratuitous violence in adult offenders. However, it seems logical that the extreme nature of such violence requires that the perpetrator have little affective or emotional capacity. Indeed, Porter et al. (2003) suggested that the lack of empathy facilitates the use of extreme violence against others. Moreover, these authors suggest that a high degree of thrill-seeking also likely contributes to the perpetration of extreme violence. Therefore, it is not surprising that the current study found the facets representing callous-unemotional traits and highly impulsive, thrill-seeking behavioural style contributed to this type of violence. Finally, the explanation for the ostensibly contradictory finding that antisocial/criminal behaviour is inversely related to gratuitous violence is more complex. Youth who engage in more excessive and severe violence often receive lengthier sentences and/or are tried as adults (Redding, 2003), resulting in fewer opportunities to engage in additional crimes within the community. In contrast, youth who do not engage in gratuitous or excessive forms of violence are less likely to receive lengthy sentences, conceivably leading to more opportunities for offending and more antisocial histories.

The current study also found that the relationship between psychopathy and gratuitous violence was moderated by the number of perpetrators. Compared to psychopathic adults who consistently engaged in gratuitous violence regardless of the number of perpetrators (Juodis et al., in press), high psychopathy youth were over seven times more likely than low psychopathy youth to engage in gratuitous violence when they were alone. With accomplices, however, both high and low psychopathy youth were

equally likely to engage in gratuitous violence. The inclusion of other offenders decreased the involvement of high psychopathy youth in gratuitous violence, while it simultaneously increased the involvement of low psychopathy youth in gratuitous violence. Although group dynamics may cause low psychopathy youth to engage in a level of violence they would not ordinarily commit, another possibility is that psychopathic individuals may be attempting to reduce their culpability. This could be accomplished by encouraging greater involvement of co-offenders while monitoring or directing the violence that the co-offenders commit. For example, one high psychopathy youth convinced his cousin to participate in murdering their abusive uncle. Although, the highly psychopathic youth initially began mutilating the victim's genitalia, he gave his cousin the knife and directed him to cut and remove various parts of the victim's genitals. This behaviour explains why there was a stronger relationship between psychopathy and overall gratuitous violence compared to offender-specific gratuitous violence. The mere involvement of individuals with higher psychopathy scores contributes to increased overall gratuitous violence, even if those high psychopathy individuals do not appear to directly participate in this violence. Alternatively, another possible explanation concerns the underlying motives for using gratuitous violence. Given the often pleasure-seeking goals of excessive violence, it is plausible that high psychopathy youth are not necessarily attempting to avoid culpability, but are reluctant to share this form of gratification with others.

Another avenue of investigation in the current study was the influence of psychopathy, motivation, and the number of perpetrators on the use of sadistic and sexual

violence. Sadism was differentiated from gratuitous violence based on evidence of the offender deriving pleasure from their gratuitous acts of violence. Krafft-Ebing (1965, as cited in Porter et al., 2003) asserted that people generally do not engage in sadistic behaviour on account of “moral beliefs.” However, given their morally-devoid personality, combined with a propensity towards thrill-seeking and stimulation, it is not surprising that sadistic violence, particularly in the context of sexual violence, has often been linked to the psychopathic personality (Firestone, Bradford, Greenberg, & Larose, 1998; Holt, Meloy, & Strack, 1999; Knight & Guay, 2007). Interestingly, the current study did not find an association between sadistic violence and psychopathy, motivation, or the number of perpetrators. One reason for this difference may be due to our objective measurement of sadism based on evidence provided in the official police reports (i.e., statements, crime-scene evidence, etc.) or on self-report of the offender. Another possible explanation is that information regarding the offenders in the current sample was collected for pretrial and presentencing purposes. As such, offenders likely would have been reluctant to divulge information on their sadistic behaviours, leading to an underestimate of sadistic violence in the current sample. Finally, following the methodology of Woodworth (2001), sadistic violence analyses included only the subset of homicides that involved gratuitous violence. Analyses examining sadistic violence across all homicides, regardless of the presence of gratuitous violence, may lead to different findings.

Sexual violence was uncommon in the current sample, occurring in less than one sixth of all homicides. Nonetheless, based on previous research (e.g., Knight & Guay,

2007; Juodis et al., in press; Woodworth, 2001), sexual violence was examined across motivation, psychopathy, and the number of perpetrators. Results only partially supported previous work. Specifically, there was no relationship between sexual violence and motivation in youth offenders. Sexual violence occurred nearly equally in primarily instrumental and primarily reactive homicides, suggesting sexual violence is equally likely to be a means of expressing anger, rage, and frustration as it is to be a primary goal driving the homicide. Although only approaching significance, offenders were three times more likely to engage in sexual violence when alone versus when with accomplices. It is likely that the relationship between sexual violence and IP homicide reflects the difficulty in enlisting an accomplice with similar desires to sexually assault and kill a victim and the greater risk for apprehension, both pre- and post-offence.

Despite the infrequency of sexual violence in the current study, our results still supported the previously documented relationship between psychopathy and sexual violence. Knight and Guay (2007) proposed that the psychopaths' lack of affect, combined with their promiscuity, increases the likelihood of psychopaths being less discouraged by their victim's rejection of sexual advances and signs of distress. Indeed, Woodworth and Waschbusch (2008) hypothesized that highly psychopathic individuals may even be hypersensitive to negative emotions in their victims, such as fear, that are indicative of vulnerability or pain. Further, this hypersensitivity may make psychopathic individuals more successful at targeting, manipulating, and victimizing others. Regardless of the mechanisms at the heart of psychopaths' affective deficit, the callous-

unemotional nature of psychopaths, combined with a proclivity towards sensation seeking and sexual promiscuity, likely contributes to the use of various types of violence.

Interestingly, although Juodis and colleagues (in press) found that adult psychopaths were more likely to commit sexual violence only in IP homicides, the current study found evidence that psychopathy in youth influences the use of sexual violence in both IP and MP homicides. That is, the mere involvement of a high psychopathy youth in MP homicides—with or without directly engaging in sexual violence themselves—increases the likelihood of sexual violence four fold. The same peer influence and diffusion of responsibility rationale provided to explain differences in the use of gratuitous violence across psychopathy and the number of perpetrators applies here. We also found the relationship between psychopathy and sexual violence was amplified when considering offender-specific sexual violence. High psychopathy youth, when engaging in IP homicides, were 28 times more likely to commit sexual violence. As posited earlier, high psychopathy youth may be less inclined to share in this form of violence with others. Indeed, Porter, Demetriooff, and ten Brinke (2009) found that sexual psychopaths use more personalized methods of killing than nonpsychopaths.

Our findings have notable applied clinical and investigative value. For example, although the majority of homicides were committed for primarily instrumental purposes, nearly two thirds of these homicides included an element of reactivity. That is, approximately two thirds of the homicides were characterized by some level of emotional arousal, which likely contributed to the deaths of the victims. Emotion management services should be directed at these offenders, as they would appear to be most likely to

benefit. In contrast, efforts could focus on cognitive behavioural therapy for those offenders who engage in purely premeditated, unemotional, goal-driven violence. In terms of prevention, over one third of offenders had been charged or convicted of violent offences prior to the homicide. In light of research indicating that there are two main subtypes of aggressive children (i.e., who either engage in only reactive aggression or who engage in both reactive and instrumental aggression), it may be useful to assess the type of motivations for all violent offences and accordingly adjust the treatment approaches.

Our findings also suggest that as both a preventative measure and a treatment measure, it is important to provide education regarding group dynamics and the potential impact on the level of violence. Given previous research (e.g., Kelly & Totten, 2002) and the common assertion by many youth in the current sample, the violence used during homicides is considered normal to these youth. Specifically, although there was often intent to severely harm the victims, the intent to end the victims' lives was frequently lacking. However, the current results point to the impact of group dynamics, regardless of this intent, and its substantial role in the amount of violence perpetrated against victims. Although they did not necessarily engage in *more* excessive violence on an individual level, these adolescents also did not reduce the amount of violence they used on account of additional offenders. Prevention and treatment strategies should focus on de-normalizing the violence these offenders use through education regarding the severity of seemingly 'normal' violence, particularly in group contexts. Finally, given the high prevalence of substance use, which may contribute to de-individuation through

diminished inhibitions, further prevention and treatment focus could be directed at drug and alcohol counseling.

In terms of criminal investigation, the current study connects specific types of homicides to offender characteristics, making the results particularly relevant for investigators attempting to reduce their field of suspects. Given the potential applied utility of the motivation coding scheme for criminal investigation (see Meloy, 2006), and given that homicides involving multiple accomplices are more difficult to solve (Dauvergne & Li, 2006), the current results—in combination with previous research—may be exceptionally useful for helping investigators determine the motivations and the characteristics of the offender(s). For example, Clark (1995) and Myers (2002) found that gratuitous violence is characteristic of youth offenders. Moreover, the current results indicate that youth-perpetrated homicides involving gratuitous violence are more likely to be instrumental and to involve multiple offenders who have less lengthy antisocial histories and more affective and impulsive behavioural problems.

4.1 Limitations and Future Directions

This study was designed to overcome weaknesses of previous homicide research. As such, the present study had many strengths relevant to the homicide literatures of both Canada and North America. For example, this study involved the largest collection of Canadian youth-perpetrated homicides since 1992 and it represents one of the largest detailed, or micro-level, investigations of youth homicide in North America. Further, this was the first study to consider motivation, psychopathy, the number of perpetrators, and the level of violence in youth simultaneously. Improving upon previous research, the

current investigation coded information from multiple and detailed official reports, while utilizing validated and reliable coding criteria.

Despite these strengths, however, the current study had some limitations. First, all data for these *Canadian* youth-perpetrated homicides were collected from a single resource in one Western province. Nonetheless, previous researchers have used similar single-area samples to extrapolate to larger national trends (see e.g., Salfati & Dupont, 2006) and, with only slightly elevated proportions of multiple offender homicides in the current study, our data appear to fit with general offender characteristics (e.g., gender, ethnicity, gang affiliation) reported by Statistics Canada (see e.g., Li, 2008). Thus, the results of this study are, albeit cautiously, interpreted as indicative of cross-Canada trends. Additional research using samples from different provinces would ideally lend credence to our findings.

Another potential limitation was the variability in the level of information in offender files. In particular, files involving multiple offenders included limited information regarding accomplices, such as general age (i.e., youth or adult), gender, and relationship to the youth offender(s) and victim(s). As such, the current study was unable to assess the combination of characteristics in all offenders that contribute most to homicide. For example, if psychopathy scores were available for all offenders, researchers could determine in what circumstances high psychopathy offenders commit homicide with low psychopathy offenders and when (or if) high psychopathy offenders commit homicide with other high psychopathy offenders. Information was also limited in terms of the offence histories of these youth. Despite lengthy criminal records for some

offenders, in many cases only the homicide offence was described in the file. Extensive information on the criminal histories of these youth would have been particularly useful for preemptively identifying youth most at risk for engaging in serious types of violence. Future researchers should determine whether the youth who eventually committed homicide consistently engaged in the same type of motivations and whether they consistently participated in crimes with multiple offenders. More specifically, further research should address whether instrumentally violent offenders are more prone to committing homicides or whether, as the current study suggests, homicides are simply more likely to be instrumental, regardless of the offenders' histories of violent aggression. Similarly, another important question is whether the tendency for multiple offenders to engage in homicide is unique to this offence, or whether offenders who engage in offences with multiple offenders are simply more likely to eventually commit homicide. Partially addressing this, Conway and McCord (2002) found that youths who engaged in crimes with accomplices escalated to more extreme forms of violence with age.

Although beyond the focus of this study, offender histories, gang affiliation, and substance use should also be considered in relation to motivation, psychopathy, the number of perpetrators, and the level of violence. For example, Dolan and Smith (2001) found offenders who had suffered extensive abuse were more likely to engage in mutilation during the homicide. Previous research has found that substance- and nonsubstance-related homicides also differ meaningfully. For example, Pridemore and Eckhardt (2008) found that substance-related homicides committed by adults were more

often committed against known victims and involved victim-precipitation (loosely interpreted as reactivity). Given this research and the high proportion of substance use in the current study, future research should investigate homicides in which the offenders (and victims) did or did not consume substances to determine if substances influence youths' motivations, the level of violence used, or the number of perpetrators involved.

In light of the association between the number of perpetrators, instrumental motivation, and the interpersonal and, particularly, the affective components of psychopathy, it is likely that high psychopathy individuals select accomplices who are easily manipulated into engaging in violence. Nonetheless, it would be useful to determine *how* high psychopathy youth are influencing the level of violence. Indeed, Juodis et al. (in press) suggest the relationship between psychopathy and the involvement of accomplices may explain why low psychopathy youth engage in greater levels of instrumentality in the presence of other offenders. Future research should investigate this issue in more detail.

Finally, although this study involved a large number of homicide offenders, the sample still had some potential shortcomings. Girls were infrequently the perpetrators of homicides. Although the number of girls included in this study is proportional to the 10-year average for 1997 to 2006 reported by Statistics Canada (Li, 2008), extrapolation of these results to girls should be done cautiously, with results requiring systematic replication in a larger sample of girls. A second shortcoming was the low number of high psychopathy youth, primarily reactive homicides, and single perpetrator homicides, which all resulted in reduced power for some of our statistical analyses. Nonetheless,

despite reduced power, our ability to find significant results and results approaching significance increases our confidence in the strength of these associations.

The present study did not include a comparison group of nonhomicidal violent youth and nonviolent youth offenders. Future research should explore the differences and similarities among these offender groups to better understand their preventative and treatment needs. Further, comparisons across violent offender types would allow for a more comprehensive examination of Woodworth and Porter's (2002) selective impulsivity hypothesis, as well as Cornell et al.'s (1996) assertion that the majority of crimes are reactive. Specifically, researchers should determine if youth commit more instrumental, or gain-motivated, violence in high-stakes crimes and more reactive, or emotionally impulsive, violence in less serious crimes. Moreover, a comparison group would be potentially useful for determining if the behaviours of highly psychopathic youth are stable across types of offences and are equally likely to involve multiple offenders. Lastly, a subsample of adult homicide offenders for direct comparison would have enabled the assessment of overall differences in characteristics of homicides committed by youth and adult offenders. Given that youth-perpetrated homicides represent but a small fraction of all homicides, the discovery of characteristics that aid in delineating between adult- and youth-perpetrated homicides would have immeasurable applied value for criminal investigators.

4.2 Conclusion

The current study investigated Canadian youth-perpetrated homicides. These homicides tended to be committed by boys, aged 16 to 17, who were under the influence

of a substance, and were often in groups of two or more. Victims were primarily male, strangers, Caucasian, and either adolescents or young adults. Only recently, however, has research moved beyond describing youth homicides and begun to address youth homicide in theoretically meaningful ways using subtypes that have direct application to prevention, treatment, and apprehension (e.g., Clark, 1995; Juodis et al., in press; Porter et al., 2003; Salfati, 2000; Woodworth & Porter, 2002). Moreover, although previous research has examined homicide subtypes in isolation, the current research was the first to simultaneously consider psychopathy, motivation, gratuitous violence, and the number of perpetrators. As such, this study provides a substantial and much needed contribution to the dearth of knowledge regarding youth-perpetrated Canadian homicides.

The majority of our main hypotheses were supported, substantiating the results of previous studies (e.g., Flight & Forth, 2007; Juodis et al., in press; Woodworth & Porter, 2002). Specifically, psychopathy was a significant predictor of the use of instrumental violence. Further comparisons revealed that only affective deficits were significantly related to instrumental violence, providing additional support for differentiating between psychopathy factor scores with the four facets (see Neumann et al., 2006). Our results also indicate that, although all three factors are positively related to instrumental violence, the number of perpetrators is a more important predictor of motivation than both psychopathy and gratuitous violence. Moreover, the number of perpetrators was an important moderator of many of the relationships between our primary variables of interest. For example, the relationship between motivation and psychopathy differed for IP and MP offences, such that low psychopathy youth were more likely to engage in

reactive homicides only when alone. Nonetheless, our results also support the use of psychopathy, motivation, and violence to delineate between offenses and the offenders who have committed them. For instance, gratuitous violence is associated with instrumental, accomplice-assisted homicides committed by youth higher in psychopathy traits. Finally, this study was the first to address the differing contributions of accomplices to the violence perpetrated against victims. Involvement of multiple offenders increased the overall violence perpetrated against victims; however, the level of offender-specific violence was stable across lone and accomplice homicides. This suggests that de-individuation may not be contributing to the additional violence observed in multiple offender homicides.

In conclusion, although the current research represents an important advancement over previous studies, additional research investigating motivation, psychopathy, the number of perpetrators, and types of violence in relation to other homicide characteristics and offender populations is crucial for developing a valid and reliable theoretical framework of youth homicide. Our results substantiate previous adult and youth homicide research and support the use of motivation, psychopathy, the number of perpetrators, and violence for delineating between offenses. Moreover, the current study contributes considerably to criminal investigation of homicide perpetration and to the development of more tailored preventative and treatment strategies for youth who are most at risk for committing homicide.

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Appendices

Appendix A: Coding Scheme

1. Offender's identification number: _____

2. Offender's dominant place of residence at time of homicide:

- 1 = Interior (Thompson Okanagan and Cariboo)
- 2 = Lower mainland
- 3 = Northern (e.g., Prince George and further North)
- 4 = Vancouver Island (and southern coast)
- 5 = Other

3. Location of Homicide Offence:

~leave if same as above.

4. Offender's gender:

- 1 = Male
- 2 = Female

5. Offender's ethnicity:

- 1 = Caucasian
- 2 = Asian/South Asian
- 3 = First Nations
- 4 = Black
- 5 = Other, specify (for example Eastern European): _____
- 6 = Unable to code: cannot be determined from case information

6. Date of birth:

YEAR/MONTH/DAY

7. Age (calculation based on offender's age as of January 1, 2008):

8. Age when current homicide was committed:

9. Specific primary caregiver marital status:

~this includes any marriages (including common-law) of the offender's primary caregivers, if their status is known.

- 1 = Never married primary caregivers
- 2 = Married primary caregivers
- 3 = Divorced
- 4 = Divorced, mother-figure remarried
- 5 = Divorced, father-figure remarried
- 6 = Divorced, both remarried
- 7 = Widowed, mother-figure deceased

8 = Widowed, father-figure deceased

9 = Widowed, mother deceased, father-figure remarried

10 = Widowed, father deceased, mother-figure remarried

11 = Unable to code: cannot be determined from case information

10. General primary caregiver marital status:

~Items from the above section will be collapsed to create six combined categories. After collapsing, items 1, 2, and 3 will remain in original format. The new item 4, labeled “divorced with one or both primary caregivers remarried,” will be created from the original items 4, 5, and 6. The new item 5, labeled “widowed,” will be created from the original items 7 and 8. Finally, the new item 6, labeled “widowed, primary caregiver remarried,” will be created from the original items 9 and 10.

11. Single- or two-parent household:

~whether the offender grew up in a single- or two-parental figure household

1 = single-parental figure household

2 = two-parental figure household

12. Primary caregiver prior to offence:

~If multiple primary caregivers, under “4” list the caregiver who has been responsible for the offender for the **longest amount of time**, then note the second most primary caregiver. For example, if the offender has resided with his/her grandparents for 4 years and his/her uncle for 3.5 years, then code as “4: grandparents, uncle.” Couples do not count separately. If the uncle and his wife/the aunt were both responsible for the 3.5 years, code as “4: grandparents, uncle/aunt.” Finally, if one of the primary caregivers was a step parent, list this under “other relatives” as well. For example, if the biological father and the step mother were the primary caregivers, code “4: step-mother + father”

1 = biological/adoptive mother

2 = biological/adoptive father

3 = biological/adoptive mother and father

4 = other relative(s), specify: _____

5 = foster home

~ the purpose here is to code as much information as possible in a concise manner.

Depending on the *n* for the categories, new collapsed categories may be formed.

13. Primary caregiver at time of homicide:

1 = biological/adoptive mother

2 = biological/adoptive father

3 = biological/adoptive mother and father

4 = other relative(s), specify: _____

5 = foster home

6 = none, living on the streets

7 = none, living independently (i.e., renting an apartment etc.)

~refer to above for coding instructions.

14. Specific age at first foster care placement: _____

15. General age at first foster care placement:

- 1 = \leq one year old
- 2 = two – five years old
- 3 = six – nine years old
- 4 = ten – thirteen years old
- 5 = fourteen years old or more

16. Approximate total number of residences offender has lived in:

~total number of residences the offender has lived at, **regardless of length of time** (do NOT include any correctional institutions or group homes).

- 1 = one residence
- 2 = two – five residences
- 3 = six – ten residences
- 4 = eleven or more residences

17. Number of primary (permanent) residences prior to offence:

~number of residences with whom the offender resided for a period of **at least 1 month**.

- 1 = only one main residence
- 2 = two – five main residences
- 3 = more than five main residences

18. Number of times the offender lived without caregiver:

~number of times the offender lived without guardianship for a period of at least one month (e.g., if the offender has resided with “buddies” or has couchsurf from place to place for at least one month. The goal is to not include periodic running away that is under the one month mark).

- 1 = once
- 2 = two – five times
- 3 = more than five times

19. Specific school functioning:

~measured according to the total number of expulsions and suspensions.

a) High-school

Expulsions: _____

Suspensions: _____

b) Elementary

Expulsions: _____

Suspensions: _____

20. General school functioning:

~expulsions will be given precedence over suspensions (e.g., if offender has one suspension and one expulsion, code as item 5).

- 1 = No recorded expulsions or suspensions
- 2 = 1-2 suspensions
- 3 = 3-5 suspensions
- 4 = more than five suspensions
- 5 = 1 expulsion
- 6 = 2 expulsions
- 7 = 3 or more expulsions
- 8 = Unable to code: cannot be determined from case information

- a) High-school (Grades 9 and higher): _____
- b) Elementary (Grades 8 and under): _____
- c) Last grade attended: _____

21. Evidence of familial abuse:

~whether offenders have been exposed to physical, and/or sexual abuse within their family/home life (e.g., abuse between parents, abuse directed towards offender, abuse directed at a sibling etc.). Physical abuse will be defined, similarly to Straus' (1979) Conflict Tactics Scale, as the use of physical force against the victim (e.g., throwing objects at victim, pushing, grabbing, shoving, slapping, kicking, biting, hitting with fist, hitting or attempting to hit with object, beating the victim up, threatening the victim with a knife or gun, and using a knife or gun against the victim). Sexual abuse will be defined as any unwanted sexual interaction ranging from fondling to intercourse.

- 0 = exposure to no family abuse (physical or sexual)
- 1 = exposure to physical abuse only
- 2 = exposure to sexual abuse only
- 3 = exposure to physical and sexual abuse
- 4 = Unable to code: cannot be determined from case information

~Code according to mention in the psychological assessment file submitted to the courts.

22. Sexual Abuse "pairs":

~list all sexual abuse perpetrator-victim "pairs" the youth was exposed to. Use arrows to indicate direction of abuse. (E.g., if the maternal uncle primary caregiver is documented as having abused his own kids as well as the offender and his/her male sibling, write "maternal uncle → own children, offender, offender's male sibling")

23. Physical Abuse "pairs":

~list all sexual abuse perpetrator-victim "pairs" the youth was exposed to. Use arrows to indicate direction of abuse. (E.g., if the maternal uncle primary caregiver is documented as having abused his own kids, write "maternal uncle → own children" or if there was mutual abuse between the mother and father write "mother ↔ father")

* A good source for information regarding items 24 & 25 is the "Ministry of Health" Assessment submitted to the Courts ("Juvenile Services to the Courts")

** Items 24 & 25 will be recoded into categories of victims and perpetrators when entered into the data set. The immediate objective in this coding phase is to document all known violence the youth offender has been exposed to, directly and indirectly.

24. Cognitive Abilities:

Based on: Full Scale (Total) IQ = _____
 WISC or WAIS (circle one) Total Score, Scaled = _____
 Version R, III, or IV (circle one) Percentile Rank = _____

~Some files only include percentile rank information or scaled total scores. Also, note: if multiple WISCs were performed, use the data from the most recent WISC assessment.

25. Specific previous behavioural/personality disorder diagnoses:

- 0 = None
- 1 = Attention-Deficit/Hyperactivity Disorder (ADHD)
- 2 = Oppositional Defiant Disorder (ODD)
- 3 = Conduct Disorder (CD)
- 4 = Antisocial Personality Disorder
- 5 = Borderline
- 6 = Paranoid
- 7 = Narcissistic
- 8 = Other, specify: _____
- 9 = Drug Abuse:
- 10 = Alcohol Abuse:

26. Presence or absence of PTSD *after* homicide:

- 1 = present 1 = symptoms
- 2 = absent 2 = diagnosis

~according to information contained in mental health assessments.

28. Paternal (biological) history of substance abuse:

- a) Drugs 1 = Yes 2 = No b) Alcohol 1 = Yes 2 = No

~enter '3' if no information/unable to code.

29. Maternal (biological) history of substance abuse:

- a) Drugs 1 = Yes 2 = No b) Alcohol 1 = Yes 2 = No
- c) During pregnancy 1 = Yes 2 = No

~enter '-1' if no information/unable to code.

30. Step-father history of substance abuse:

- a) Drugs 1 = Yes 2 = No b) Alcohol 1 = Yes 2 = No

~enter '0' if offender did not have a stepdad, enter '-1' if no information/unable to code

31. Step-mother history of substance abuse:

a) Drugs 1 = Yes 2 = No b) Alcohol 1 = Yes 2 = No

~enter '0' if offender did not have a stepmom, enter '-1' if no information/unable to code

32. Total number of homicides committed by the offender:

~an indication of the total number of homicides the offender has committed.

33. Number of current victims:

~The number of victims from the offender's current homicide conviction.

34. Total number of victims:

~The total number of victims from all of the offender's homicide convictions.

35. Number of individuals involved in the homicide:

- 1 = Just the offender being coded
- 2 = The offender and one other individual
- 3 = The offender and two other individuals
- 4 = The offender and three other individuals
- 5 = The offender and four other individuals
- 6 = The offender and five or more individuals

36. Other Offender's identification number:

~List codes for all offenders involved in the offence. This variable will enable comparisons of characteristics of multiple offenders involved in a homicide. If a co-offender is an adult, record as -1. If a co-offender is a youth not assessed through the current institute, record as -2.

37. Co-accused #1 characteristics:

i) Gender:

- 1 = male
- 2 = female

ii) General age

- 1 = adult
- 2 = youth

iii) Relationship to offender

- 1 = intimate partner
- 2 = friend
- 3 = family member, specify:

4 = other: _____

38. Co-accused #2 characteristics:

~if more than 2 co-accused, record their relationship on the "notes" page

i) Gender:

- 1 = male
- 2 = female

ii) General age

- 1 = adult
- 2 = youth

iii) Relationship to offender

- 1 = intimate partner
- 2 = friend
- 3 = family member, specify:

4 = other: _____

39. Offender's "role" in the homicide:

~investigates the "role" of the offender who was convicted of criminal homicide.

- 1 = Offender was primarily responsible for the criminal homicide (e.g. offender was alone, offender murdered the victim while a second individual waited in a car outside).
 2 = Offender committed the homicide with one or more other individuals who also had a substantial role in the crime (e.g., the offender and one other individual both severely beat a victim to death).
 3 = Offender had a minor role in the criminal homicide (e.g. the offender "kept watch" outside while his companion murdered the victim inside their apartment).
 4 = Completely unclear what role the offender had in the homicide offence.

40. Number of police incidences prior to current homicide conviction:

a) violent incidences: _____ b) nonviolent incidences: _____

~There may be many violent and nonviolent incidences for which the youth was **not** charged. If the police record is available, **record all incidences that were not charged or convicted**. The objective here is to list all known "run-ins" with the law, regardless of any legal action or consequences.

41. Number of charges prior to current homicide conviction:

a) violent charges: _____ b) nonviolent charges: _____

~record all **official** charges (which have either not yet resulted in a conviction or were stayed).

42. Number of convictions prior to current homicide conviction:

a) violent convictions: _____ b) nonviolent convictions: _____

~violent refers to codes 1 through 9 in Item 43. Nonviolent refers to codes 10 through 13 as well as failure to appear, breach, threats of violence, arson, etc.

43. Most serious prior conviction of offender:

0 = none

1 = 1st degree murder

2 = 2nd degree murder

3 = manslaughter

4 = attempted/conspiracy to murder

5 = armed robbery

6 = assault with a deadly weapon

7 = kidnapping

8 = assault

9 = sexual assault

10 = theft over \$5000

11 = theft under \$5000

12 = break and enter

13 = other, specify: _____

14 = unable to code: cannot be determined from case information

44. Number of charges after the homicide:

a) violent: _____ b) nonviolent: _____

~E.g., in cases where the offender is not immediately in police custody or under suspicion, the offender may acquire additional charges.

45. Legal description of the current criminal homicide CHARGE:

- 1 = 1st degree murder
- 2 = 2nd degree murder
- 3 = manslaughter
- 4 = attempted/conspiracy to murder

46. Legal description of the current criminal homicide CONVICTION:

- 1 = 1st degree murder
- 2 = 2nd degree murder
- 3 = manslaughter
- 4 = attempted/conspiracy to murder

47. Type of homicide:

- 1 = Instrumental homicide
- 2 = Instrumental/reactive homicide
- 3 = Reactive/instrumental homicide
- 4 = Reactive homicide
- 5 = Unable to determine

*Please refer to the detailed descriptions below for further information on 1 through 5.
Note: Sexual violence will not automatically be assumed to be one type of violence or the other.

47. (1) Instrumental homicide:

~Evidence of planning

~Evidence of some type of goal. This could include reasons such as:

- A. Revenge or retribution for past events (such as stealing from the offender)
- B. Monetary gain
- C. Drugs or alcohol
- E. A female (two individuals competing over the same woman)
- F. Jealousy
- G. To escape custody/remain at large

~Homicide committed for a clearly identifiable purpose other than “hot-blooded” spontaneous anger, frustration, or provocation.

*Although not necessarily conclusive evidence, a conviction for 1st degree murder is another indicator that the offender committed a homicide that would be considered instrumental.

47 (2). Instrumental/Reactive:

~When there is clear evidence of both instrumental and reactive behaviour regarding the homicide, yet the primary cause could be attributed to instrumental violence.

47 (3). Reactive/Instrumental:

~When there is clear evidence of both reactive and instrumental behaviour regarding the homicide, yet the primary cause could be attributed to reactive violence.

47 (4). Reactive homicide:

- ~Primary motive appears to be anger or displaying aggression
- ~Evidence of provocation, without a "cooling off" period between the time of the provocation and the time of the homicide.
- ~Homicide crime scene appears careless and spontaneous.
- ~Violence is in response to some type of dispute or interpersonal conflict, without a "cooling off" period between the time of the dispute or interpersonal conflict and the time the homicide was committed. If there was a "cooling off" period, the files may indicate that the interpersonal conflict or dispute actually led to an instrumental homicide which was committed for reasons of revenge or retribution, rather than being a reaction to the immediate dispute.
- ~Homicide appears to be a spontaneous or unplanned consequence of a sexual assault or encounter (violence was not initially used to force or manipulate the victim into sexual acts).

*Please Note: Holmes & Holmes (1998) have described the "cooling off" period as a "singleness of time." Another perhaps more appropriate way to conceive of this is as a "singleness of incident." This is meant to imply that there is no discernable gap or emotional break between the incident in question and the homicide.

Example 1. The offender and victim engage in an argument at a drinking establishment and within the course of the night the victim is murdered in a fight with the offender = No cooling off period.

Example 2. The offender and victim engage in an argument at a drinking establishment and two days later the offender murders the victim at their place of employment = cooling off period.

47 (5). Unable to code:

1 = There is a lack of information due to **a:** missing or too little information or **b:** coder is unclear as to what actually happened, how it happened, or why it happened (e.g. an offender's girlfriend is found dead, and he is charged with the homicide, HOWEVER he does not admit to the crime, there is no details regarding how the incident occurred and there is no indication of planning or motivation)

2 = Coder is completely unclear about what the possible motive or rationale for the homicide may be (e.g. the homicide does not appear to have been provoked **or** planned). In most cases, this second possibility will be in homicides that have been committed against women for no apparent or obvious reason

48. Degree of instrumental violence:

1 = minor amount of instrumental violence (appears to be planned/thought about within a short period of time (e.g. that day)

2 = medium amount of instrumental violence (appears to have been planned for a number of days, and considerably well-thought out)

3 = major amount of instrumental violence (appears to have been extremely well-thought out and planned over a long period of time)

4 = unable to code

49. Degree of reactive violence:

1 = Minor amount of reactive violence

2 = Medium amount of reactive violence

3 = Major amount of reactive violence

4 = Unable to code

*to assist in the coding of variable 49, please refer to variables 54 and 55 (overall and offender-specific gratuitous and unnecessary violence) to check the amount of gratuitous/extreme violence that was present in the homicide offence.

50. Specific type of instrumental violence:

~If a score of (1-3) was obtained on variable 47 (e.g. some evidence of instrumental violence) was the instrumental violence primarily for the reason of:

1 = Monetary gain

2 = Drugs or alcohol (includes prescription drugs)

3 = Revenge/retribution

4 = A female (a fight over an affair or jealousy, or upset about ending of relationship)

5 = To obtain nonconsensual sex /Intentionally victimize a female or male/female children

6 = Caught in the act of other crime

7 = Unable to code

51. General type of instrumental violence:

~We will also investigate any differences within the results on variable 50 above. (1-2) from above are both examples of 'secondary instrumental violence' where the homicide was committed for a reason that was not primarily intended to inflict harm upon a victim. Whereas (3-5) from above are examples of 'primary instrumental violence' where the homicide was committed primarily for the reason of causing pain or discomfort to the victim.

1 = Secondary instrumental violence (e.g. score of 1 or 2 on Variable 50 above)

- 2 = Primary instrumental violence (e.g. score of 3, 4, or 5 on Variable 50 above)
- 3 = Combination
- 4 = Unclear which would be more appropriate
- 5 = Unable to code

52. Specific type of reactive violence:

~If a score of (2-4) was obtained on variable 47 (e.g. some evidence of reactive violence) was the reactive violence primarily for the reason of:

- 1 = revenge/retribution – for physical assault (physical assault which does **NOT** threaten the life of the offender and does **NOT** require self-defensive action to be taken by the offender. E.g., the victim punched the offender once. Also note: the initial physical assault does not have to be directed *at* the offender but may have been against someone who the offender feels the need to protect for example, mother, girlfriend, younger sibling etc.)
- 2 = revenge/retribution – for racial slur or other type of verbal slight that does not include a physical assault component against the perpetrator
- 3 = lover's quarrel or jealousy
- 4 = rejection of sexual advances (e.g., after rejection, the offender goes into a rage and in attempt at raping and beating the victim, the victim dies. Although this will often be hard to determine, the key difference here is that this is in *reaction* to rejection, prior to which the offender appeared to have no intention/plans of harming the victim)
- 5 = self-defense/accident (this will likely often coincide with manslaughter convictions in which the primary intent of the offender was to protect his/herself and/or others)
- 6 = other, specify: _____
- 7 = Unable to code

Note: For codes 1 and 2 above, this is primarily differentiated from instrumental by determining that there was no cooling off period.

54. Overall amount of unnecessary and gratuitous violence:

~code item based on total amount of violence inflicted on victim by everyone involved.

~ If there is evidence that unnecessary and gratuitous violence was used during the commission of the homicide. For example, if it is apparent from the victim's wounds that a considerable amount of pain and suffering was inflicted upon them. This variable attempts to account for a type of violence during the homicide that is beyond the degree that would be necessary to accomplish the act of homicide or was conducted in such a manner as to increase the pain and suffering of the victim.

This type of gratuitous, unnecessary violence would include crime scenes where the style of homicide indicated:

- A. prolonged torture,
- B. evidence of mutilation or overkill,
- C. posing of the body
- D. sadistic sexual behaviour

- 0 = No evidence of gratuitous, excessive violence
- 1 = Evidence of a minor amount of gratuitous, excessive violence
- 2 = Evidence of a medium amount of gratuitous, excessive violence
- 3 = Evidence of a major amount of gratuitous, excessive violence

55. Offender-specific unnecessary and gratuitous violence:

- 0 = No evidence of gratuitous, excessive violence
- 1 = Evidence of a minor amount of gratuitous, excessive violence
- 2 = Evidence of a medium amount of gratuitous, excessive violence
- 3 = Evidence of a major amount of gratuitous, excessive violence

~variable indicates the amount of gratuitous/unnecessary violence committed by the offender whose file is currently being coded, as it may be different from the overall levels of gratuitous/unnecessary violence observed in the homicide (i.e., violence committed by other individuals involved in the homicide commission).

56. Overall sadistic violence:

~code item based on total amount of violence inflicted on victim by everyone involved.

~Often gratuitous and excessive violence is committed for the sole of purpose of giving pleasure (often sexual) to the offender(s). This type of violence (which often involves the offender taking pleasure in the unnecessary suffering of their victims) is most commonly referred to as sadistic violence. For those offenders/overall crimes that show evidence of gratuitous violence on variable 54: code any information in the file that indicates this excessive violence was committed for sadistic purposes. E.g., observations, crime scene description, or witness reports. Note: the current offender can provide evidence against other co-accused that would apply to overall sadistic violence.

0 = No evidence of sadistic violence (e.g. although the victim has been stabbed an unnecessary number of times, it is completely unclear what the motivations of the offenders may have been).

1 = Some evidence of sadistic violence: most acts of body mutilation or deviant, violent sexual activity are conducted primarily for the sadistic pleasure of the offender. However, without witness report or actual file information that confirms this assumption, we cannot be certain that this behaviour was necessarily for sadistic motivations. Therefore, this type of situation should be coded as “some evidence” of sadistic violence.

2 = Concrete evidence of sadistic violence (e.g. offender reports taking pleasure in the excessive suffering of their victim).

57. Offender-specific Sadistic violence: (Off_Sadi)

~variable indicates the amount of sadistic violence committed by the offender whose file is currently under consideration, as it may be different from the overall levels of sadistic violence observed in the homicide (i.e. violence committed by other individuals involved in the homicide). If there is only one offender, do NOT use above variable, code only this item.

0 = No evidence of sadistic violence (e.g. although the victim has been stabbed an unnecessary number of times, it is completely unclear what the offender's motivations for this behaviour may have been).

1 = Some evidence of sadistic violence: most acts of body mutilation or deviant, violent sexual activity are conducted primarily for the sadistic pleasure of the offender. However, without self-report or actual file information that confirms this assumption, we cannot be certain that this behaviour was necessarily for sadistic motivations. Therefore, this type of situation should be coded as "some evidence" of sadistic violence.

2 = Concrete evidence of sadistic violence (e.g. offender reports taking pleasure in the excessive suffering of their victim).

58. Overall sexual violence:

~code item based on total amount of violence inflicted on victim by everyone involved.

Note: differs from "sexual component" (below) as this involves violent or coercive sexual behaviour intended to harm, humiliate, or disfigure (etc.) the victim. If there are multiple offenders, use this variable to note the overall sexual violence used in the homicide (sexual violence committed by all offenders).

~includes any evidence of sexual assault/offense prior to, during, or after the homicide.

0 = No evidence of sexual violence

1 = Evidence of sexual violence

2 = Unclear (body has decomposed to a degree where investigators are unable to determine aspects of the homicide such as the possibility of sexual activity)

59. Offender-specific sexual violence:

~this variable should be used to note the sexual violence perpetrated by only the offender whose case is under review.

0 = No evidence of sexual violence

1 = Evidence of sexual violence

2 = Unclear

60. Overall sexual component:

~differs from "sexual violence" as this involves, *consensual* sexual activities that may or may not have been used to "lure" the victim into a vulnerable position.

0 = No evidence of sexual component.

1 = Evidence of sexual component.

2 = Unclear (body has decomposed to a degree where investigators are unable to determine aspects of the homicide such as the possibility of sexual activity).

61. Offender-specific sexual component:

~Use this variable to code the specific behaviour of the current offender.

0 = No evidence of sexual component.

1 = Evidence of sexual component.

2 = Unclear (body has decomposed to a degree where investigators are unable to determine aspects of the homicide such as the possibility of sexual activity).

62. Overall sexual behaviours:

~sexual behaviour of all offenders before, during, or after the homicide. Mark all that apply.

1 = vaginal penetration

2 = anal penetration

3 = necrophilia

4 = genital mutilation

5 = other, specify: _____

63. Offender-specific sexual behaviours:

~sexual behaviour of offender before, during, or after the homicide. Mark all that apply.

1 = vaginal penetration

2 = anal penetration

3 = necrophilia

4 = genital mutilation

5 = other, specify: _____

64. Presence of an instrumental gain: (for validity purposes)

0 = No evidence (that the homicide was committed for some instrumental gain, resource, or goal.)

1 = Evidence (that the homicide was committed for some instrumental gain, resource, or goal)

2 = Unclear (unclear/uncertain what motivation for homicide was)

Acceptable Examples of 'instrumental gain, resource, or goal.'

-drugs or alcohol

-money

-revenge or retribution that is committed after a "cooling off" period (e.g. evidence of planning)

-planned out sexual homicide

65. Presence/absence of Impulsivity:

~Impulsivity = An individual who acts quickly without forethought of the appropriateness of their actions, and does not consider the consequences and/or risk of those actions. Impulsive acts can be thought of as "spur of the moment" and are often to obtain immediate gratification. Coded for validity purposes.

0 = Not impulsive (e.g. planned out, not spontaneous)

1 = Somewhat impulsive (e.g. the incident contained some of the impulsive elements listed below, but did not fully match the description, or it is somewhat unclear from given file information how impulsive the individual was, although there is some evidence to suggest that they were impulsive.)

2 = Highly impulsive (e.g. the incident matched the majority of elements used to describe impulsivity below)

3 = Unclear

66. Presence/absence of affect (emotional arousal; e.g. anger or upset)

0 = Low emotional arousal (e.g. calm, subdued)

1 = Moderate emotional arousal (e.g. somewhat angry or states got into an argument/was upset but it is unclear if would be high emotional arousal, yet it is obvious there was some emotional arousal). This is most appropriate since in those instances where it is some type of high emotional arousal it is almost always explicitly stated.

2 = High emotional arousal (e.g. very angry, enraged)

3 = Completely Unclear what affective state was

Note: To eliminate the highly subjective nature of coding from the crime scene information itself (e.g. the condition of the deceased's body), item 66 was only coded from the self-report of either the offender, witnesses, or law enforcement officers. Therefore, in a number of instances we were unable to code this dimension. Further, we did not attempt to code more subjective states of affect such as nervousness or fear.

67. Gang membership of offender:

1 = Not a gang member

2 = Gang member

3 = Unable to code: cannot be determined from case information

68. Record name of gang, if given in the file: _____

~need as additional information regarding the gang's activities may be required (also to ensure proper categorization of the gang if file information is limited, see variable 71).

69. Gang membership of victim:

1 = Not a gang member

2 = Gang member

3 = Unable to code

70. Gang membership of victim & offender:

1 = Victim and offender from same gang

2 = Victim and offender from different gangs

3 = Not applicable (neither belong to a gang)

4 = Unable to Code

71. Gang classification of offender:

~Based on White and Mason's (2002) categories.

- 1 = Criminal gang: the main activity focuses on making money through illegal means (e.g., selling drugs, theft). This activity may be sporadic or episodic, secondary to the group's overall activity, or it may be highly organized with profit making a central goal.
- 2 = Conflict gang: the main activity is street fighting, with violence being central to gaining social status and street reputation. There is marked emphasis on honour, territory, and integrity.
- 3 = Retreat gang: the main activity is heavy drug use and withdrawal from mainstream social interaction. Illegal activity is centered more on drug use than violence or other forms of antisocial activity. Property crimes or other violent crimes may occur as a result of drug use, however. These are often impulsive and/or senseless in nature.
- 4 = Street culture gang: the main feature is of gang-related cultural forms and presentation of gang-like attributes (e.g., certain music types, dress codes, hand signals, tattoos or body markings, speech, graffiti, etc.).
- 5 = Not applicable
- 6 = Unable to code

72. Gang classification of victim:

~using the categories as above (item #71).

73. Relationship between offender gang membership and instrumental violence:

~assesses whether the crime was committed for the instrumental gain of the offender's gang or for the instrumental gain of only the offender. (Should be related to items 47 and 49).

- 1 = Primary gain for offender; little or no evidence of gang influence
- 2 = Primary gain for gang; little or no evidence of personal gain (beyond "naturally" occurring/expected gains within the gang e.g., increased status)
- 3 = Unable to code: cannot be determined from case information.

74. Gender of homicide victim #1:

1 = Male

2 = Female

75. Victim #1 Ethnicity:

1 = Caucasian

2 = Asian/South Asian

3 = First Nations

4 = Black

5 = Other, specify: _____

6 = Unable to code

76. Relationship of victim to offender:

~The predominate relationship between the offender and his victim.

- 1 = Stranger
- 2 = Romantic partner (or previous romantic partner).
- 3 = Family member (e.g., immediate family, uncles, aunts, grandparents, cousins, plus immediate family in-laws).
- 4 = Friend (or family friend; or family friend's child).
- 5 = Co-worker/casual acquaintance/classmate.

77. If victim was offender's family member, specify victim-offender relationship:

- 1 = Parent
- 2 = Sibling
- 3 = Stepparent
- 4 = Stepsibling
- 5 = Aunt/Uncle
- 6 = Grandparent
- 7 = Cousin
- 8 = Multiple familial victims, specify: _____
- 9 = Other, specify: _____

78. Specific age of the victim: _____79. General age of the victim:

- 1 = Child (0-12)
- 2 = Teen-ager (13-19)
- 3 = Adult (20-64)
- 4 = Senior (65 and over)

80. Gender of Victim #2:

- 1 = Male
- 2 = Female

81. Ethnicity of Victim #2:

- 1 = Caucasian
- 2 = Asian/South Asian
- 3 = First Nations
- 4 = Black
- 5 = Other, specify: _____
- 6 = Unable to code

82. Relationship of victim #2 to offender:

~The predominant relationship between the offender and a second victim, if there was more than one victim from the current homicide (see variable 76 for coding details).

83. If victim #2 was offender's family member: (v_f_rel2) _____ (see variable 77)84. Specific age of victim #2:

85. General age of victim #2:

~see variable 79 for coding details.

86. PCL-YV total: (PCL_tot)87. PCL-YV Factor 1 score: _____90. PCL-YV Facet 2 score: _____88. PCL-YV Factor 2 score: _____91. PCL-YV Facet 3 score: _____89. PCL-YV Facet 1 score: _____92. PCL-YV Facet 4 score: _____93. PCL-YV category:

~The PCL-YV scores will be coded into one of two categories:

1 = Low psychopathy (1-29 on the PCL-YV)

2 = High psychopathy (30-40 on the PCL-YV)

94. Type of weapon:

~categories for coding the type of weapon used to commit the homicide:

1 = Gun

2 = Knife

3 = Bare hands (hitting, kicking, biting, scratching, throwing, pushing)

4 = An object used for the purpose of bludgeoning, stabbing, strangling or restraining (except for a knife), that has/could be conceived of as a weapon. (e.g., club, axe, sword).

5 = An object used for the purpose of bludgeoning, stabbing, strangling, or restraining the victim that has not traditionally been thought of as a weapon. (e.g., broken glass, rock, piece of wood, eating utensil).

6 = Combination of gun and knife.

7 = Combination of gun and bare hands.

8 = Combination of knife and bare hands.

9 = Combination of bare hands and either 4 or 5 from above.

10 = Combination of knife and either 4 or 5 from above.

11 = No weapon (tampered with the car brakes etc.).

95. How the weapon was obtained to commit current homicide:

~The method by which the offender obtained the weapon that was used during the homicide.

1 = Weapon of opportunity (what was immediately available at crime scene)

2 = Weapon of choice (chosen beforehand to help achieve a goal)

3 = No Weapon (includes using only hands or items that would fall under 5 from variable 94)

4 = Unclear if a score of 1 or 2 would be more appropriate

96. Drugs:

0 = No drug involvement.

1 = At the time of the offense, offender was under the influence of 'minor' drugs such as

marijuana, hashish, or prescription drugs such as Tylenol 3.

2 = At the time of the offense, offender was under the influence of ‘major drugs’ such as mushrooms, LSD, cocaine, heroin or prescription drugs such as Demerol or morphine.

3 = both minor and major drugs.

4 = Drugs were determined to have played a role in the homicide, even though the offender was not intoxicated during the commission of the offense.

*An example of (4) would be an offender who was on a cocaine ‘binge’ for a number of days and had become quite delusional and neurotic. Even if he was NOT under the influence of cocaine at the time he committed the homicide, the circumstances may still reveal that the drug was a major contributing factor towards the homicide. Another example would be if the offender was attempting to get drugs when the homicide was committed.

97. Alcohol:

0 = No alcohol

1 = At the time of the offense, offender was under the influence of a small amount of alcohol at the time of the offense (1-2 beers or 1-2 hard alcoholic drinks or 1-2 glasses of wine)

2 = At the time of the offense, offender was under the influence of a moderate amount of alcohol (3-6 beers or 3-4 hard alcoholic drinks or 3-5 glasses of wine)

3 = At the time of the offense, offender was under the influence of an extreme amount of alcohol (over 6 beers and/or 5-6 hard alcoholic drinks and/or more than 5 glasses of wine). A 3 would also be appropriate in cases where prior to the offence the offenders was reported to have been “binge” drinking or “drinking for the entire day and/or night.”

4 = Alcohol was determined to have played a role in the homicide, even though the offender was not intoxicated during the commission of the offense.

5 = Offender was under the influence of an undetermined amount of alcohol.

98. Drugs and alcohol:

0 = Neither one applies

1 = Only variable 96 applies (drugs)

2 = Only variable 97 applies (alcohol)

3 = Both variables apply (offender was under the influence of both drugs and alcohol)

99. Body recovery location: (where body was **found**)

1 = victim’s home

2 = offender’s home

3 = victim and offender’s home

4 = public place (e.g., mall, city parks, streets/alleys)

5 = wooded or nonresidential area (includes lakes, rivers, camping/hiking grounds, “look out” areas etc.)

6 = other, specify: _____

7 = unable to code

100. Homicide location:

~Use same codes as item #99

101. Body Covered:

~using blanket, clothing, etc.

1 = uncovered

2 = partially covered, specify body part(s) (e.g., face, neck, chest, genitals etc.):

3 = fully covered (i.e., code this if an *attempt* has been made to cover the entire body. E.g., if the feet are left exposed because the blanket or other material is not large quite enough, this would still count as fully covered; however, if the material was placed only over the areas where there was damage inflicted to the body, while other areas are left exposed, despite the possession of enough material to cover the body, then mark as partially covered and list the body areas that have been covered)

102. Body hidden:

0 = not hidden

1 = buried

2 = in a body of water

3 = burned

4 = in garbage/at landfill

5 = other, specify: _____

~circle all that apply (e.g., if the body was burned and then dropped in a lake).

103. Location of wounds:

1 = head

2 = face

3 = arms

4 = legs

5 = upper body (i.e., chest, breasts)

6 = lower body (i.e., stomach, lower abdomen)

7 = back of body (e.g., if the offender shot, stabbed etc. the victim from behind)

8 = front of body (e.g., if the offender attacked the victim from the front, face to face)

9 = neck

~record all that apply. Refer primarily to the information contained in the coroner's report. If this report is not available, use information given by the police reports, offender's confession, or witness testimonies. Note the source if the information is not obtained from the coroner's report.

104. Amnesia

~Whether or not the offender reported amnesia *during* the offence

1 = full amnesia

2 = partial amnesia

3 = did not report amnesia

~based on the offender's self-report of the existence of full or partial amnesia for the events that occurred *during* the homicide act. Full amnesia will be defined as having no memory (e.g., "blacking out") of the events that occurred during the homicide. E.g., the offender recalls that the victim was taunting him prior to taking any actions against the victim. He does not recall any of the events during the homicide, and the next memories he has are of staring down at the victim with blood on his hands. Partial amnesia will be defined as having "patch"-like memories of the events that occurred *during* the homicide. E.g., the offender recalls the victim taunting him and responding angrily. He remembers grabbing a knife from the kitchen slashing out at the victim's chest twice. Memories of the next "five minutes" are blurry, but the offender eventually remembers hearing the victim pleading with him to stop but he has no memory of what happens next as he "blacked out" again. The next memories he has are of staring down at the victim with blood on his hands. No amnesia will be defined as reporting no significant loss of memory (no "black outs" or extended period of time with no memory). "Normal" memory decay, in which the memory of the events becomes less clear, or somewhat "hazy," will not be considered to be a form of amnesia—nor will offender reports of "undeterminable" amounts of time beating or stabbing (etc.) the victim in which the offender has difficulty describing exactly what happened next (i.e., where next he wounded the victim) but **does not** claim significant memory loss.

105. Presence/absence of remorse:

- 0 = absent
- 1 = present, genuine
- 2 = present, feigned
- 3 = present, self-centered (focuses on personal costs)
- 4 = unable to code

~often self-reported in confession or during psych assessments. The psychological assessment usually includes the psychologist's subjective impressions of the offender's sincerity with regards to the expression of regret and guilt for the crime. As this assessment is submitted to the courts and used in the decision-making process, the evaluator's expert opinion of this variable is appropriate for the purpose of coding this variable.

106. Confession or denial of role in homicide:

- 1 = confesses
- 2 = denies
- 3 = unable to code

~whether or not the offender confesses or denies having any role in the homicide. If the offender has not confessed or denied, or has otherwise not made any statements code '3.'

107. Offender's behaviour *AFTER* homicide:

A: 1 = stayed at the scene

2 = left scene

3 = left scene & left town

B: 1 = informed others

2 = called authorities (turned him/herself in or told others to call)

3 = did not tell anyone

~Complete both section 'A' and section 'B'.

108. File Completeness:

~ list all that apply (assessments, police report, court proceedings, coroner's report, statements, confession, police records.

1 = Standardized testing

2 = Assessments

3 = Police reports

4 = Court proceedings

5 = Coroner's report

6 = Witness statements

7 = Confession

8 = Offender records (if they have a history of criminal offences)

9 = Probation records (if any)

10 = Educational records

Appendix B: Case Examples for Motivation and Violence Variables

Motivation

Instrumental homicide

- i) A youth planned the robbery of his neighbour. He consumed nearly 40 ounces of whiskey before he used her spare key to enter her house. He stated he dressed as a cat burglar and armed with a large kitchen knife, which “he was prepared to use” in order to avoid being caught. When the neighbor awoke, the offender stabbed her 23 times before taking the money and leaving the victim’s four year-old daughter to find her mother’s body the next morning. The offender confessed to the murder in detail when prompted by an undercover investigation.
- ii) Three offenders (two youth and one 18 year-old adult) planned the brutal murder of the adult accomplice’s mother and grandmother. The murders had been painstakingly planned for over six months. The two youth were promised a steady income as the adult’s bodyguards after the adult offender collected the fortune he stood to inherit. The two youth entered the family home under false pretenses and attacked the two women with a knife and a crowbar. The boys then disposed of the weapons and were met by the adult. The adult offender’s girlfriend called the police after hearing the youth brag about their successful murders. One youth and the adult confessed to the crime, while one youth steadfastly denies all culpability.

Instrumental/Reactive

- i) On the night of the offence, the offender stole some alcohol and prescription drugs and became extremely intoxicated. While his foster mother's family was out for the evening, the offender searched all the bedrooms for drugs. He was encountered by his foster parent's niece, who called him a drug addict and demanded he leave her room. Instead, the offender attacked the girl, during which time the victim scratched the offender, further inciting the offender's rage. The offender then stabbed the victim multiple times in the chest, neck, and face.
- ii) A group of neo-Nazi offenders attended a Sikh temple at night to intentionally vandalize the property and assault any persons at the temple. The youth attacked a 65 year-old Sikh security guard who asked them to leave the premises after they were caught vandalizing temple property. The entire group participated in beating the man by punching and stomping his whole body. Once the victim was dead, they robbed him of his jewelry (rings, bracelet, and watch) and wallet before fleeing the scene.

Reactive/Instrumental

- i) A group of four inebriated youth (three males and one female) were walking by a bicyclist when one of the youth asked for a cigarette. According to the offenders, the bicyclist made a disparaging comment, which caused the youth to attack him. The three males proceeded to beat and stomp the cyclist while he begged them to stop. According to the female's reports the two offenders

stopped after a couple of minutes while the third offender continued to stomp on the victim's head/face and scream at the victim until his legs gave out from exhaustion. Afterwards, all three offenders took part in dumping the bike and stealing the victim's duffel bag.

- ii) The mother of the offender's girlfriend confronted the offender for stealing from her, at which time he reported he flipped out and he started beating her. After knocking the victim unconscious, the offender searched the house for Vaseline before brutally vaginally and anally raping the victim. He then attempted to drown the victim in the bathtub but reported not being confident that she was dead. As a final measure, he stabbed the victim and then slit her throat. Initially the youth confessed to the crime; however, he eventually changed his story stating that another offender, who was actually responsible for the sexual assault and the murder, had forced him to admit to the homicide. Forensic evidence contradicts the latter version of the offender's story.

Reactive homicide

- i) After a party in which alcohol and drugs were consumed, the offender and his girlfriend returned to the offender's house where they proceeded to get into a fight. The offender reported "losing it" when she broke up with him. He stated he started strangling her and could not make himself stop. Friends reported the offender had a history of abusing and choking his girlfriend when they argued.

- ii) The offender returned home inebriated from a party to find his stepfather and mother in a vicious drunken fight. The offender, as he had done on multiple previous occasions, broke up the fight by beating up his stepfather. The offender then put his mother to bed in a room separated from his stepfather and then went to bed himself. He awoke shortly after to his stepfather again beating his mother. The offender again engaged his stepfather, leaving him unconscious. While unconscious, the stepfather had an aneurism caused by his injuries and died. The offender called authorities himself despite his mother's advice.

Unable to code

- i) An offender had a verbal fight with his stepfather regarding negligence of farm chores. The offender left the house with his shotgun, with the intention of shooting at animals to relieve his anger and frustration, as he had many times before. On the day of the offence, however, the offender encountered three older men walking along the river. There was no verbal or physical contact between the offender and the strangers, when the offender started shooting at the men. Two of the men escaped, while the third man was shot twice. The assessment revealed the offender was schizophrenic and had suffered intense psychological, emotional, and physical abuse at the hands of his schizophrenic biological father.
- ii) A female was playing with a gun at a party, aiming at people in the house. The offender (and witnesses) believed the gun was not loaded. The offender aimed

the gun at a male and pulled the trigger. The victim fell but the offender and friends believed he was playing dead. When police arrived, the offender was hysterical.

Other type of specific instrumental violence

- i) A youth murdered an elderly woman whom he had previously mowed lawns for twice in the past. Evidence provided by a friend, whom the offender attempted to convince to participate, indicated the offender's intention was to cut off her hands and use them in a satanic spell he wished to cast against an acquaintance.

Types and levels of violence

No evidence of gratuitous violence

The offender stabbed the victim who was chasing him. He then ran to a nearby store, demanded the clerk lock the door, and then called 911 to report the incident.

Gratuitous Violence Criteria:

Overall/Offender-specific = None

Prolonged torture = no

Mutilation or overkill = no

Posing of the body/souvenir = no

Sadistic behaviour = no

Minor amount of gratuitous violence

After planning the murders of his family members for nearly one month, a male offender (offender #1) decided to commit the murders while an acquaintance visited. The acquaintance (offender #2) agreed to participate after the other offender promised to help him kill his own family as well. Offender #2 was instructed to shoot the family's boarder once he heard offender #1 fire his gun. Offender #1 shot his brother's girlfriend twice while she slept. He then shot his mother in the face as she attempted to get out of bed and his father in the head as he approached to disarm the offender. Offender #1 dragged his father's body back to the bed and then shot both parents in the chest—although they were already deceased. Finally, before they left the house, offender #1 shot the boarder again, despite clear evidence that the boarder was already dead from offender #2's single gunshot. All of the first shots each of the victims suffered resulted in wounds that caused instantaneous death; additional shots were overkill.

Gratuitous Violence Criteria:**Overall** = minor**Offender-specific** = none (offender #2)**Prolonged torture** = no**Prolonged torture** = no**Mutilation or overkill** = yes**Mutilation or overkill** = no**Posing of the body/souvenir** = no**Posing of the body/souvenir** = no**Sadistic behaviour** = no**Sadistic behaviour** = no

Medium amount of gratuitous violence

Three males attempted to rob a drunken man in his mid-thirties. When he had no money, alcohol, or cigarettes to offer, the youth became angered and started severely beating the victim with their hands, feet, sticks, and other makeshift weapons from a nearby, vacated lot. Though the offender under review and a second offender participated in beating the victim, the third offender reportedly taunted the victim multiple times by offering to let him up before continuing his assault of the victim. All three offenders helped remove the victim's shoes, jacket, and shirt before dragging him an extended distance across dirt, weeds, and gravel. The third offender, who had previously taunted the victim, then urinated onto the victim's cuts, causing unnecessary pain. He was left to die on a residential property when a man awoke, scaring the offenders away. The victim sustained multiple blows, many of which would have resulted in death.

Gratuitous Violence Criteria:**Overall = medium****Offender-specific = low****Prolonged torture** = yes**Prolonged torture** = yes**Mutilation or overkill** = yes**Mutilation or overkill** = yes**Posing of the body/souvenir** = no**Posing of the body/souvenir** = no**Sadistic behaviour** = yes-possibly**Sadistic behaviour** = no*Major amount of gratuitous violence*

An offender killed a young female he met at a party after they walked to a secluded lookout where they reportedly attempted to have consensual sex. After the

victim made an allegedly insulting comment about the offender's mother, the offender stated he became enraged. The offender claimed to have experienced multiple blackouts, though he reported that he strangled the victim for an extended period of time. He then stabbed the victim with a pocketknife 87 times in the chest and neck area. He also reported he stopped stabbing the victim briefly, when she pleaded to him about her suffering, after which he continued to stab the victim, nearly decapitating her. He then dragged and dumped her partially clothed body to a hillside with public hiking trails. He returned to the site with friends to show them the body and brag about the homicide. He was reported to have said that, "the knife didn't sound the way I thought it would when I cut her." Evidence from the offender's diary revealed the offender fantasized about murder and carried a knife for months waiting for an opportunity to arise.

Gratuitous Violence Criteria:

Overall/Offender-specific = Major

Prolonged torture = yes

Mutilation or overkill = yes

Posing of the body/souvenir = possibly-yes

Sadistic behaviour = possibly-yes

No evidence of sadistic violence

See example of minor gratuitous violence. Although offender #1 had planned and fantasized about the killings, his stated purpose was for revenge because his mother always nagged him about doing drugs and his brother's girlfriend never shared her

cigarettes. The father and the boarder were murdered in order to get away with the other two murders. However, neither offender displayed any evidence of, or verbally reported, deriving pleasure from the excessive violence perpetrated against all four victims.

Some evidence of sadistic violence

A male and female offender attacked a female acquaintance at a party in a wooded, nonresidential area. The female offender had been planning revenge for rumours that the victim allegedly spread. During the vicious assault, the female offender forced the victim to remove her clothes, adding to the victim's humiliation. The female offender then burnt the victim's breasts with a cigarette before eventually drowning her in a river.

Concrete evidence of sadistic violence

A female offender and her older adult boyfriend lured a 15-year-old female street kid up to a secluded mountain trail, promising her alcohol. The victim was hit in the face with a shovel and then bound with rope while both offenders participated in violently sexually assaulting her. The female offender then removed each of the victim's breasts before tying the victim behind their vehicle and dragging her for approximately two miles. The body was then dismembered and buried. The police investigation provided clear evidence that the female offender and her boyfriend engaged in extreme sadistic violence together and had expressed shared fantasies about raping and torturing an unspecified female (information derived from police reports including witness statements from friends and previous romantic partners with whom the offenders openly discussed their homicidal fantasy).

Appendix C: Ethics Approval

<https://rise.ubc.ca/rise/Doc/0/12HQNI3MATL4NEKBA7524991BB/fromString.html>

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The University of British Columbia
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Behavioural Research Ethics Board
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CERTIFICATE OF APPROVAL - MINIMAL RISK

PRINCIPAL INVESTIGATOR: Michael W. Woodworth	INSTITUTION / DEPARTMENT: UBC/UBCO IKE Barber School of Arts & Sc/UBCO Admin Unit 4 Arts & Sci	UBC BREB NUMBER: H08-00011
INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:		
Institution	Site	
N/A		
Other locations where the research will be conducted: The research will be conducted at Youth Forensic Psychiatric Services (YFPS) in Burnaby, B.C. A proposal has been simultaneously submitted to YFPS for ethical review and approval is expected without complication. Contact YFPS support and administration at 604-660-5756.		
CO-INVESTIGATOR(S): Ava D. Agar		
SPONSORING AGENCIES: N/A		
PROJECT TITLE: Characteristics of homicide as a function of psychopathy in a sample of youth offenders		

CERTIFICATE EXPIRY DATE: February 7, 2009

DOCUMENTS INCLUDED IN THIS APPROVAL:	DATE APPROVED: February 7, 2008	
Document Name	Version	Date
Protocol: Youth Homicide & Psychopathy Proposal	N/A	January 6, 2008
Other Documents: Appendix B -- Woodworth & Porter (2002)	N/A	January 1, 2002
Appendix C -- Paper Coding Form	N/A	January 6, 2008
Appendix A -- Coding Scheme	N/A	January 6, 2008
Appendix B -- Porter et al. (2003)	N/A	January 1, 2003
The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.		
<p>Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:</p> <hr style="width: 50%; margin: auto;"/> <p style="text-align: center;"> Dr. M. Judith Lynam, Chair Dr. Ken Craig, Chair Dr. Jim Rupert, Associate Chair Dr. Laurie Ford, Associate Chair Dr. Daniel Salhani, Associate Chair Dr. Anita Ho, Associate Chair </p>		