INSTRUMENTAL AND REACTIVE VIOLENCE:

THE ROLE OF MENTAL HEALTH FACTORS AND MALTREATMENT

HISTORY IN THE MANIFESTATION OF VIOLENT OFFENDING

by

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This dissertation is dedicated to my family. Mom, Dad, and Keith, I would not have gotten through this long haul without your continued support, both emotional and financial. I also want to recognize the example all three of you set in valuing advanced education. You were an alphabet of degrees to live up to!

...and Grandpa Douglas, I think this is pretty "Great"!

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Abstract

Researchers have consistently identified two distinct types of aggression: A "hot-blooded", impulsive, reactive form of aggression, and a "cold-blooded", premeditated, instrumental form of aggression. Despite the relevance of psychopathology to the prediction of violent offending, there has been limited research on the role of mental health factors in subtypes of severe criminal violence. Childhood maltreatment history has also demonstrated associations with both psychopathology and violence, yet has not been investigated in subtypes of severe violence in adults. In the current study, the relationships between mental health history, substance use, personality pathology, maltreatment, and subtypes of criminal violence were examined in a sample of 144 incarcerated male offenders. Domain-specific multinomial logistic regression analyses indicated that the likelihood of reactive violence was predicted by the severity of alcohol use history and polysubstance intoxication at the time of the offence. Whereas there was a trend for stimulant use history to be predictive of reactive violence, stimulant intoxication at the time of offence was exclusively associated with instrumental violence. Severity of opiate use history revealed a trend for association with the likelihood of instrumental violence. Specific Axis I mental health problems, personality pathology, and maltreatment history were not predictive of violence subtype. Although psychopathy was not a significant individual predictor of violence subtype, the interaction between substance intoxication and specific psychopathic traits contributed significantly to the prediction of violence subtype. A final logistic regression model identified stimulant intoxication, polysubstance intoxication, and alcohol use history as key predictors of violence subtype. This model allowed for the prediction of subtype of violence at a rate higher than chance. In addition to risk-factor analyses, person-focused analyses identified four clusters of offenders in the current sample: A High Psychopathology cluster, a Low Psychopathology cluster, an Antisocial cluster, and a Moderate Schizoid Traits cluster. Clusters differed significantly on psychopathology profiles, and were marginally different on maltreatment history. However, clusters demonstrated limited association with subtype of violence. Findings from this research have important implications for violence risk prediction, offender profiling, and developing targeted intervention services.

List of Abbreviations and Symbols Used

ADHD = Attention Deficit Hyperactivity Disorder

ANOVA = Analysis of Variance

APA = American Psychiatric Association

CAs = Community Assessments

CI = Confidence Interval

CSC = Correctional Service Canada

CPRs = Criminal Profile Reports

D = Depression (MMPI-2)

DSM = Diagnostic and Statistical Manual

DSM-IV-TR = Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition,
Text Revision

EPQ = Eysenck Personality Questionnaire

FBI = Federal Bureau of Investigation

GAF = Global Assessment of Functioning

Hs = Hypochondriasis (MMPI-2)

Hy = Hysteria (MMPI-2)

ICC = Intraclass Correlation Coefficient

LR = Likelihood ratio test

Ma = Hypomania (MMPI-2)

MANOVA = Multivariate Analysis of Variance

MCMI-III = Millon Clinical Multiaxial Inventory (3rd ed.)

MF = Masculinity-Femininity (MMPI-2)

MMPI-2 = Minnesota Multiphasic Personality Inventory (2nd ed.)

NEO-PI-R= Revised NEO Personality Inventory

OR = Odds Ratio

Pa = Paranoia (MMPI-2)

PARs = Psychological Assessment Reports

PCL-R = Psychopathy Checklist Revised

PCL-R-2 = Psychopathy Checklist Revised (2nd ed.)

PCL-SV = Psychopathy Checklist- Screening Version

PD = Psychopathic Deviate (MMPI-2)

PD-NOS = Personality Disorder Not Otherwise Specified

PET = Positron Emission Tomography

Pt = Psychasthenia (MMPI-2)

PTSD = Post Traumatic Stress Disorder

Sc = Schizophrenia (MMPI-2)

Si = Social Introversion (MMPI-2)

SUD = Substance Use Disorder

U.S. = United States

VAS = Violence Assessment Scheme

χ^2 = Chi-square test

η_p^2 = Partial eta-squared

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Chapter I:

Introduction

Criminal violence has a significant impact on our society, with regard to both the victims of the violence and the financial toll it entails on the criminal justice system. In Canada, over 311 000 violent crimes were committed in 2006 alone (Statistics Canada, 2007). In the same year, in the United States (U.S.), a violent crime was committed on average every 22 seconds (Federal Bureau of Investigation [FBI], 2007). In both countries, more than three quarters of the perpetrators implicated in violent crimes are male (FBI, 2007; Statistics Canada, 2003). Given these figures, a greater understanding of violent crime committed by male offenders appears necessary. The research detailed in this dissertation investigates predictors of the *nature* of violence committed by male offenders. This research examines various mental-health characteristics of male offenders that are both prevalent in correctional settings and have theoretical links with different forms of violence. I will begin by defining several key terms used in this dissertation, and then briefly introduce the goals of the current research.

Despite a plethora of studies with an explicit focus on aggression and/or violence, there is little consensus on definitions for these terms (Kaufmann, 1965; Stanford, Houston, Mathias, et al., 2003). Indeed, the terms "aggression" and "violence" have often been used interchangeably (e.g., Kingsbury, Lambert, & Hendrickse, 1997). Kingsbury et al. (1997) claimed that the term aggression is more often used in psychological literature, whereas the term violence is more often found in psychiatric literature. The definitional scope of these terms is also highly variable. Some authors have argued for a very broad

definition of aggression. For example, Rosenzweig (1977) proposed that the term "aggression" should not inherently imply negative behaviour. Given that the terms "hostility" and "violence" capture negative elements of aggression, Rosenzweig (1977) suggested that the term "aggression" be used to encompass both constructive and destructive actions taken to overcome an obstacle or move toward a goal. "Assertiveness" (undefined by the author) was identified as a key element of aggression in this definition (Rosenzweig, 1977). Other definitions of aggression have included the impact of the behaviour on another person. For example, Eron (1987) defined aggression as an act that results in injury or irritation to another person, either directly or via damage to property. This definition does not delineate between socially acceptable and unacceptable forms of aggression, nor does it differentiate between accidental and intentional harm.

The necessity of harmful intent for a behaviour to be defined as aggressive has received little consensus (Stanford, Houston, Mathias, et al., 2003). For example, Moyer's (1968) often-cited definition of aggression as a behaviour that leads to harm, damage, or destruction of an organism (as cited by Weinshenker & Siegel, 2002) does not explicitly address intention to harm. An additional definitional issue concerning the distinction between an act and possible outcomes of that act was identified by Kaufmann (1965). The author subsequently defined aggression as a behaviour that is directed at a target, is perceived by the actor as having a subjective probability of reaching that target, and is expected to remove the target from impeding the actor's goal and/or deliver a noxious stimulus to the target. Kingsbury et al. (1997) also incorporated the motivation of the *target* of the act in their definition of aggression, with an act being defined as aggressive only if the target is motivated to avoid harm. Thus, in incorporating all of

these elements, the categorization of a behaviour as "aggressive" requires knowledge of its social context, intentionality of the actor, harm to the target, and motivation of the target to avoid harm (Okey, 1992).

Although the terms have often been used interchangeably (e.g., Kingsbury et al., 1997), Meloy (1988, 2006) argued that the distinction between aggression and violence is important. He defined violence as a severe form of aggression, such that all violence is by definition aggression, but not all aggression violence (Meloy, 1988). Violence is defined as intentional physical aggression involving either the application of force or the overt threat of force that is likely to cause injury to another person or people. This differs greatly from definitions of violence in which non-physical acts such as yelling or insults are included as mild forms of violent behaviour (e.g., Tyrer et al., 2007). For the purposes of the current study, the definition of violence is adapted from that of Meloy (1988, 2006). Thus, violence is defined as a severe form of aggressive behaviour that involves the intentional application of physical force to another human, or the imminent threat of such force, where this force is unwanted by the target (who is therefore classified as a victim). Such behaviour is classified as criminal conduct under the [Canadian] *Criminal Code* (1985). "Aggression" is defined more broadly as intentional destructive behaviour that delivers noxious stimuli to a target. It should be noted, however, that throughout this dissertation I have preserved the terms used by other authors when citing their works.

Researchers have acknowledged that aggression is not a unitary construct, and that it is important to distinguish between subtypes of aggression (e.g., Kingsbury, Lambert, & Hendrickse, 1997). Although numerous classification systems have been proposed, a common thread in various classification systems has been a distinction

between what might be termed *motivational* subtypes of aggression. The term

"motivational" is used to refer to the intent or goals of the aggressor. While it is possible

to classify aggression and violence by a variety of parameters (e.g., number of victims,

degree of harm to the target, etc.), considerable research has focused on different types of

motivation for aggressive behaviour. Specifically, researchers have identified two distinct

yet correlated motivational subtypes of aggression: a reactive, impulsive, affectively-

driven ("hot-blooded") form of aggression, and a proactive, instrumental, premeditated

("cold-blooded") form of aggression (e.g., Barratt, 1991; Cornell, Warren, Hawk,

Stafford, Oram, & Pine, 1996; Dodge & Coie, 1987; Kingsbury et al., 1997; Meloy,

1988). This two-factor model of aggression has demonstrated support in numerous

populations, including school-aged children (Poulin & Boivin, 2000), adolescent clinical

samples (Connor, Steingard, Cunningham, Anderson, & Melloni, 2004; Vitiello, Behar,

Hunt, Stoff, & Ricciuti, 1990), college students (Barratt, Stanford, Dowdy, Leibman, &

Kent, 1999), adults with aggression problems (Stanford, Houston, Mathias et al., 2003),

and adult forensic populations (e.g., Cornell et al., 1996; Kockler, Stanford, Nelson,

Meloy, & Sanford, 2006). A number of researchers have suggested potentially important

differences in the correlates and risk factors for these subtypes of aggression (e.g.,

Kingsbury et al., 1997; Meloy, 1988). Indeed, certain individual difference variables

have emerged as potential markers that may distinguish between perpetrators of reactive

versus instrumental violence (e.g., Chase, O'Leary, & Heyman, 2001; Cornell et al.,

1996; Houston, Stanford, Villemarette-Pittman, Conklin, & Helfritz, 2003), although

there is a need for continued research to identify factors associated with different forms

of aggression.

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In violence prediction research, psychological and mental health variables have emerged as an important focus (e.g., Kropp, Hart, Webster, & Eaves, 1995; Swanson, Holzer, Ganju, & Jono, 1990; Webster, Douglas, Eaves, & Hart, 1997). In addition to being linked to violence in a number of populations, including correctional (e.g., Webster, Douglas, Eaves, & Hart, 1997), community (e.g., Swanson, Holzer, Ganju, & Jono, 1990), and non-clinical populations (e.g., Berman, Fallon, & Coccaro, 1998), mental health problems are extremely prevalent in correctional settings (e.g., Brink, Doherty & Boer, 2001; Hare, 1991, 1996; Longato-Stadler, Von Knorring & Hallman, 2001; McClellan, Farabee, & Crouch, 1997). There are considerable differences in the cognitive, affective, behavioural, and interpersonal characteristics of different mental disorders/mental health problems (e.g., APA, 2000). Thus, it might be expected that different mental health problems hold different patterns of association with the motivational subtypes of violence. Of specific interest in the current research were *Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition, Text Revision* (DSM-IV-TR; American Psychiatric Association [APA], 2000) Axis I disorders, including substance use disorders, and Axis II personality disorders and maladaptive personality traits. Given that childhood maltreatment has been linked to adult psychopathology (e.g., Bernstein, Stein & Handelsman, 1998; Cohen, Brown & Smailes, 2001), its role in the subtypes of violent offending also was investigated. The goal of the current dissertation research was to develop a greater understanding of the possible clinical correlates of instrumental and reactive forms of adult violence. Better understanding the clinical correlates can help elucidate specific risk factors for these two forms of violence and, hopefully, will lead to more targeted intervention approaches.

The introduction to this dissertation is organized into several sections. First, I review pertinent literature on motivational theories and models of aggression in humans. I identify important commonalities across models. I then turn to a review of the literature on psychopathology in offender populations. Within this section, I review research on the prevalence of various forms of psychopathology within offender populations, and discuss the association between clinical factors and violence. I subsequently review the small body of literature that has examined offender characteristics associated with different forms of aggression. The next section identifies major limitations of the existing research on clinical differences between forms of aggression and violence. Finally, I present the current program of research. I outline the theory, objectives, approach, and hypotheses for the research presented in this dissertation.

Motivational Theories and Models of Aggression and Violence

Motivation for Aggression

A number of different theories have been advanced concerning motivations for human aggression. Two of the major theories of aggression over the last century are Bandura's *social learning theory of aggression* (e.g., Bandura, 1978), and the *frustration-aggression hypothesis* (e.g., Berkowitz, 1989). Briefly, social learning theory posits that aggressive behaviour is controlled by reinforcement (Bandura, 1978). The model highlights the roles of observational and experiential learning in the acquisition of aggressive behaviour. Bandura (1978) emphasizes the "pull" of expected reinforcements in the motivation for aggressive behaviour, while acknowledging that some aggression may be motivated by the "push" of aversive stimuli. Thus, aggression is a learned

behaviour that is engaged in with the expectation of a positive outcome (Okey, 1992). The primary focus of this theory is on deliberate acts of aggression, as opposed to impulsive acts (Bandura, 1978). In this model, aggression is selected based on a learning history of positive outcomes for aggression, high self-efficacy for aggressive behaviour, and low expectation of efficacy of non-aggressive behaviour and/or contextual limitations to non-aggressive behaviour (Okey, 1992). According to Bandura (1978), theoretical formulations of aggression that focus on frustration-based motivation to harm are of limited utility, as they do not capture the range of possible motives for aggression.

Although often attributed to Berkowitz (e.g., Berkowitz, 1989), the original frustration-aggression theory was actually proposed by Dollard and colleagues in 1939 (Dollard, Doob, Miller, Mower, & Sears, 1939). The initial model proposed that all aggression could be explained by frustration in response to the thwarting of a goal expected to result in gratification. In an expansion of this model, Berkowitz (1989) identified negative affect as a critical component of the model. In what he labelled a "cognitive neoassociationistic model", aggressive behaviour is construed as the end product of a sequence of cognitive-affective processes, in which negative affect subsequently leads to aggressive feelings, and then to higher-order cognitive processing that leads to an aggressive behavioural response. The expanded theory of aggression also acknowledges possible subtypes of aggression, and proposes that the frustration-aggression theory is only applicable to "hostile" types of aggression.

As acknowledged by Berkowitz (1989), neither the social learning theory nor the frustration-aggression hypothesis independently capture the diversity of motives for aggressive or violent behaviour. The theories appear to differ in relative emphasis on

different aspects of motivation (reward versus aversive stimuli). As suggested by Dodge

and Coie (1987), each theory might be applicable to a specific subtype of aggression.

Specifically, the social learning theory and reward-based motivation might be implicated

in proactive aggression, whereas the frustration-aggression hypothesis and aversion-

based motivation might be more applicable to reactive aggression (Dodge & Coie, 1987).

Early work on aggression acknowledged that violence is not a unitary construct, and

consists of different subtypes (Feshback, 1964). A number of different subtyping systems

have been proposed, and are outlined below and summarized in Table 1. There are

numerous commonalities across these proposed systems, which are subsequently

discussed.

<div align="center">Proposed Subtypes of Aggression</div>

Impulsive and Premeditated Aggression

Barratt (1991) initially proposed a schema of three forms of aggression:

spontaneous/impulsive aggression, psychopathology/medically-related aggression, and

premeditated aggression. Spontaneous/impulsive aggression was defined as an

aggressive behavioural response lacking in self-control. Psychopathology/medically-

related aggression was described as aggression stemming from agitation due to acute

mental health symptoms or brain injury/pathology. Premeditated aggression was

described as a learned behaviour that involves planning. Barratt suggested that

individuals who engage in spontaneous/impulsive aggression are easily provoked, and

that impulsive aggression is associated with the personality traits of anger-hostility and

impulsivity. Impulsive and premeditated aggression appear to map onto the frustration-

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aggression (Berkowitz, 1989) and social-learning (Bandura, 1978) models of aggression, respectively.

Using factor-analysis of self-reported aggressive acts, Barratt's (1991) model of aggression was subsequently examined in a non-clinical student sample (Barratt et al., 1999). Study findings suggested four subtypes of aggression; along with impulsive and premeditated forms of aggression, *agitation* and *mood on the day* of the behaviour also emerged as contributing factors. Impulsive aggression was characterized by an impulsive act that was more extreme than warranted by provocation, and was associated with cognitive confusion, lack of self-control, and subsequent guilt. Self-reported anger and impulsivity measures were found to relate to this form of aggression, as hypothesized. Premeditated aggression was characterized by planning, and was associated with a motive of either achieving dominance or financial reward. Agitation aggression was associated with an agitated state resulting from goal-directed behaviour being thwarted, resulting in a change of mood and subsequent aggression. 'Mood on the day' aggression was characterized by a negative, irritable affective state preceding the incident, which was exacerbated by provocation. Barratt et al.'s (1999) results indicated that both impulsive and premeditated aggression are reported in most individuals, but are independent constructs.

Impulsive and premeditated aggression were subsequently examined in a community sample of aggressive men (Stanford, Houston, Mathias et al., 2003) as well as a sample of male and female forensic psychiatric patients (Kockler et al., 2006). Using a self-report measure of these subtypes of aggression, impulsive aggression was defined as a spontaneous, behaviourally uncontrolled response to perceived provocation, whereas

premeditated aggression was defined as a purposeful, planned, and conscious action that

is not associated with an agitated state. Participants in both samples were assigned to

either subtype based on whether their aggressive acts in the past six months were

predominantly of one type of aggression or the other. Whereas three factors were actually

identified in the community sample (*familiarity with target/remorse/agitation*, in addition

to impulsive and premeditated aggression), the focus was on impulsive and premeditated

aggression in both samples. In the community sample, 90% of individuals were classified

as having predominantly impulsive aggression, and 10% with predominantly

premeditated aggression (Stanford, Houston, Mathias et al., 2003). In the forensic

psychiatric sample, 60% of patients were classified as displaying predominantly

impulsive aggression, and 40% premeditated aggression[1]. In the forensic sample,

principal components analyses confirmed two distinct factors (impulsive and

premeditated aggression); however, the scales were significantly correlated, with $r = .40$

(Kockler et al., 2006).

Reactive and Proactive Aggression

Explicitly incorporating both the social learning theory of aggression (e.g.,

Bandura, 1978) and frustration-aggression hypothesis (e.g., Berkowitz, 1989), Dodge and

Coie (1987) developed and examined a model of *reactive* and *proactive* aggression in

school-aged children. Reactive aggression was described as retaliatory aggression in

response to a perceived threat (i.e., the "push" to aggressive behaviour suggested by the

frustration-aggression model; Berkowitz, 1989), whereas proactive aggression was

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[1] In male patients, the ratio was 64:36 impulsive to premeditated aggression, and in
female patients the ratio was reversed, with 33:67 impulsive to premeditated aggression.

described as aggressive behaviour that is perceived as a viable means of achieving a

specific goal (i.e., the "pull" to aggression by anticipated rewards suggested by the social

learning theory of aggression; Bandura, 1978). The authors found evidence for construct

validity in a series of studies, with reactive and proactive aggression loading onto

separate factors (Dodge & Coie, 1987). The majority of children scored either high or

low on both types of aggression. This model has subsequently been supported by a

number of other youth studies (e.g., Connor et al., 2004; Poulin & Boivin, 2000;

Washbusch, Willoughby, & Pelham, 1998).

Hostile and Instrumental Aggression

Kingsbury and colleagues (1997) presented a *hostile* and *instrumental* model of

aggression, and hypothesized potential physiological correlates and psychological states

associated with each subtype. The authors described hostile aggression as an annoyance-

motivated behaviour that is associated with increased arousal, and that is facilitated by

affective states such as rage or frustration. Instrumental aggression was described as

aggression as a "means to an end"-- that is, incentive motivated behaviour. Operant

conditioning and expectations were identified as explanatory factors for this form of

aggression, with the social context of reinforcement being important (consistent with

Bandura's social learning theory of aggression; Bandura, 1978). Kingsbury and

colleagues (1997) proposed a number of different psychological factors as important

elements of the two subtypes of violence: the ability to experience or anticipate remorse;

the ability to anticipate aversive outcomes of aggression; arousal; disinhibition; affective

states such as anger, frustration or fear; and cognitive processing factors. The authors

acknowledged that displays of aggression can contain elements of both subtypes of

aggression, and that engaging in one form of aggression could increase the risk for the other form of aggression (e.g., the increased arousal associated with physically enacting instrumental aggression may prime an individual for hostile aggression).

Affective and Predatory Aggression

Drawing from animal research on the neurochemistry and neurophysiology of aggression, Meloy (1988, 2006) proposed *affective* and *predatory* subtypes of aggression in humans. These terms were chosen due to their prior use in non-human animal research. Affective aggression was defined as aggression in response to threat stimuli (external or internally perceived), resulting in sympathetic arousal, activation of the autonomic nervous system, and a subsequent subjective experience of emotion (anger and/or fear). Violent behaviour was proposed to follow closely from arousal and an aggressive reaction, with the goal of the behaviour being threat reduction. This sequence was described as time-limited, and may be preceded by overt cues such as aggressive or submissive behaviour. Meloy (1988) also proposed that the target of the aggression could be displaced if someone were to intervene. Affective aggression may be characterized by hypervigilance to stimuli, and while engaged in this form of aggression, individuals may show evidence of loss of reality testing. This form of aggression was proposed to be the most common form of aggression, and to have an evolutionary basis in self-protection (Meloy, 1988, 2006).

In contrast to the emotional dimension of affective aggression, Meloy (1988, 2006) described predatory aggression as characterized by minimal or absent arousal, and limited experience of emotion (other than possibly exhilaration). Meloy's (1988, 2006) definition of predatory aggression involves intentional, planned, and purposeful

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behaviour. The motives of the aggression may include retribution or vengeance, sadism, compulsive behaviour, relief of psychotic symptoms, or behaviour for instrumental gain (e.g., resources, status). Threat is not immediate, or is minimal or absent in predatory aggression. Meloy (1988) suggests that predatory aggression involves a time-*un*limited behavioural sequence. In contrast to affective aggression, in predatory aggression there is minimal or absent displacement of the target of aggression, and unimpaired reality testing. Meloy (1988, 2006), as with Kingsbury et al. (1997), proposed that the subtypes of aggression can occur sequentially, with either form of aggression leading to the other type of aggression. For example, Meloy (1988) suggested that an individual might engage in goal-directed violence in an attempt to cover up reactive violence. Additionally, Meloy (2006) noted that it is unclear whether predatory and affective violence represent a single, bipolar construct, or two dimensions.

A model of predatory and affective types of aggression has also been examined with childhood aggression. Vitiello and colleagues (1990) examined these subtypes of aggression in chronically aggressive male and female child and adolescent psychiatric patients. They used cluster analysis to confirm the subtypes of aggression, although factor analyses indicated only one factor, with positive or negative loadings of either subtype onto a total aggression score. Score distribution in their sample was bimodal, and suggested one group with mainly affective aggression, and one group with mixed affective-predatory aggression.

Weinshenker and Siegel (2002) also used similar terminology in their proposed bimodal classification of human aggression. The authors synthesized the animal and human literature on models of aggression, and proposed *affective defence* and *predatory*

attack subtypes of aggression to incorporate various previously proposed models. In their classification system, affective defence includes aggressive responses to real or perceived fear and/or threat stimuli, and is associated with activation of the autonomic nervous system. Predatory attack involves goal-directed aggressive behaviour, which is either incidental/as a means to an end for another goal, or in which the harm itself is the goal. This form of aggression is characterized by the absence of sympathetic arousal. The authors propose that these subtypes incorporate both the adult and child literature of human aggression, which have a range of terminology, as well as linking to animal models of aggression. Weinshenker and Siegel acknowledge that some aggressive acts may contain elements of both forms of aggression, and suggest classifying an *individual* based on his/her ratio of affective defence relative to predatory attack behaviours. McEllistrem (2004) provided a similar review of the literature on forms of animal and human aggression, and endorsed a bimodal model of affective and predatory violence.

Reactive and Instrumental Violence

Cornell and colleagues (1996) focused their examination of aggression subtypes on criminal violence. Within samples of correctional and forensic psychiatric offenders, the authors investigated violent offenders classified as either *reactive* or *instrumental*. Reactive violence was defined as violence in reaction to a dispute or interpersonal conflict (i.e., "push" to behaviour). Typical examples of reactive violence included violence stemming from an argument with an estranged spouse or a dispute with acquaintances. This form of violence was described by Cornell et al. (1996) as being consistent with Berkowitz' (1989) frustration-aggression hypothesis. Instrumental violence was defined as violence for a clearly identifiable purpose other than as a

response to provocation or frustration. Cornell et al. proposed that such violence typically takes place within the context of a robbery or burglary. Instrumental violence was explicitly conceptualized as consistent with Bandura's (1978) social learning theory of aggression (i.e., "pull" to behaviour). Offenders were classified based on their history of each type of violence; reactive violent offenders were those with a history of exclusively reactive violent acts, whereas those with any history of instrumental violent acts were classified as instrumental offenders. Of correctional offenders, approximately 53% were classified as reactive, and 47% were classified as instrumental. Among forensic patients, 60% were classified as reactive, and 40% as instrumental.

Reactive and instrumental aggression were subsequently discussed within the context of emotion theory by Patrick and Zempolich (1998), as part of a larger theoretical review of aggression. Reactive aggression was conceptualized as aversion/defence motivated (i.e., "push" to aggression), whereas instrumental aggression was conceptualized as motivated by appetite/reward (i.e., "pull" to aggression).

Woodworth and Porter (2002) further examined reactive and instrumental criminal violence in a sample of homicide offenders. They adapted Cornell et al.'s (1996) definition of reactive and instrumental violence to a four-level scheme of *purely reactive*, *reactive-instrumental*, *instrumental-reactive*, and *purely instrumental* to account for the presence of dual motives during violence offences. Woodworth and Porter's (2002) classification scheme primarily considered degree of instrumental gain, impulsivity, and level of antecedent arousal, rated based on official descriptions of the offence. In contrast to Cornell et al. (1996), in Woodworth and Porter's (2002) scheme, instrumental violence included both violence committed as a means to achieve an external goal (e.g., to acquire

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resources), and also violence committed where harm is the intent of the act (e.g., revenge, acts of sadism). When the most recent act of homicide was examined among incarcerated homicide offenders, approximately 13% of the offences were classified as purely reactive, 23% as reactive-instrumental (thus 36% primarily reactive), 20% as instrumental-reactive, 36% as purely instrumental (thus 56% primarily instrumental), and 8% were unclassifiable.

Commonalities across Subtype Models of Aggression

Table 1 provides a summary of the various subtype models of aggression. While variation in terminology across models of aggression can be problematic (McEllistrem, 2004), despite inconsistent nomenclature there are a number of common elements present in each of the proposed systems outlined above. First, most propose bimodal models of aggression. Although a few studies identified either more than two factors (Barratt et al., 1999; Stanford, Houston, Mathias et al., 2003) or just one factor (e.g., Vitiello et al., 1990), the research does seem to support two distinct (albeit potentially not mutually exclusive) subtypes of aggression with different motives and characteristics. Most models incorporated the degree of planning or premeditation versus impulsivity of an offence, the role of arousal and affect, the presence or absence of provocation or perceived threat (along with the immediacy of response to this perceived threat), the intentionality of the aggression, and the presence of an external goal for the aggression. Some models distinguished between the influence of cognitive factors relative to affective factors for the aggression (e.g., Meloy, 1988). Although not all models incorporate all of the aforementioned elements, and the relative weight given to each of the elements may differ across models, there appears to be a general consensus across the literature on

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aggression and violence that there are two distinct forms of aggression: a reactive, affectively-driven, highly aroused, impulsive response to perceived threat (i.e., "push" toward aggression), versus a premeditated, non-affectively driven reward-seeking behaviour that is not associated with heightened arousal (i.e., "pull" toward aggression).

Some models differ on the types of goals associated with motivation for the latter form of violence, with some including only extrinsic or non harm-motivated goals, such as to secure resources (e.g., Cornell et al., 1996), whereas others allow for harm or pain as a goal in-and-of itself, such as for revenge or sadism (e.g., Meloy, 1988; Woodworth & Porter, 2002). However, as noted by Kauffmann (1965), pain-directed aggression can be conceptualized as consistent with other forms of instrumental aggression, as only the reinforcing stimuli differ (i.e., pain cues versus other sources of reinforcement). The degree to which each subtype of aggression is "allowed" to co-occur within one individual also varies across systems; in some models, the presence of *any* prior acts of instrumental violence (irrespective of a history of reactive violence) categorizes an individual as instrumental or predatory (Cornell et al., 1996). In other models, the relative proportion of each type of act is the determining factor (Kockler et al., 2006; Stanford, Houston, Mathias et al., 2003), whereas in others either the *degree* of instrumentality-reactivity of an act (Woodworth & Porter, 2002) or the history of *both* acts (e.g., Connor et al., 2004) is examined. The empirical basis for these different structural models is unknown. One study assessing a scale that measures aggressors' representations of their own aggression failed to determine whether the construct was best represented as uni- or bi-dimensional (Campbell, Muncer, McManus, & Woodhouse, 1999).

Table 1.

Models of aggression subtypes.

Model elements	Subtypes		
	Impulsive & premeditated aggression[a, b, c, d]	Reactive & proactive aggression[e]	Hostile & instrumental aggression[f]
Relationship between subtypes	Both can be present in the same individual; generally correlated.	Two factors; correlated scales.	Act can contain elements of both subtypes.
Classification	Classify actor based on predominant category of recent acts.	Actor receives scale scores for both types of aggression.	Not specified.
Key elements (presence or absence)	Self-control/ impulsivity; perceived provocation; planning; purpose-driven.	Perceived threat; goal-directed.	Annoyance; arousal; rage/frustration; incentive.

Table 1 (continued).

	Subtypes	
Model elements	Affective & predatory aggression[g, h, i, j]	Reactive & instrumental violence[k, l, m]
Relationship between subtypes	May be uni- or bi-dimensional[g]; or, one factor with subtypes loading positively or negatively, with bimodal distributions[i].	Mutually exclusive
Classification	Not specified[g,h], or, scale scores for actor[i], or, classify individual based on ratio of acts[j].	Classify actor based on history of whether exclusive reactive violence or any history of instrumental violence[k], or, rating based on one act[l].
Key elements (presence or absence)	Threat/fear; arousal; cognitive versus affective; planning; incentive; time-limited versus unlimited.	Interpersonal conflict; external goal; harm as goal[l]; immediacy[l]; arousal[l]; impulsivity[l].

Note. Superscripts are used to identify key model authors, and model elements associated exclusively with one set of authors. [a]Barratt (1991); Barratt et al. (1999). [b]Kockler et al. (2006). [c]Stanford, Houston, Mathias et al. (2003). [d]Barratt (1991) also proposed a third *medically-related* subtype of aggression, which does not appear to have received further examination. Barratt et al. (1999) and Stanford, Houston, Mathias et al. (2003) also identified additional subtypes using factor-analyses, but these factors were not investigated further. [e]Dodge and Coie (1987). [f]Kingsbury, Lambert, and Hendrickse (1997). [g]Meloy (1988, 2006). [h]McEllistrem (2004). [i]Vitiello et al. (1990). [j]Weinshenker and Siegel (2002) used the similar terms *affective defence* and *predatory attack.* [k]Cornell et al. (1996). [l]Woodworth and Porter (2002). [m]Woodworth and Porter also included a four-point scale, with *purely reactive*, *reactive-instrumental*, *instrumental-reactive*, and *purely instrumental* response options.

Addressing the Constraints of a Two-Factor Model of Aggression

There has been some criticism of bimodal models of aggression. Bushman and Anderson (2001) discussed perceived problems with a hostile-instrumental dichotomy, and suggested that it does not accurately capture the range of possible motives for aggression, nor does it capture acts of aggression with multiple motives. However, the authors appear to be using the term "instrumental" to refer to any premeditated act of aggression, and the term "hostile" to refer to any spontaneous acts of aggression. Their critique of "instrumental" and "hostile" forms of aggression thus seems to ignore the other elements relevant to a distinction between types of aggression (as noted above). For example, the authors specifically fail to mention the importance of affect, emotion, and impulse control in the model they critique. Further, several models *have* allowed for the co-occurrence of more than one motive during an act of aggression (e.g., Woodworth & Porter, 2002).

In summary, although there have been a number of proposed subtyping systems for aggression, there are common features across models, with a consistent distinction between an affective, impulsive form of aggression that appears to occur in reaction to aversive stimuli, and a predatory, instrumental form of aggression that appears reward-motivated. For the purposes of the current dissertation, I have selected the terms "instrumental" and "reactive" to reflect the subtypes of violence under investigation in the research presented herein. The specific operational definitions of these subtypes are presented in the next chapter, and represent a synthesis of the elements identified as important to these subtypes, as described above.

Psychopathology, Childhood Maltreatment, and Offenders

Psychopathology in Offender Populations

DSM-IV-TR defined Axis I and II mental disorders are frequent in both federal and provincial/state correctional settings (Brink, 2005; Brink, Doherty, & Boer, 2001; Daniel, Robins, Reid, & Wilfley, 1988; Longato-Stadler et al., 2001; Peters, Greenbaum, Edens, Carter, & Ortiz, 1998; Teplin, 1994). Specifically, the prevalence of any lifetime Axis I mental disorder was found to be 84.2% in an incarcerated sample of Canadian federal offenders, with 31.7% currently meeting diagnostic criteria (Brink et al., 2001). In this sample, a lifetime history of mood disorders was found in 30.2% of offenders, while 8.4% of the sample had a history of psychosis. The most prevalent disorders in this population were substance use disorders, at 75.7% for lifetime rates. The authors noted that the rates of both current and lifetime disorders were much higher in the sample of offenders than the rates reported for the general population (Brink et al., 2001). Similarly, a Canadian study of remanded offenders suggested current prevalence of any Axis I or II mental disorder(s) at 94% (Corrado, Cohen, Hart, & Roesch, 2000). Other studies have reported similar rates of mental and substance use disorders in offenders (Daniel et al., 1988; Peters et al., 1998; Teplin, 1994).

In addition to substance use disorders, research has demonstrated high rates of substance use among offenders, including the time period immediately preceding the commission of the index offence. A large-scale study of Canadian federal offenders found that 62.7% of recently admitted offenders were regular alcohol users, and 80.5% had a history of illicit drug use (Brochu, Cousineau, Gillet, Cournoyer, Pernanen, & Motiuk, 2001). Canadian federal offenders have also reported elevated rates of heavy

alcohol (63%) and drug (38%) consumption in the six months preceding their most serious index offence (Lightfoot & Hodgins, 1993). In addition, 51% of offenders report being intoxicated on the day of their index offence (Brochu et al., 2001).

Personality disorders, as conceptualized by the DSM-IV-TR (APA, 2000), are also ubiquitous in corrections settings, with studies finding prevalence rates over 35% in some inmate populations (e.g., Longato-Stadler et al., 2001; Rasmussen, Storsæter, & Levander, 1999; Rotter, Way, Steinbacher, Sawyer, & Smith, 2002). DSM-Cluster B (APA, 2000) personality disorders appear the most common (Longato-Stadler et al., 2001; Rasmussen et al., 1999; Rotter et al., 2002), although paranoid personality disorder also appears frequent in some samples (Longato-Stadler et al., 2001; Rasmussen et al., 1999).

Although not included in the current DSM (APA, 2000), psychopathy is a personality disorder characterized by affective, interpersonal and behavioural deficits (Hare, 1991; 1996). As measured by the Psychopathy Checklist – Revised (2nd Edition; Hare, 2003), psychopathy consists of two factors, each representing two facets: Factor 1, consisting of interpersonal and affective facets, and Factor 2, consisting of antisocial behaviour and deviant lifestyle facets (Hare, 2003). The prevalence of psychopathy in correctional settings ranges between 15-30% for males, whereas it is estimated to be present in only about 1% of the general population (Hare, 1991, 1996). In addition to its high prevalence in correctional settings, psychopathy is also relevant to mental health in offenders through its comorbidity with other psychopathology. For example, higher rates of substance use disorders have been found in psychopathic offenders relative to non-psychopathic offenders (Rasmussen et al., 1999; Smith & Newman, 1990). In addition,

an association between symptoms of psychopathy and prevalence of substance use

disorders has been found in forensic psychiatric patients (Hart & Hare, 1989; Nedopil,

Hollweg, Hartmann, & Jaser, 1995; Stalenheim & von Knorring, 1996). Although there is

no evidence for statistically elevated rates of other mental disorders among psychopaths,

comorbidity can occur (e.g. Nedopil et al., 1995; Stalenheim & von Knorring, 1996).

Unfortunately, there is a dearth of literature on the influence of comorbid

mental/substance use disorders on the manifestation or course of psychopathy.

In addition to elevated *rates* of psychopathology among offenders, prior research

suggests that there may be distinct *groups* of offenders characterized by different profiles

of psychopathology. Tweed and Dutton (1998) identified two main groups of domestic

violence offenders: one group characterized by narcissistic, antisocial, and aggressive

features, and a second group characterized by DSM Cluster A, B and C features

(odd/eccentric, dramatic/erratic, and anxious/fearful, respectively; APA, 2000) and higher

levels of trauma symptoms. Other offender classification studies have identified

additional groups of offenders, often including an antisocial personality group, a

dramatic/erratic group, a group with limited psychopathology, and occasionally groups

characterized by DSM Cluster A and/or Cluster C (APA, 2000) personality features (e.g.,

Hamberger & Hastings, 1986; Taylor, Kemper, Loney, & Kistner, 2006).

Mental Disorders and Violence

In addition to substantial prevalence rates in correctional settings, mental health

factors are also specifically relevant to understanding and predicting violence. Although

clinical and public opinion has been equivocal on the matter, empirical investigations

have demonstrated a moderate, but significant association between mental disorder and

violent behaviour (e.g. Monahan, 1992; Swanson, Borum, Swartz, & Monahan 1996; Swanson et al, 1990). In an epidemiological survey of approximately 10,000 participants, schizophrenia and major affective disorders were found to increase the odds of violence fourfold in one year (Swanson et al., 1990). Studies conducted with homicide offenders and recently discharged psychiatric patients, as well as prospective cohort studies, have confirmed the association between major mental illness and violence (Hodgins, 1995). Substance misuse, and substance use disorders have also been consistently linked to increased risk for violence (e.g., Friedman, 1998; Steadman et al., 1998; Swanson, 1994; see Dowden & Brown, 2002, for a recent meta-analysis). The physiological effects of various types of drugs have been shown to increase the propensity for aggressive and violent behaviour (see Miller & Potter-Efron, 1989; Pihl & Hoaken, 1997).

In addition to Axis I mental disorders, personality disorders and symptoms of personality pathology have been linked to increased risk of violence. Johnson, Cohen, Smailes, Kasen, Skodol, and Brook (2000) found that youth diagnosed with a personality disorder had higher rates of violent behaviour than those without such a diagnosis. Specifically, both Cluster A (odd/eccentric) and Cluster B (dramatic/erratic) personality disorders were associated with violence. In addition, *symptoms* of paranoid, narcissistic, and passive-aggressive personality disorder were associated with an increased risk for violent behaviour. The authors did not examine antisocial personality disorder due to the age of their sample (Johnson et al., 2000), since a diagnosis of antisocial personality disorder can only be made for adults (APA, 2000). Among patients in substance use treatment, antisocial personality disorder, borderline personality disorder, and schizoid personality disorder have all been found to be postdictive of self-reported violent crime

(Hernandez-Avila et al., 2000). Following treatment, borderline personality disorder predicted self-reported violence (Hernandez-Avila et al., 2000). Within a community sample, a diagnosis of either antisocial personality disorder, narcissistic personality disorder, or passive-aggressive personality disorder was found to correlate with impulsive aggression (Berman et al., 1998). Within this sample, *symptoms* of antisocial, borderline, histrionic, narcissistic, paranoid, and passive-aggressive personality pathology were also positively correlated with aggressive behaviours (Berman et al., 1998). Interestingly, even after controlling for other mental health factors, and antisocial and borderline personality symptoms, both passive-aggressive and paranoid personality symptoms still contributed to violence prediction (Berman et al., 1998).

Psychopathy has also been extensively studied in relation to criminal violence. Results indicate that the association between psychopathy and violence is unequivocal; in a meta-analysis, Salekin, Rogers, and Sewell (1996) described the ability of psychopathy to predict violence as "unparalleled" and "unprecedented". Within the first year following release from prison, psychopaths are four times more likely to reoffend violently than other offenders (Hemphill, Hare, & Wong, 1998). The predictive validity of psychopathy extends to forensic psychiatric patients (e.g., Hare, 1999), and civil psychiatric patients (Skeem & Mulvey, 2001).

Personality Traits and Violence

In addition to mental disorders and personality pathology, it has been suggested that specific personality *traits* may be associated with violence (e.g., Nestor, 2002; Skeem, Miller, Mulvey, Tiemman, & Monahan, 2005). These personality traits may operate in populations both with and without mental/personality disorders, and may serve

as important risk factors for violence in-and-of themselves (Bjørnebekk, 2007; Skeem et al., 2005). However, certain mental/personality disorders may be specifically characterized by the presence of these personality traits that then serve to elevate risk for violence in these populations (Nestor, 2002). Within civil psychiatric patients, Skeem et al. (2005) found that traits from the Five-Factor model of personality were equally postdictive of violence as psychopathy, after controlling for associations with past misconduct. In addition, even after controlling for past antisocial and violent behaviour, the Five-Factor model and psychopathy *each* captured a small amount of unique variance in violence (Skeem et al., 2005). Nestor (2002) posited that four personality dimensions underlie the association between mental disorder and violence: impulsivity, affect dysregulation, narcissism, and paranoia. The author hypothesized that impulsivity and affect dysregulation may be implicated in the association between *all* mental disorders and violence, to varying degrees. Additionally, he outlined the possible role of narcissism in the association of Cluster B personality disorders and psychopathy with violence. Finally, he suggested that paranoia could have a role in explaining the association between psychosis/schizophrenia spectrum disorders and violence (Nestor, 2002).

Prevalence of Childhood Maltreatment among Offenders

In addition to psychopathology, childhood maltreatment is an important construct in correctional mental health. Although findings are varied, a history of childhood maltreatment appears common among male offenders. For example, 23.5% of male inmates self-reported a history of physical abuse, 4.5% reported a sexual abuse history, and 17.7% reported emotional abuse in a study conducted by McClellan and colleagues (1997). In a different sample of male offenders, approximately 40% self-reported a

history consistent with sexual abuse, although only slightly more than half of those offenders considered themselves to have been victimized (Fondacaro, Holt, & Powell, 1999). Even higher rates of sexual abuse were reported in a sample of inmates in a county jail, with 59% reporting some form of sexual abuse history (Johnson et al., 2005). Although there is considerable variability in reported prevalence rates for childhood maltreatment, it appears that rates of childhood maltreatment among male offenders are either comparable to, or exceed, rates of childhood maltreatment in the general male population (see Briere & Elliott, 2003).

Childhood Maltreatment and Psychopathology

Childhood maltreatment has been linked to the development of psychopathology in adulthood (e.g., Bernstein, Stein & Handelsman, 1998; Cohen, Brown & Smailes, 2001). In fact, maltreatment appears to confer increased risk for the development of many forms of Axis I and II psychopathology, including major depressive disorder, substance use disorders, and Cluster B personality pathology (Cohen et al., 2001). Other research has suggested elevated rates of anxiety disorders (Fergusson, Horwood, & Lynskey, 1996) and symptoms of Attention Deficit Hyperactivity Disorder ([ADHD] Shields & Cicchetti, 1998; Simmel, Brooks, Barth, & Hinshaw, 2001) in maltreated populations. Childhood maltreatment is also currently emerging as an issue of relevance to psychopathy. For example, in a large sample of young adults, Weiler and Widom (1996) found that those who had been victims of childhood abuse or neglect had significantly more psychopathic traits than those with no maltreatment history. Similarly, among adult male and female offenders who had undergone court-ordered mental health assessments, psychopathy characteristics were found to correlate with the presence of a childhood

maltreatment history (Koivisto & Haapasalo, 1996). These increased rates of various

forms of adult psychopathology have led researchers to hypothesize that childhood

maltreatment is a nonspecific risk factor for psychopathology in general, with the specific

form of subsequent psychopathology determined by other factors (Ruggiero, Berstein, &

Handelsman, 1999).

Childhood Maltreatment and Violence

The exact mechanisms for the association have yet to be delineated; however, the

relationship between youth maltreatment and later commission of violence also appears

unequivocal, at least among male perpetrators (e.g., Dodge, Bates, & Pettit, 1990;

Haapasalo & Moilanen, 2004; Hosser, Raddatz, & Windzio, 2007; Widom, 1989a).

Findings from a large-scale cohort study indicated that abuse and neglect of male

children increases the risk for subsequent criminal violence as a juvenile or adult

(Widom, 1989a). Among male young offenders, childhood physical abuse is predictive

of self-reported violent criminality (Haapasalo & Moilanen, 2004). Similarly, adolescent

victimization heightens the risk for later violent offending among young men (Hosser et

al., 2007). The relationship between maltreatment and subsequent aggression appears to

hold even when other ecological and biological factors are accounted for (Dodge, Bates,

& Pettit, 1990).

Summary

As reviewed above, both theory and research demonstrate the importance of

various forms of psychopathology, personality traits, and childhood maltreatment history

to violent offending. More specifically, Axis I mental disorders, including psychotic,

affective, and substance use disorders are associated with increased risk for violence. In

addition, both Cluster A (odd/eccentric) and Cluster B (dramatic/erratic) personality

disorders and symptoms have consistently demonstrated an association with violence.

Underlying (higher-order) personality traits such as those tapped by the Five-Factor

model of personality have also been proposed as risk factors for violence. Both abuse and

neglect during childhood have been shown to increase risk for the perpetration of

violence in adulthood. The role of individual difference factors in *subtypes* of aggression

and violence has received less attention; the available literature on this latter topic is

reviewed below.

Perpetrator Characteristics and Motivational Subtypes of Violence

Research on individual difference characteristics associated with subtypes of

criminal violence in adults is very limited. There is a small body of literature on clinical,

personality, family history, and offending-related characteristics associated with subtypes

of aggression in various youth and adult populations.

Psychopathology and Subtypes of Violence

Axis I Mental Disorders and Symptoms

A number of researchers have suggested that substance use might be relevant to

subtypes of aggression. For example, Meloy (1988) proposed that the use of stimulant

drugs might be part of a ritual associated with predatory aggression. Kingsbury and

colleagues (1997) also suggested that intoxication might be associated with instrumental

aggression, by reducing the ability to anticipate aversive outcomes of aggressive

behaviour. In contrast, they also suggested that stimulant intoxication and alcohol

withdrawal may increase the risk for hostile aggression, due to an increase in arousal or

negative emotional states, or through a decreased "stimulus threshold" at which an individual will respond aggressively. In youth, studies have found that a history of substance use disorders is associated with predatory/proactive aggression (Connor et al., 2004; Vitiello et al., 1990). Similarly, substance intoxication loaded onto the premeditated aggression factor in a community sample of physically aggressive men (Stanford, Houston, Mathias et al., 2003).

There has been even less attention to other forms of Axis I psychopathology and subtypes of aggression. Kingsbury, Lambert, and Hendrickse (1997) hypothesized that a clinical condition or state that increases arousal and/or negative emotional states, such as fear, or decreases cognitive processing, might increase the risk for hostile aggression. The authors cite mania, psychosis, post-traumatic stress disorder, delirium, and depression as possible examples of pertinent clinical conditions. Meloy (2006) postulated that major mental disorders are not associated with a specific subtype of violence, but that some mental states (e.g., psychosis, anxiety) may result in a perception of increased threat, thereby increasing the risk for affective violence. Meloy (2006) proposed, however, that delusions might lead to predatory violence. Among youth, patients with a history of affective aggression are more likely to have a diagnosis of schizophrenia, and to have been treated with psychotropic medication than those with a history of predatory aggression (Vitiello et al., 1990). In contrast, conduct problems and ADHD were equally associated with both forms of aggression in two studies (Connor et al., 2004; Vitiello et al., 1990), whereas hyperactivity was uniquely characteristic of proactive aggression in another sample (Raine et al., 2006). The association between Axis I psychopathology and subtypes of aggression/violence in adults remains virtually uninvestigated.

Personality Disorders and Traits

Whereas little research has examined the link between Axis I disorders and subtypes of aggression, more attention has been paid to the role of personality in the subtypes of aggression. As stated by Meloy (1988), personality may be a critical factor in determining subtype of violence, as personality "… provides the vehicle for the violence itself, regardless of the motivational or instrumental context" (p. 223). Meloy proposed that borderline, narcissistic, and psychopathic personality characteristics are linked to predatory violence. A number of other authors have hypothesized about the role of personality disorders in subtypes of aggressive behaviour. Kingsbury et al. (1997) suggested that antisocial personality disorders might be associated with instrumental aggression, given potential deficits in experiencing or anticipating remorse, and in anticipating aversive outcomes of aggression. Stanford, Houston, Villemarette-Pittman, and Greve (2003) also suggested that premeditated aggressive offenders might be at higher risk for antisocial personality disorder or psychopathy. In a review paper by this research group, however, they hypothesized that antisocial personality disorders might in fact be associated with both premeditated and impulsive aggression, and that other personality disorders similarly may not be differentially associated with one subtype of aggression (Houston, Stanford, Villemarette-Pittman, Conklin, & Helfritz, 2003).

A few studies have examined personality pathology in subtypes of aggression by use of personality assessment. Tweed and Dutton (1998) initially defined "instrumental" and "impulsive" subgroups of domestically violent men based on Millon Clinical Multiaxial Inventory – 2nd edition (MCMI-II) scores and self-reported level of aggression using cluster analysis. The instrumental group was defined based on the MCMI-II

Antisocial scale score, and the total scale score on a measure of use of physical aggression, whereas the impulsive group was defined based on MCMI-II scores on Borderline, Schizoid, and Major Depression scales. Subsequent analyses of the groups indicated that the instrumental group was similar in MCMI-II profile to a "classic" antisocial personality disorder profile, with the highest scores on the Narcissistic, Antisocial, and Aggressive subscales. This group also reported more severe and more frequent violence. The impulsive group also demonstrated antisocial personality tendencies, but with scores higher on the Schizoid, Avoidant, Self-defeating, Schizotypal, Borderline, Dysthymic, Thought Disorder, and Depression scales. This group fit the profile of an emotionally volatile group and also reported higher levels of PTSD symptoms.

Chase, O'Leary, and Heyman (2001) also examined personality pathology in subtypes of domestic violence offenders using the MCMI-II. Offenders were classified based on the characteristics of their domestic violence, categorized as either reactive or proactive in nature. Men classified as reactive were more likely to score at a diagnosable level of dependent personality disorder, whereas men classified as proactive were more likely to score at diagnosable levels of antisocial personality disorder, aggressive-sadistic personality disorder, and "psychopathic personality disorder" (Narcissistic and Antisocial scales both above BR-scores of 85). There were no differences between groups on Borderline Personality disorder scale scores.

Hodges (2007), in an unpublished master's thesis, examined several facets of personality pathology in relation to instrumental violence in a sample of civil psychiatric patients. The study focused on acts of "serious" violence following release to the

community, and defined instrumental violence as any act of violence committed in the absence of provocation. Using this definition, only 6.7% of the sample had committed an instrumentally violent act in the year following release from hospital. Instrumentally violent patients were compared to the remainder of the sample, which included non-violent participants combined with those who committed acts of violence not classified as instrumental. Hodges failed to find any difference in either antisocial personality disorder or DSM-defined Cluster B personality disorders across the two groups of instrumental or non-instrumental (non-violent and non-instrumentally violent) patients. Finally, in a study of correlates of reactive and proactive aggression in male youth, Raine and colleagues (2006) found that reactive aggression was characterized by schizotypal personality traits in male adolescents.

Several studies have focused specifically on the role of psychopathy in subtypes of aggression. Cornell et al. (1996) investigated this relationship in two studies: the first with 106 male offenders, and the second within a sample of 50 violent offenders remanded for psychiatric evaluation. The researchers used the Psychopathy Checklist – Revised (PCL-R; Hare, 1991) and an initial version of the Psychopathy Checklist-Screening Version (PCL-SV; Hart, Hare, & Forth, 1994) to evaluate psychopathy, respectively. In both samples, offenders who had committed instrumental violence had considerably more symptoms of psychopathy than reactive offenders, with medium and large effect sizes for these differences in the correctional and forensic psychiatric samples, respectively. Scores on the behavioural/deviant lifestyle factor of psychopathy (Factor 2; Hare, 1991), but not the interpersonal/affective factor of psychopathy (Factor 1; Hare, 1991), were significantly higher in the instrumental offenders in the correctional

sample, with a medium effect size for this difference. Both factors were significantly higher in the instrumental offenders in the forensic sample, with a large effect for the difference between Factor 1 scores (effect size was not reported for Factor 2).

In her PhD dissertation, Steele-Williams (2002) attempted to replicate the work of Cornell et al. (1996), using the Minnesota Multiphasic Personality Inventory – 2nd edition (MMPI-2) Psychopathic Deviate, Mania, Antisocial Practices, and Cynicism scales to define psychopathy. Steele-Williams (2002) failed to find any differences on these scales between instrumental and reactive groups of incarcerated offenders. Unfortunately, the author did not discuss potential reasons for her lack of findings. Methodological factors such as sampling limitations (e.g., poor response rate, exclusion criterion of current risk for institutional aggression) and subgroup composition (i.e., "instrumental" group composed of offenders with both instrumental and reactive offences, and "reactive" group consisting of exclusively reactive offenders) may explain Steele-Williams lack of findings. Alternatively, the personality features that were investigated may not be relevant to the differentiation of instrumental and reactive violence.

Woodworth and Porter (2002) also examined the role of psychopathy in subtypes of offending. As noted previously, the authors expanded Cornell et al.'s (1996) definition of instrumental and reactive violence to a four-level scheme, ranging from purely reactive, reactive-instrumental, instrumental-reactive, to purely instrumental. Psychopathy, as assessed by the PCL-R, was examined in a sample of homicide offenders, rated using the four-level ordinal scheme. When offenders were classified as psychopathic or non-psychopathic, psychopathic offenders were found to have perpetrated homicides that were significantly more instrumental than non-psychopathic

offenders, with a medium effect size for this difference. When examined as a continuous

trait, there was a significant correlation between psychopathic traits and instrumentality

of violence, with a medium effect size ($r = .45$; Cohen, 1977). When only offenders

whose violence could be classified into a subtype were collapsed into instrumental or

reactive categories, psychopathic offenders were more likely to have engaged in

instrumental violence than non-psychopathic offenders, and more likely to have engaged

in instrumental violence than reactive violence. In contrast, non-psychopathic offenders

were equally likely to have committed instrumental or reactive violence. When examined

at the factor level of psychopathy, it was determined that only Factor 1

(interpersonal/affective) was associated with degree of instrumentality of violence. The

authors hypothesized that the key reason that psychopathic offenders were more likely to

perpetrate instrumental homicides was related to the empathic and affective deficits

characteristic of the disorder. Specifically, they proposed that an inability to experience

or anticipate remorse might lead to an increase in instrumental violence, while a lower

propensity for strong emotional reactions might reduce the likelihood of reactive

violence.

In addition to examining DSM-defined personality disorders, as discussed

previously, Hodges (2007) examined the role of psychopathic traits in the prediction of

instrumental violence among civil psychiatric patients. After controlling for covariates,

psychopathy accounted for an additional 2.9% of the variance in violence status

(instrumental or non-instrumental). In contrast to the findings of Woodworth and Porter

(2002), Hodges found that only the antisocial behaviour factor of psychopathy (Factor 2)

significantly contributed to group prediction. It is possible that these findings differ due to the inclusion of non-violent offenders in Hodges' comparison group.

Miller and Lynam (2003) examined the role of psychopathic traits in subtypes of aggression as one component of a larger study validating the use of the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992; as cited in Miller & Lynam, 2003) for detecting psychopathic traits in an undergraduate population. The authors found that psychopathic traits were associated with increased risk for both reactive and proactive aggression, but that the association between psychopathic traits and proactive aggression was significantly stronger than the relation between psychopathic traits and reactive aggression. This again suggests some specificity of psychopathy to proactive aggression (or instrumental violence).

A number of studies have examined psychopathic traits and subtypes of aggression in adolescents. One study of psychopathic traits in adolescents found that both "primary" and "secondary" psychopathic traits (which appear to generally map on to the interpersonal/affective and antisocial behaviour/deviant lifestyle factors of psychopathy, respectively) were associated with both instrumental and "emotional" self-reported aggression (Bjørnebekk, 2007). The author did not examine differences in the strength of association across subtypes of aggression, but the absolute values of the correlations were very similar. "Secondary" psychopathic traits appeared to have a slightly stronger relationship with both subtypes of aggression than "primary" psychopathic traits, although the authors did not statistically compare these correlations. Similarly, within a psychiatric inpatient sample of youths, psychopathic traits were predictive of both instrumental and reactive aggression (Stafford & Cornell, 2003). Within a population of

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incarcerated youth offenders, the interpersonal features of psychopathy (Factor 1) were predictive of instrumentality of aggression, whereas the antisocial behaviour characteristics of psychopathy (Factor 2) were *negatively* associated with instrumental aggression (Vitacco, Neumann, Caldwell, Leistico, & Rybroek, 2006). In a separate sample of incarcerated adolescents, a significant correlation between psychopathic traits and instrumentality of prior violence was identified (Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004). Similarly, psychopathic traits were uniquely characteristic of proactive (and not reactive) aggression in a school-based sample of adolescent boys (Raine et al., 2006).

Thus, the results of several studies suggest that psychopathy might be an important predictor for violence subtype across varying degrees of severity of aggression (Cornell et al., 1996; Hodges, 2007; Miller & Lynam, 2003; Murrie et al., 2004; Raine et al., 2006; Woodworth & Porter, 2002). However, psychopathic traits have failed to clearly differentiate between subtypes of aggression in other studies (Bjørnebekk, 2007; Stafford & Cornell, 2003; Steele-Williams, 2002; Vitacco et al., 2006). At the psychopathy factor level, results are also mixed. Several studies have provided support for a relationship between Factor 1 (affective/interpersonal) and instrumental aggression (forensic sample in Cornell et al., 1996; Vitacco et al., 2006; Woodworth & Porter, 2002). However, a few studies found no support for a relationship between Factor 1 (affective/interpersonal) and psychopathy (correctional sample in Cornell et al., 1996; Hodges, 2007). Similarly, several studies indicated an association between Factor 2 (social deviance/antisocial behaviour) and instrumental violence (correctional and forensic samples in Cornell et al., 1996; Hodges, 2007). However, one study suggested

no association between Factor 2 (social deviance/antisocial behaviour) and instrumental violence (Woodworth & Porter, 2002), and one study suggested a *negative* association between Factor 2 (social deviance/antisocial behaviour) and instrumental violence (Vitacco et al., 2006).

Several studies have examined the role of personality *traits* in subtypes of aggression. Individuals with a history of either impulsive aggression or premeditated aggression appear to be more hostile, irritable, and impulsive than non-aggressive individuals (Stanford et al., 1995; Stanford, Houston, Villemarette-Pittman, & Greve, 2003). Individuals with a history of premeditated aggression also score higher on the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975; as cited by Stanford, Houston, Villemarette-Pittman, & Greve, 2003) psychoticism and neuroticism traits than non-aggressive individuals (Stanford, Houston, Villemarette-Pittman, & Greve, 2003). Relative to impulsive aggressive individuals, premeditated aggressive individuals score higher on EPQ neuroticism, psychoticism, and extraversion, and measures of physical aggression, hostility, antisocial behaviour, and self-directed aggression (Stanford, Houston, Mathias et al., 2003). In contrast, impulsive aggressive individuals score higher on irritability, suspiciousness, and anger control problems (Bjørnebekk, 2007; Stanford, Houston, Mathias et al., 2003). These findings have led to the suggestion that impulsive aggressive individuals have a broader range of impairments, with irritability and emotional lability, whereas premeditated aggressive individuals are more hostile, antisocial, and overall more aggressive (Stanford, Houston, Villemarette-Pittman, & Greve, 2003). Underlying, or higher-order, personality traits have also been implicated in differentiating subtypes of aggression. For example, in a

sample of adolescents, reward sensitivity was positively correlated with self-reported emotional aggression, whereas insensitivity to punishment was associated with self-reported instrumental aggression (Bjørnebekk, 2007). The findings were consistent with the author's theory that strong sensitivity to reward leads to *impulsive* reward-focused behaviour, which in turn results in emotional aggression, whereas insensitivity to punishment cues increase the risk for instrumental aggression via deficient social learning (Bjørnebekk, 2007).

Neuropsychological and Psychophysiological Characteristics

Given the emerging evidence for personality and behavioural differences between instrumental/premeditated aggressive individuals and impulsive/reactive aggressive individuals, there have been several investigations of possible underlying neuropsychological and psychophysiological differences between offenders with a history of either of these types of aggression. While neuropsychological and psychophysiological constructs were not measured in the study presented in this dissertation, the results of previous research on these constructs are presented here to highlight the full range of elements of the clinical profile of instrumental and reactive violence that is emerging in the research literature.

Stanford, Greve, and Gerstle (1997) found that relative to non-aggressive controls, participants with a history of impulsive aggression displayed problems in responding to competing task demands, along with problems in strategy processing. In contrast, few neuropsychological or psychophysiological differences were identified between premeditative aggressive patients and non-aggressive individuals (Stanford, Houston, Villemarette-Pittman, & Greve, 2003). In a neuropsychological examination of

instrumental and reactive violent male offenders, Broomhall (2005) compared executive functioning across these subtypes of offenders. Results suggested that reactive offenders were significantly impaired on higher-order executive functioning tasks, such as cognitive flexibility, capacity to maintain set, initiation, and verbal inhibition. This group also displayed significantly higher performance IQ than verbal IQ. In contrast, instrumental offenders were relatively intact on measures of executive functioning.

Raine and colleagues (1998) conducted a positron emission tomography (PET) study of brain functioning during a Continuous Performance Task (Nuechterlein, Parasuraman, & Jiang, 1983; as cited in Raine et al., 1998) in predatory and affective homicide offenders. Results indicated that both subtypes of offenders displayed increased right hemisphere subcortical (i.e., amygdala, midbrain, hippocampus, and thalamus) brain functioning relative to non-offender participants, but only affective homicide offenders evidenced reduced prefrontal functioning relative to non-offender controls (Raine et al., 1998). There were no significant differences between subgroups of homicide offenders (Raine et al., 1998). The authors concluded that whereas excessive subcortical activity might be associated with aggression in general, prefrontal deficits might explain affective offenders' difficulty controlling aggressive impulses (Raine et al., 1998).

Houston et al. (2003) reviewed evidence concerning neurobiological, neuropsychological, and psychophysiological correlates of impulsive and premeditated aggression. The authors suggest that there may be neurotransmitter differences between subtypes of aggression (e.g., serotonin metabolites), which may lead to increased arousal and irritability, and decreased impulse control in impulsive aggression. There also appear to be executive functioning deficits, along with verbal skills deficiencies (which may be

linked to executive dysfunction) in impulsive aggressive populations. Furthermore, psychophysiological testing suggests increased physiological reactivity in impulsive aggressive individuals, and possible sensory and information processing deficits. The authors conclude that there is considerably more evidence for deficits in impulsive relative to premeditated aggressors, and that a key distinguishing feature between these subtypes of aggression is degree of behavioural control (i.e., lower in impulsive relative to premeditated aggression).

Clinical Profile Associated with Reactive and Instrumental Aggression

Although the literature on various forms of psychopathology and subtypes of aggression and violence is limited, what has emerged is a generalized pattern of hyper-reactivity associated with reactive aggression. Dysfunctional reactivity is evidenced across emotional, neuropsychological, and psychophysiological domains, and is associated with poor behavioural control. In contrast, instrumentally aggressive individuals do not display a pattern of emotional, neuropsychological, or psychophysiological deficits. Rather, this form of aggression appears to be characterized by a personality profile of antisocial, hostile, psychopathic, narcissistic, and aggressive-sadistic traits. If further research continues to lend support for this clinical profile distinction between forms of aggression, this suggests quite different intervention approaches. Indeed, a medication trial for aggressive behaviour suggested that certain medications might be effective only for reactive aggression (Barratt, Stanford, Felthous, & Kent, 1997). Table 2 provides a summary of the clinical profiles of instrumental and reactive aggression, across affective, cognitive, behavioural, psychophysiological, neuropsychological, and personality domains of functioning.

Table 2.

Clinical profiles of instrumental and reactive aggression.

Domain of functioning	Subtype of Aggression	
	Instrumental aggression	Reactive aggression
Affective/emotional	Intact or hypo-reactive	Dysfunctional; labile, low mood
Cognitive	Intact	Distorted thought processes/psychotic
Behavioural	Intact	Disinhibited
Psychophysiological	Intact or increased subcortical arousal	Hyper-reactive; increased subcortical arousal
Neuropsychological	Intact	Executive dysfunction
Personality	Disordered; antisocial, psychopathic, narcissistic, hostile/ aggressive, sadistic, extraversion, psychoticism, punishment insensitive	Disordered; schizoid, schizotypal, borderline, dependent, irritable, suspicious, reward sensitive

Childhood Maltreatment and Subtypes of Aggression

There have been few investigations of the role of maltreatment in subtypes of aggressive

behaviour. One study of reactive and proactive aggression in a clinical sample of youth

found that the parents' general history of violence was predictive of proactive aggression

in the youth, whereas sexual abuse was uniquely predictive of reactive aggression

(Connor et al., 2004). Physical abuse correlated with both reactive and proactive

aggression, but was not predictive of either form of aggression in a regression model (Connor et al., 2004). A study of reactive and proactive aggression in male domestic violence perpetrators failed to find any difference in childhood maltreatment history between groups (Chase et al., 2001). There do not appear to have been any investigations of the role of childhood maltreatment in the subtypes of aggression in other populations.

Offence Characteristics and Subtypes of Violence

A few studies have examined the relationship between subtypes of violence and offending characteristics. In terms of victim characteristics, studies have been equivocal; Standford and colleagues (2003) found no relationship between knowledge of the victim and subtype of violence in a community sample of physically aggressive men, whereas Cornell et al. (1996) found that reactive offenders were more likely to have known their victim. In terms of violence severity, Cornell et al. (1996) found no relationship between violence subtype and degree of victim injury. In contrast, proactive men were more severe in their partner violence than reactive men in a sample of domestic violence offenders (Chase et al., 2001). With regard to offending history, proactive male domestic violence offenders were marginally more likely to have a history of other types of violent offences (i.e., non-partner violence) than reactive offenders (Chase et al., 2001). In a sample of incarcerated offenders, Heilbrun et al. (1978) found that parole violations were more likely among impulsive offenders, whereas violent recidivism was more likely among premeditated offenders.

Theoretical Model of Subtypes of Violence

As discussed previously, there appear to be distinct clinical profiles associated with reactive and instrumental aggression (see Table 2). Reactive aggression appears to be associated with emotional, physiological, and neuropsychological reactivity, leading to poor behavioural control. In contrast, instrumental aggression is associated with a psychopathic, antisocial, narcissistic, aggressive, and hostile personality profile. Drawing from the research findings on these subtypes of violence, and from theories of aggression, several underlying factors are proposed to be relevant to each subtype of aggression. In terms of reactive aggression, impulsivity and affect dysregulation appear to be key characteristics. Indeed, these were among the factors identified by Nestor (2002) as critical to the association between psychopathology and violence. This is consistent with the frustration-aggression hypothesis (Berkowitz, 1989), in which negative affect leads to an aggressive response. Clinical conditions and states that are associated with poor impulse control, negative affective states, and/or emotional lability are therefore expected to increase risk for reactive aggression.

Several characteristics are common to the personality features associated with instrumental aggression. For example, lack of empathy is characteristic of psychopathy, antisocial personality disorder, and narcissism (APA, 2000; Hare, 2003). Woodworth and Porter (2002) hypothesized that empathic deficits might explain the association between psychopathy and instrumental violence, given that despite the poor behavioural control characteristic of the disorder, psychopathic offenders perpetrate more instrumental than reactive violence. Meloy (2006) and Kirsch and Becker (2007) also discussed the possibly important role of lack of empathy in instrumental violence.

In addition, a reward-dominant style or bias has been associated with psychopathy (Newman & Kosson, 1986), antisocial personality disorder (Petry, 2002), and narcissism (Foster & Trimm IV, 2008). Aggression as a means to achieve reward is consistent with the social learning theory of aggression (Bandura, 1978). However, as noted previously, reward sensitivity/behavioural approach was associated with *emotional* aggression in a sample of adolescents (Bjørnebekk, 2007). The original model of reward sensitivity/behavioural approach system linked the construct to impulsivity (Leone & Russo, 2009), and also to sensitivity to *relief* from punishment (Bijttebier, Beck, Claes, & Vandereycken, 2008), which might explain an association with emotional aggression. In contrast, recent research suggests that whether the behavioural approach system is associated with dysfunctional impulsivity depends on the aspect of the behavioural approach system under investigation (Leone & Russo, 2009). Further, recent conceptualizations of reward sensitivity include only responses to positively valenced stimuli, and not relief from punishment (Bijttebier et al., 2008). Thus, while reward-sensitivity has been linked empirically to reactive aggression (Bjørnebekk, 2007), current conceptualizations of reward-sensitivity/behavioural-approach are more theoretically consistent with instrumental aggression.

In addition to sensitivity to reward, punishment insensitivity is a feature associated with psychopathy (Newman, Kosson, & Patterson, 1992) and narcissism (Foster & Trimm IV, 2008), and has been linked empirically to instrumental aggression (Bjørnebekk, 2007). Although not explicitly addressed in the social learning model, deficits in the ability to anticipate and learn from punishment should play a role in the

development of an instrumentally aggressive style, as there would be fewer negative

consequences perceived prior to engaging in aggressive behaviour.

Clinical conditions or states that decrease the ability to anticipate remorse

(empathize), are associated with increased reward-sensitivity, or are characterized by

insensitivity to/deficits in anticipating punishment, are expected to be associated with

instrumental aggression. As various forms of psychopathology differ in their associations

with these personality features (impulsivity, affective dysregulation, empathy, reward-

dominance, punishment insensitivity), it might be predicted that different forms of

psychopathology have differential associations with instrumental and reactive subtypes of

violence. For example, given the association between substance use and impulsivity (e.g.

Fishbein, 2000; Miller & Potter-Efron, 1989; Pihl & Hoaken, 1997), it might be expected

that substance use disorders, and substance intoxication would be associated with reactive

violence. Kingsbury and colleagues (1997) also suggested possible differential

associations between types of substances and subtypes of violence, with stimulant

intoxication proposed to increase the risk for reactive violence, and alcohol intoxication

potentially linked to both subtypes of violence. The few studies that have examined the

link between substance use and subtypes of aggression, however, have found an

association between substance use disorders and *instrumental* aggression (Connor et al.,

2004; Vitiello et al., 1990). Given that distinct personality and clinical profiles are

associated with the abuse of different types of substances (e.g., Conrod, Pihl, Stewart, &

Dongier, 2000), the types of substances of abuse in a given sample may determine what

sort of association with aggression subtypes is identified. For example, pure alcohol

abuse has been associated with a reward- or sensation-seeking personality profile

(Conrod, Pihl, et al., 2000), which is more consistent with instrumental aggression, whereas stimulant abuse is associated with an impulsive personality profile (Conrod, Pihl, et al., 2000), which is consistent with reactive aggression. In addition, it is possible that whereas substance use disorders are associated with instrumental violence (Connor et al., 2004; Vitiello et al., 1990), substance intoxication at the time of an offence might be associated with reactive violence, given the disinhibiting effects of intoxication (e.g., Howard & Menkes, 2007; Vogel-Sprott, Easdon, Fillmore, Finn, & Justus, 2001).

In addition to substance use, a number of other disorders and clinical states are also characterized by poor impulse control, and might be associated with reactive aggression. For example, antisocial and borderline personality disorders, impulse-control disorders not elsewhere classified, and ADHD all include impulse-control problems as diagnostic criteria (APA, 2000).

Emotion regulation deficits are associated with a number of disorders, such as borderline personality disorder (e.g., Skodol, Gunderson, Pfohl, Widiger, Livesley, & Siever, 2002), anxiety disorders, mood disorders, and schizophrenia spectrum disorders (e.g., Green & Malhi, 2006; Green, Cahill, & Mahli, 2007). As such, it might be expected that these forms of psychopathology are associated with reactive aggression. Consistent with this hypothesis, Vitiello et al. (1990) found that schizophrenia was more common in youth with a history of affective (reactive) aggression relative to instrumentally aggressive youth. In addition, Tweed and Dutton's (1998) "impulsive" domestic violence offenders scored higher on dysthymic, depression, and borderline scales of the MCMI-II. However, borderline personality traits, as measured by the MCMI-II, did not differ between subtypes of aggression in another study of male domestic violence offenders

(Chase et al., 2001). In the current study, conditions associated with increased susceptibility to negative affect were expected to be associated with reactive aggression.

A number of personality disorders characterized by lack of empathy, reward-dominance, and/or punishment insensitivity were outlined above (e.g., antisocial, narcissistic, and psychopathic personality disorders). Also previously noted was the link between substance abuse and reward-dominance. Other clinical conditions or states might also be associated with lack of empathy or deficits in anticipating or experiencing remorse (e.g., sexual sadism; Kirsch & Becker, 2007) and might be associated with instrumental violence.

In terms of how childhood maltreatment might fit in the above-described model, given that childhood maltreatment has been associated with impulsivity (e.g., Shields & Cicchetti, 1998; Simmel et al., 2001), it might be expected that a history of maltreatment would be associated with more reactive than instrumental violence. Conversely, following the social learning theory of aggression (e.g., Bandura, 1978), one might expect a link with instrumental violence due to the modelling of aggression inherent in certain forms of maltreatment (e.g., physical abuse). As childhood maltreatment appears to increase the risk of various forms of psychopathology (e.g., Bernstein, Stein & Handelsman, 1998; Cohen et al., 2001; Ruggiero et al., 1999), any link between maltreatment and specific forms of violence might be indirect, and dependent on the type of concomitant psychopathology.

Limitations of the Existing Research

Although a few studies have investigated the relationship between subtypes of aggression and a limited number of clinical factors, there is a lack of comprehensive examination of a full range of Axis I and II psychopathology. Research on Axis I pathology is limited to two youth studies and one adult community sample, in which only a small number of clinical conditions were examined. Research on personality pathology is limited to psychopathy and a few studies of personality testing (e.g., MCMI-II, MMPI-2). The associations between various mental and personality disorders and subtypes of aggression remain unknown. Similarly, pathological personality *traits* have received limited investigation. Also unknown is the *relative* contribution of various forms of psychopathology. For example, while psychopathy has been identified as being associated with instrumental aggression in a number of studies, the contribution of psychopathy relative to other clinical factors has not been investigated. Research has demonstrated a high rate of comorbidity between psychopathy and substance misuse (Rasmussen et al., 1999; Smith & Newman, 1990); however, the influence of comorbid substance use problems or substance intoxication at the time of the aggressive act on the relationship between psychopathy and instrumental aggression is not known. Additionally, despite the plethora of literature linking childhood maltreatment to later violence (e.g., Dodge et al., 1990; Widom, 1989a), the limited findings concerning the role of childhood maltreatment in violence subtypes have been equivocal.

Much of the (limited) research on psychopathology, clinical history, and subtypes of violence has also been conducted with either youth or community samples. Only a small number of studies have investigated these issues in adult offender populations (e.g.,

Cornell et al., 1996; Steele-Williams, 2002; Woodworth & Porter, 2002). Given the prevalence of mental health problems and history of maltreatment in adult offender populations (e.g., Brink et al., 2001; Hare, 1996; Longato-Stadler et al., 2001; McClellan et al., 1997), and the associations between maltreatment, psychopathology, and violence (Berstein et al., 1998; Hodgins, 1995; Widom, 1989a), the role of these factors in subtypes of *criminal violence* bears further investigation. The current research attempted to address these critical research limitations.

The Current Research

Study Goals

The current study sought to elucidate the relationships between childhood maltreatment, psychopathology and the type of violence committed by adult male offenders. The goals of the study were threefold: (1) The first goal was to examine the relationships between substance use history (history of use and intoxication at the time of the offence), Axis I mental disorders, Axis II personality pathology (disorders and traits), and instrumental and reactive violence. Specifically, the goal was to determine whether the aforementioned clinical factors would postdict subtypes of violent offending, and to determine the relative contribution of the various clinical factors to this postdiction of violence subtypes. (2) Given the high rate of comorbidity between psychopathy and substance misuse (e.g., Rasmussen et al., 1999; Smith & Newman, 1990), the second goal was to evaluate the influence of substance use (substance use history and intoxication during the index offence) on the relationship between psychopathy and subtype of violence. (3) Finally, the third study goal was to elucidate the relationship between

childhood maltreatment history, psychopathology, and subtypes of violent offending. Specifically, the goal was to determine whether (a) childhood maltreatment confers an elevated risk for psychopathology in adult offenders, (b) whether there is a relationship between childhood maltreatment and subtype of violence, and (c) whether any relationship detected between childhood maltreatment and subtype of violence is due to concomitant psychopathology.

The current study was limited to male offenders for several reasons. First, the number of federally incarcerated female violent offenders is very limited. For example, in March 2007, only 320 women were federally incarcerated for violent offences across Canada (CSC, 2007c). Second, there may be differences in the predictors for subtypes of violence in male and female offenders. Research has suggested that violence risk factors may operate differently in men and women, with psychopathology associated with a much greater increase in risk for violence in women than men (Hodgins, 1992), and women's violence less likely to be preceded by substance use (Robbins, Monahan, & Silver, 2003). Further, the location and targets of violence appear to differ between men and women (Hiday, Swartz, Swanson, Boram, & Wagner, 1998; Robbins et al., 2003). Thus, given the potential sample size limitations and possible sex differences in the prediction of violence subtype, the current research focused exclusively on male offenders.

Study Design

To address the three study goals, the relationships between various forms of psychopathology, childhood maltreatment, and subtypes of violence were examined in a large sample of adult, male offenders currently serving federal sentences in Canada for

violent offences. I specifically targeted federal offenders due to the higher concentration of violent offenders among this group and the greater severity of violence associated with a federal sentence. Federal sentences are longer in duration than provincial sentences and are associated with more severe offences (*Criminal Code,* 1985). The current study used an archival approach, drawing information on psychopathology, maltreatment history, and the nature of the violent offending through review of pertinent correctional file documents. Cross-sectional in nature, the study targeted the violent index offence, which refers to the offence for which the offender was currently serving his sentence. There is some variability in the literature in terms of whether one should assign *individuals* or *acts* to a specific subtype of aggression (e.g., Weinshanker & Siegel, 2002; Woodworth & Porter, 2002). Although offenders in the current study could have committed prior violent offences, primary analyses were limited to the violent offence associated with the current sentence because of the potential lack of systematic information on other violent acts that offenders may have committed before their current incarceration. Moreover, psychosocial assessments from which study data were drawn were completed for the purpose of the specific sentence and its associated offences, and were meant to be reflective of the mental health and personality functioning of the individual at the time of intake. In addition, some of the clinical information being investigated was specific to the mental state of the offender at the time of the act (e.g., substance intoxication). Support for this approach is drawn from Woodworth and Porter (2002), who found significant differences between psychopathic and non-psychopathic offenders who were classified based on the violence subtype of their index offence.

Although researchers have acknowledged that subtypes of violence might interact (e.g., Kingsbury et al., 1997), studies have typically treated the subtypes as dichotomous categories of one variable, rather than two separate scales (although several studies of childhood aggression have used the latter approach; Connor et al., 2004; Dodge & Coie, 1987). It is also conceivable that there is in fact a continuum of violence, rather than dichotomous subtypes, ranging from instrumental to reactive. Woodworth and Porter (2002) used this latter approach in addition to a categorical approach with similar results. Without making an assumption concerning the theoretical nature of the subtypes of violence, in the current study I have operationally defined these subtypes of violence as distinct, mutually exclusive categories of one variable, to be consistent with most prior research. I have taken the ordinal approach used by Woodworth and Porter (2002) to allow for the relative *balance* of motives (instrumental or reactive) to be captured, with the possibility of collapsing the categories into a dichotomous variable.

While cross-sectional in nature, the current study makes an assumption concerning the direction of the relationship between mental health factors, maltreatment, and subtypes of violence, such that violence is conceptualized as the outcome variable. It must be acknowledged that violence could also be treated as a predictor variable, if conceptualized as a proxy for personality or another underlying variable. For example, reactive violence could be a proxy for an impulsive personality, with "reactively violent people" being more likely to have certain other mental health characteristics. Childhood maltreatment has a more clear temporal order, although it may be that children with certain temperamental characteristics are more likely to "elicit" abuse (Bell, 1979; Friedrich & Boriskin, 1976; Martorell & Bugental, 2006), suggesting that many of these

relationships are likely reciprocal. For the current research, both childhood maltreatment and mental health factors were treated as postdictors of violence outcome; however, it is acknowledged that order of these relationships might be more complex.

Study Hypotheses

Drawing from previous research findings and the elements identified above that are proposed to be relevant to subtypes of violence (impulsivity, affective dysregulation, empathy, reward dominance, and punishment insensitivity), a number of exploratory theory-driven hypotheses were advanced. With regard to the first goal of the study, the following hypotheses were examined:

1. Offenders with a history of substance use disorders would be more likely to have committed instrumental violence than reactive violence. However, offenders who were intoxicated at the time of their offence would be more likely to have committed reactive violence, particularly if the substance of abuse was a stimulant.

2. A history of mood disorders, psychotic disorders, and impulse control disorders would be associated with reactive violence. Other categories of Axis I psychopathology were not expected to be predictive of subtype of violence.

3. In terms of Axis II psychopathology, it was predicted that borderline personality disorder would be associated with reactive violence, whereas antisocial personality disorder, narcissistic personality disorder, and psychopathy would be associated with instrumental violence.

4. It was expected that personality pathology *traits,* as measured by the MCMI-III and MMPI-2, would be relevant to subtype of violence, parallel to the predictions for clinical diagnoses. Specifically, scores on the MCMI-III Drug and Alcohol Dependence,

Antisocial, Sadistic, and Narcissistic scales would be associated with instrumental violence, whereas scores on the Paranoid, Borderline, Bipolar, Dysthymia, and Major Depression, and PTSD scale scores would be associated with reactive violence. As for the MMPI-2, it was predicted that scores on the Psychopathic Deviate scale would be associated with instrumental violence, whereas scores on the Depression, Paranoia, Schizophrenia, and Hypomania scales would be associated with reactive violence.

In addition, it was expected that *groups* of offenders would be identified in the sample who exhibited distinct personality profiles associated with instrumental and reactive violence. Specifically, these groups were expected to be characterized by antisocial, narcissistic, and aggressive/sadistic features, and by borderline, schizoid, schizotypal, and depressive personality features, and labile/depressed mood, respectively. It was also expected that there would be a group of offenders with minimal psychopathology, and potentially a group with DSM-Cluster A and/or C traits (e.g., Hamberger & Hastings, 1986; Taylor et al., 2006).

In terms of the second goal of examining the impact of substance use history on the association between psychopathy and subtype of violence, the following hypothesis was advanced:

5. Substance intoxication at the time of the index offence would attenuate the association between psychopathic traits and instrumental violence. Specifically, substance intoxication was expected to interact with psychopathic traits, such that psychopathy would *not* be associated with instrumental violence for offenders who were intoxicated during their offence. In contrast, other substance use factors (i.e., history of substance

use) would not impact on the association between psychopathic traits and instrumental violence.

6. With regard to childhood maltreatment, it was hypothesized that, (a) offenders with a history of childhood maltreatment would have higher rates of psychopathology than non-maltreated offenders; and (b) given the various forms of psychopathology associated with childhood maltreatment, it was not expected that any one form of violence would be directly associated with a history of childhood maltreatment.

Summary

This dissertation is the first study, to my knowledge, to provide a comprehensive investigation of psychological and mental-health history variables of offenders, as they relate to instrumental and reactive criminal violence. Despite considerable focus on the role of psychopathology and clinical history variables in general violent offending, research on the role of such factors in *subtypes* of aggression and, more specifically, subtypes of severe violence, is limited. Currently, research on the associations between subtypes of violence and psychopathology in male offenders is limited to four studies, none of which addressed Axis I mental disorders. Among adult male domestic violence offenders, personality pathology has demonstrated some promise in distinguishing between reactive and instrumental violence (Chase et al., 2001; Tweed & Dutton, 1998). While certain clinical factors have received some support as predictors of criminal violence subtype, the amount of variance in violence subtype explained by any one factor is likely limited (e.g., Hodges, 2007). Thus, the current examination of a wide range of mental health history factors in relation to motivational subtypes of criminal violence

provides a considerable expansion of knowledge concerning both the impact of mental

health history in offenders, and the perpetration of violence.

Chapter II:

Method

Sample

The sample in the current study consisted of 144 adult male offenders, incarcerated within a federal (Correctional Service Canada [CSC]) prison in Atlantic Canada. In the Canadian criminal justice system, federal sentences are those of at least two years duration and are, therefore, associated with crimes deemed more serious in nature than those resulting in provincial sentences (*Criminal Code,* 1985). The facility from which data were collected includes both a Regional Reception Centre, for the assessment of security needs and penitentiary placement of recently sentenced offenders, as well as a medium security correctional facility. Offenders in either the Reception Centre or the medium security unit were eligible for inclusion in the present study. Eligibility also required that the offender's index offence(s) (i.e., the offence(s) for which the offender was currently incarcerated) included a violent offence. For offenders incarcerated for more than one index offence, the most serious violent offence, as defined by the *Criminal Code* (2003), was examined in the current study. Only one index offence was examined per offender.

For the purposes of the current study, a "violent offence" was defined as a crime involving physical force or a threat to the bodily integrity of the victim. Violent offences included the following types of *Criminal Code* (2003) Crimes Against Persons: all offences categorized under "Assaults", with the exception of Uttering Threats, Disarming a Police Officer, and Sexual Assault (without other violence); all offences categorized

under "Kidnapping, Hostage Taking and Abduction", with the exception of Abduction in Contravention of a Custody Order; Negligence Causing Bodily Harm, and Negligence Causing Death; all Robbery-related offences; and all offences categorized under "Homicide". Uttering Threats and Disarming a Police Officer were excluded as they are not classifiable under the violence motivation scheme (described below), whereas Abduction in Contravention of a Custody Order was excluded as it does not meet the criteria for a violent crime as operationalized in this study. Sexual Assault was excluded for several reasons. First, sexual assault is qualitatively different from other non-sexual Crimes Against Persons. Sexual and non-sexual violence differ on certain risk factors for recidivism (e.g., sexual deviance; see Boer, Hart, Kropp, & Webster, 1997), and perpetrators of sexual assault differ from non-sexually violent offenders in terms of the typical offender-victim relationship (Gudjonsson & Sigurdsson, 2000). Second, previous studies of instrumental and reactive violence (as reviewed in Chapter 1) have not included sexual assaults in their definition of violent offences. Finally, sexual assault would not be classifiable under the violence motivation scheme used in the current study (described below).

See Appendix A for a complete list of the *Criminal Code* violent offences and associated charge numbers included in the current study. As *Criminal Code* infraction names and numbers have changed with *Criminal Code* versions (e.g., prior major amendments of 1970, 1985), offenders currently incarcerated for offences that are not specified in the 2004 version of the *Criminal Code*, but which are earlier variations of such offences or are consistent with the definition of "violent offence" used in this study,

were also eligible for inclusion. There were two such offenders in the current sample, both with convictions for "Non Capital Murder".

Offenders in the current sample had a mean age at time of index offence of 33.02 years ($SD = 11.26$), with a range from 17 to 64 years. A mean of 6.63 years ($SD = 7.71$) had elapsed since perpetration of the index offence, with a range from 0 to 40 years. Slightly more than half of the offenders (55.6%) were serving their first federal sentence, with a mean number of prior federal incarcerations of 0.85 ($SD = 1.19$), ranging from zero to five prior incarcerations. Offenders in the sample had been convicted of a mean of 4.90 ($SD = 3.14$) violent offences during their lifetime (inclusive of the index offence), with a range of 1 to 15 convictions.

<div align="center">Measures</div>

All data for the current study were extracted and coded from the correctional files of eligible offenders. Offenders in the federal correctional system in Canada undergo a thorough assessment process upon intake. This includes an assessment of criminogenic risks and needs. The results of these assessments are documented in Criminal Profile Reports (CPRs), which are completed by parole officers and contain information pertaining to an offender's psychosocial history (including developmental and mental health history), criminal history, institutional history, a description of the index offence drawn from both the offender's self-report and official police reports, and an estimate of risk for recidivism. Parole officers also complete Community Assessments (CAs), which involve interviews with collateral contacts, such as family members, a spouse, and/or other individuals in the community who have knowledge of the offender. Such

assessments typically include information on the offender's background and family history, and may also include information related to the offender's mental health, substance use, and criminal history. These assessments are conducted for the purposes of gathering background information on the offender and for identifying community supports.

For offenders whose index offence involves serious harm or who have a history of violent offending, the intake assessment also includes a psychological violence risk assessment. Psychological assessments are documented in Psychological Assessment Reports (PARs), which typically include a developmental history, mental health history (including prior diagnoses and results of previous psychological or mental health assessments), criminal history, description of the index offence (official and offender self-report), clinical impressions, psychological test results, and determination of risk for recidivism. During the incarceration period and prior to release, offenders are often re-assessed in the areas examined by the CPR, CA, and PAR.

In addition to the CPRs, CAs, and PARs, offenders may also undergo psychiatric assessment to evaluate mental health diagnoses or symptoms and need for psychotropic medication if there are concerns in these areas. In addition to assessment reports, the raw test results for several psychological measures, such as the Millon Clinical Multiaxial Inventory – 3rd Edition (MCMI-III; Millon, David, & Millon, 1997), Minnesota Multiphasic Personality Inventory – 2nd Edition (MMPI-2; Hathaway & McKinley, 1991), and Psychopathy Checklist-Revised (PCL-R/PCL-R-2; Hare, 1991, 2003) were also included in their files.

Information was collected and/or coded from the correctional file documents

concerning offenders' substance use history, psychiatric history, personality traits,

psychopathy traits, childhood maltreatment history, history of violence, institutional

adjustment, criminal history, and demographic characteristics. Recorded data included

information drawn directly from offender files, including the results of psychometric

measures (e.g., personality inventories) that were administered to the offenders for the

purposes of correctional planning, as well as information drawn from the files that was

coded by trained raters, using a coding scheme developed for the purposes of this study

(see Appendix B for the study coding scheme and data collection form).

Substance Use History

Three types of substance use information were examined for each offender:

History of use, substance use disorders (SUDs), and intoxication status during the index

offence. For all three categories of substance use information, the pertinent type of

substance was documented, and classified into the following categories: Alcohol,

Stimulants, Cannabis, Opiates, and Other Substances. History of substance use included

any reported history of use of intoxicating substances, as per either the offender or other's

reports. SUDs include any prior or current diagnosis[2] of a SUD reported in an offender's

correctional documents. Substance abuse and substance dependence were both included

in this category of information; they were not considered separately due to the potential

for low individual cell counts. Intoxication status during the index offence is typically

well documented, based on police and witness information, and offender report. Due to

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[2] "Diagnosis" refers to a formal classification of psychopathology, made by either a
physician or psychologist.

the potential for unreliability of offender self-report data concerning intoxication status at the time of the offence (e.g., an offender claiming substance intoxication at the time of offence in order to be perceived as less personally responsible for the crime; recall errors), the source of the information was also recorded.

Psychiatric/Mental Health History

Three categories of mental health history were examined: Axis I Disorders, Mental Health Symptoms, and Personality Disorders. Axis I Disorders included mental disorders that would be classified on Axis I of the DSM multiaxial system (e.g., APA, 2000). Specific diagnoses were recorded and disorders were classified as follows: Mood Disorders, Anxiety Disorders, Psychotic Disorders/Schizophrenia Spectrum Disorders, Impulse-Control Disorders, Adjustment Disorders, or Other Psychiatric Condition(s). This classification system follows the major DSM-IV-TR categories (APA, 2000), with a few slight modifications to capture salient features of certain disorders. Specifically, disorders applicable to adult populations that are primarily characterized by impulse-control problems were included in the same category. This category includes the DSM-IV-TR Impulse Control Disorders Not Elsewhere Classified, and adult ADHD (APA, 2000). In addition, mood disorders with psychosis were classified along with other psychotic/schizophrenia spectrum disorders as opposed to with other mood disorders, given the commonalities across disorders with psychosis (Crow, 1995). For Axis I mental disorders, the timing of the onset of the disorder (if known) was also recorded to differentiate between disorders that preceded the index offence and could therefore have potentially played a contributing role versus those with onset subsequent to the index offence.

In addition to diagnosed mental disorders, the presence or history of reported psychiatric *symptoms* was documented. This included symptoms from the same categories as the Axis I Disorders, but that were not formally diagnosed as associated with a mental disorder. Thus, the symptoms were either below diagnostic threshold, or a diagnosis was not made at the time of the occurrence of the symptoms. For example, if an offender reported troublesome symptoms of anxiety, but the offender was not diagnosed with a specific anxiety disorder, this would be classified as 'Anxiety Symptoms', as opposed to the Anxiety Disorder category. Symptom onset was documented in the same manner as with Axis I disorders. This section was included to capture offenders' experiences with significant mental health symptoms that were not captured in the section on Axis I diagnoses.

Personality disorders were defined following the DSM-IV-TR (APA, 2000), and classified as follows: Cluster A Personality Disorders (Paranoid, Schizoid, and Schizotypal Personality Disorders); Cluster B Personality Disorders (Histrionic, Narcissistic, Borderline, and Antisocial Personality Disorders); and Cluster C Personality Disorders (Avoidant, Dependent, and Obsessive-Compulsive Personality Disorders). In addition, diagnoses of Personality Disorder(s) Not Otherwise Specified (PD-NOS) were included. This category included the DSM-IV-TR diagnosis of PD-NOS (APA, 2000), an unspecified diagnosis of a personality disorder or personality disorders included in previous editions of the DSM or those included in the DSM-IV-TR section on disorders requiring further study (e.g., depressive personality disorder, passive-aggressive/negativistic personality disorder; APA, 2000). For all disorders, both specific diagnosis/diagnoses (current or prior) and the associated cluster were documented.

Personality Traits

In addition to capturing mental health symptoms, various personality traits were also examined. Offenders frequently undergo standardized personality assessment during the intake assessment process, using the MMPI-2 and/or the MCMI-III. The MMPI-2 and MCMI-III are among the most frequently used self-report measures of personality and psychopathology (Butcher, 2004; Strack & Millon, 2007). The MMPI-2 is a 567 item self-report measure on which the test-taker responds true or false to a series of questions tapping various aspects of personality. Items contribute to a number of basic and supplementary scales, which are scaled as t-scores (norm-referenced) with cutoffs to identify degree of trait severity. The measure is intended for use with a wide range of adult populations, including clinical, non-clinical, and correctional populations (Hathaway & McKinley, 1991). Reported test-retest and internal consistency coefficients suggest good reliability for most basic MMPI-2 scales (Hathaway & McKinley, 1991). There is also evidence for adequate convergent validity (Wise, 1996). Of particular interest for the current study were the following MMPI-2 Clinical Scales: Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Masculinity/Femininity, Paranoia, Psychasthenia, Schizophrenia, Hypomania, and Social Introversion.

The MCMI-III is a measure of personality and clinical pathology based on Millon's theory of psychopathology (e.g., Millon et al., 1997; Strack & Millon, 1997). As with the MMPI-2, the measure consists of a series of true-false statements; the 175 items contribute to a number of different scales, which are intended to map onto the DSM (e.g., APA, 2000) classification system. Raw scale scores are converted into base-rate (BR) scores, based on population prevalence rates of the characteristic measured by each scale

(criterion-referencing); scale anchor points indicate degree of trait severity (Millon et al., 1997). Evidence of good internal consistency, test-retest reliability, and convergent, concurrent, and discriminant validity has been reported for the majority of MCMI-III scales (Strack & Millon, 2007). The MCMI-III is intended for use in adult clinical (including correctional) populations and includes Axis I and Axis II scales (Millon et al., 1997), both of which were included in the current study. Axis I scales include the following: Anxiety, Somatoform, Bipolar, Dysthymia, Alcohol Dependence, Drug Dependence, PTSD, Thought Disorder, Major Depression, and Delusional Disorder. Axis II scales include Schizoid, Avoidant, Depressive, Dependent, Histrionic, Narcissistic, Antisocial, Sadistic, Compulsive, Negativistic, Masochistic, Schizotypal, Borderline, and Paranoid.

For each of these measures, profile validity was identified and both a continuous score approach, using scale scores, and a categorical approach, using clinical cutoffs, were utilized. Due to the more complex nature of profile configuration interpretation (e.g., Hathaway & McKinley, 1991; Millon et al., 1997), this approach was not used for either the MMPI-2 or the MCMI-III. Profile validity for the MMPI-2 was determined following the standard test scoring procedures (Hathaway & McKinley, 1991). Specifically, profiles with the *?-scale* score equal to, or greater than 30; the *L-scale* score equal to, or greater than 80; and/or the *F-scale* score equal to, or greater than 91, were deemed invalid. For each offender with a valid MMPI-2 profile, t-scores on each of the 10 MMPI-2 Clinical Scales were documented. Scale scores were then classified as clinically elevated if the t-scores for the scale fell in the "High" range or above (i.e., ≥ 66; Hathaway & McKinley). As with the MMPI-2, profile validity for the MCMI-III was

determined using the standard test scoring approach (Millon et al. 1997). Profiles with *V-scale* scores of 2, and/or *X-scale* raw scores of less than 34 or greater than 178, were deemed invalid. For each offender with a valid MCMI-III profile, BR-scores on each of the Axis I and Axis II scales were documented. In addition, each of the Axis I and Axis II scale scores were coded as "clinically significant/suggestive of the presence of the syndrome" if they were in the "Moderate Range" or above (i.e., ≥ 75; Millon et al. 1997).

Psychopathy

In the Canadian federal correctional system, psychopathy assessments are frequently conducted as part of the intake assessment for male offenders. Psychopathy assessments are conducted using the Psychopathy Checklist-Revised (PCL-R; Hare, 1991) or Psychopathy Checklist-Revised 2nd Edition (PCL-R-2; Hare, 2003)[3], the "state of the art" measures in this area (Fulero, 1995, p. 454). The PCL-R has demonstrated strong reliability and validity with male and female offender populations, male forensic psychiatric patients (e.g., Hare, 1991, 2003; Hare et al., 1990, Hart & Hare, 1989), and substance abusers (e.g., McDermott et al., 2000). PCL-R assessments typically consist of a structured clinical interview and review of file data; the information gathered is used to score the test items. The PCL-R consists of 20 criteria, each scored as 0, 1, or 2, for a

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[3] Note that test items and assessment procedures do not differ between the PCL-R and PCL-R-2. The PCL-R-2 manual provides an updated literature review, as well as updated and expanded normative ratings and details of the standardization samples (Hare, 2003). The PCL-R-2 also allows for the calculation of raw scores and percentiles for four facet scores, in addition to the two factor scores available in the PCL-R. In the current study percentiles were re-calculated for all offenders with PCL-R assessments using the normative ratings available in the PCL-R-2. Future references to the PCL-R are inclusive of both versions of the Psychopathy Checklist-Revised, unless otherwise specified.

maximum score of 40. Ratings reflect the degree to which the individual resembles the "prototypical" psychopath (Hare, 2003). In addition to the total score (0 - 40), the PCL-R also consists of two subscales that reflect the personality and deviant behaviour characteristics of psychopathy: the interpersonal/affective subscale (Factor 1) and the social deviance subscale (Factor 2). On the PCL-R-2, each factor is further subdivided into two facets: Factor 1 is composed of "interpersonal" and "affective" facets (Facets 1 and 2, respectively), whereas Factor 2 consists of the "lifestyle" and "antisocial behaviour" facets (Facets 3 and 4, respectively; Hare, 2003). The interpersonal and affective facets tap deficits in emotional and interpersonal functioning characteristic of psychopathy such as lack of empathy, failure to experience remorse, and manipulative behaviour (Hare, 2003). The lifestyle and antisocial behaviour facets tap socially deviant, irresponsible, impulsive, and antisocial characteristics of psychopathy (Hare, 2003).

There is considerable support for the reliability and validity of the PCL-R (Hare, 2003), and this research literature is too extensive to review here in depth. The PCL-R-2 manual (Hare, 2003) provides a comprehensive overview of psychometric characteristics of the measure. Briefly, there is support for internal consistency of the PCL-R, with alpha levels for the four facets ranging from .64 to .83, and for the factor scores and total score ranging from .75 to .85 (Hare, 2003). Similarly, inter-rater reliability is good, with intra-class correlation coefficients ranging from .67 to .84 for the four facets, and .75 to .86 for the factor and total scores. Evidence for concurrent, convergent, discriminant, and predictive validity for the PCL-R is also extensive (Hare, 2003), and includes support for validity drawn from clinical assessments, behavioural reports, self-report, history and demographic characteristics, experimental findings, and laboratory findings (Hare, 2003).

In the current study, offenders were classified as either psychopathic or non-psychopathic, using the recommended cut-off of ≥ 30 on the total score (Hare, 2003). In addition, following a method suggested by Hare (2003) scores were classified as very high (≥ 33), high (25 - 32), moderate (17 – 24), low (9 – 16), or very low (≤ 8). Item Response Theory suggests that the PCL-R is appropriate for both classification purposes and as a measure of trait strength (Cooke & Michie, 1997). A continuous score (raw and percentile) approach was also used in the current study, given recent data supportive of a dimensional model of psychopathic traits, as opposed to taxonicity (Edens, Marcus, Lilienfeld, & Poythress, 2006). In addition to the total score, raw scores for Factor 1 (interpersonal/affective), Factor 2 (social deviance) and the 4 sub-facets (interpersonal, affective, lifestyle, antisocial behaviour) were also documented.

Childhood Maltreatment History

Given the potential relevance of a childhood history of trauma to both violent behaviour and psychological adjustment (e.g., Cohen et al., 2001; Widom, 1989a), intake assessments (both by parole officers and psychologists) routinely include a review of the offender's childhood experiences and history of maltreatment. Both offenders and collateral contacts are interviewed concerning the family life and developmental history of the offender (the latter are conducted exclusively by parole officers). Information on maltreatment history is typically included in CPRs, CAs, and PARs. In the current study, the presence of any report of childhood maltreatment was documented. The source of the report was also documented (offender and/or collateral and/or official). Definitions of childhood maltreatment were derived from Moran, Vuchinich, and Hall (2004), and

White and Widom (2003), and included sexual abuse, physical abuse, physical neglect, and emotional abuse.

Sexual Abuse was defined as a nonconsensual[4] activity directed by a perpetrator toward the child for the intent of gratifying sexual desires. This includes the perpetrator performing or forcing the child to perform unwanted sexual activities, including invitations to sexual activities, sexual touching or fondling, penetration, sodomy, and incest. *Physical Abuse* was defined as any adult knowingly and wilfully using physical force (e.g., hitting, slapping, punching, kicking, or using objects) to inflict harm upon a child. Physical abuse may or may not result in injury; the absence of documented physical injury does not preclude the presence of physical abuse. *Physical Neglect* was defined as parental or caregiver deficiencies during childhood that go beyond those acceptable by the community and professional standards. This includes failure by the caregiver to provide adequate nutrition, clothing, shelter, and/or medical attention to the offender as a child. *Emotional Abuse* was defined as the parent or caregiver intentionally harming their child with words or interactions, including yelling, degrading, name-calling, ostracizing, and belittling.

In addition to documenting reports of maltreatment, the offender's perception of his childhood experiences was also examined. Previous research suggests that offenders

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[4] As per the Canadian Criminal Code (2003), children under the age of 14 cannot consent to sexual activity. An exception to this rule applies to youths who are twelve years of age or more, but less than 14 years of age, wherein the other partner is less than two years older than the youth and under the age of 16, and is not in position of trust or authority to the youth. An exemption also applies to acts classified as Sexual Interference, Invitation to Sexual Touching, and Exposure, if the perpetrator is aged 12 or 13.

often do not perceive certain experiences as abusive, despite clearly meeting community, official, and research standards of such (Fondacaro, Holt, & Powell, 1999). Offenders are typically requested to describe their childhood experiences and family environment, in addition to being directly queried about maltreatment. As such, an offender's perception of his childhood experiences as abusive/non-abusive is frequently inferable from this discussion.

History of Violence

The primary focus of the current study is on the index offence violence of offenders. While motivational subtype of violence is the key violence variable in the current study, a number of other characteristics of the index offence violence were also measured, as described below.

Motivational Subtypes of Violence

Index offence violence was classified using Woodworth and Porter's (2002) Likert-type scale as Primarily Reactive, Reactive-Instrumental, Instrumental-Reactive, or Primarily Instrumental. These violence ratings mainly consider the degree of instrumental gain, purpose, impulsivity, and level of antecedent arousal associated with the offence. In addition, instrumentally motivated crimes (instrumental-reactive or primarily instrumental) were classified as Primary Instrumental or Secondary Instrumental to capture the type of instrumental gain associated with the offence. While not all violent offences fit exclusively into one of the categories, offences were categorized based on the closest approximation to one of the categories (see Appendix C for coding instructions and examples of each type of offence). This coding scheme has documented

acceptable/high reliability (Woodworth & Porter, 2002). Detailed review of the offender's correctional file was undertaken to code the motivational subtypes of violence.

Primarily reactive violence was defined as being characterized by a number of elements. First, the primary motive of the offence appeared to be anger or the display of aggression and frustration. Typically, this type of violence included evidence of some sort of provocation, dispute, or interpersonal conflict that served to instigate the event. There was no discernable gap in time or "cooling off" period between the provocation and the violent offence such that these could be considered separate events. Holmes and Holmes (1998) described this lack of "cooling off" period as a "singleness of time", indicating that the instigating event and the subsequent violent offence constitute part of a single incident. The violent offence appeared unplanned, spontaneous, and impulsive. There may have been evidence of the impulsive and unplanned nature of the offence in the description of the offence, and in the description of the crime scene itself. Such offences were often described as "hot-blooded".

In contrast to reactive violence, *primarily instrumental violence* was both planned and goal-directed. There was evidence that the offence was perpetrated as a means to an end, including for the purposes of revenge or retribution; competition related to a sexual partner; jealousy or envy; to escape custody/remain at large; or to gain access to money, goods, substances of abuse, or sexual activity. There was a clear purpose to the offence other than frustration or anger. Offences that occurred in response to a provocation, but for which there was a discernable "cooling off" period, such that the provocation and the offence were two clearly separable events may have been instrumental in nature (e.g.,

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revenge or retribution), as opposed to reactive. Instrumental offences were often

described as "cold-blooded".

Offences that contained elements of both reactive and instrumental motivation

were classified as either *reactive/instrumental* if the primary motivation appeared to be

reactive; or *instrumental/reactive,* if the primary motivation appeared to be instrumental.

In addition, for offences classified as either *instrumental* or *instrumental/reactive,* the

specific goal of the offence was further subclassified as follows, using the definitions and

labels advanced by Woodworth and Porter (2002). *Primary instrumental:* The

instrumental offence was committed primarily for the reason of causing harm to the

victim (e.g., revenge/retribution, jealousy, sadism); *Secondary instrumental*: The violence

was committed as a means to obtain a non-harm related goal, such as to obtain resources

(i.e., for monetary gain, or for drugs/alcohol); or *Combination instrumental*: The violent

offence was committed for both harm-related reasons and to obtain resources. Offences

for which there was inadequate or unclear information about the circumstances or

motivation (e.g., no witnesses, limited evidence, no perpetrator statement) were classified

as *Unable to code.*

Characteristics of the Index Offence

In addition to the motivational classification and subtypes, a number of other

characteristics of the index offence were documented. First, offences were rated on the

degree of *severity of violence*. Violence severity was rated using the Violence

Assessment Scheme (VAS; Alia-Klein, O'Rourke, Goldstein, & Malaspina, 2007). The

VAS is a tool designed for rating the severity of other-directed aggressive acts, ranging

from mild, verbal or non-physical aggression to extreme acts of physical violence. The

scale is analogous to the DSM-IV-TR Global Assessment of Functioning (GAF; APA, 2000) in terms of format and rating procedure. The scale ranges from 0 – 100, with 10 anchor points that include descriptions of acts of increasing severity. The descriptions incorporate examples of specific acts, as well as degree of damage and use of weapons. In addition, the scale includes five anchored categories of severity that indicate *minimum* scores for certain acts or outcomes (e.g., ≥ *71 - Threat with a loaded firearm*). An inter-rater reliability of .98 (interclass correlation) has been reported for the current version of the scale, which also correlates significantly with a measure of aggression, the Modified Overt Aggression Scale (Alia-Klien et al., 2007). An earlier version of the VAS was validated with the MacArthur Community Violence Instrument, for which between scale agreement was reported to range from .52 - .89 (Alia-Klien et al., 2007). See Appendix C for a copy of the VAS.

Along with violence severity, the presence of *sexual violence* was examined. Sexual violence was defined as any evidence of sexual activity or assault prior to, during, or after the violent offence, and was coded as present, absent, or unclear/ambiguous. Finally, index offences were classified as to whether they involved *excessive/gratuitous* violence. *Excessive/gratuitous* is a subjective determination of violence that is "extreme", and goes beyond the degree of violence necessary to accomplish the "goal" of the offence, irrespective of the motivational subtype of violence. This type of violence is characterized by a considerable amount of injury intentionally inflicted upon the victim so as to maximize pain and suffering, and would typically be associated with homicide or attempted homicide (although possibly a lesser charge depending on plea agreements). Evidence of gratuitous violence could include prolonged torture, mutilation, sadistic

sexual behaviour, and/or a large number of injuries/wounds. Excessive/gratuitous violence was coded as present, absent, or unclear/ambiguous.

Victim Characteristics

The number of victims, the victim-offender relationship, victim age, and victim sex were examined. The relationship between the victim and the offender was classified as follows: stranger, acquaintance/co-worker/business partner, friend/family friend, family member (immediate family and first-degree relatives/partner's relatives), and current/former romantic/sexual partners. Victim age was classified into the general age category (child/youth or adult), as well as more specific age ranges (baby/young child = five years and under; child = six to 12 years; teenager = 13 to 19 years; young adult = 20 to 30 years; adult = 31 to 59 years; and senior = 60 and over). Victim sex was classified as male/female. For offences with more than one victim, information was gathered for each victim, and the consistency in the offender-victim relationship, victim age, and victim sex across victims was examined.

Demographic Characteristics and Criminal/Institutional History

Information was collected regarding the age of the offender at the time of the offence and time since the offence. Additionally, information related to the criminal and incarceration history of the offender was documented, including the number of prior federal sentences, number of violent offence convictions (inclusive of the index offence), the number of conditional release revocations, and history of any mental health intervention.

Procedure

Development of Materials and Rater Training

As the current study included a comprehensive coding scheme with a number of variables requiring collating information across sources and an understanding of various psychological concepts, a multi-step procedure was used to optimize the coding scheme/data collection form, coding instructions, and rater training process. This involved pilot testing the study materials and developing a comprehensive coding manual and rater training process. This initial pilot testing was conducted with ten undergraduate students, all of whom had completed a course in abnormal psychology. Pilot raters attended two training sessions with the primary investigator. In the initial session, raters were provided with a written summary of the study (excluding hypotheses), a draft of the coding scheme/data collection form, a coding manual, an explanation of the operational definitions of each of the variables under investigation, information regarding the sources of data relevant to the coding of each variable, and instructions concerning collating information across sources for the rating of the study variables. Following the first training session, raters were provided with a sample offender file for practice coding.

A review of the practice ratings of the pilot raters allowed for the identification of coding manual instructions that required clarification, modification of the response options for certain variables, and identification of potential difficulties that might arise during data collection. A second training session was held to update the pilot raters on the changes to the coding scheme/data collection form, and the clarifications to the coding manual. It also provided the opportunity to review any difficulties that arose during the

practice coding, which might also arise during data collection (e.g., file data that did not fit well into any of the specified response options, or that were either too general or too specific to be adequately captured by the existing variables). The pilot coders were subsequently provided with a second sample offender file to evaluate the modified coding scheme/data collection form and coding manual. A review of these ratings as well as feedback from the pilot raters allowed for a final optimization of the coding scheme/data collection form and coding manual. This pilot testing also allowed for the determination of the necessary elements for comprehensive rater training in terms of information and instructions for raters, as well as prerequisite knowledge of raters.

Two members of the research team conducted offender file review and data coding: a trained rater, who is a master's level correctional psychologist, and the primary investigator. Rater training followed an eight-step process: 1. The rater was provided with an overview of the project, along with study materials (coding scheme/data collection form, and coding manual) to review; 2. The rater met with the primary investigator for a training session on the use of these materials; 3. The rater practiced coding a sample offender file; 4. Ratings on the sample file were reviewed, and the rater was provided with feedback and further instructions and clarifications at a second training session; 5. The rater practiced coding a second sample offender file; 6. The rater was provided with feedback on performance with the second file, and was provided with additional clarification on rating variables; 7. The rater extracted and coded information from a third sample offender file; and 8. The rater was provided with feedback at a final training session. In addition, each of the first ten offender files was coded by both the primary investigator and the trained rater, to ensure sufficient training.

Data Collection and Coding

Offenders who met the eligibility criteria (as described above) were identified by staff at the target correctional facility. Obtaining consent from individual offenders to review and code data from their correctional files had the strong potential to result in a biased sample, given that personality features and clinical characteristics may be differentially associated with likelihood to consent to research (e.g., Dyce, 1997; Jaskiw, Blumer, & Gutierrez-Esteinou, 2003), and personality and clinical characteristics were target variables under study. As such, consent was not obtained from individual offenders. Only CSC-affiliated research team members, including the primary investigator[5], had access to raw file materials. As none of the research team worked at the correctional facility targeted for data collection, the likelihood was minimal of a team member being familiar with any offenders included in the study. If a team member was familiar with a case, then that team member was not involved in the coding for that participant. File documents for each offender were reviewed thoroughly in order to code each of the variables under investigation. Extracted data was recorded on the Coding Scheme/Data Collection Form (Appendix B). Offender files were each coded by one rater. In addition, in order to ensure continued fidelity in ratings, every 10th file was double-coded. All data collection and coding was conducted on-site at a CSC facility, and all raw data remained on site for storage to ensure a high level of data security. All data collection procedures were approved by the Dalhousie University Research Ethics Board and by CSC National Headquarters.

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[5] At the time of data collection the primary investigator was affiliated with CSC via a clinical placement.

Data Treatment

Predictor variables in the current study included both categorical and continuous variables. Substance use history variables were primarily categorical, initially coded as *history/no history* for substance use, substance use disorders, intoxication at the time of the index offence, and the specific classes of substances for each of these categories of substance use information. Within the classes of substance use information, the *number* of specific substances relevant to that class was also recorded (e.g., number of drugs for which there was a history of abuse/dependence). The history of use of various substances and substance use disorder variables were subsequently combined to create a new variable to capture substance use history *severity*. For each new variable, substance use severity was coded as *no history of use*, *history of use but no history of abuse/dependence diagnosis*, and *history of substance use disorder*.

For Axis I mental disorder diagnoses, Axis I symptoms, Axis II personality diagnoses, and for history of childhood maltreatment information, each specific variable (e.g., "mood disorders") was initially coded as *history/no history*. Given the similarity in the symptoms of adjustment disorder with depressed mood and the symptoms captured by the mood disorder variable, and the symptoms of adjustment disorder with anxiety and those captured by the anxiety disorder variable, adjustment disorder diagnoses were re-coded in combination with the associated mood and anxiety disorder variables. No offenders had received diagnoses of adjustment disorder with disturbance of conduct or mixed adjustment disorders.

As with substance use history, Axis I symptoms and Axis I diagnoses variables were subsequently combined to create new variables to capture Axis I mental health

history severity, for both general history and history of specific forms of Axis I psychopathology. Severity levels were coded as *no Axis I history*, *history of Axis I symptoms but no diagnosis*, and *history of Axis I diagnosis.*

Personality traits as measured by the scales of the MCMI-III and MMPI-2 were continuously distributed variables, as were scores on the total, factor and facet scales of the PCL-R. Both personality traits and psychopathic traits were also represented categorically for descriptive purposes, with the former classified into *clinically elevated (yes/no)*, and the latter dichotomized into *psychopathic/non-psychopathic*, as well as being classified into Hare's (2003) five levels of psychopathic traits ranging from *very low* to *very high*.

As noted previously, subtype of violence was represented by four categories: Primarily Reactive, Reactive-Instrumental, Instrumental Reactive, and Primarily Instrumental. As most prior studies on subtypes of violence have examined violence subtypes as two categories (e.g., Barratt et al., 1999; Houston et al., 2003), these four subtypes were also collapsed into two categories of Reactive and Instrumental violence for ready comparison to the extant literature.

Chapter III:

Results

The following chapter is organized into four sections. (a) I first present initial analyses with the potential predictor variables concerning *mental health history* and *childhood maltreatment*. These initial analyses are presented separately for each of the domains (i.e., variable groupings) of interest: Axis I symptoms and disorders, substance use history and intoxication during the offence, personality disorders, personality testing, and childhood maltreatment. These analyses include descriptive findings and data integrity checks. I subsequently present initial analyses with the outcome variables of interest concerning *index offence violence*. (b) I then examine the relationships between the potential predictor variables (mental health history and maltreatment) and outcome variables (index offence violence) *within* each domain. (c) This is followed by an examination of the relationships between predictor variables, mental health history and childhood maltreatment, and the outcome variable, subtype of index offence violence, *across* domains. (d) Finally, I present the results of a person-focused analytic approach to examine the relationship between mental health history and index offence violence.

It should be noted that there is some variability in sample size across analyses, as not all measures were available for each offender. Sample size is noted for analyses that were not conducted with the complete sample (i.e., $n = 144$). Unless otherwise noted, the reader should assume that subsets of offenders under examination in a given analysis may overlap with subsets of offenders in separate analyses. For example, whereas only subsets of offenders had MCMI-III or MMPI-2 results, these groups were not mutually exclusive.

It should also be noted that super-ordinate/overarching variables (e.g., *history of any substance use*) do not necessarily reflect the sum of associated subordinate/more specific variables (e.g., *history of alcohol use, history of stimulant use*, etc.), as in certain instances there may have been sufficient information to code the super-ordinate variable but an insufficient level of detail to code the associated subordinate variable.

Throughout this dissertation, $p < .10$ was used as the threshold for a trend toward significance, whereas $p < .05$ was used as the threshold for significance. As this research was exploratory in nature, I did not apply any correction factors to the results (e.g., Bonferroni correction) in order to ensure potential significant findings were detected.

Sample Characteristics and Data Integrity Checks

Mental Health History of Offenders

Substance Use History

General substance use history information was available for 142 offenders (98.6% of the sample), with information on specific substances available for 138 to 142 offenders (95.8% to 98.6% of the sample) depending on the substance. As seen in Table 3, the vast majority of offenders had a history of substance use or substance use disorder (SUD), although most had not been diagnosed with a SUD. The majority of offenders had a history of use or SUD for alcohol, cannabis and stimulants, with alcohol having the highest rate of SUD. A notable minority of offenders had a history of opiate and/or other substance use or SUD. The prevalence of non-alcohol-related SUDs of any sort (including diagnoses for unspecified non-alcohol drugs) was 26.1% ($n = 37$).

Rates of alcohol use disorders were considerably lower in the current sample than rates reported for Correctional Service Canada (CSC) offenders in the Atlantic region in the early 1990s (Motiuk & Porporino, 1992). Combining use and abuse/dependence, the rate of any history of alcohol use in the current sample (87.3%, n = 124) is comparable to the rate reported in a large-scale epidemiological study of men and women in the U.S. (92%; Degenhardt, Chiu, Sampson, Kessler, & Anthony, 2007). The rate of alcohol abuse/dependence in the current study was also similar to rates that have been reported in several Canadian prevalence studies for men and women conducted in the late 1980s and mid-1990s (11.5-18%; Somers, Goldner, Waraich, & Hsu, 2004). In contrast, the use of non-alcohol substances appears elevated relative to general population rates, although sufficient comparative data is lacking. For example, the rate of any history of cannabis use in the current sample (71.2%, n = 99; combining cannabis use and abuse/dependence) considerably exceeds the rate reported in the aforementioned large-scale U.S. epidemiological study (42.7%; Degenhardt et al., 2007). Although not directly comparable, the rate of any history of stimulant use in the current sample (60.9%, n = 84; combining stimulant use and abuse/dependence) is vastly higher than the rate reported for cocaine use in the U.S. epidemiological study (16.4%, Degenhardt et al., 2007). In addition, the rate of non-alcohol SUDs in the current sample (26.1%, as noted above) is considerably higher than the rate of "drug use disorders" identified in the aforementioned Canadian substance use prevalence studies (5.4-6.9%; Somers et al., 2004).

In terms of substance use at the time of the index offence, information was collated by including *any* report of intoxication from all sources. This information was available for 137 offenders (95.1% of the sample). This collated information indicated

that 61.3% of offenders ($n = 84$) were under the influence of a substance at the time of committing their index offence. This is consistent with CSC data on substance use at the time of offending (Brochu et al., 2001; CSC, 2007b). Based on offender self-report alone, approximately 56.9% of offenders ($n = 78$) were under the influence at the time of the index offence, whereas based solely on police or official offence descriptions, 30.7% of offenders ($n = 42$) were under the influence at the time of the index offence. As police/official reports appeared to typically rely exclusively on observation (as opposed to objective evidence, such as urinalysis), reported at the discretion of the official, police/official reports of substance use may reflect an *underestimation* of substance use at the time of the offence. Conversely, it is possible that offender reports represent an *overestimation* of substance use at the time of offence, if some offenders claimed substance intoxication in an attempt to mitigate responsibility for their offence. For the purposes of this study, avoiding under-identification of substance use during the index offence was deemed more important than the potential for over-estimation of intoxication; thus, subsequent analyses were conducted with information collated across all sources.

Based on information collated across informants, 19.0% ($n = 26$) of offenders were under the influence of alcohol exclusively, 10.9% of offenders ($n = 15$) had used stimulants exclusively, 2.2% of offenders ($n = 3$) had used opiates exclusively, and 23.4% of offenders ($n = 32$) had used multiple substances at the time of the index offence. Of offenders who had consumed multiple substances during their offence, 78.1% ($n = 25$) had consumed two substances, 18.8% ($n = 6$) had consumed three substances, and 3.1% ($n = 1$) had consumed four substances. Of the offenders who had consumed

more than one substance, the vast majority (87.5%, *n* = 28) had consumed alcohol in addition to another substance.

Table 3.

Substance use history of violent offenders.

	Percentage (*n*) of sample with different levels of substance use		
Substance	No use	Use	Abuse/dependence
Any substance	4.2 (*6*)	60.6 (*86*)	35.2 (*50*)
Alcohol	12.7 (*18*)	71.1 (*101*)	16.2 (*23*)
Stimulants	39.1 (*54*)	52.9 (*73*)	8.0 (*11*)
Cannabis	28.8 (*40*)	69.1 (*96*)	2.1 (*3*)
Opiates	68.6 (*96*)	29.3 (*41*)	2.1 (*3*)
Other	56.5 (*78*)	43.5 (*60*)	0

Note: Levels of substance use are mutually exclusive.

Axis I Symptoms and Disorders

Information on history of any mental health problems was available for 144 offenders, whereas information on the specific forms of mental health history was available for 143 offenders. As seen in Table 4, the majority of offenders in the current study had a history of some form of mental health problems (symptoms or diagnosis) with onset prior to the index offence. Slightly less than half of the sample had a history of mood symptoms or diagnosis, and about a third of the sample had a history of impulse control problems. Slightly more than one fifth of the sample had a history of anxiety symptoms or disorder. The majority of offenders did not have a history of psychosis or other mental health problems.

It is difficult to drawn any conclusions concerning the prevalence rate in the current study relative to the general population. Studies with comparable samples (i.e., adult Canadian men) and comparable methodology (i.e., adult history of mental health symptoms and disorders) are lacking. U.S. epidemiological data for adult men and women indicates lifetime rates that are higher than the rates of diagnoses in the current sample (Kessler et al., 2005). Specifically, data from the U.S. National Comorbidity Survey Replication suggests a lifetime prevalence of anxiety disorders at 28.8%, mood disorders at 20.8%, and impulse control disorders at 24.8% (Kessler et al., 2005). However, the U.S. study included diagnoses that are specific to childhood, such as separation anxiety, oppositional-defiant disorder, and conduct disorder, which were not included in the current study. In addition, the U.S. study included specific phobias in the anxiety disorder category, which were excluded in the current study. The mood disorders category in the U.S. epidemiological study was inclusive of the same disorders as in the current study, and demonstrated somewhat comparable rates of diagnoses to those identified in the current study. The rates for mood and anxiety diagnoses in the current sample are lower than estimated for CSC offenders in the Atlantic region in the early 1990s, however (Motiuk & Porporino, 1992).

Table 4.

Mental health history of violent offenders.

Disorder	Percentage (*n*) of sample with mental health history prior to index offence at different levels of severity.		
	No history	History of symptoms	Diagnosis of mental disorder
Any mental health problems	33.3 (*48*)	31.3 (*45*)	35.4 (*51*)
Mood	59.7 (*86*)	25.0 (*36*)	15.3 (*22*)
Anxiety	77.8 (*112*)	13.2 (*19*)	9.0 (*13*)
Psychosis	88.8 (*127*)	5.6 (*8*)	5.6 (*8*)
Impulse control	66.4 (*95*)	20.3 (*29*)	13.3 (*19*)
Other	83.2 (*119*)	6.3 (*9*)	10.5 (*15*)

Note: Mental health history levels of severity are mutually exclusive.

Other = Other mental health symptoms or disorders generally consistent with DSM-IV-TR (APA, 2000) categories of somatoform, factitious, dissociative, sexual or gender identity, cognitive, eating, or sleep disorders.

Personality Disorders.

Personality disorder diagnoses had been made for 28.5% of offenders (*n* = 41). Specifically, 1.4% (*n* = 2) of offenders had been diagnosed with a Cluster A disorder (0.7% Schizotypal Personality Disorder, 0.7% unspecified Cluster A disorder), 25% (*n* = 36) with a Cluster B disorder (22.9% Antisocial Personality Disorder, 2.1% Borderline Personality Disorder, 0.7% Narcissistic Personality Disorder), 0.7% (*n* = 1) with a Cluster C disorder (0.7% Avoidant Personality Disorder, 0.7% Dependent Personality disorder), and 4.9% (*n* = 7) with an unspecified, mixed, or not otherwise classified personality disorder. Rates do not sum to 100% as categories were not mutually

exclusive. Although the *proportions* of diagnoses in different clusters are generally as expected, with the most frequent diagnoses falling into Cluster B (e.g., Rotter et al., 2002), the overall *rates* of diagnoses appear considerably lower than reported in other comparable samples. For example, approximately 62% of a CSC sample drawn from the Atlantic Region met stringent DSM-III Antisocial Personality Disorder criteria (Motiuk & Porporino, 1992). As personality testing (i.e., MCMI-III, MMPI-2) is commonly conducted with CSC offender populations as part of psychological assessments, it may be that clinicians favoured the continuous score/trait approach, and avoided making formal diagnoses. Given the potential under-identification of personality pathology in the current sample using the diagnostic approach, available personality test results (see below) were used for subsequent analyses concerning personality pathology.

Personality Testing

Results for the MCMI-III, MMPI-2, and PCL-R-2 were available for (non-mutually exclusive) subsets of the total sample. Results from the MCMI-III were available for 55.6% of the total sample ($n = 80$; see Table 5). Offenders with MCMI-III results did not differ from those without MCMI-III results on proportions of instrumental and reactive violence, $\chi^2 (1, N = 136) = 1.49, p = .22$. In addition, offenders with MCMI-III data did not significantly differ from offenders without MCMI-III data on criminal history variables, including age at time of offence, $F(1, 142) = 0.52, p = .47$, total number of convictions for violent offences, $F(1, 142) = 0.05, p = .82$, and number of conditional release revocations, $F(1, 134) = 1.58, p = .21$, although there was a trend for offenders with MCMI-III data to have had more prior federal incarcerations, $F(1, 142) = 3.01, p = .09$. This latter trend may be due to the offenders having more opportunities for

assessment with the MCMI-III. Given these findings, it is likely that the results of the

MCMI-III can be generalized to the complete sample of violent offenders.

Results indicated that for those administered the MCMI-III, highest scale scores

were for the Drug Dependence, Antisocial, and Alcohol Dependence scales, although the

mean scores for the sample were not above the clinical cutoffs (e.g., Millon, David, &

Millon, 1997). Although the mean sample scores were not elevated, a notable minority of

the sample scored in the clinically significant ranges on the Anxiety and Depressive

scales. The proportion of clinical elevations on the MCMI-III scales in the current sample

is generally similar to those identified in a large ($N = 10000$) mixed-sex U.S. correctional

sample (Retzlaff, Stoner, & Kleinsasser, 2002). There were also significant

intercorrelations between MCMI-III scale scores in the current sample (see Tables 6 and

7). The high correlations between some of the scales imply that later analyses with the

MCMI-III can be reduced to a subset of the scales (see further discussion on this, below).

Table 5.

MCMI-III scale scores and clinical elevations among violent male offenders.

MCMI-III scale	Mean *(SD)*	Percentage (*n*) of sample with clinically elevated scores
Clinical scales		
Anxiety	45.23 (*36.90*)	41.2 (*33*)
Somatoform	35.73 (*27.71*)	2.5 (*2*)
Bipolar	42.93 (*25.81*)	3.8 (*3*)
Dysthymia	37.19 (*30.61*)	15.0 (*12*)
Alcohol Dependence	59.65 (*27.90*)	37.5 (*30*)
Drug Dependence	65.53 (*23.78*)	38.8 (*31*)
PTSD (*n* = 76)	38.66 (*31.28*)	11.8 (*9*)
Thought Disorder	31.08 (*27.67*)	3.8 (*3*)
Major Depression	29.93 (*29.81*)	5.0 (*4*)
Delusional Disorder	29.96 (*27.68*)	1.2 (*1*)
Personality scales		
Avoidant	40.11 (*29.56*)	18.8 (*15*)
Schizoid	49.76 (*24.83*)	12.5 (*10*)
Depressive (*n* = 76)	47.72 (*34.15*)	30.3 (*23*)
Dependent	41.56 (*27.74*)	17.5 (*14*)
Histrionic	49.29 (*15.79*)	7.5 (*6*)
Narcissistic	55.75 (*15.45*)	10.0 (*8*)
Antisocial	63.76 (*23.98*)	41.2 (*33*)
Sadistic	43.96 (*25.14*)	8.8 (*11*)
Compulsive	54.38 (*17.58*)	15.0 (*12*)
Negativistic	41.83 (*32.84*)	26.2 (*21*)
Masochistic	39.33 (*32.23*)	23.8 (*19*)
Schizotypal	35.66 (*29.38*)	3.8 (*3*)
Borderline	42.41 (*29.10*)	16.2 (*13*)
Paranoid	37.11 (*31.14*)	8.8 (*7*)

Note: $N = 78$. MCMI-III = Millon Clinical Multiaxial Inventory – 3rd ed.

Table 6.

MCMI-III clinical scale scores correlation matrix.

	1. Anxiety	2. Somatoform	3. Bipolar	4. Dysthymia	5. Alcohol Dependence	6. Drug Dependence	7. PTSD	8. Thought Disorder	9. Major Depression	10. Delusional Disorder
1		.56**	.49**	.58**	.50**	.34**	.81**	.67**	.50**	.38**
2			.53**	.67**	.39**	.21	.56**	.65**	.80**	.31**
3				.42**	.63**	.57**	.42**	.66**	.46**	.56**
4					.34**	.22	.68**	.73**	.68**	.41**
5						.59**	.39**	.50**	.31**	.37**
6							.29*	.47**	.26*	.26*
7								.76**	.57**	.39**
8									.67**	.47**
9										.34**

Note: N = 80. MCMI-III = Millon Clinical Multiaxial Inventory – 3rd ed. PTSD = Post Traumatic Stress Disorder.

*p < .05; ** p < .01.

Table 7.

MCMI-III personality scale scores correlation matrix.

	MCMI-III personality scales												
	2a	2b	3	4	5	6a	6b	7	8a	8b	S	C	P
1	.59**	.50**	.37**	-.54**	-.10	.30**	.37**	-.40**	.54**	.48**	.63**	.39**	.57**
2a		.74**	.55**	-.56**	-.26*	.35**	.41**	-.39**	.70**	.69**	.70**	.53**	.71**
2b			.70**	-.51**	-.30**	.42**	.53**	-.50**	.76**	.80**	.71**	.69**	.64**
3				-.27*	-.35**	.33**	.47**	-.53**	.67**	.71**	.49**	.67**	.54**
4					.62**	-.07	-.15	.33**	-.33**	-.40**	-.40**	-.28*	-.33**
5						.12	.04	.29**	-.12	-.36**	-.10	-.20	.05
6a							.83**	-.67**	.53**	.40**	.42**	.70**	.47**
6b								-.69**	.71**	.50**	.51**	.77**	.63**
7									-.59**	-.52**	-.49**	-.75**	-.44**
8a										.70**	.72**	.78**	.84**
8b											.69**	.70**	.58**
S												.60**	.73**
C													.59**

Note. N = 80. MCMI-III = Millon Clinical Multiaxial Inventory – 3rd ed. MCMI-III scales: 1 = Schizoid. 2a = Avoidant. 2b = Depressive. 3 = Dependent. 4 = Histrionic. 5 = Narcissistic. 6a = Antisocial. 6b = Sadistic. 7 = Compulsive. 8a = Negativistic. 8b = Masochistic. S = Schizotypal. C = Borderline. P = Paranoid.

*p < .05; ** p < .01

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Results of the MMPI-2 were available for 47.9% of the total sample of offenders (n = 69; see Table 8). Offenders with MMPI-2 results did not differ from those without MMPI-2 results on the proportion of instrumental and reactive violence, χ^2 (1, N = 136) = 1.82, p = .18. In addition, offenders with MMPI-2 data did not significantly differ from offenders without MMPI-2 results in terms of their age at the time of the offence, F(1, 142) = 0.03, p = .85, total number of convictions for violent offences, F(1, 142) = 0.17, p = .68, and number of conditional release revocations, F(1, 134) = 2.39, p = .12. However, offenders with MMPI-2 data had more prior federal incarcerations than those without MMPI-2 data, F(1, 142) = 6.37, p = .01. As with the MCMI-III, this may reflect the greater opportunity for test administration. These findings suggest that the MMPI-2 results can likely be generalized to the complete sample of violent offenders.

The current sample had a mean score on the Psychopathic Deviate scale above the clinical cutoff (e.g., Hathaway & McKinley, 1991), with the majority of the sample in the clinically elevated range. This proportion is slightly higher than was reported for a very large (N for male offenders = 34281) correctional sample in the U.S., in which 41% of male offenders demonstrated clinical elevations on the Psychopathic Deviate scale of the MMPI-2 (Black et al., 2004). Although the mean scores for the current sample were not above the clinical cutoff on other scales, approximately one-fifth of the sample had clinically elevated scores on the Hysteria, Hypochondriasis, and Paranoia scales. The proportion of the current sample with clinical elevations on the Hysteria and Hypochondriasis scales is notably higher than in the U.S. study, but is comparable for the Paranoia scale (Black, 2004). See Table 9 for a correlation matrix of scale scores. As with

the MCMI-III, the high correlations between some of the scales imply that later analyses with the MMPI-2 can be reduced to a subset of the scales.

For both the MCMI-III and MMPI-2, only non-redundant scales for which there were specific hypotheses were selected for inclusion in most subsequent analyses. Scales that were inter-correlated at $r > .70$ were deemed redundant, and only one of a redundant pair of scales was included in the analysis. The scale of greatest interest (i.e., the scale for which there was a hypothesis) was selected for redundant pairs. Specifically, for the MCMI-III, the following scales were retained for subsequent logistic regression analyses: Bipolar, PTSD, Major Depression, Alcohol Dependence, Drug Dependence, Narcissistic, Antisocial, Borderline, and Paranoid. For the MMPI-2, the following scales were retained for later logistic regression analyses: Depression, Hysteria, Psychopathic Deviate, Paranoia, Schizophrenia, and Hypomania.

Table 8.

MMPI-2 scale scores and clinical elevations among violent male offenders.

MMPI-2 scale	Mean *(SD)*	Percentage (*n*) of sample with clinically elevated scores
Hypochondriasis	56.46 *(11.52)*	21.7 (*15*)
Depression	54.99 *(9.67)*	10.1 (*7*)
Hysteria	55.75 *(12.60)*	21.7 (*15*)
Psychopathic Deviate	67.42 *(10.14)*	62.3 (*43*)
Masculinity/Femininity	44.90 *(9.04)*	2.9 (*2*)
Paranoia	57.09 *(11.13)*	20.3 (*14*)
Psychasthenia	54.65 *(11.35)*	14.5 (*10*)
Schizophrenia	54.64 *(10.28)*	8.7 (*6*)
Hypomania	53.07 *(11.16)*	11.6 (*8*)
Social Introversion	49.04 *(9.5)*	5.8 (*4*)

Note: N = 69. MMPI-2 = Minnesota Multiphasic Personality Inventory – 2nd ed.

Table 9.

MMPI-2 scale scores correlation matrix.

	1. Hs	2. D	3. Hy	4. Pd	5. MF	6. Pa	7. Pt	8. Sc	9. Ma	10. Si
1		.50**	.75**	.10	.25*	.33**	.43**	.48**	-.02	.18
2			.53**	.28*	.39**	.34**	.67**	.42**	-.33**	.50**
3				.21	.40**	.38**	.55***	.41**	-.23	.06
4					.05	.10	.38***	.49***	.27*	.07
5						.28*	.32**	.17	-.27*	.27*
6							.62**	.53**	.10	.30*
7								.73**	-.08	.41**
8									.26*	.38***
9										-.11

Note: N = 69. MMPI-2 = Minnesota Multiphasic Personality Inventory – 2nd ed. Hs = Hypochondriasis. D = Depression. Hy = Hysteria. PD = Psychopathic Deviate. MF = Masculinity-Femininity. Pa = Paranoia. Pt = Psychasthenia. Sc = Schizophrenia. Ma = Hypomania. Si = Social Introversion.

*p < .05; ** *p* < .01.

Designation of psychopathy status (PCL-R-2 score of above/below 30) was available for 77.8% of the total sample ($n = 112$), whereas total PCL-R-2 scores were available for 73.6% of the total sample ($n = 106$), and PCL-R-2 facets scores available for 68.1% of the total sample ($n = 98$). Offenders with PCL-R-2 status information did not differ from those without PCL-R-2 results on the proportion of instrumental and reactive violence, χ^2 (1, $N = 136$) = 1.28, $p = .26$. Offenders with PCL-R-2 results also did not differ from those without on their age at the time of offence, $F(1, 142) = 0.33$, $p = .57$, or on their number of prior federal incarcerations, $F(1, 142) = 1.35$, $p = .25$. There was a trend for offenders with PCL-R-2 data to have had fewer revocations of conditional release than those without PCL-R-2 data, $F(1, 134) = 3.23$, $p = .07$. Additionally, offenders with available PCL-R-2 results had been convicted of a greater number of violent offences than those without PCL-R-2 results, $F(1, 142) = 9.40$, $p < .01$. It may be that those convictions provided the impetus for the PCL-R-2 assessment (as part of a violence risk assessment). Thus, it is possible that offenders with PCL-R-2 results may represent a more violent subsample of offenders.

Using the PCL-R-2 scoring classification system proposed in the test manual (Hare, 2003), 9.4% of offenders ($n = 24$) were classified in the Very Low range, 33% ($n = 35$) as Low, 41.5% ($n = 44$) as Moderate, 14.2% ($n = 15$) as High, and 1.9% ($n = 2$) as Very High scoring. In terms of actual scores, the mean total PCL-R-2 score for the sample was 17.91 ($SD = 7.09$), with the factor and facet means as follows: Factor 1 (interpersonal/affective) $M = 6.09$ ($SD = 3.92$), Factor 2 (social deviance) $M = 10.67$ ($SD = 3.81$), Facet 1 (interpersonal) $M = 2.42$ ($SD = 2.12$), Facet 2 (affective) $M = 3.59$ ($SD = $

2.14), Facet 3 (lifestyle) $M = 4.74$ ($SD = 2.32$), and Facet 4 (antisocial behaviour) $M =$ 5.94 ($SD = 2.39$).

Given the clinical judgement required in rating items on the PCL-R (Hare, 2003), reliability and validity of the available PCL-R-2 scores were examined via several methods. A series of one-sample t-tests using the scores reported at the 50th percentile for male offenders in the PCL-R-2 manual (Hare, 2003) indicated that the PCL-R-2 total and facets scores, with the exception of Facet 4 (antisocial behaviour), were significantly lower in the current sample than expected. Specifically, the mean PCL-R-2 total score for the current sample was lower than the reported value of 22.5, $t(105) = -6.62$, $p < .000$. The mean Facet 1 (interpersonal) score for the current sample was lower than the reported score of 3.25, $t(97) = -3.88$, $p < .000$. The mean Facet 2 (affective) score for the current sample was lower than the reported score of 4.5, $t(97) = -4.23$, $p < .000$. The mean Facet 3 (lifestyle) score for the current sample was lower than the reported score of 5.75, $t(97) = -4.33$, $p < .000$. In contrast, the mean Facet 4 (antisocial behaviour) score did not differ from the reported score of 5.75, $t(97) = .79$, $p = .43$, ns.

A very small ($n = 8$; 5.6%) subsample of offenders had more than one PCL-R-2 total score available from having had multiple administrations of the measure. The PCL-R-2 rating made closest in time to the offence was used for all analyses. The intraclass correlation coefficient (ICC) was calculated for multiple PCL-R-2 administrations as a secondary reliability check; using a two-way random effects model with an absolute agreement method, the single-measures ICC was .94, $p < .000$.

Correlations between the PCL-R-2 and criminal history variables were also examined as a measure of validity. Total PCL-R-2 scores were significantly correlated

with total number of violence convictions, $r(104) = .26$, $p = .01$, number of prior federal

sentences, $r(104) = .42$, $p < .01$, and number of conditional release revocations, $r(96) =$

$.40$, $p < .01$.

The lower than expected PCL-R-2 scores, with the exception of Facet 4

(antisocial behaviour), raise the possibility of validity problems with this measure.

However, as the PCL-R-2 demonstrated expected correlations with criminal history

variables (see Hare, 2003), it may be that the PCL-R-2 scores are skewed to the lower

end of the scale but still tap the construct of interest.

Childhood Maltreatment History

Childhood maltreatment information was available for 93.8% of the sample ($n =$

135). Information on maltreatment was collated by classifying an offender in a

maltreatment category based on *any* report of maltreatment, across sources (offender self-

report, collateral, or official reports). Collating information across sources, 52.6% ($n =$

71) of offenders had a history of some form of maltreatment. In terms of information

drawn from different sources, 48.1% ($n = 65$) of offenders self-reported a history

consistent with maltreatment, with 43% ($n = 52$) of offenders in the sample describing

their experiences as abusive. Collateral reports indicated a childhood history of

maltreatment for 26.7% ($n = 36$), and 11.2% ($n = 15$) had official reports of maltreatment.

Of the total sample, based on information collated across informants, 24.8% ($n = 32$)

were reported to have a history of sexual abuse, 34.9% ($n = 45$) were reported to have a

history of physical abuse, 20.9% ($n = 27$) were reported to have a history of emotional

abuse, and 12.4% ($n = 16$) were reported to have a history of neglect. These rates are

generally consistent with those reported previously for offender samples (e.g., Fondacaro

et al., 1999; McClellan et al., 1997). Maltreatment categories were not mutually exclusive, so percentages are not expected to sum to 100%. Subsequent analyses were conducted with information collated across all sources. It should be acknowledged that offender reports might represent an *overestimation* of childhood maltreatment frequency, possibly due to offender perception that a history of childhood abuse may serve to mitigate responsibility for their offence(s). In contrast, official and collateral reports may represent an *underestimation* of the frequency of childhood maltreatment due to lack of detection or reporting of maltreatment.

<div align="center">*Index Offence Violence*</div>

Offence Characteristics

Index offences in the current sample were approximately evenly divided between homicide (32.6%, $n = 47$), assaults (34%, $n = 49$), and robberies (29.2%, $n = 42$), with a small minority of unlawful confinement offences (4.2%, $n = 6$). In terms of motivational subtypes of violence, using the four-level scheme, 22.2% ($n = 32$) were classified as primarily reactive, 2.8% ($n = 4$) as reactive-instrumental, 15.3% ($n = 22$) as instrumental-reactive, 54.2% ($n = 78$) as primarily instrumental, and 5.6% ($n = 8$) were not classifiable. Collapsing across forms of instrumental and reactive violence for classifiable offences, 26.5% ($n = 36$) of offences were reactive, and 73.5% ($n = 100$) of offences were instrumental in nature. Of instrumental offences for which there was sufficient information to make a determination ($n = 94$), 25.5% ($n = 24$) were classified as primary instrumental, 66.0% ($n = 62$) as secondary instrumental, and 8.5% ($n = 8$) as combination instrumental.

In terms of offence severity, VAS scores for offences ranged from 35 to 96, with

a mean of 74.77 (SD = 16.59). A t-test for VAS scores for instrumental and reactive

index offence violence indicated that reactive index offences (M = 80.33, SD = 12.46)

were significantly more violent than instrumental offences (M = 72.88, SD = 17.62),

t(133) = 2.33, p = .02. Gratuitous/excessive violence was clearly present in 14.6% (n =

21) of index offences, while 4.9% (n = 7) could not be unambiguously classified. Sexual

violence was only clearly present in 3.5% (n = 5) of index offences, with a further 2.8%

(n = 4) being unclear or ambiguous about whether there was a sexual element to the

violence. The number of perpetrators involved in the index offences ranged from one to

five, with a mean of 1.48 (SD = 0.76).

Inter-rater Reliability

Inter-rater reliability was estimated for violence variables that required a

subjective component to rating, which included the motivational subtypes of violence,

violence severity scale, presence of gratuitous/excessive violence, and presence of sexual

violence. Slightly more than one-tenth of the sample (13.2%; n = 19) had their index

offence variables coded by two raters. Kappas for index offence violence subtype were

generally reasonable using the four-level scale. Unweighted kappa was .56, and weighted

kappa was .72, which can be considered moderate and substantial, respectively (Landis &

Koch, 1977). The collapsed two-category violence subtype variable had a kappa of .87, p

< .001, which is considered outstanding (Landis & Koch, 1977). Given the strength of the

kappa for this latter violence subtype representation, and the small cell size for some of

the levels in the four-level violence subtype scale, all subsequent analyses were

performed only with the two-level violence subtype variable. Kappa could not be

calculated for the specific type of instrumental violence (primary instrumental or secondary instrumental), due to the small cell count for each response option. However, raters agreed on 11 of 12 classifications of instrumental violence.

Kappa was also used to examine inter-rater reliability for the variable *gratuitous/excessive violence* in the index offence. Kappa was substantial, at .68, $p = .002$ (Landis & Koch, 1977). Kappa was not computed for the *presence of sexual violence in the index offence* as not all response options (i.e., presence, absence, unclear/ambiguous) were represented in this subsample; however, raters agreed on the classification of 18 of 19 of the offences. ICC was calculated for *violence severity* (VAS) using a two-way mixed effects model with absolute agreement approach ($n = 17$). The VAS mean of rater one was 73.53 ($SD = 17.06$), and the VAS mean of rater two was 71.06 ($SD = 21.26$), which is not significantly different, $F(1,16) = 1.78$, $p = .20$. The single measures ICC was .92, $p < .000$.[6]

Index Offence Victim Characteristics

The offenders in the current sample had 194 confirmed[7] index offence victims. The modal number of victims per index offence was one, with 76.4 % offenders ($n = 107$) with one victim, 15% of offenders ($n = 21$) with two victims, 6.4% of offenders ($n = 9$) with three victims, 0.7% of offenders ($n = 1$) with four victims, and 1.4% of offenders ($n = 2$) with five victims, for a mean of 1.36 victims ($SD = 0.76$). There was sufficient information to determine the sex of 179 victims. Of those victims for whom the sex was known, 59.8% ($n = 107$) were male. Of offenders with multiple index offence victims for

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[6] Pearson's *r* was also calculated, with very similar results, $r = .94$, $p = .000$.

[7] There were four index offences for which the number of victims was unclear.

whom victim sex data was available, 33.3% (*n* = 9) had offended exclusively against

male victims, 14.8% (*n* = 4) exclusively against female victims, and 51.9% (*n* = 14)

against both male and female victims. In terms of victim age, there was sufficient

information to classify 189 victims as either a child/youth or adult. The vast majority of

victims were adults (96.3% of those victims whose age was classifiable; *n* = 182). There

was also sufficient information to classify the offender-victim relationship for 92.8% (*n* =

182) of victims. More than half (55.5%; *n* = 101) of the victims were strangers to the

perpetrating offender, whereas 17.6% of victims (*n* = 32) were an acquaintance, 12.6%

of victims (*n* = 23) were a partner or former partner, 8.8% of victims (*n* = 16) were a

friend, and 5.5% of victims (*n* = 10) were a family member.

Relationships between Mental Health History, Childhood Maltreatment, and Index Offence Violence within Domains

Mental Health History, Childhood Maltreatment, and Index Offence Violence Severity

Prior to addressing specific study hypotheses, relationships between the predictor

variables (mental health and maltreatment history) and violence severity were examined,

due to the significant difference in violence severity scores between instrumental and

reactive violence. These relationships were examined via a series of bivariate

correlations.

Violence Severity and Substance Use

In terms of substance use history and violence severity, stimulant use history was

negatively correlated with index offence violence severity, $r(136) = -.26$, $p = .002$.

Alcohol use history, $r(139) = .05$, $p = .60$, cannabis use history, $r(136) = -.02$, $p = .82$,

opiate use history, $r(137) = -.06$, $p = .48$, and history of other drug use, $r(135) = .06$, $p =$

.49, were not significantly associated with index offence violence severity. There was a trend for number of SUDs to be negatively associated with index offence violence severity, $r(109) = -.16$, $p = .09$.

With regard to substance use during the index offence, stimulant intoxication was negatively correlated with index offence violence severity, $r(137) = -.18$, $p = .03$. In contrast, polysubstance intoxication was positively associated with index offence violence severity, $r(137) = .25$, $p = .00$. General intoxication status during the offence, $r(134) = .00$, $p = .99$, alcohol intoxication, $r(137) = -.09$, $p = .29$, and opiate intoxication, $r(137) = -.11$, $p = .21$, were not significantly associated with index offence violence severity.

Violence Severity and Axis I Psychopathology

Both history of any mental health problem, $r(140) = -.18$, $p = .03$, and history of mood problems, $r(140) = -.24$, $p = .01$, were negatively correlated with index offence violence severity. Similarly, there were trends for history of anxiety problems, $r(140) = -.15$, $p = .07$, and history of psychosis, $r(140) = -.15$, $p = .08$, to be negatively associated with index offence violence severity. History of impulse control problems, $r(140) = .04$, $p = .67$, and other mental health problems, $r(140) = -.08$, $p = .35$, were not significantly associated with index offence violence severity.

Violence Severity and Personality Pathology

In terms of MCMI-III clinical scales, there was a trend for the alcohol dependence scale score to be negatively correlated with index offence violence severity, $r(78) = -.20$, $p = .08$. None of the other clinical scales were significantly associated with index offence

violence severity, including Bipolar, $r(78) = -.17$, $p = .13$, PTSD, $r(74) = .06$, $p = .64$,

Major Depression, $r(78) = -.16$, $p = .15$, and Drug Dependence, $r(78) = -.10$, $p = .38$.

Surprisingly, a number of forms of personality pathology across several different

measures were negatively correlated with violence severity. Regarding MCMI-III

personality scales, the Paranoid scale was negatively correlated with index offence

violence severity, $r(78) = -.25$, $p = .03$. Similarly, there was a trend for the Antisocial

scale to be negatively associated with index offence violence severity, $r(78) = -.20$, $p =$

.08. Narcissistic, $r(78) = .00$, $p = .98$, and Borderline, $r(78) = -.19$, $p = .10$, scales were

not significantly associated with index offence violence severity.

With regard to the MMPI-2, there was a negative correlation between the

Depression scale and index offence violence severity, $r(66) = -.28$, $p = .02$. In contrast,

there was a trend for the Paranoia scale to be positively correlated with index offence

violence severity, $r(66) = .24$, $p = .05$. Hysteria, $r(66) = .04$, $p = .76$, Schizophrenia, $r(66)$

$= .03$, $p = .84$, Hypomania, $r(66) = .09$, $p = .49$, and Psychopathic Deviate, $r(66) = -.05$, p

$= .67$, scales were not significantly correlated with index offence violence severity.

In terms of the PCL-R-2 facets, there was a trend for Facet 4 (antisocial

behaviour) to be negatively correlated with index offence violence severity, $r(94) = -.19$,

$p = .06$. Facet 1 (interpersonal), $r(94) = .10$, $p = .35$, Facet 2 (affective), $r(94) = .10$, $p =$

.34, and Facet 3 (lifestyle), $r(94) = -.08$, $p = .46$, were not significantly correlated with

index offence violence severity.

Violence Severity and Childhood Maltreatment History

Correlational analyses indicated that childhood history of sexual abuse, $r(126) =$

$-.01$, $p = .91$, physical abuse, $r(126) = -.03$, $p = .78$, emotional abuse, $r(126) = .02$, $p =$

.79, and neglect, $r(126) = -.07$, $p = .43$, were not significantly associated with index offence violence severity. The number of types of maltreatment to which an offender was exposed was also not significantly associated with index offence violence severity, $r(126) = -.03$, $p = .77$.

Mental Health History, Childhood Maltreatment, and Subtypes of Index Offence Violence

Study hypotheses were then examined in a number of ways. First, a series of multinomial logistic regressions were conducted with each mental health history domain as predictors of the likelihood of instrumental violence relative to reactive violence (i.e., for all analyses, reactive violence was the reference category). This was then followed by model-building with variables identified in the domain-by-domain analyses as individually predictive of violence subtype, to develop a model with the best predictors. Logistic regression was selected for the primary analytic approach as it allows for the prediction of group membership of a categorical dichotomous outcome variable (i.e., instrumental or reactive violence). This prediction can be based on either individual, or a combination of, independent variables that are either continuous or categorical. Logistic regression allows for the development of models that result in an equation that can be used to classify risk for an outcome in samples or individuals beyond the current data. Multinomial (as opposed to binomial) logistic regression was used due to the implementation and output options available for this analytic approach in data analysis software (e.g., ability to specify the reference category for analyses).

Subtypes of Violence and Substance Use

Hypothesis 1a: Offenders with a history of substance use disorders would be more likely to have committed instrumental violence than reactive violence.

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A multinomial logistic regression with history of use of specific substances indicated that degree of alcohol use history was significantly negatively associated with likelihood of instrumental violence. Thus, in direct opposition to the hypothesis, as alcohol usage history increased (moving from no use, to some use, to alcohol use disorder), the likelihood of instrumental violence decreased (therefore, the likelihood of reactive violence increased). This can be seen in Table 10 with the odds-ratio (likelihood of instrumental relative to reactive violence) considerably below one, and a negative slope (B). This odds-ratio reflects an *increase* in odds for *reactive* violence by a factor of 2.27 (i.e., 1/0.44) with each one-unit increase in alcohol usage history severity. There were no other significant substance use history predictors of subtype of index offence violence. However, there was a trend (p = .09), again opposite to the hypothesis, for stimulant use history to be associated with decreased likelihood of instrumental violence (and therefore, increased likelihood of reactive violence), with an odds-ratio below one, and negative slope. The magnitude of this effect was such that each unit increase in stimulant use history would result in an *increase* in odds of *reactive* violence by a factor of 1.82 (i.e., 1/0.55). There was also a trend (p = .08), consistent with the hypothesis, for opiate use history to be associated with increased likelihood of instrumental violence. The effect of opiate history is opposite to the effect of alcohol history, with an odds-ratio above one, and a positive slope. Although not significant, the magnitude of the effect for opiate use history is comparable to that for alcohol history (i.e., 1/0.44 = 2.27 ≈ 2.23). The majority of offenders (n = 29, 90.6%) with an opiate use history (use or SUD) who had perpetrated an instrumental offence had engaged in secondary instrumental violence. Likelihood ratio test chi-squares, which identify the difference between the full model

with all specified independent variables, and a reduced model without the inclusion of a given independent variable, indicated very similar results. Removal of alcohol use history from the model resulted in significant change from the full model, whereas removal of opiate use history fell slightly short of significance in impact on the model. Removal of stimulant use history from the model did not result in a significant change from the full model, however. As such, alcohol use history and opiate use history were retained for later model-building analyses, whereas stimulant use history was not retained (see below).

Table 10.

Substance use history of offenders and prediction of violence subtype by multinomial logistic regression.

Substance	LR χ^2	B	Wald	*OR*	95% *CI*
Stimulants	2.71	-0.61	2.92^t	0.55	0.27-1.09
Alcohol	4.11*	-0.83	4.21*	0.44	0.20-0.96
Cannabis	.00	0.02	0.00	1.02	0.43-2.41
Opiates	3.10^t	0.80	3.12^t	2.23	0.92-5.41
Other	.21	-0.22	0.23	0.81	0.33-1.95

Note: LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. $^t p < .10$. *$p < .05$.

Hypothesis 1b. Offenders who were under the influence of (a) substance(s) at the time of their offence would be more likely to have committed reactive violence, particularly if the substance of use was a stimulant.

Separate multinomial logistic regression analyses were conducted with general intoxication (with any substance) at the time of the index offence as a single independent

variable in the first analyses, and with specific substances of intoxication as the four

independent variables in the second analysis. In the first analysis (see Table 11),

intoxication at the time of index offence was a significant predictor of violence subtype,

such that being intoxicated with any substance decreased the likelihood of instrumental

violence (i.e., increased the likelihood of reactive violence). This can be seen with an

odds-ratio well below one, and a negative slope. Intoxication with any substance

increased the odds of *reactive* violence by a factor of 2.56 (i.e., 1/0.39), consistent with

the hypothesis. In the second analysis (see Table 11), consistent with the hypothesis,

intoxication with more than one substance was a significant predictor of decreased

likelihood of instrumental violence (i.e., increased likelihood of reactive violence), with

an odds-ratio well below one, and a negative slope. The magnitude of this effect was

stronger than that for intoxication with any substance, such that polysubstance

intoxication was associated with an *increase* in odds of *reactive* violence by a factor of

3.70 (i.e., 1/0.27). In contrast to the hypothesis, stimulant intoxication at the time of the

index offence was exclusively associated with instrumental violence, and as such, a

logistic regression equation could not be computed for this variable. All of these

offenders had perpetrated secondary instrumental violence. Alcohol and opiate

intoxication were not significant predictors of index offence violence subtype, but note

that the odds-ratio for alcohol was quite similar to that for the analysis with history of

alcohol use (see Table 10). Likelihood ratio test chi-squares indicated parallel results,

with the removal of stimulant, alcohol, or polysubstance intoxication resulting in

significant changes from the full logistic regression model. Thus, these three variables

were retained for model-building analyses, presented in the third section of this chapter.

Table 11.

Substance intoxication during the index offence and prediction of violence subtype by multinomial logistic regression.

Substance	LR χ^2	B	Wald	OR	95% CI
Any substance	4.81*	-0.95	4.41*	0.39	0.16-0.94
Stimulants	4.64*		N/A[1]		
Alcohol	1.92	-0.76	1.96	0.47	0.16-1.36
Opiates	0.38	-0.82	0.42	0.44	0.04-5.29
Polysubstance	7.38**	-1.32	7.23**	0.27	0.10-0.70

Note: LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. No offenders were exclusively intoxicated with cannabis during their index offence. [1]Exclusively instrumental offences. *$p < .05$. **$p < .01$.

Subtypes of Violence and Axis I Psychopathology

Hypothesis 2: (a) A history of mood disorders, psychotic disorders, and impulse control disorders would be associated with reactive violence. (b) Other categories of Axis I psychopathology were not expected to be predictive of subtype of violence.

Separate multinomial logistic regression analyses were conducted with general mental health history as a single independent variable in the first analyses, and with specific forms of mental health history (i.e., history of mood, anxiety, impulse control, and other mental health problems) as the five independent variables in the second analysis. Although Axis I psychopathology history (other than substance use, see above) was not significantly predictive of subtype of violence (see Table 12), there was a trend ($p = .08$) for history of any form of Axis I psychopathology to be predictive of violence subtype. Consistent with the hypothesis, increasing severity of history of Axis I psychopathology (from none, to symptoms, to disorder) was associated with decreasing

likelihood of instrumental violence (and therefore increasing likelihood of reactive violence), as seen with the odds-ratio below one, and a negative slope. The odds-ratio indicates that each unit increase in mental health history severity is associated with an *increase* in odds of *reactive* violence by a factor of 1.52 (i.e., 1/0.66). No other specific forms of psychopathology were associated with violence subtype. Likelihood ratio test chi-squares paralleled these findings. History of any form of Axis I psychopathology was therefore retained for later model-building (see below).

Table 12.

Axis I history prior to index offence and prediction of violence subtype by multinomial logistic regression.

Axis I Disorder	LR χ^2	B	Wald	*OR*	95% *CI*
Any disorder	3.08^t	-0.42	3.00^t	0.66	0.41-1.06
Mood	0.01	0.03	0.01	1.03	0.56-1.89
Anxiety	0.69	0.31	0.65	1.37	0.64-2.91
Psychosis	0.00	0.02	0.00	1.02	0.45-2.28
Impulse control	1.70	-0.36	1.73	0.79	0.40-1.20
Other	0.14	0.12	0.13	1.13	0.60-2.13

Note: LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. $^t p < .10$.

Subtypes of Violence and Personality Pathology

Hypothesis 3. Borderline personality disorder would be associated with reactive violence, whereas antisocial personality disorder, narcissistic personality disorder, and psychopathy would be associated with instrumental violence.

The analyses of borderline personality, antisocial personality, and narcissistic personality are examined later under Hypothesis 4. In terms of psychopathy, the total

score, and the four facet scores, were examined in two separate logistic regression analyses. In contrast to the hypothesis, neither the total PCL-R-2 score, nor the facet scores[8], were predictive of violence subtype (see Table 13). All of the odds-ratios were near one, and removal of any of these variables from the model did not result in a significant change from the full model. Thus, no PCL-R-2 variables were retained for later model-building.

Table 13.

PCL-R-2 facets and prediction of violence subtype by multinomial logistic regression.

PCL-R-2 score	LR χ^2	B	Wald	*OR*	95% *CI*
Total	.05	0.01	0.03	1.01	0.93-1.09
Interpersonal (Facet 1)	.04	-0.03	0.03	0.97	0.72-1.32
Affective (Facet 2)	2.15	0.20	1.72	1.22	0.91-1.63
Lifestyle (Facet 3)	.14	-0.05	0.14	0.95	0.72-1.26
Antisocial (Facet 4)	2.67	-0.19	2.08	0.83	0.65-1.07

Note: $N = 91$. PCL-R-2 = Psychopathy Checklist – Revised (2nd Edition). LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval.

Given that Woodworth and Porter (2002) found psychopathy to be associated with instrumental index offence violence in a sample of homicide offenders (i.e., a sample that had committed severe violence), the role of violence severity was examined in relation to psychopathy in the current sample. In other words, it is possible that the expected relation of psychopathy to instrumental violence is only present at higher levels of violence severity of the index offence. To this end, a series of interaction vectors were

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[8] The same analysis was conducted with the PCL-R factor scores in place of the four facet scores, with comparable results.

created for the product of the psychopathy facet scores and the index offence violence severity variable. These four interaction vectors were then examined in relation to their component variables to determine whether they were likely to add significantly to the prediction of variance. All interaction vectors were significantly correlated with their component variables ($p < .01$), although the correlations with violence severity were all in the $r < .40$ range, implying less than 20% overlap between the interaction and its components. Point biserial correlations between the interaction vectors and index offence subtype were then examined. Only the interaction between violence severity and PCL-R-2 Facet 4 (antisocial behaviour) was significantly correlated with subtype of index offence violence, $r(89) = -.22$, $p = .04$, but in the opposite direction than would be expected. Specifically, the interaction suggests that as violence severity and PCL-R-2 Facet 4 score increase, offences become more *reactive*.

   As seen in Table 14, a hierarchical logistic regression was then conducted with violence severity and PCL-R-2 Facet 4 (antisocial behaviour) at step one, and the interaction vector for the two variables at step two. Results indicated that the incremental change in model fit (model chi-square) was not significant, indicating that the interaction terms did not contribute significantly to the prediction of subtype of index offence violence.

Table 14.

Hierarchical logistic regression with interactions between PCL-R-2 and violence severity.

Predictor variable	LR χ^2	B	Wald	*OR*	95% *CI*
Block 1					
Index offence severity	2.73[t]	-0.03	2.53	0.97	0.94-1.01
PCL-R-2 Facet 4	3.36[t]	-0.20	3.11[t]	0.82	0.66-1.02
Block 2					
(A) Index offence severity	1.39	-0.06	1.27	0.94	0.85-1.05
(1) PCL-R-2 Facet 4	0.97	-0.64	0.93	0.53	0.14-1.95
A X 1	0.48	0.01	0.47	1.01	0.99-1.02

Note: $N = 90$. PCL-R-2 = Psychopathy Checklist – Revised (2nd ed.). LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. PCL-R-2 Facet 4 = Antisocial. Block 1: Nagelkerke R^2 = .08. Block LR χ^2 (2, $N = 90$) = 5.18, $p = .08$. Block 2: Nagelkerke R^2 = .09. Block LR χ^2 (1, $N = 90$) = 0.48, $p = .49$. Model LR χ^2 (3, $N = 90$) = 5.66, $p = .13$
[t] $p < .10$.

Hypothesis 3b. Substance use at the time of the index offence would attenuate the association between psychopathic traits and instrumental violence, whereas other substance use factors (i.e., general use, substance use disorders) would not have an impact on the association between psychopathic traits and instrumental violence.

The possibility of a significant interaction between substance use and psychopathy in the prediction of violence subtype was examined using the same method used for the interaction of psychopathy and violence severity. A series of two-way interaction vectors were created for the product of the history of substance use variables (for each substance type) and the general intoxication at the time of the offence variable,

with each of the PCL-R-2 facet scores. These 24 interaction vectors were then examined in relation to their component variables. All interaction vectors were significantly correlated with their component variables ($p < .01$), although a number of these correlations were in the $r < .50$ range, indicating less than 25% overlap between the interaction and its components. The point bi-serial correlations between the interaction vectors and offence subtype were then examined. Most interaction vectors were non-significant, with the exception of the interaction between stimulant use history and PCL-R-2 Facet 4 (antisocial behaviour) score, r (91) = -.26, p = .02, alcohol use history and PCL-R-2 Facet 4 (antisocial behaviour) score, r (91) = -.23, p = .03, intoxication during the index offence and PCL-R-2 Facet 3 (lifestyle) score, r (91) = -.21, p = .04, and intoxication during the index offence and PCL-R-2 Facet 4 (antisocial behaviour) score, r (91) = -.27, p < .01. In each case, the interaction terms were associated with reactive violence.

Hierarchical logistic regression analyses were then conducted with each interaction vector that was significant in the preceding correlational analyses and its component variables (see Table 15). Component variables were entered at step one, and the interaction of those variables was entered at step two. The significance of the incremental change in model fit (model chi-square) was obtained. Results indicated that the addition of the interaction terms to the model contributed significantly. As shown in Table 15, there was a trend for the interaction between intoxication during the index offence and PCL-R-2 Facet 3 (lifestyle) to be predictive of reactive violence, with an odds-ratio below one, and a negative slope. The magnitude of this effect was such that a one-unit increase in the interaction vector score was associated with an *increase* in the

odds for *reactive* violence by a factor of 2.63 (i.e., 1/0.38). An examination of the data

indicated that PCL-R-2 Facet 3 (lifestyle) scores were marginally associated with

instrumental violence in unintoxicated offenders, whereas in intoxicated offenders, this

relationship disappears (see Figure 1). In addition, PCL-R-2 Facet 3 (lifestyle) scores

were associated with intoxication in those offences that were reactive. No other

individual interaction terms were significant predictors of violence subtype. Thus,

substance use does appear to impact on the relationship between psychopathy and

subtype of index offence violence, but only for the deviant social/behaviour aspects of

psychopathy and only for intoxication during the index offence.

Table 15.

Hierarchical logistic regression with interactions between PCL-R-2 and substance use variables.

Predictor variable	LR χ^2	B	Wald	*OR*	95% *CI*
Block 1					
Stimulant use history	0.65	-0.38	0.64	0.68	0.27-1.73
Alcohol use history	3.15[t]	-1.06	2.99[t]	0.35	0.10-1.15
Intoxication during I.O.	1.82	-0.80	1.71	0.45	0.14-1.49
PCL-R-2 Facet 3	0.30	0.07	0.30	1.07	0.84-1.38
PCL-R-2 Facet 4	1.41	-0.15	1.34	0.86	0.67-1.11

(continued on next page)

Table 15 (continued).

Block 2					
(A) Stimulant use history	0.40	1.33	0.39	3.80	0.06-254.60
(B) Alcohol use history	4.52*	-3.57	3.06[t]	0.03	0.00-1.54
(C) Intoxication during IO	3.61[t]	4.81	3.09[t]	122.53	0.57-26170.00
(1) PCL-R-2 Facet 3	5.28*	0.88	3.34[t]	2.42	0.94-6.25
(2) PCL-R-2 Facet 4	0.24	-0.18	0.23	0.84	0.41-1.72
A X 2	1.27	-0.34	1.15	0.71	0.38-1.33
B X 2	1.96	0.41	1.60	1.50	0.80-2.83
C X 1	5.35*	-0.97	3.66[t]	0.38	0.14-1.02
C X 2	0.63	-0.34	0.62	0.71	0.30-1.66

Note: $N = 86$. LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. IO = Index offence. PCL-R-2 = Psychopathy Checklist – Revised (2nd ed.). Facet 3 = Lifestyle. Facet 4 = Antisocial.

Block 1: Nagelkerke $R^2 = .15$. Block LR χ^2 (5, $N = 86$) = 9.46, $p = .09$.

Block 2: Nagelkerke $R^2 = .35$. Block LR χ^2 (4, $N = 86$) = 13.96, $p < .01$.

Model LR χ^2 (9, $N = 86$) = 23.41, $p < .01$

[t] $p < .10$. *$p < .05$.
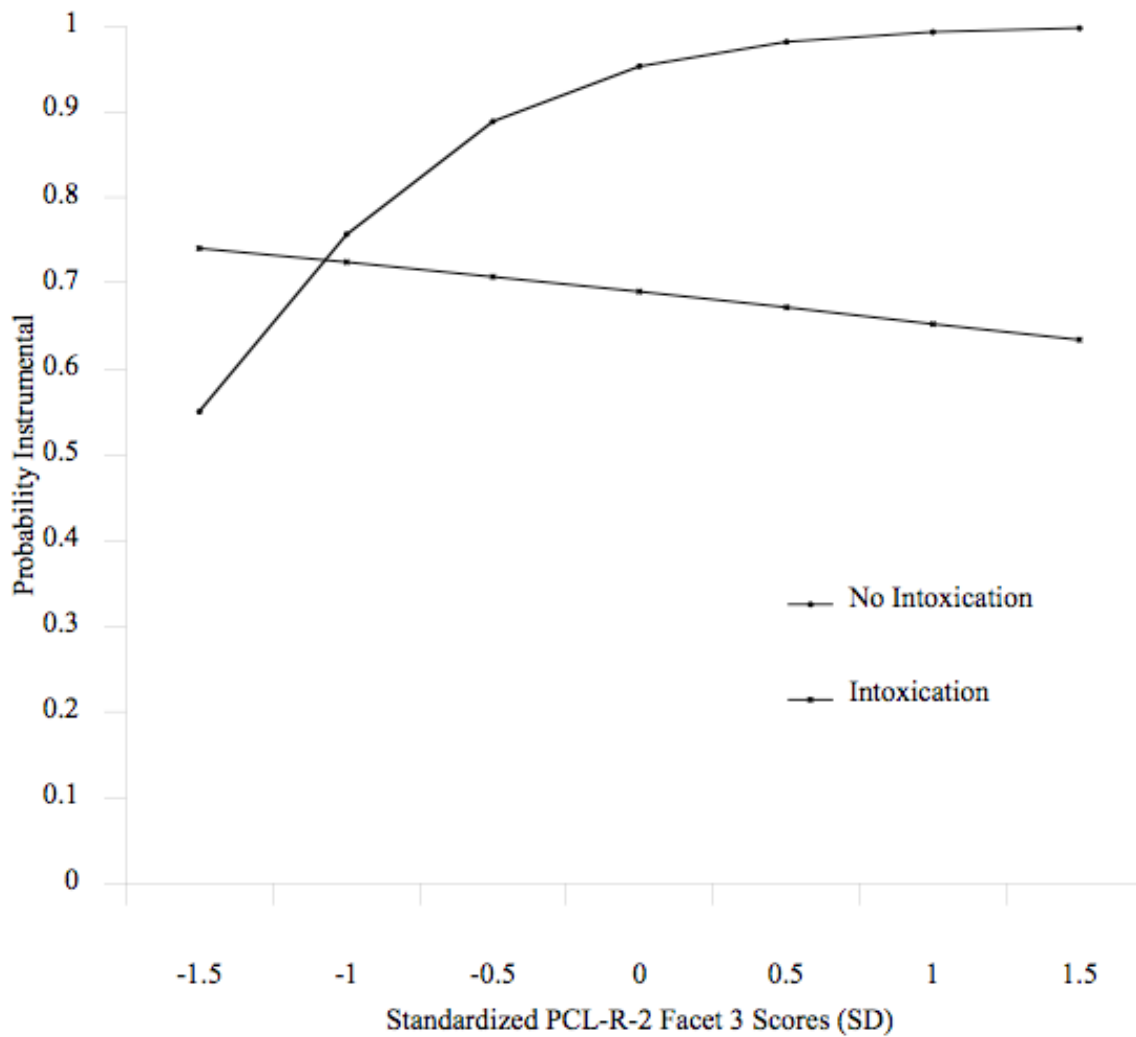
Figure 1. Interaction between standardized PCL-R-2 Facet 3 (lifestyle) scores and substance intoxication in the prediction of subtype of violent offence.

Hypothesis 4. Personality pathology traits, as measured by the MCMI-III and MMPI-2,
would be relevant to subtype of violence, parallel to the predictions for diagnoses.

As noted above, DSM forms of personality pathology were examined using a
continuous score approach through personality testing. In terms of specific hypotheses, it
was predicted that scores on the MCMI-III Drug and Alcohol Dependence, Antisocial,
and Narcissistic scales would be associated with instrumental violence, whereas scores on
the Paranoid, Borderline, Bipolar, Major Depression, and PTSD scale scores would be
associated with reactive violence[9]. MCMI-III scales were examined in three separate
logistic regression analyses: clinical scales excluding substance use, substance use scales,
and personality scales. Person-focused analyses concerning personality features are
presented in the fourth section of this chapter.

As shown in Table 16, in contrast to predictions, none of the MCMI-III scales
were significant predictors of violence subtype, with odds-ratios very close to one. There
was a trend for the Paranoid scale to be associated with an increased likelihood of
instrumental violence even though the odds-ratio for this scale was very close to one.
Removal of the Paranoid variable from the model resulted in significant change to the
model, whereas all other variables could be dropped without significant change from the
full model, suggesting that it might be useful to include the Paranoid variable in model-
building. However, given that only a subsample of offenders had MCMI-III test data, the
Paranoid scale was not included in later model development, as this significantly limited
available sample size for the model.

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[9] Hypotheses were originally also advanced for MCMI-III Sadistic and Dysthymia scales,
but these scales were not included in the analyses due to redundancy with other MCMI-
III scales.

For the MMPI-2, scores on the Psychopathic Deviate scale were predicted to be associated with instrumental violence, whereas scores on the Depression, Paranoia, Schizophrenia, and Hypomania scales were predicted to be associated with reactive violence. As with the MCMI-III, none of the MMPI-2 scales were predictive of violence subtype, with all odds ratios approaching one (see Table 17). Removal of any the MMPI-2 scales had no significant impact on the model.

Table 16.

MCMI-III scales and prediction of violence subtype by multinomial logistic regression.

MCMI-III scale (analysis[1])	LR χ^2	B	Wald	*OR*	95% *CI*
Bipolar (1)	1.84	-0.02	1.76	0.98	0.96-1.01
PTSD (1)	0.43	0.01	0.42	1.01	0.98-1.03
Major Depression (1)	0.53	0.01	0.52	1.01	0.98-1.04
Alcohol Dependence (2)	0.10	0.00	0.10	1.00	0.97-1.02
Drug Dependence (2)	0.04	0.00	0.04	1.00	0.97-1.03
Narcissistic (3)	1.84	-0.03	1.78	0.97	0.93-1.01
Antisocial (3)	0.42	-0.01	0.40	0.99	0.95-1.03
Borderline (3)	0.27	-0.01	0.27	0.99	0.96-1.03
Paranoid (3)	4.00*	0.02	3.60[t]	1.03	1.00-1.05

Note: $N = 76$. MCMI-III = Millon Clinical Multiaxial Inventory – 3rd ed. LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. PTSD = Post Traumatic Stress Disorder. [1]Analyses were conducted in sets with theoretically related scales. [t]$p < .10$. *$p < .05$.

Table 17.

MMPI-2 scales and prediction of violence subtype by multinomial logistic regression.

MMPI-2 scale	LR χ^2	B	Wald	*OR*	95% *CI*
Depression	.05	-0.01	0.05	0.99	0.91-1.08
Hysteria	.02	0.01	0.02	1.01	0.94-1.07
Psychopathic Deviate	1.08	-0.04	1.04	0.96	0.89-1.04
Paranoia	1.78	-0.05	1.71	0.95	0.89-1.02
Schizophrenia	1.58	0.06	1.43	1.06	0.96-1.18
Hypomania	.65	-0.03	0.65	0.97	0.90-1.04

Table 17 (continued).

Note: N = 76. MMPI-2 = Minnesota Multiphasic Personality Inventory – 2nd ed. LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval.

Childhood Maltreatment History

Maltreatment and Psychopathology.

Hypothesis 5a. Offenders with a history of childhood maltreatment would have higher rates of psychopathology than non-maltreated offenders. A series of MANOVAs were conducted to examine differences in mental health history between maltreated and non-maltreated offenders. Separate MANOVAs were conducted for each type of maltreatment. The first set of MANOVAs examined Axis I mental health history, excluding substance use history. The multivariate test for sexual abuse history was not significant, $F(5, 123) = 0.21$, $p = .96$, $\eta_p^2 = .01$. Similarly, the multivariate test for physical abuse was not significant, $F(5, 123) = 1.71$, $p = .14$, $\eta_p^2 = .07$. However, consistent with the hypothesis, the tests for individual dependent variables indicated that offenders with a history of physical abuse had a more severe mood history than those without a history of physical abuse, $F(1, 127) = 6.86$, $p = .01$, $\eta_p^2 = .05$. The multivariate

test for neglect was non-significant, $F(5, 123) = 0.39$, $p = .86$, $\eta_p^2 = .02$. In contrast, the multivariate test for emotional abuse approached significance, $F(5, 123) = 2.01$, $p = .08$, $\eta_p^2 = .08$, with marginally greater history of mood, $F(1, 127) = 3.09$, $p = .08$, $\eta_p^2 = .02$, anxiety, $F(1, 127) = 3.16$, $p = .08$, $\eta_p^2 = .02$, and impulse control problems, $F(1, 127) = 3.81$, $p = .05$, $\eta_p^2 = .03$, in offenders with a history of emotional abuse than those without such a history, consistent with the hypothesis.

A second set of MANOVAs examined the effect of maltreatment history on substance abuse history. In contrast to the hypothesis, the multivariate test for sexual abuse history was non-significant, $F(5, 119) = 1.57$, $p = .17$, $\eta_p^2 = .06$, as was the test for physical abuse history, $F(5, 119) = 1.19$, $p = .32$, $\eta_p^2 = .05$. The test for neglect was also non-significant, $F(5, 119) = 1.39$, $p = .23$, $\eta_p^2 = .06$, as was the test for emotional abuse, $F(5, 119) = 0.20$, $p = .96$, $\eta_p^2 = .01$.

Subsequently, a series of MANOVAs were conducted to examine differences in personality test scores between maltreated and non-maltreated offenders for specific types of maltreatment. With regard to MCMI-III clinical scale scores, the overall test was significant for sexual abuse, $F(10, 57) = 2.74$, $p = .01$, $\eta_p^2 = .33$, consistent with the hypothesis. However, none of the specific scale scores differed between sexually abused and non-sexually abused offenders, although there was a trend ($p = .06$) for sexually abused offenders to score higher on the Alcohol Dependent scale. There was also a significant overall effect for physical abuse history, $F(10, 57) = 2.35$, $p = .03$, $\eta_p^2 = .28$. Consistent with the hypothesis, physically abused offenders scored significantly higher than non-physically abused offenders on all MCMI-III clinical scales, with the exception of Alcohol Dependence, for which there was only a trend ($p = .07$). In contrast, the tests

for neglect history, $F(10, 57) = 0.21$, $p = .96$, $\eta_p^2 = .04$, and emotional abuse history,

$F(10, 57) = 0.57$, $p = .83$, $\eta_p^2 = .09$, were not significant. See Table 18 for significant and

marginally significant clinical scales across maltreatment types.

With regard to MCMI-III personality scales, in contrast to the hypothesis, the tests

for sexual abuse, $F(14, 53) = 0.91$, $p = .56$, $\eta_p^2 = .19$, and emotional abuse, $F(14, 53) =$

1.38, $p = .20$, $\eta_p^2 = .27$, were not significant. The multivariate test for physical abuse,

$F(14, 53) = 1.46$, $p = .16$, $\eta_p^2 = .28$, was also not significant; however, many of the tests

for individual dependent variables were significant. Specifically, offenders with a history

of physical abuse had higher scores on the Depressive, $F(5, 66) = 6.39$, $p = .01$, $\eta_p^2 = .09$,

Antisocial, $F(5, 66) = 7.45$, $p = .01$, $\eta_p^2 = .10$, Sadistic, $F(5, 66) = 10.04$, $p = .00$, $\eta_p^2 =$

$.13$, Negativistic, $F(5, 66) = 5.67$, $p = .02$, $\eta_p^2 = .08$, Masochistic, $F(5, 66) = 4.41$, $p =$

$.04$, $\eta_p^2 = .06$, Schizotypal, $F(5, 66) = 5.92$, $p = .02$, $\eta_p^2 = .08$, Borderline, $F(5, 66) =$

9.17, $p = .00$, $\eta_p^2 = .12$, and Paranoid, $F(5, 66) = 4.73$, $p = .03$, $\eta_p^2 = .07$, scales,

consistent with the hypothesis. The omnibus test for neglect approached significance,

$F(14, 53) = 1.75$, $p = .07$, $\eta_p^2 = .32$. However, none of the specific MCMI-III Axis II

scales significantly differed between neglected and non-neglected offenders.

In contrast to the hypothesis, multivariate tests for the MMPI-2 scales were non-

significant for sexual abuse, $F(10, 50) = 1.34$, $p = .23$, $\eta_p^2 = .28$, physical abuse, $F(10,$

$50) = 1.59$, $p = .14$, $\eta_p^2 = .24$, and emotional abuse, $F(10, 50) = 0.90$, $p = .54$, $\eta_p^2 = .15$.

The multivariate test was significant for neglect, $F(10, 50) = 2.55$, $p = .01$, $\eta_p^2 = .34$;

however, none of the individual MMPI-2 scales differed significantly across neglected

and non-neglected offenders.

Table 18.

Notable differences between maltreated and non-maltreated offenders on MCMI-III scale scores.

MCMI-III scale	Type of maltreatment	No maltreatment history M (SD)	Maltreatment history M (SD)	F/η_p^2 for scale (df = 1, 66)
Anxiety	PA*	41.54 (36.38)	61.00 (35.81)	4.30/.06
Somatoform	PA*	30.93 (27.62)	46.23 (27.13)	4.61/.07
Bipolar	PA*	39.85 (25.63)	53.23 (24.40)	4.18/.06
Dysthymia	PA*	31.54 (29.61)	49.00 (31.01)	5.01/.07
Alcohol Dependence	SA†	56.43 (29.78)	70.58 (21.35)	3.56/.05
	PA†	56.15 (29.54)	69.23 (23.86)	2.35/.28
Drug Dependence	PA**	59.72 (23.99)	77.73 (17.24)	9.92/.13
PTSD	PA**	32.63 (30.32)	57.64 (27.88)	10.66/.14
Thought Disorder	PA**	25.24 (24.66)	48.64 (27.47)	12.45/.16
Major Depression	PA**	21.35 (24.66)	44.36 (31.24)	9.75/.13
Delusional Disorder	PA*	26.39 (27.24)	41.77 (27.20)	4.75/.07

Note. $N = 76$. MCMI-III = Millon Clinical Multiaxial Inventory - 3rd ed. SA = Sexual abuse; PA = Physical abuse.

†$p < .10$. *$p < .05$. **$p < .01$.

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In terms of psychopathy, the omnibus test for physical abuse was significant, $F(4, 83) = 3.02$, $p = .02$, $\eta_p^2 = .13$, consistent with the hypothesis. Specifically, offenders with a history of physical abuse had significantly higher PCL-R-2 Facet 4 (antisocial behaviour) scores than those without a physical abuse history, $F(1, 86) = 10.75$, $p = .00$, $\eta_p^2 = .11$. An omnibus test for sexual abuse was also significant, $F(4, 83) = 4.76$, $p = .00$, $\eta_p^2 = .19$, consistent with the hypothesis. As with physical abuse, sexually abused offenders had significantly higher PCL-R-2 Facet 4 (antisocial behaviour) scores than non-sexually abused offenders, $F(1, 86) = 14.54$, $p = .00$, $\eta_p^2 = .15$. There was only a trend for PCL-R-2 facet scores to differ between offenders with and without a neglect history, $F(4, 83) = 2.06$, $p = .09$, $\eta_p^2 = .09$. An omnibus test for emotional abuse was also significant, $F(4, 83) = 3.44$, $p = .01$, $\eta_p^2 = .14$. As with other forms of maltreatment, offenders with a history of emotional abuse had significantly higher PCL-R-2 Facet 4 (antisocial behaviour) scores than those without a emotional abuse history, $F(1, 86) = 10.00$, $p = .00$, $\eta_p^2 = .10$, consistent with the hypothesis.

Maltreatment and Subtypes of Violence.

Hypothesis 5b. It was not expected that any one form of violence would be directly associated with a history of childhood maltreatment. It was expected that while childhood maltreatment would increase the risk for adult psychopathology, and that certain forms of psychopathology would be differentially associated with the subtypes of violence, maltreatment itself would not been associated with a specific subtype of violence. This hypothesis appears to have been confirmed. Specifically, as seen in Table 19, history of childhood maltreatment, number of types of childhood maltreatment, and history of specific forms of childhood maltreatment, respectively, were entered into three

separate logistic regression analyses. As hypothesized, none of the maltreatment variables were predictive of violence subtype.

Table 19.

Maltreatment history as predictors for violence subtype by multinomial logistic regression.

Maltreatment history	LR χ^2	B	Wald	*OR*	95% *CI*
Any maltreatment history	0.85	0.38	0.84	1.46	0.65-3.26
Sexual abuse	0.19	-0.22	0.19	0.80	0.30-2.14
Physical abuse	0.20	-0.25	0.20	0.78	0.26-2.31
Neglect	1.14	-0.67	1.18	0.51	0.15-1.72
Emotional abuse	0.57	0.48	0.56	1.61	0.46-5.61
Number of types of abuse	0.56	-0.13	0.28	0.88	0.53-1.44

Note: LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval.

Summary

Results of the domain-by-domain multinomial logistic regression analyses indicated that a number of mental health variables were significant or marginally significant individual predictors of subtype of index offence violence. Increased likelihood of *reactive* violence was associated with:

- alcohol use history

- stimulant use history

- intoxication with any substance at the time of the index offence

- polysubstance intoxication at the time of the index offence

- any history of Axis I mental health problems

Increased likelihood of *instrumental* violence was associated with:

- opiate use history

- stimulant intoxication at the time of the index offence

- MCMI-III Paranoid scale

As index offence violence severity differed between subtypes of violence, potential predictors of violence subtype were also examined in relation to offence severity. Several of the identified predictors (or marginal predictors) of violence subtype were significantly associated with index offence violence severity. Specifically, the following variables were *negatively* correlated with index offence violence severity:

- stimulant use history

- stimulant intoxication at the time of the index offence

- any history of Axis I mental health problems

- MCMI-III Paranoid scale

In contrast, polysubstance intoxication at the time of the index offence was *positively* correlated with index offence violence severity.

With the exception of stimulant intoxication and polysubstance intoxication, all variables held *opposite* direction relationships with offence severity than would be the case if subtype of violence was simply a proxy variable for offence severity. Thus, the individual mental health predictors of violence subtype were subsequently examined in combination in a multinomial logistic regression model.

Relationships between Mental Health History and Index Offence Violence across

Domains

The second goal of the current dissertation was to determine which of the

previously examined mental health factors are the best predictors of violence subtype. A

multivariate logistic regression model was developed to include all relevant variables in

one analysis. In the previous section, analyses examined the effects of predictor variables

within domains, whereas the current analyses allowed for the development of a predictive

model across mental health domains. The results of the domain-by-domain analyses were

examined, using the likelihood ratio tests to determine which variables to include in this

new model. Using a liberal inclusion criterion, variables with a $p < .10$ were retained in

the current analysis. When both a higher-order variable and a subcomponent variable

(e.g., intoxication during the index offence, and specific substance of intoxication) were

eligible for inclusion, only the more specific subcomponent variable was retained to

reduce the potential for multicollinearity. Given the reduced sample sizes with

personality test data and for the psychopathy-substance use interaction terms, the MCMI-

III Paranoid scale and the interaction between PCL-R-2 Facet 3 (lifestyle) and

intoxication status during the index offence were not included in the model, although

both had likelihood ratio tests with $p < .10$ in the domain-by-domain analyses. Other

interaction terms were also not examined in the model. The inclusion of all possible two-

way interactions for all mental health history variables would require the creation of over

700 interaction terms; even limiting interactions to those created by across-domain

products would still require hundreds of interaction terms. Thus, it was not feasible to

examine interaction effects in the current model; however, such effects cannot be ruled

out.

The following variables were included in the model: Alcohol use history, opiate use history, stimulant use intoxication at the time of the offence, polysubstance use intoxication at the time of the offence, and history of any Axis I mental disorder (see Table 20). The entry method for multinomial logistic regression was used to avoid modelling excessive error, as may occur with step-wise approaches (Garson, 2009).

Table 20.

Prediction of violence subtype by Axis I psychopathology: Initial multinomial logistic regression model.

Predictor	LR χ^2	B	Wald	OR	95% CI
Full model (*df* = 3)	24.12***	-	-	-	-
Alcohol use history	6.54*	-1.11	5.90*	0.33	0.13-0.81
Opiate use history	1.49	0.57	1.41	1.76	0.69-4.47
Stimulant intoxication	5.69*	20.19		*N/A*[1]	
Polysubstance intoxication	5.48*	-1.12	5.46*	0.33	0.13-0.84
Axis I mental health history	2.84[t]	-0.47	2.76[t]	0.63	0.36-1.09

Note: LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. Nagelkerke's R^2 = .25. Classification accuracy = 74.6% [1]Exclusively instrumental offences. [t]*p* < .10. **p* < .05. ****p* < .001.

Table 21.

Prediction of violence subtype by Axis I psychopathology: Final multinomial logistic regression model.

Predictor	LR χ^2	B	Wald	*OR*	95% *CI*
Full model (*df* = 3)	22.14***	-	-	-	-
Alcohol use history	8.54**	-1.27	7.65**	0.28	0.11-0.69
Stimulant intoxication	5.28*	20.09		*N/A*[1]	
Polysubstance intoxication	5.43*	-1.07	5.45*	0.34	0.14-0.84

Note: LR = Likelihood ratio test. *OR* = Odds Ratio. *CI* = Confidence Interval. Nagelkerke's R^2 = .23. Classification accuracy = 75.8% [1]Exclusively instrumental offences. *p < .05. **p < .01. ***p < .001.

Whereas a liberal threshold was used to determine the inclusion of variables in the initial combined model (i.e., likelihood ratio test p < .10) to avoid prematurely eliminating potentially important variables, a more conservative threshold was selected for variable inclusion in the final model, with the goal of balancing parsimony and predictive power. Likelihood ratio tests with a threshold of p < .05 indicated that both opiate use history and mental health history could be dropped from the initial model (see Table 20). A second multinomial logistic regression analysis was then conducted with only alcohol use history, stimulant intoxication at the time of the index offence, and polysubstance intoxication at the time of the offence as predictors (see Table 21[10]). Results indicated that all three of these variables contributed significantly to the prediction of violence subtype. As with previous analyses, increasing severity of alcohol

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[10] Using a liberal inclusion criterion, a final model that retained the variable *history of any Axis I mental disorder* had a classification accuracy of 73.5%, which is lower than in either the initial or the final models that are presented.

use history was associated with a decreased likelihood of instrumental violence (i.e.,

increased likelihood of reactive violence), as indicated by the odds-ratio well below one,

and a negative slope. The magnitude of this effect was relatively strong, with a one-unit

increase in alcohol history severity associated with an *increase* in odds for *reactive*

violence by a factor of 3.57 (i.e., 1/0.28). Polysubstance use during the index offence was

also associated with a decreased likelihood of instrumental violence (i.e., increased

likelihood of reactive violence), with an odds-ratio considerably below one, and a

negative slope. The magnitude of this effect was slightly less than that for alcohol use

history, with an *increase* in odds for *reactive* violence by a factor of 2.94 (i.e., 1/0.34).

Stimulant use during the index offence was exclusively associated with instrumental

violence. Classification accuracy of the full model exceeded chance classification

accuracy using either the "proportional by chance" criterion of 63.1% for the current

sample, or the "proportional reduction in error" criterion of 74.05% for the current

sample (Garson, 2009).

To provide additional confirmation that the variables identified in the final

logistic regression model predicted subtype of violence and not simply violence severity,

a hierarchical logistic regression analysis was then conducted (see Table 22). Violence

severity was added to the model at step one, and the three substance use variables

(alcohol use history, stimulant intoxication, and polysubstance intoxication) were added

to the model at step two. At step one, violence severity was a significant predictor of

subtype of violence, and was associated with an increased likelihood of reactive violence,

by a factor of 1.30 (i.e., 1/0.97). The addition of the substance use variables at step two

contributed to the predictive ability of the model, with a significant incremental change in

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the model chi-square. At step two, the substance use variables all contributed significantly or marginally significantly to the prediction of violence subtype. In contrast, violence severity was not a significant predictor of violence subtype at step two. These results suggest that the identified substance use variables are indeed predictive of violence subtype, beyond their association with violence severity.

Table 22.

Hierarchical logistic regression predicting violence subtype with violence severity and substance use predictors.

Predictor variable	LR χ^2	B	Wald	OR	95% CI
Block 1					
Violence severity	5.58*	-0.03	5.10*	0.97	0.95-1.00
Block 2					
Violence severity	2.75[t]	-0.02	2.59	0.98	0.95-1.01
Alcohol use history	8.74**	-1.30	7.76**	0.27	0.11-0.68
Stimulant intoxication	4.05*	19.85		N/A[1]	
Polysubstance intoxication	3.54[t]	-0.90	3.57[t]	0.41	0.16-1.03

Note: LR = Likelihood ratio test. OR = Odds Ratio. CI = Confidence Interval.

Block 1: Nagelkerke R^2 = .07. Block LR χ^2 (1, N = 131) = 6.00, p = .01.

Block 2: Nagelkerke R^2 = .25. Block LR χ^2 (3, N = 131) = 18.29, p < .000.

Model LR χ^2 (4, N = 131) = 24.29, p < .000.

[1]Exclusively instrumental offences. [t] p < .10. *p < .05. ** p < .01.

Subgroups of Offenders and Offending Patterns

An alternate approach to examining correlates or risk factors for subtypes of violence at the variable level is to attempt to identify subgroups or types of *individuals*

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who are at greater risk for perpetrating a specific subtype of violence. These individuals may be characterized by a number of the correlates/predictors for violence subtypes, and may constitute specific subgroups of offenders. This subgrouping or offender classification approach has been used successfully with a number of offender populations, including domestic violence offenders (e.g., Hamberger & Hasting, 1986; Tweed & Dutton, 1998) and young offenders (e.g., Taylor et al., 2006). As discussed previously, Tweed and Dutton (1998) used a cluster analytic approach to identify two main groups of domestic violence offenders: they labelled these groups as "instrumental" and "impulsive". These groups appeared to possess a number of the characteristics that have been suggested as correlates for instrumental and reactive violence, respectively.

In the current study, cluster analysis was selected to explore the possibility of offender groups in the current sample of violent offenders, and to determine whether these groups were differentially associated with instrumental and reactive violence of the index offence. Cluster analysis is an exploratory method that is used to identify homogeneous groups or subsets of participants within a sample, and requires variable selection based on theory (Speece, 1995). Expected clusters should be hypothesized *a priori*, and corresponding clustering variables selected, as the analysis will always produce clusters, irrespective of the validity of those clusters (Speece, 1995). Based on the review of the profiles of instrumental and reactive violence discussed in Chapter 1 (see Table 2), and the results of the cluster analytic studies of Tweed and Dutton (1998) and Taylor et al. (2006), it was expected that "Instrumental" and "Reactive" groups would be identified in the current sample.

Instrumental offenders were expected to be characterized by antisocial, narcissistic, and aggressive/sadistic features, whereas Reactive offenders were expected to be characterized by borderline, schizoid, schizotypal, and depressive personality features, and labile/depressed mood. It was also expected that a group low on psychopathology would emerge from the sample. Finally, given that other studies (e.g., Hamberger & Hastings, 1986; Taylor et al., 2006) have identified groups with DSM-Cluster A and/or C traits, it was proposed that such a cluster might additionally emerge. However, in some studies (e.g., Tweed & Dutton, 1998), Cluster A and C features were associated with the Reactive-type ("Impulsive") group, and did not form an additional separate cluster.

Input variables were selected based on the expected clusters. A small number of variables were selected, as the use of "too many" variables can add noise and decrease the identification of clusters (Speece, 1995). Variables were selected from the MCMI-III for two reasons: First, use of a self-report personality and clinical pathology inventory is consistent with the procedure used by several of the previously cited cluster analytic studies (e.g., Taylor et al., 2006; Tweed & Dutton, 1998) and would facilitate cross-study comparisons. Second, although only a subset of offenders in the current study had MCMI-III data available, the MCMI-III provides indices of Axis I, Axis II, and substance abuse characteristics, allowing for a comprehensive examination of offender psychopathology unavailable in other indices in the current study. For the current study, the MCMI-III scales of Antisocial, Narcissistic, Borderline, Schizoid, and Avoidant were selected with the expectation that they would help bring out the three-to-four hypothesized clusters discussed above.

It is important to note that this analytic approach was planned prior to conducting the above-described logistic regression analyses. The results of the logistic regression analyses indicated that the MCMI-III scales (individually and in conjunction) were *not* significant predictors of subtype of index offence violence. Thus, any resulting clusters should not demonstrate differences on offence subtype, despite initial hypotheses. Cluster analyses were still conducted as planned, as clusters could demonstrate relationships with other variables of interest.

Clustering was conducted using a hierarchical cluster analysis approach with offenders for whom MCMI-III data was available ($N = 80$). An average (between groups) linkage and squared Euclidian distance approaches were used, and the two-to-six cluster solutions were examined in detail based on the number of hypothesized clusters. Variables were not standardized, as all were on the same scale (i.e., metric) and it permitted interpretability of the scores. The cluster solution was determined in several ways. First, the agglomeration matrix and cluster dendogram were visually inspected for large distances between clustering solutions. From the dendogram it appeared that two offenders were outliers, as each did not cluster with other cases. A number of hierarchical clusters appeared in the dendogram, suggesting several possible cluster solutions. As very clear demarcations among clusters are rare, however, a replication approach was then used (Overall & Magee, 1992). To this end, half of the sample with MCMI-III data was randomly selected, and a second cluster analysis was conducted with this subsample following the same approach as with the complete sample. Each of the two-to-six cluster solutions were examined in comparison to those for the full sample. While there was complete correspondence in cluster assignment for the two-cluster solution, the

dendogram indicated a large distance between the three- and two-cluster solutions,

suggesting combination of relatively different cases or groups. Similarly, the three-cluster

solution also appeared to have a relatively large distance from the four-cluster solution,

whereas the four- and five-cluster solutions were much closer in distance. The four-

cluster solution for the complete cluster analysis sample and that for the randomly

selected subsample corresponded in case-to-cluster assignment for all but two cases. As

such, the four-cluster solution was selected for subsequent analyses.

Descriptive statistics for the input variables were calculated for the four clusters.

The clusters did not completely correspond to those proposed above, although were

similar in some respects. Based on their characteristics on the input variables, the four

clusters were labelled as High Psychopathology, Low Psychopathology, Antisocial, and

Moderate Schizoid Traits. See Figure 2 for details of the four clusters.

To further examine the characteristics of the four-cluster solution, a MANOVA

was conducted with the remaining MCMI-III scales. Tukey's honestly significant

difference was used for relatively conservative post-hoc tests. The omnibus test was

significant, and the four clusters differed on all MCMI-III scales (see Tables 23 and 24).

Consistent with the results of the initial clustering on the input MCMI-III variables,

Cluster 1 (High Psychopathology) demonstrated elevated scores on several scales (i.e., $\geq$

75), with scores being significantly higher than the scores for the other clusters for many

of the scales. While the three other clusters tended to resemble each other more than

Cluster 1 (High Psychopathology), Cluster 3 (Antisocial) shared several characteristics

with Cluster 1 (High Psychopathology), particularly concerning substance use. Cluster 3

(Antisocial) fell between Cluster 1 (High Psychopathology) and the remaining clusters on

a number of scales. Cluster 2 (Low Psychopathology) and Cluster 4 (Moderate Schizoid

Traits) typically did not differ across scales, although Cluster 4 (Moderate Schizoid

Traits) did have higher scores than Cluster 2 (Low Psychopathology) on several scales

tapping DSM Cluster A and C personality characteristics (although scale scores were not

clinically elevated). Thus, while clusters did not emerge exactly as expected, they did

bear some similarities with the hypothesized clusters.

A series of chi-square analyses were subsequently conducted with substance use

and mental health variables. Degree of stimulant use differed across the clusters, χ^2 (6, N

= 76) = 13.00, p = .04, such that Cluster 1 (High Psychopathology) appeared to have a

slightly higher degree of stimulant use history, and Clusters 2 (Low Psychopathology)

and 4 (Moderate Schizoid Traits) slightly lower. There was a trend for intoxication status

at the time of index offence to differ across groups, χ^2 (3, N = 74) = 6.89, p = .08, such

that Clusters 1 (High Psychopathology) and 3 (Antisocial) appear slightly more likely to

have been intoxicated, and Cluster 2 (Low Psychopathology) slightly less likely to have

been intoxicated during the offence. No other substance use variables demonstrated

across-cluster differences (alcohol use history: χ^2 (6, N = 77) = 1.52, p = .96; cannabis

use history: χ^2 (6, N = 75) = 7.72, p = .26; opiate use history: χ^2 (6, N = 77) = 8.03, p =

.24; and history of other drugs: χ^2 (3, N = 75) = 4.26, p = .24).
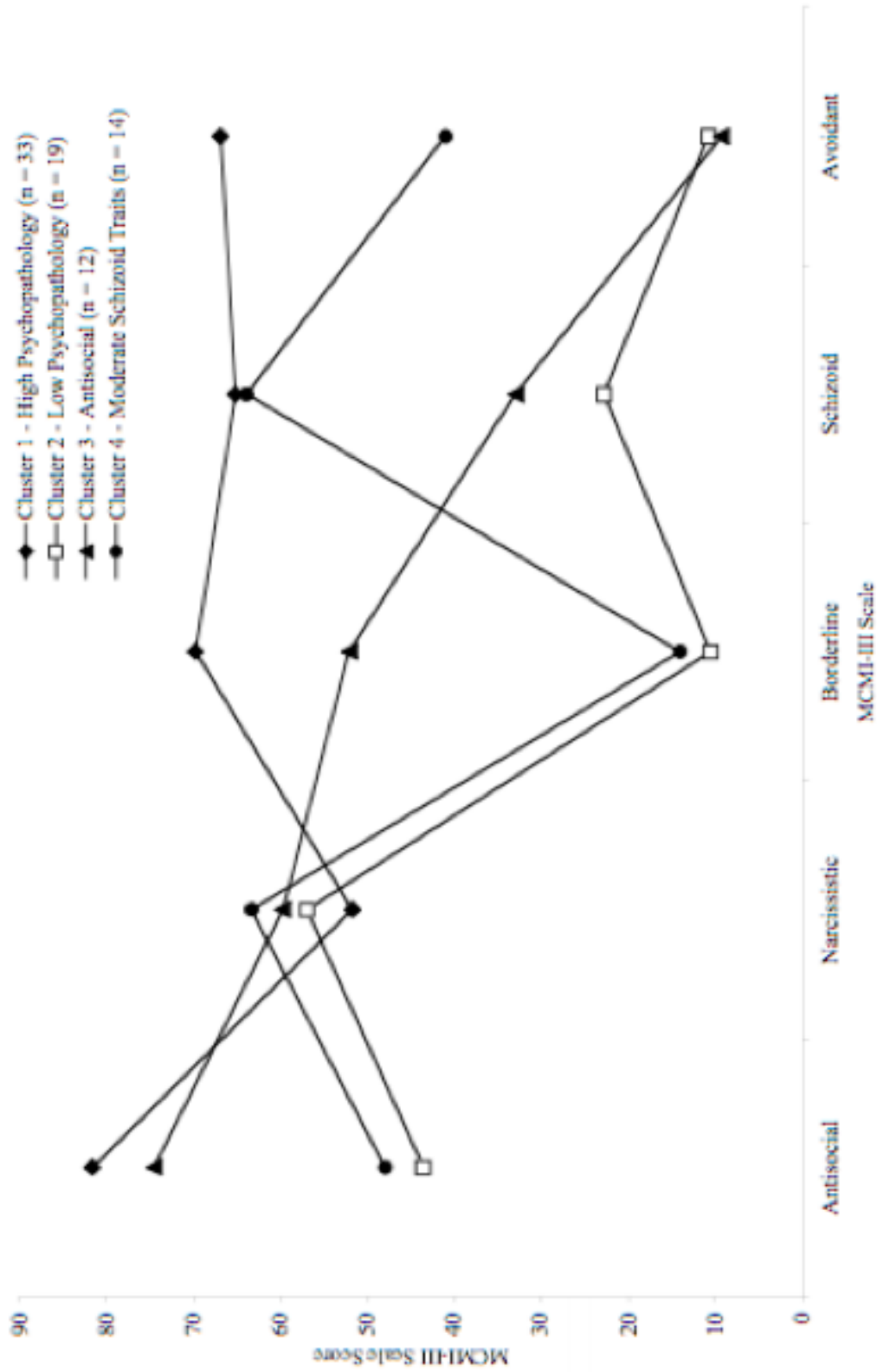
Figure 2. Profile configuration on input variables for cluster analysis of Millon Clinical Multiaxial Inventory – 3rd ed. (MCMI-III) personality pathology in violent male offenders.

Table 23.

Cluster differences on MCMI-III clinical scale scores.

MCMI-III scale	Cluster 1: High psychopathology[a] M (SD)	Cluster 2: Low psychopathology[b] M (SD)	Cluster 3: Antisocial[c] M (SD)	Cluster 4: Moderate Schizoid Traits[d] M (SD)	F/η_p^2 for group main effect[1] (df = 3, 70)
Anxiety	72.71 (27.54)	17.68^{c,d} (25.09)	30.80^{b,d} (32.57)	29.00^{b,c} (31.02)	18.11/.44
Somatoform	54.55^c (20.97)	10.47^d (17.52)	34.30^{a,d} (30.75)	24.43^{b,c} (20.99)	17.59/.43
Bipolar	62.00^c (16.08)	16.05^d (15.10)	52.90^a (17.26)	29.86^b (23.08)	30.85/.57
Dysthymia	58.26 (27.57)	8.47^c (13.34)	19.00^{b,d} (23.61)	33.86^c (18.58)	21.48/.48
Alcohol Dependence	80.45^c (12.82)	31.00^d (19.71)	71.00^a (17.99)	43.21^b (23.87)	35.74/.61
Drug Dependence	78.77^c (15.17)	51.89^d (23.39)	78.30^a (13.80)	50.79^b (19.13)	13.63/.37
PTSD	61.68 (23.86)	13.32^{c,d} (17.73)	24.00^{b,d} (22.97)	27.50^{b,c} (28.72)	19.82/.46
Thought Disorder	56.19 (18.83)	3.74^d (6.67)	27.20^d (17.34)	14.64^{b,c} (13.04)	53.76/.70
Major Depression	48.32^c (31.34)	7.79^{c,d} (15.75)	28.30^{a,b} (25.38)	15.00^{b,c} (16.19)	12.37/.35
Delusional Disorder	44.52^c (28.95)	6.11^c (8.92)	21.50^{b,d} (18.56)	35.21^{a,c} (27.45)	10.93/.32

Note: $N = 76$. MCMI-III = Millon Clinical Multiaxial Inventory – 3rd ed.

The MANOVA was conducted with clinical and personality scale scores, the results of which are presented in separate tables. Wilk's Lambda for multivariate test F (57, 155.87) = 5.97, $p < .001$, $\eta_p^2 = .68$. Means in the same row that do not share a superscript differ in Tukey's HSD post-hoc tests at $p < .05$. [1] Group main effects significant at $p < .001$ for all MCMI-III scales.

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Table 24.

Cluster differences on MCMI-III personality scale scores.

MCMI-III scale	Cluster 1: High psychopathology[a] M (SD)	Cluster 2: Low psychopathology[b] M (SD)	Cluster 3: Antisocial[c] M (SD)	Cluster 4: Moderate Schizoid Traits[d] M (SD)	F/η_p^2 for group main effect (df = 3, 70)
Depressive	77.45 (14.47)	13.37[c] (21.64)	33.30[b,d] (28.02)	36.21[c] (29.04)	37.95/.62
Dependent	66.81 (16.65)	19.79[d] (15.74)	37.70 (17.75)	20.43[b] (18.45)	40.81/.64
Histrionic	39.81[d] (14.96)	56.89[e,d] (9.73)	64.10[b] (16.81)	48.36[a,b] (9.69)	11.66/.33
Sadistic	62.26[c] (14.73)	18.58[d] (14.32)	48.60[a] (8.75)	32.86[b] (24.41)	30.74/.57
Compulsive	41.06[c] (13.35)	69.63[d] (13.06)	48.60[a] (8.37)	65.07[b] (15.68)	22.56/.49
Negativistic	73.58 (17.92)	6.74 (6.28)	24.20[d] (13.35)	31.21[c] (25.24)	68.23/.75
Masochistic	69.58 (15.44)	6.37[c] (10.96)	23.70[b,d] (31.09)	25.14[c] (24.73)	48.76/.68
Schizotypal	58.13 (17.49)	5.47[c] (14.08)	14.90[b] (24.66)	38.07 (28.19)	30.50/.57
Paranoid	62.39 (19.45)	5.95[c] (7.57)	16.00[b] (20.76)	41.50 (31.10)	34.77/.60

Note. $N = 76$. MCMI-III = Millon Clinical Multiaxial Inventory – 3rd ed.

The MANOVA was conducted with clinical and personality scale scores, the results of which are presented in separate tables. Wilk's Lambda for multivariate test F (57, 155.87) = 5.97, $p < .001$, η_p^2 = .68. Means in the same row that do not share a superscript differ in Tukey's HSD post-hoc tests at $p < .05$. [1] Group main effects significant at $p < .001$ for all MCMI-III scales.

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In terms of mental health characteristics, clusters differed significantly on degree of mood-related problems, χ^2 (6, $N = 78$) = 25.60, $p < .001$), with Cluster 1 (High Psychopathology) appearing more likely to have had prior mood symptoms or disorder, and Clusters 2 (Low Psychopathology) and 4 (Moderate Schizoid Traits) appearing less likely to have had any mood-related problems. Similarly, groups differed in terms of history of anxiety, χ^2 (6, $N = 76$) = 20.50, $p < .01$, with Cluster 1 (High Psychopathology) appearing more likely to have had anxiety symptoms or disorder, and Clusters 2 (Low Psychopathology) and 4 (Moderate Schizoid Traits) less likely to have had any anxiety-related problems. There were similar findings for impulse control problems, with a marginal group difference, χ^2 (6, $N = 76$) = 12.70, $p = .05$. Individuals in Cluster 1 (High Psychopathology) appeared more likely to have been diagnosed with an impulse-control disorder. Clusters did not differ on history of psychosis, χ^2 (6, $N = 78$) = 6.02, $p = .42$, or history of other mental-health problems, χ^2 (6, $N = 78$) = 4.55, $p = .60$.

A series of chi-squares were conducted to examine maltreatment history across the clusters. There was a marginal difference in physical abuse history across clusters, χ^2 (3, $N = 70$) = 6.53, $p = .09$, with Clusters 1 and 3 (High Psychopathology and Antisocial, respectively) appearing slightly more likely to have a history of physical abuse, and Clusters 2 and 4 (Low Psychopathology and Moderate Schizoid Traits) slightly less likely to have a history of physical abuse. Clusters did not differ on sexual abuse, χ^2 (3, $N = 70$) = 2.51, $p = .47$, emotional abuse, χ^2 (3, $N = 70$) = 1.22, $p = .75$, or neglect, χ^2 (3, $N = 70$) = 1.48, $p = .69$, history.

Clusters were subsequently examined for possible differences in demographic characteristics and criminal history. A univariate ANOVA with offender age at the time of the offence was not significant for any cluster differences, $F(3, 74) = 1.13$, $p = .34$. Number of years since offence did differ across groups, $F(3, 73) = 4.27$, $p = .01$, $\eta_p^2 = .15$. Tukey's honestly significant post-hoc tests indicated that it had been a significantly greater number of years post-offence for offenders in Cluster 2 (Low Psychopathology; $M = 10.74$, $SD = 11.47$) than for those in Cluster 1 (High Psychopathology; $M = 3.42$, $SD = 4.15$), at $p < .05$. There were no differences across clusters on the criminal history variables of number of prior federal incarcerations, number of violence offence convictions, and number of conditional release revocations (Wilk's lambda omnibus test $F(9, 168.08) = 0.78$, $p = .64$).

Finally, clusters were examined for possible differences in characteristics of their index offence, including subtype of violence. A MANOVA was conducted with offence severity, number of perpetrators, and number of victims as outcomes. The overall multivariate Wilk's Lamba was not significant, $F(9, 165.65) = 0.66$, $p = .76$, indicating that individual clusters did not differ on any of the index offence variables. Pearson chi-square analyses were conducted with categorical index-offence variables. Clusters did not differ on the presence of sexual violence, $\chi^2(3, N = 76) = 3.27$, $p = .35$, or gratuitous violence, $\chi^2(3, N = 76) = 0.87$, $p = .83$. There was a marginal difference in clusters on subtype of index offence violence, $\chi^2(3, N = 74) = 6.55$, $p = .09$. Cluster 3 (Antisocial) was equally likely to have committed a reactive or instrumental offence, and had thus committed a marginally greater proportion of reactive offences than expected. Cluster 1 (High Psychopathology) was more likely to have committed an instrumental offence than

a reactive offence, and had thus committed a marginally greater proportion of instrumental offences than expected. These findings are in direct opposition to the hypothesis[11].

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[11] The two-cluster solution was also examined. Results indicated that one cluster corresponded to the High Psychopathology cluster of the four-cluster solution, whereas the second cluster included the remaining three clusters identified in the four-cluster solution. These two clusters were also not related to index offence violence, χ^2 (1, $N =$ 74) = 2.65, $p = .10$

Chapter IV:

Discussion

Emerging research has revealed an important distinction between reactive and instrumental subtypes of aggression (e.g., Barratt, 1991; Cornell et al., 1996; Dodge & Coie, 1987; Kingsbury et al., 1997; Meloy, 1988), and suggests that distinct clinical profiles may be associated with these subtypes (see Table 2). The purpose of this dissertation was to extend limited previous research on mental health factors and subtypes of aggression, through a comprehensive investigation of the relationship between mental health and substance use/abuse history, childhood maltreatment, and subtypes of criminal violence in incarcerated adult male offenders. There were three goals of the current study: First, to examine the relationship between substance use history, Axis I mental health history, personality pathology, and subtypes of violence; second, to examine the influence of substance use on the relationship between psychopathy and subtypes of violence; and third, to elucidate the relationship between childhood maltreatment, psychopathology, and subtypes of violence. The findings of the current dissertation research are discussed in turn, below. The strengths and limitations of this research are reviewed, followed by a discussion of the important implications of the findings. Finally, I identify important avenues for future research that build on the findings of my dissertation research.

Summary of Study Findings

I first review some of the findings concerning sample characteristics, and then discuss findings relevant to the study goals and hypotheses.

Psychopathology, Childhood Maltreatment, and Violence in Male Offenders

Prevalence of Psychopathology

A history of Axis I psychopathology was very common among offenders in the current study, with the majority of offenders having experienced some form of Axis I symptoms or disorder prior to their index offence. The most frequent form of Axis I psychopathology (excluding substance use) was mood-related, followed by impulse-control problems, anxiety, other mental health problems, and then psychosis. The rates for mood and anxiety diagnoses in the current study were lower than estimated for offenders in the Atlantic region by Correctional Service Canada (CSC) in the early 1990s (Motiuk & Porporino, 1992). The latter findings indicated higher rates of anxiety diagnoses than mood diagnoses, and an overall higher rate of diagnoses than reported in the current study. The CSC study did find similar rates of psychotic disorders as in the current study, however. It is unknown whether these differences in rates reflect actual changes in offender composition over time, or an under-identification of psychopathology in the current sample. Up until very recently, CSC did not have a comprehensive mental health strategy to ensure systematic mental health screening of all offenders (see CSC, 2007a). It is possible that this may have resulted in an under-identification of psychopathology among the federal offender population.

Almost all offenders had some form of substance use history, although most had not been diagnosed with a substance use disorder (SUD). Even excluding alcohol use,

which is normative among adults (Degenhardt et al., 2007), most offenders had a history of substance use or misuse. The majority of offenders had a history of either use or SUD for alcohol, cannabis, and stimulants. Rates for non-alcohol substance use and SUDs appeared higher in the current sample than in the general population (Degenhardt et al., 2007; Somers et al., 2004), consistent with prior research on Canadian federal offenders (e.g., Brochu et al., 2001). In contrast, rates of alcohol use disorder diagnoses were considerably lower in the current sample than rates reported in the early 1990s for CSC-Atlantic offenders (Motiuk & Porporino, 1992). Similarly, diagnoses of SUDs were much lower than found in a recent study of Canadian federal offenders (Brink et al., 2001). It was the observation of the author that substance use problems were often not described diagnostically in correctional assessment reports, but rather in terms of whether there was a history of, and/or current use of, a given substance, and whether this use was seen as a risk factor for recidivism. Substance use at the time of the index offence was also very common, with slightly more than one-half of offenders having been intoxicated with one or more substances. Intoxication had most frequently occurred with multiple substances. These rates are comparable to those recently reported by CSC for the federal offender population (Brochu et al., 2001; CSC, 2007b).

Personality disorder diagnoses were considerably less frequent than Axis I psychopathology and substance use. Although most of these diagnoses fell into DSM-Cluster B as expected, the rates were much lower than in comparable samples (e.g., Motiuk & Porporino, 1992; Rotter et al., 2002), with less than one quarter of the current sample diagnosed with antisocial personality disorder. As personality testing (i.e., MCMI-III, MMPI-2) is commonly conducted with CSC offender populations as part of

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psychological assessments, it may be that clinicians favoured the continuous score/trait approach, and avoided making formal diagnoses. MCMI-III and MMPI-2 personality results were as expected, however, with offenders demonstrating the highest scores on the Drug Dependence, Alcohol Dependence, and Antisocial Scales of the MCMI-III, and showing significant elevations on the MMPI-2 Psychopathic Deviate scale. In contrast, offenders scored significantly lower on the PCL-R-2 than would be expected for *non-violent* offenders, indicating that scores were quite low for a sample of violent offenders. This may reflect either an unusually low level of psychopathic traits in the current sample of offenders, or an under-identification of these traits. This issue is discussed in more detail in the strengths and limitations section of this chapter.

Although rates for certain diagnoses were lower than expected, the overall prevalence of psychopathology was still considerable among offenders in the current study. This is consistent with prior research that has identified significant mental health needs among incarcerated offenders (e.g., Brink et al., 2001; Teplin, 1994; see also CSC, 2007a), and links between psychopathology and violent offending (Berman et al., 1998; Monahan, 1992; Salekin et al., 1996; Swanson et al., 1990). Lack of community mental health resources has been suggested as one possible reason for the high prevalence rates of psychopathology among incarcerated offenders (e.g., CSC, 2007a).

Prevalence of Childhood Maltreatment

As with psychopathology, childhood maltreatment rates were quite high among offenders in the current study. Almost half of the offenders had a reported history of some form of maltreatment. With regard to specific forms of maltreatment, the most prevalent form was physical abuse at 35%. One quarter of the sample had a reported

history of sexual abuse, and approximately one-fifth of the sample had a history of

emotional abuse. The least prevalent form of maltreatment was neglect, at a rate of

slightly over 10%. Given the large variability in reported rates of maltreatment among

offenders (e.g., Fondacaro et al., 1999; Johnson et al., 2005; McClellan et al., 1997), it is

difficult to make definitive statements of comparison with the current findings. However,

the current rates do appear to be within the range of maltreatment rates that have been

reported for other offender samples (e.g., Fondacaro et al., 1999; McClellan et al., 1997).

The prevalence of both physical and sexual abuse in the current sample is higher than has

been reported for men in the general population (Briere & Elliott, 2003).

The reason for high rates of childhood maltreatment among adult offenders has

not been definitively established. However, childhood maltreatment is associated with

poor psychosocial outcomes (e.g., Nelson et al., 2002), and has been proposed as a causal

factor for later criminal and violent behaviour (e.g., Dodge et al., 1990; Widom, 1989a,

1989b). The pathway from maltreatment to incarceration for male offenders may be both

via a direct increase in violent offending and indirectly by increased psychopathology

that then leads to violent behaviour (Widom, Schuck, & White, 2006).

Index Offence Violence Characteristics

The index offences in the current study were almost evenly split between assault,

homicide, and robbery, with very few instances of unlawful confinement. Evidence of

gratuitous or sexual violence during the index offence was infrequent, at approximately

15% and less than 5%, respectively. Given the distribution of types of offences, there was

unsurprisingly a substantial range in the severity of the violence in the index offences.

Violence severity also differed between instrumental and reactive violence, with the latter

considerably more severe that the former. This may be due to the large proportion of robbery as the index offence, which is by default considered instrumental. This issue is discussed further in the limitations section.

Relationships between Psychopathology, Childhood Maltreatment, and Index Offence Violence

Subtypes of Violence and Substance Use (Hypothesis 1)

Based on the findings of (limited) previous research (Connor et al., 2004; Stanford, Houston, Mathias et al., 2003; Vitiello et al., 1990), it was predicted that offenders with a history of substance use disorders would be more likely to have committed instrumental than reactive violence. In contrast, it was expected that offenders who were intoxicated at the time of their offence, particularly with a stimulant, would be more likely to have committed reactive violence, given the disinhibiting nature of intoxication (e.g., Howard & Menkes, 2007; Vogel-Sprott, Easdon, Fillmore, Finn, & Justus, 2001).

Logistic regression analyses indicated that the relationship between substance use and subtype of violence was in fact more complex. The relationships between substance use history, substance intoxication, and subtype of violence varied based on the specific type of substance. In terms of substance use history, the only significant predictor of violence subtype was alcohol use history, whereby increasing severity of alcohol use history was associated with increasing likelihood of reactive violence by a factor of slightly more than two. There were also trends for stimulant use history to be associated with an increased likelihood of reactive violence by a factor of slightly less than two, and for opiate use history to be associated with an increased likelihood of instrumental violence by a factor of slightly more than two.

With regard to substance use at the time of offence, as expected, any intoxication was associated with an increased likelihood of the offence being reactive in nature by a factor of approximately two-and-a-half. Polysubstance intoxication had an even stronger relationship with subtype of violence, and was associated with an increased likelihood of reactive violence by a factor of more than three-and-a-half. Contrary to expectations, stimulant intoxication was exclusively associated with instrumental violence, with all offenders who were intoxicated purely on stimulants having committed an instrumentally motivated offence. Intoxication with alcohol and opiates at the time of the offence were not significant predictors, and no offenders were exclusively intoxicated with cannabis during their offence.

Although limited research (with youths) suggests a possible substance use history-instrumental violence link (Connor et al., 2004; Vitiello et al., 1990), the contrary findings of the current study are not unexpected. The findings concerning history of use may be understood by considering research on associations between substance use and personality (both in terms of neurotoxic effects and as a pre-existing risk factor; see Hoaken & Stewart, 2003). In addition, research on the social correlates of use of certain substances may explain some of the findings. Research has indicated that use of both alcohol (Verdejo-García, Lawrence, & Clark, 2008) and stimulants (Moeller et al., 2002) is associated with impulsivity (either as cause or consequence; see Verdejo-García et al., 2008). This is consistent with the associations between stimulant and alcohol use history and reactive violence in the current study. In contrast, previous research suggests that opiate use is not as strongly associated with impulsivity or disinhibition as alcohol or stimulant use (Verdejo-García et al., 2008). In addition, regular opiate use has been

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demonstrated to predict "acquisitive" crime, including robbery (Stewart, Gossop, Marsden, & Rolfe, 2000). Thus, the marginal link between opiate use history and instrumental violence in the current study may reflect the use of robbery as a means to finance the drug use of opiate users. This is consistent with the findings of the current study, in which the majority of individuals with an opiate use history who had committed instrumental offences had done so for financial gain/resources (i.e., secondary instrumental violence).

In terms of the findings concerning intoxication, these also can be understood within the framework of both the acute pharmacological effects of substance use on mental state, and other possible correlates of the use of particular substances. First, drug intoxication is generally disinhibiting (e.g., Howard & Menkes, 2007; Vogel-Sprott, Easdon, Fillmore, Finn, & Justus, 2001), so the findings concerning general intoxication and polysubstance intoxication are as expected. However, the varying relationship that stimulant use appears to hold with subtypes of violence over different time periods (i.e., history of use associated with reactive offences, and intoxication associated with instrumental offences) bears closer examination. It may be that offenders who have planned an instrumental offence choose to increase their arousal and alertness (or, colloquially, "hype themselves up") for the offence through the consumption of stimulants, given the well-established arousal-increasing properties of such drugs (e.g., Berridge, 2006). Thus, while a history of stimulant use may be associated with disinhibited behaviour (as a pre-existing personality trait and/or as a neurotoxic effect of continued use), offenders may elect to consume stimulant drugs prior to a planned (i.e., instrumental) offence in order to activate themselves. In addition, in contrast to long-term

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effects, acute stimulant administration has been associated with dose-dependent

facilitated behavioural inhibition (Verdejo-García, Lawrence, & Clark, 2008), which is

more consistent with instrumental rather than reactive violence. Indeed, researchers have

speculated that stimulant medication use in children with ADHD may suppress reactive

aggression, allowing for the emergence of planned aggression (King et al., 2009). A

similar effect might occur in behaviourally disinhibited adults who consume stimulant

drugs. In addition, engaging in violence as a means to procure resources or goods could

be conceptualized as reward-seeking behaviour, which is consistent with the social

learning theory of aggression (Bandura, 1978) and instrumental violence. Stimulant

abuse/dependence has been linked to reward-sensitivity (e.g., Brunelle, Douglas, Pihl &

Stewart, 2009); thus, it may be that stimulant *consumption* prior to an offence is a

component of a reward-seeking activity. Similarly, some instrumental violence might be

conceptualized as sensation (thrill)-seeking. In animal models of substance use,

sensation-seeking traits are predictive of stimulant consumption (Leeman, Grant, &

Potenza, 2009). Meloy (1988) similarly proposed that the use of stimulant drugs might be

part of a ritual associated with predatory aggression to enhance feelings of grandiosity,

self-esteem, and arousal during the offence.

Subtypes of Violence and Axis I Psychopathology (Hypothesis 2)

A history of mood, psychotic, and impulse control problems were expected to

predict reactive violence due to the associations between these forms of psychopathology

and emotional dysregulation and/or impulsivity (e.g., APA, 2000; Green & Malhi, 2006;

Green, Cahill, & Malhi, 2007). Other categories of Axis I psychopathology were not

expected to predict violence subtype. In contrast to these expectations, Axis I

psychopathology had limited predictive power. There was a trend for any history of Axis I psychopathology to be predictive of reactive violence, which was consistent with the hypothesis, but no specific forms of psychopathology were differentially associated with the violence subtypes.

The hypotheses regarding the relationship between history of psychopathology and reactive violence were based primarily on theory, given the limited prior research on this topic. To my knowledge, only two prior studies, both with youths, have examined any form of Axis I psychopathology (other than substance use) in relation to subtype of aggression (i.e., Connor et al., 2004; Vitiello et al., 1990). One possible explanation for the current findings is that the forms of psychopathology under examination are approximately equally associated with both instrumental and reactive violence. This appears to be the case for some forms of psychopathology (e.g., childhood ADHD; Connor et al., 2004; Vitiello et al., 1990). Alternatively, an important factor may be the manifestation of a given form of psychopathology. For example, psychosis can include hyperarousal and agitation (e.g., Allen, Freeman, & McGuire, 2007; APA, 2000), suggesting an association with reactive violence. However, psychosis can also include delusional thought processes (APA, 2000), which could conceivably lead to planning of instrumental violence, as suggested by Meloy (2006). Researchers have acknowledged that "psychotic" violence may be of either instrumental or reactive motivation (McDermott, Quanbeck, et al., 2008). Future research should examine symptoms of the different forms of psychopathology and their associations with the two forms of violence to investigate this issue further.

Another key issue may be the distinction between mental health history and

mental state. While a given form of psychopathology may increase the likelihood of a certain mental state at any given point in time (e.g., history of psychotic disorder increasing the likelihood of thought disturbance at the time of the index offence), other factors may also affect mental state. This may be especially relevant in the current study where the prediction was for a one-time occurrence, as opposed to a pattern of offending. Meloy (2006) has also suggested that mental disorders may not be predictive of subtypes of aggression, whereas certain mental states may be predictive of aggressive subtypes. The issue of predicting an event versus a pattern of events is discussed further later.

Subtypes of Violence and Personality Pathology (Hypotheses 3 and 4)

Due to unexpectedly low rates of personality disorder diagnoses, personality pathology was examined primarily via the MCMI-III, MMPI-2, and the PCL-R-2. Borderline personality features were expected to predict reactive violence, whereas antisocial, narcissistic, and psychopathic features were expected to predict instrumental violence. Specifically, the MCMI-III Paranoid and Borderline scales were expected to be associated with reactive violence, whereas the MCMI-III Antisocial and Narcissistic scales[12], the MMPI-2 Psychopathic Deviate scale, and the PCL-R-2 facets were expected to predict instrumental violence.

Contrary to expectations, personality pathology demonstrated limited differential associations with the subtypes of violence. None of the MCMI-III scales or MMPI-2 scales was a significant predictor of violence subtype. Only the MCMI-III Paranoid scale had a trend for being associated with reactive violence as hypothesized, but the odds ratio

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[12] As noted previously, the MCMI-III Sadistic scale was also originally expected to be predictive of instrumental violence. However, this scale was redundant with other MCMI-III scales and was not included in the analysis.

was very close to zero indicating limited relevance of this variable. Similarly, none of the psychopathy facets were predictive of violence subtype.

These results contrast sharply with the suggestion of Meloy (1988) that personality may be the key factor for understanding subtypes of violence. However, predictions of other researchers concerning personality pathology and subtypes of violence have not been consistent. For example, Houston and colleagues (2003) suggested that antisocial personality disorder might be associated with both instrumental and reactive violence for different reasons, and other personality disorders are also not likely to be differentially associated with one subtype of violence. That appears consistent with the current findings. The reasons for this may be similar to those proposed to explain the Axis I findings. Specifically, it may be an issue of different manifestations or features associated with these forms of personality pathology. For example, whereas borderline personality pathology is associated with impulsivity and mood lability (APA, 2000) suggesting an association with reactive violence, the characteristics of anger and efforts to avoid abandonment (APA, 2000) could conceivably lead to planned violence. Similarly, whereas one criterion for antisocial personality disorder is a lack of remorse, other criteria include impulsivity and irritability (APA, 2000). Depending on the specific symptoms experienced by a given individual, that individual may be more prone to either subtype of violence. As in the current study, Steele-Williams (2002) failed to find any differences in MMPI-2 Psychopathic Deviate scores between instrumental and reactive offenders. Hodges (2009) also failed to find any differences between instrumental and non-instrumental offenders on antisocial personality disorder or DSM-Cluster B personality disorders. Taken in conjunction, there

appears to be preliminary evidence that personality pathology *syndromes* may not be predictive of violence subtype. This does not rule out the possibility of specific personality *features* being predictive of violence subtype, such as those proposed to be salient in Chapter 1 (i.e., impulsivity, empathy, reward dominance, punishment insensitivity, mood lability). Future research should focus on the relative predictive ability of these personality features (or specific characteristics of personality disorders) in accounting for violence subtype.

In terms of psychopathy, the results of the current study are in contrast to a number of prior studies suggesting an association between psychopathic traits and instrumental violence (Cornell et al., 1996; Hodges, 2007; Murrie et al., 2004; Raine et al., 2006; Woodworth & Porter, 2002). However, not all studies have supported a differential relationship between psychopathic traits and instrumental violence. Several studies have suggested that psychopathic traits are associated with both forms of aggression (Bjørnbekk, 2007; Stafford & Cornell, 2003). Other researchers have found that the association between psychopathic traits and violence subtypes appeared dependent on the aspect of psychopathy under investigation. For example, Vitacco and colleagues (2006) found that interpersonal features of psychopathy were positively associated with instrumental aggression, whereas the antisocial behaviour aspects of psychopathy were *negatively* associated with instrumental aggression. However, in the current study, *none* of the different facets (nor factors) of psychopathy were associated with violence subtype.

One issue that has been discussed regarding the relationship between psychopathic traits and subtypes of violence is the consequentiality of the act.

Woodworth and Porter (2002) discussed the seemingly contradictory relationship between psychopathic traits and instrumental violence, given that impulsivity is a feature of psychopathy. They speculated that when an act has significant consequences (such as homicide in their study), that psychopathic individuals might engage in planning. For acts with less severe consequences, they might be more likely to act on impulse. Woodworth and Porter (2002, p. 443) described this duality as "selective impulsivity". The role of event consequentiality was investigated in the current study by examining the impact of offence severity on the relationship between psychopathy and subtypes of violence. Contrary to what would be expected from the "selective impulsivity" proposal, the interaction between psychopathy and offence severity did not contribute significantly to the prediction of violence subtype. As discussed further below, unexpectedly low PCL-R-2 scores may have contributed to the lack of significant findings for psychopathy via range restriction.

In terms of clinical syndromes identified via personality testing, mood-related syndromes, substance use, and psychotic-like syndromes were expected to predict subtypes of violence (parallel to the predictions for clinician-identified Axis I psychopathology). Specifically, I expected that the MCMI-III Drug and Alcohol Dependence scales would predict instrumental violence, whereas scores on the MCMI-III Bipolar, Dysthymia, Major Depression, and PTSD scales, and scores on the MMPI-2 Depression, Paranoia, Schizophrenia, and Hypomania scales would predict reactive violence. Contrary to expectations, none of these scales predicted violence subtype. The explanation for these findings may be similar to those suggested for the clinician-assessed Axis I psychopathology in terms of the distinction between general clinical history and

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mental state at the time of offence. With regard to the lack of findings for the substance use scales, the lack of predictive utility for the Alcohol Dependence scale is surprising. However, the lack of predictive utility for the Drug Dependence scale may be because the scale is not specific to a particular type of substance, as the current study demonstrated that different substances have different relationships with instrumental and reactive violence.

A second goal of the current research was to examine the role of substance use on the relationship between psychopathy and subtypes of violence. PCL-R-2 scores were expected to interact with substance use, such that intoxication at the time of the offence would attenuate a psychopathy-instrumental violence association. Substance use history was not expected to interact with the psychopathy-subtypes of violence relationship. Given that psychopathy was not significantly predictive of subtype of violence on its own, this expectation was by default not fully supported. However, there were several significant correlations between subtype of violence and interaction vectors created from the product of various substance use variables and PCL-R-2 facet scores. Hierarchical logistic regression results indicated that adding these interaction terms to a model with the component variables added significant predictive ability, and that there was a trend for the interaction between substance intoxication at the time of the index offence and PCL-R Facet 3 (lifestyle) to predict reactive violence. An examination of the data indicated that PCL-R-2 Facet 3 (lifestyle) traits were marginally predictive of *instrumental* violence in offenders who were *not intoxicated* during the index offence. In contrast, PCL-R-2 Facet 3 (lifestyle) traits were not predictive of subtype of violence in intoxicated offenders. In addition, PCL-R-2 Facet 3 (lifestyle) traits were associated with

intoxication during the index offence for reactive offences. Thus, the hypothesis was partially supported. It may be that substance use enhances the impulsivity aspect of psychopathy, which is reflected on Facet 3 (lifestyle), thus *decreasing* a propensity for instrumental violence when intoxicated. Alternatively, substance-abusing psychopathic offenders high on social deviance may reflect a more disinhibited subgroup of psychopaths, as there is some speculation that there are distinct types of psychopathic offenders (e.g., Swogger & Kosson, 2007).

Predicting Subtype of Violence with Mental Health Variables

Beyond simply identifying individual significant predictors of instrumental and reactive violence, the current research aimed to determine the best predictors of subtype of violence. To this end, a logistic regression model was developed, with a final optimal model including alcohol use history, stimulant intoxication at the time of the index offence, and polysubstance intoxication at the time of offence as predictors. All variables added significant predictive ability to the model, with alcohol use history and polysubstance intoxication serving as *negative* predictors of instrumental violence (i.e., associated with increased likelihood of reactive violence, by a factor of approximately three-and-a half, and three, respectively), and stimulant intoxication associated with an increased likelihood of instrumental violence. The model classification accuracy exceeded chance, with a classification rate of 75.8%. Although this indicates that approximately one quarter of offences will be misclassified with this model, given the heavy weighting in the current study toward instrumental violence, increased accuracy might be difficult. Thus, these results are seen as promising findings for the first predictive model of violence subtype.

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These findings highlight the link between substance use and violence, and in particular violence subtypes. The current findings parallel findings for violence in general, in which the association between substance use and violence is stronger than the association between mental disorder and violence (e.g., Swanson, 1994). More importantly, however, these results indicate the need to examine specific *types* of substance use, and not just substance use as a whole. Each substance use variable in the final model contributed individually, as well as collectively, to the prediction of violence subtype, and demonstrated *different* relationships with the subtypes of violence. While research on violence has typically focused on combined indicators of substance use (e.g., Dowden & Brown, 2002; Steadman et al., 1998; Swanson, 1990), researchers in the area of substance use have demonstrated the critical importance of examining correlates of specific types of substances of abuse (e.g., Conrod, Pihl, et al., 2000).

An important issue that bears discussion concerning the above findings is the role of violence severity. As noted previously, instrumental and reactive offences differed significantly on level of violence severity, with reactive offences scoring much higher on the VAS. This begged the question of whether the predictors of violence subtype identified in the current study, and potentially, those identified in prior studies, are simply predictors of violence severity. For this reason, the relationship between potential predictors of violence subtype and the severity of index offence violence was examined. Whereas a number of potential violence subtype predictors were significantly associated with violence severity, in most cases, these relationships were in the opposite direction to what would be expected given their demonstrated associations with the subtypes of violence. In addition, a hierarchical logistic regression analysis conducted with violence

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severity and the substance use variables that were identified as significant predictors of violence subtype indicated that the substance use variables contributed significantly to the prediction of subtype of violence beyond the effect of violence severity. Thus, subtype of violence does not seem to be a proxy variable for violence severity (or vice-versa), lending confidence to the interpretation of the current results.

Childhood Maltreatment History (Hypothesis 5)

The third goal of the current dissertation was to elucidate the relationships between childhood maltreatment history, psychopathology, and subtypes of offending. Given previous research on the association between childhood maltreatment and psychopathology (e.g. Berstein et al., 1998; Cohen et al., 2001; Fergussen et al., 1996; Weiler & Widom, 1996), I expected that offenders with a history of childhood maltreatment would have higher rates of and/or more severe adult psychopathology. I also expected that maltreatment would *not* be directly predictive of subtype of violence, given that maltreatment increases the risk for a wide range of types of psychopathology.

Results indicated that the relationship between maltreatment history and psychopathology was dependent on the form of childhood maltreatment, with physical abuse demonstrating the largest association. Specifically, offenders with a history of physical abuse had significantly more severe histories of clinician-identified mood problems. Physical abuse also had a significant relationship with MCMI-III clinical scale scores, with physically abused offenders scoring significantly higher on all MCMI-III clinical scales (Anxiety, Somatoform, Dysthymia, Bipolar, Drug Dependence, PTSD, Thought Disorder, Major Depression, and Delusional Disorder) with the exception of Alcohol Dependence, for which there was only a trend. Similarly, offenders with a

physical abuse history had higher scores on a number of MCMI-III personality scales,

including Depressive, Antisocial, Sadistic, Negativistic, Masochistic, Schizotypal,

Borderline, and Paranoid. Offenders who were physically abused in childhood also had

significantly higher PCL-R-2 Facet 4 (antisocial behaviour) scores than those who were

not physically abused. They did not, however, differ from non-physically abused

offenders on any MMPI-2 scales.

In contrast to physical abuse, sexual abuse during childhood was not associated

with increased clinician-identified Axis I psychopathology. Sexual abuse did have a

significant association with MCMI-III clinical scales as a whole, with a specific trend for

sexually abused offenders to have greater Alcohol Dependence scores than offenders

without a sexual abuse history. Sexually abused offenders also had higher PCL-R-2 Facet

4 (antisocial behaviour) scores than offenders without a sexual abuse history. Sexual

abuse did not have a significant association with MCMI-III personality scale scores or

MMPI-2 scale scores.

There was a statistical trend for offenders with a history of emotional abuse

during childhood to have a more severe history of clinician-identified mood, anxiety, and

impulse control problems than those without a emotional abuse history. In contrast,

emotional abuse did not relate to MCMI-III scale scores or on MMPI-2 scale scores.

Psychologically abused offenders did have higher PCL-R-2 Facet 4 (antisocial behaviour)

scores than offenders without a history of emotional abuse, however.

Neglect appeared to have the weakest association with psychopathology.

Offenders with a history of neglect did not differ from those without such a history on

MCMI-III clinical scale scores. There was only a statistical trend for neglect to relate to

MCMI-III personality scales and MMPI-2 scales, with higher scores overall in the neglected offenders, but there were no differences between neglected and non-neglected offenders on specific scales. There was a statistical trend for offenders with a neglect history to have higher PCL-R-2 Facet 2 (affective) scales than those without such a history.

These results are consistent with prior research indicating that maltreatment during childhood confers a risk for a range of adult psychopathologies (e.g., Bernstein et al., 1998; Cohen et al., 2001, Koivisto & Haapasalo, 1996). This is also in keeping with the theory that childhood maltreatment is a non-specific risk factor for later problems (Ruggiero et al., 1999). These results also highlight the importance of examining the specific type of childhood maltreatment, given that the findings varied across maltreatment types.

The relationship between maltreatment history and subtypes of violence was examined by logistic regression. None of the indicators of maltreatment history, including any history of childhood maltreatment, history of specific types of maltreatment, and number of types of maltreatment to which an offender had been exposed, were predictive of violence subtype. Thus, whereas maltreatment is associated with an increased risk for psychopathology in adulthood, and is known to relate to an increased risk for violence in men (e.g., Dodge et al., 1999; Widom, 1989), it does not appear to be differentially associated with one specific type of violence. It may be that maltreatment increases the risk for reactive violence via increased impulsivity (e.g., Shields & Cicchetti, 1998; Simmel, Brooks, Barth, & Hinshaw, 2001), while also increasing the risk for instrumental violence, via modeling of aggressive behaviour.

Testing this hypothesis would require a different method to capture instrumental and reactive violence (e.g., ratings of instrumental and reactive violence on separate scales), and was therefore not possible in the current study. The current study findings are also consistent with the findings of Chase and colleagues (2001), who failed to find any differences in maltreatment history between groups of reactive and proactive domestic violence offenders. In contrast, one study with youth suggested a relationship between childhood maltreatment and subtype of aggression, with sexual abuse predictive of reactive aggression, and physical abuse correlated with both reactive and proactive aggression (Connor et al., 2004). Thus, it may be that during childhood, maltreatment is predictive of subtype of violence (either directly, or as mediated by psychopathology), but as time post-maltreatment increases, this relationship diminishes.

Subgroups of Offenders and Offending Patterns

In addition to a variable- or risk factor-focused analytic approach, I also used a person-centred analytic approach to examine psychopathology and subtypes of violence. McDermott and colleagues (2008) discussed the potential utility of identifying subgroups of patients who display different clinical profiles, who then may demonstrate differential relationships with subtypes of aggressive behaviour. The authors found some utility in identifying patient groups with different rates of inpatient aggression. A person-focused analytic approach appears to fit with the conceptualization of distinct clinical profiles associated with subtypes of violence. There is limited research of this type examining subtypes of aggression, however. Indeed, Tweed and Dutton (1998) appear to report the only published study with a person-focused analytic approach to subtypes of violence. In the current study, it was hypothesized that the personality characteristics that were

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identified as prototypical of instrumental and reactive offenders would form distinct clusters in the population, with antisocial and narcissistic features for the former, and borderline personality features for the latter. Based on the limited published studies involving offender classification using characteristics of psychopathology (e.g., Hamberger & Hasting, 1986; Taylor et al., 2006), it was also expected that there would be two additional groups: a low psychopathology group and potentially a group with DSM Cluster A/C personality features.

I initially predicted that these different (hypothesized) groups of offenders would be differentially at risk for reactive and instrumental violence. As planned, the clusters were defined using MCMI-III scales, based on prior research (e.g., Tweed & Dutton, 1998) and the range of clinical features tapped by the measure. However, the results of the logistic regressions with the MCMI-III scales demonstrated that neither the individual scales nor the combination of the scales were significant predictors of violence subtype. Thus, the resulting clusters should not have demonstrated any significant differences on violence subtype. The cluster analyses were still conducted as planned, as the clusters could demonstrate interesting relationships with other variables.

Four clusters emerged through the analysis. These were labelled High Psychopathology, Low Psychopathology, Antisocial, and Moderate Schizoid Traits. The High Psychopathology group had higher scores than the other clusters on many MCMI-III scales. In addition, the group displayed elevated Antisocial, Alcohol and Drug dependence, and Depressive MCMI-III scale scores. They also demonstrated moderate scores on Borderline, Schizoid, and Avoidant scales of the MCMI-III. Further, the High Psychopathology group had a more severe history of stimulant use than the Low

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Psychopathology and Moderate Schizoid Traits groups. They were also marginally more likely to have been intoxicated during their index offence. In addition, they were more likely to have had mood, anxiety, and impulse control problems than the Low Psychopathology and Moderate Schizoid Traits groups. They demonstrated a marginally increased rate of childhood physical abuse than Low Psychopathology and Moderate Schizoid Traits groups. Thus, this group generally appears to be characterized by more clinical and psychosocial adversity than other clusters.

In contrast, the Low Psychopathology cluster was characterized by moderate Antisocial, Narcissistic, Drug Dependence, Histrionic, and Compulsive MCMI-III scale scores. They had low scores on all other MCMI-III scales.

The Antisocial group had elevated MCMI-III Drug Dependence scale scores, and approached elevation on the Antisocial scale. They displayed moderate Alcohol Dependence, Narcissistic, Bipolar, Histrionic, Sadistic, Compulsive, and Borderline MCMI-III scale scores. Offenders in this cluster scored low on the Avoidant and Schizoid scales of the MCMI-III. The Antisocial cluster was similar to the High Psychopathology cluster on substance use. They were also marginally more likely to have been intoxicated during their index offence, and marginally more likely to have a history of physical abuse than the Low Psychopathology and Moderate Schizoid Traits clusters.

Finally, the Moderate Schizoid Traits cluster demonstrated moderate scale scores on the MCMI-III Schizoid, Antisocial, Narcissistic, Drug Dependence, and Compulsive scales. This group was characterized by low MCMI-III Borderline and Avoidant scale scores. Offenders in the Moderate Schizoid Traits cluster scored higher than the Low Psychopathology and Antisocial groups on MCMI-III Schizotypal and Paranoid scales,

and higher than the Low Psychopathology group on several MCMI-III scales reflective of DSM- Cluster A and C personality traits.

The identified clusters were not exactly as hypothesized, although they did bear some similarities to the hypothesized clusters. First, a cluster characterized by low psychopathology was identified. Second, the Moderate Schizoid Traits cluster appears somewhat similar to clusters described in the literature characterized by DSM Cluster A and/or C personality features. The cluster identified in the current sample did not display elevations in the clinical range for Cluster A or C scales, but scored higher on scales tapping these features than other clusters. The High Psychopathology group appears similar to the profile associated with reactive violence (see Table 2) in that reactive violence has been associated with a wider range of psychopathology than instrumental violence, including psychopathology on Axis I. The Antisocial cluster appears to fit the profile of a classic antisocial offender, with significant antisocial traits and substance use, but fewer Axis I mental health issues.

Despite the distinct clinical profiles associated with these clusters, there were limited differences in index offence characteristics across groups, consistent with the results of the logistic regressions. Thus, the general conclusion is that MCMI-III personality features are not related to subtype of index offence violence. Further research will be needed to validate the clusters identified in this study and to further examine their possible role in violent offending. I turn now to a discussion of the strengths and limitations of this dissertation research.

Strengths and Limitations

The research detailed in this dissertation has a number of strengths and limitations, which will be discussed in turn. First, to my knowledge this is the first study to comprehensively examine the role of mental health history in relation to subtypes of aggression. While previous studies have examined some elements of mental health history, no study to date has examined the range of psychopathology that was investigated in the current study. Further, this study is one of a limited number of studies examining subtypes of *severe* violence in adult prison populations, as much research has focused on lower-level violence and aggression in community, youth, and psychiatric populations (e.g., Dodge & Coie, 1987; Kockler et al., 2006; Miller & Lynam, 2003; Stafford & Cornell, 2003; Stanford, Houston, Mathias et al., 2003; Vitiello et al., 1990).

Although the sampling in the current study was non-random, the sample included all eligible offenders during the participant selection period. As such, it should be generally representative of incarcerated violent offenders. Offender profiles vary across regions in Canada in terms of ethnicity, types of offences, and predominant substances of abuse (J. Earle, personal communication, August 25, 2005; Motiuk & Vuong, 2005; Trevethan & Rastin, 2004), however, so it would be useful to replicate the findings in another region.

The analytic approach taken in the current study is also a strength. Using multinomial logistic regression allowed for an examination of individual predictors, and the development of a predictive model incorporating several key predictors. To my knowledge, this is the first study to develop a predictive model for subtypes of violence, which can subsequently be applied in other samples. In addition to the predictor-based

analyses, the current study also included a preliminary offender-focused examination via cluster analysis, which provides an alternate method of examining the relationship between psychopathology and subtypes of violence in offenders.

There are also several limitations of this research that bear discussion. First, although archival data is representative of "real-world" practice, the utility of the data is only as good as what is available for each offender. One possible concern in the current study was whether offender psychopathology was adequately detected. As discussed above, rates of Axis I disorders, including SUDs, were lower than expected given related research findings (i.e., Brink et al., 2001; Motiuk & Porporino, 1992). While the presence of substance use *problems* was likely adequately identified in the current study given the high rates of either substance use or SUDs, formal diagnoses may have been under-identified. In addition, rates of clinician-identified personality disorders were considerably lower than expected (e.g., Motiuk & Porporino, 1992; Rasmussen et al., 1999).

As mentioned previously, it is unknown whether these differences in rates reflect changes in offender composition over time, or reflect an under-identification of psychopathology through current CSC practices. CSC has publicly acknowledged a need to increase identification of psychopathology in incarcerated offenders, which has led to the recent development of a mental health strategy including the systematic mental health screening of offenders (CSC, 2007a). Thus, it may be that both Axis I and II psychopathology was under-identified in the current study. If this is the case, it could have lead to an under-identification of predictors for instrumental and reactive violence.

Given the possible concerns about the validity of the clinician-identified personality disorders, I chose not to use these data for subsequent analyses. As such, I was limited to personality test data to reflect personality pathology. These data were only available for a subset of offenders (see discussion of sample size, below). However, analyses indicated that those with and without personality test results generally did not differ. For the MCMI-III and MMPI-2, offenders with personality test data had had a greater number of previous federal offences; however, this is not surprising, as the likelihood of having such an assessment would increase with the number of incarcerations.

In terms of the PCL-R-2, those with assessments on file generally did not differ from those without, other than on the number of prior violent offences. As noted previously, it is possible that these offences served as the impetus for the psychopathy assessment, and that the subgroup of offenders in the current sample with PCL-R-2 results therefore represents a more violent group of offenders. Offenders with PCL-R-2 assessment results on file did not differ from those without an assessment regarding the proportion of instrumental to reactive violence, suggesting that the results are likely generalizable. However, a notable concern with the PCL-R-2 results in the current study was that scores (Total score and Facets 1-3) were considerably lower than would be expected for a general incarcerated offender population. Given that the current sample consisted of violent offenders, this is even more surprising. This brings into question whether the current sample was actually less psychopathic than other offender populations, or, alternatively, whether the clinicians who had conducted the assessments had consistently under-rated severity of psychopathic traits on Facets 1 to 3. For several

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reasons, it seems that the latter might be more likely. First, some researchers have suggested that affective and interpersonal aspects of psychopathy may be more difficult to assess than the antisocial behaviour aspects; indeed, this is one of the arguments in favour of the DSM-IV conceptualization and criteria for antisocial personality disorder (Widiger et al., 1996). Second, Facet 4 (antisocial behaviour) generally demonstrated the only associations with other variables (with the exception of the interaction of Facet 3 [lifestyle] and substance intoxication during the index offence). Thus, it may be that clinicians found the other facets more difficult to assess. Given that there was strong inter-rater reliability on the PCL-R-2 for the small number of offenders who had more than one such assessment, it may be that the clinicians consistently under-rated the other facets, but that the *relative* scores across assessments were generally valid. However, this may have led to range restrictions on the PCL-R-2, with results skewed to the lower end of severity. This may have limited the identification of expected significant associations between PCL-R-2 scores and outcome variables such as subtype of violence and violence severity.

The proportion of instrumental relative to reactive violence in the current study also bears discussion. A considerably higher proportion of offences were classified as instrumental relative to rates reported in other studies (e.g., Cornell et al., 1996; Hodges, 2007; Stanford, Houston, Mathias et al., 2003; Woodworth & Porter, 2002). However, it does appear that the proportion of instrumental relative to reactive violence is greater in prison-based samples than hospital- (psychiatric or forensic-psychiatric) or community-based samples (e.g., Cornell et al., 1996; Stanford, Houston, Mathias et al., 2003; Steele-Williams, 2002; Woodworth & Porter, 2002). For example, in Woodworth and Porter

(2002), 39% of offences were classified as primarily reactive, and 61% classified as primarily instrumental, which are closer to the proportions found in the current study than have been reported for other samples. Woodworth and Porter (2002) also relied on a Canadian federal offender sample, some of which was drawn from the same region as in the current study. It may be that Canadian federal correctional institutions include more instrumental offenders than prisons in other jurisdictions, due to differences in criminal justice systems (e.g., Canadian federal sentences associated with more serious offences; *Criminal Code*, 2003). One difficulty presented by the much higher proportion of instrumental relative to reactive violence in the current study is the possible impact of this imbalance on the results of the logistic regression analyses. In logistic regression, the greater the imbalance in proportions of the outcome variable, the more difficult it is for a predictor variable to have an effect; weak relationships may not be detected (Garson, 2009). Thus, it is possible that weak but potentially relevant predictors were not identified in the current study.

Another issue that bears discussion is the inclusion of robbery in the current study. CSC classifies robbery as a violent offence; however, certain offence classification schemes do not *de facto* consider robbery a violent offence, unless there is also evidence of physical violence (e.g., Cormier-Lang system/Violence Risk Appraisal Guide [VRAG]; Cormier, Rice, Harris, & Quinsey, 2005). As all robberies by default have an instrumental motive irrespective of degree of planning, the inclusion of robbery may have lead to the higher proportion of instrumental violence in the current study. Robberies were also significantly lower in violence severity than other offences and may account for the difference in violence severity between reactive and instrumental offences.

Further, the inclusion of these qualitatively and quantitatively different offences in the current study may have added noise to the data. However, removal of these offences from the analyses would have drastically decreased the sample size; the removal of just robberies without evidence of physical violence would decrease the sample size by approximately 24% ($n = 35$). As such, this was not feasible in the current study.

A further issue to be considered is the type of predictions that were made in the current study. The outcome of interest was a single behaviour: the index offence violence of the incarcerated offenders. The prediction of a single behaviour is considerably more difficult than the prediction of a pattern of behaviour (Epstein, 1979). Further, as noted by Hodges (2007), any given factor is likely to explain only a small proportion of the variance in subtype of violence. There may be additional predictors for a *pattern* of perpetrating instrumental or reactive violence that were not detected in the current examination of predictors of index offence violence subtype. Whether a single behaviour is consistent with a general pattern of behaviour in some way, and therefore might be predicted by characteristics of the perpetrator of that behaviour, may also depend on the severity of that behaviour. Woodworth and Porter (2002) speculated that psychopathy might be associated with instrumental index offence violence (in their study, a single occurrence of homicide) when that violence was very severe due to the potential consequences of the behaviour. There was a large range in violence severity of the offences in the current study. Including a large range of severity of offences might have precluded identifying certain predictors that may only apply for a single event at a high level of violence severity. An examination of a possible severity-psychopathy interaction failed to confirm this for psychopathy, however. Interaction effects for violence severity

and other mental health factors were not examined due to limitations in sample size, and therefore cannot be ruled out.

An additional limitation related to the issue of prediction is the lack of a control group of non-violent offenders. In the current study, psychosocial factors were examined as predictors of *type* of index offence violence. However, without a control group of non-violent offenders, *the risk for violence* (relative to non-violence) cannot be predicted. A group of non-violent offenders was not included in the current study for two primary reasons. First, the focus of the current study was on the distinction between subtypes of criminal violence, given the dearth of research in this area. Second, although non-violent offenders can receive federal sentences (e.g., drug trafficking, fraud; *Criminal Code*, 2003), such offenders may not receive the comprehensive psychosocial assessments that are conducted with violent offenders as part of violence risk assessment and intervention planning. As such, it is likely that there would not have been sufficient information on the psychosocial history of offenders in a non-violent control group to perform comparison analyses with the violent offender subgroups in this current study. Future research will be needed to determine whether the predictors of *subtype* of violence identified in the current study extend to the *prediction of violence* for each of the subtypes (i.e., reactive violence relative to non-violence, instrumental violence relative to non-violence).

Finally, one of the limitations of the current study was the statistical power in certain analyses. While the overall sample size was comparable to that in other similar studies (e.g., Woodworth & Porter, 2002), the frequency of certain variables was low. Specifically, the rate of neglect was relatively low, which may have limited the power of any analyses that included this variable. Furthermore, only a subsample of offenders had

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personality test data. The sample size was considerably lower for analyses with the

personality measures, especially the MMPI-2. In addition, as noted above, a strength of

the current study was the range of mental health history variables that were examined.

However, it was not possible to examine the possibility of interaction effects beyond the

few potential interactions for which there were specific *a priori* hypotheses. This would

have required the creation of a very large number of interaction vectors, for which the

sample size was inadequate. Thus, it is possible that certain predictors were not detected

due to lack of statistical power, and that some aspects of mental health history might

interact with other variables in their relationship with subtype of violence. Future

research may require a particularly large sample to examine these possibilities.

Implications

The findings of the current study have a number of important applied and

theoretical implications. First, the study findings advance our understanding of mental

health history and criminal violence. As discussed previously, there is a growing body of

research on predictors of violent behaviour. Examining subtypes of violent behaviour,

and possible correlates of these subtypes, is an emerging focus in the area of research on

violence. The current research extends what little is known about factors that can lead an

individual to perpetrate a given subtype of violence. More specifically, the current

research helps elucidate the relationship between mental health factors and violence.

While research has consistently demonstrated that certain forms of mental health and

psychosocial history increase the risk for violent behaviour (e.g., Hernandez-Avila et al.,

2000; Monahan, 1992; Salekin et al., 1994; Skeem et al., 2005; Swanson, 1994; Widom,

1989), the specific nature of these relationships is much less clear. The current findings suggest that different forms of psychopathology have differential relationships with the subtypes of violence. In particular, the results highlight the importance of substance use/misuse to violent offending, and the importance of examining substance use at the level of the specific type of substance, as noted previously. Research often examines substance use as a unitary construct, which may miss important substance-specific information. The results of this dissertation suggest the importance of considering pharmacological and psychosocial effects of specific types of substances of abuse, including their associations with clinical traits, and impact on mental state and behaviours. The results also indicate the importance of considering substance use in conjunction with other mental health factors. Although it was beyond the scope of the dissertation research to examine possible interactions between substance use and all other mental health variables under consideration, the finding of an interaction between psychopathic traits and substance intoxication suggests that this may be important to consider. These latter results add to previous research findings, suggesting that the relationship between psychopathy and instrumental violence may not be as clear as previously suggested. Specifically, the socially deviant aspect of psychopathy appears to be marginally associated with instrumental violence *only for non-intoxicated offenders.* Although there are likely many other factors that increase the risk for a given subtype of violence (e.g., Hodges, 2007), the results add to our understanding of motivation for violence.

The findings of this study also lay the groundwork for additional research that will have important implications for violence risk prediction (and its corollary,

prevention). Current commonly used violence risk assessment measures, such as the

HCR-20 (Webster et al., 1997) and VRAG (Cormier et al., 2005) predict "violence",

unspecified in nature. These assessment schemes include mental health history factors as

items; in the case of the HCR-20, both historical and current clinical functioning are

included (Webster et al., 1997). The results of a recent study suggest that different

elements of risk assessment measures are not equally predictive of both instrumental and

reactive violence (McDermott, Quanbeck, Busse, Yastro, & Scott, 2008). Taken in

conjunction with the findings of the current dissertation, this suggests a need for further

research on, and refinement of violence risk assessment tools. With further research, the

findings of the current study will hopefully be incorporated into risk assessment tools that

not only predict violence, but also specify what *form* such violence is likely to take. In

particular, specific substance use history and intoxication at the time of offence may be

important elements to include in future risk assessment tools.

The results of this dissertation also suggest avenues for intervention research and

program evaluation. As intervention programs are often designed to address violence risk

assessment results, they may focus on reducing the risk for violence in general, as

opposed to targeting subtypes of violence for which an individual might be particularly at

risk. The results of the current study suggest a number of possible intervention targets

that warrant investigation in future research. Specifically, prevention of the development

of substance use problems may be effective for both instrumental and reactive violence.

Although substance use history is a "historical/static" risk factor (see Wong, Oliver, &

Stockdale, 2009), targeting this risk factor both pre- and post-incarceration may reduce

risk for reactive violence. Prevention programs that target the *initiation* of substance use

may help reduce risk for reactive violence. In individuals who have already initiated substance use, preventing *escalation* into disordered use (abuse/dependence) may also reduce risk, as the results of the current study indicated a progressive increase in risk from no use, to use, to abuse/dependence. Given that the mechanism by which substance use history is associated with increased risk for reactive violence is unknown (e.g., neurotoxic effects of substance use; pre-existing associated personality traits), intervention may also be effective if it targets a pre-existing risk factor that is associated with both substance use and reactive violence (e.g., impulsivity).

Factors such as the likelihood of substance intoxication during a *future* offence also bear investigation as treatment targets. As any intoxication and polysubstance intoxication were associated with reactive violence, decreasing the likelihood of future use of any substances may decrease the likelihood of reactive violence. Similarly, decreasing the likelihood of stimulant use may decrease the likelihood of instrumental violence. The results of the current research suggest that it may be beneficial to target substance use intervention programs (prevention or treatment) toward the use of *specific* substances to target the differential association with instrumental and reactive violence associated with different substances of abuse. Research has suggested specific clinical profiles are associated with the abuse of different types of substances (Conrod, Pihl, et al., 2000). Intervention targeting these specific substance abuse and clinical profiles has been shown to be effective (Conrod, Stewart, et al., 2000), and may therefore specifically reduce the risk for each subtype of violence.

With additional research, the findings of the current study may also have implications for criminal investigations. Woodworth and Porter (2002) suggested that

knowledge of a correlate of a subtype of violence might reduce the field of possible suspects during the police investigation of a violent crime. Similarly, Meloy (2006) discussed potential differences in crime scenes associated with subtypes of violence. The findings of the current research suggest possible characteristics of perpetrators of each subtype of violence. From a criminal investigative standpoint, if the subtype of violence is determinable from details of the crime, known predictors of instrumental and reactive violence may help investigators identify possible suspects or avenues for investigation. For example, the perpetrator of a reactive offence may have been intoxicated on multiple substances during their offence, and have a substance use/misuse history. In contrast, the perpetrator of an instrumental crime may have been intoxicated on stimulants during the offence. It is also possible that the perpetrator of an instrumental offence is psychopathic (with particular elevations on socially deviant behaviour), but was *not* intoxicated during the offence. If the offence was reactive in nature, it may have been perpetrated by an intoxicated socially-deviant psychopathic offender. The latter finding is important, as Woodworth and Porter (2002) suggested that offences that are reactive in nature are less likely to have a psychopathic perpetrator; this may only be the case if the perpetrator was not intoxicated during the offence.

The findings concerning childhood maltreatment also have important implications. First, there were high rates of childhood maltreatment in the current sample. Childhood maltreatment was found to be associated with increased psychopathology among the offenders in this study, as has been found in previous studies (Berstein et al., 1998; Cohen et al., 2001; Weiler & Widom, 1996). For offenders with a known history of childhood maltreatment, screening for psychopathology may therefore be warranted. As

childhood maltreatment is both a risk factor for violence and psychopathology (e.g., Widom, 1989a, 1989b), intervention specifically targeting childhood maltreatment history may be beneficial for offenders. More broadly, prevention of childhood maltreatment and early intervention subsequent to maltreatment may help lower rates of psychopathology both in offenders and the community and would also ideally lead to reductions in violent offending.

In addition to the implications that stem from the results concerning the key study goals, several other issues warrant noting. Rates of psychopathology among the offenders in the study were quite high, despite the possible under-identification of both substance use disorders and personality disorders. This finding suggests an important need for systematic, comprehensive mental health screening of offenders, and intervention services to target all areas of psychopathology. In addition, the possible under-identification/under-rating of psychopathic traits suggests a need for further PCL-R-2 training and implementation of inter-rater reliability checks for CSC clinicians who are using this measure. Hare (2003) recommends structured training on the use of the PCL-R-2, and suggests having two clinicians assess each offender on the measure to ensure reliable ratings.

<center>Recommendations for Future Research</center>

Based on the findings presented in this dissertation and on the limitations of the research discussed above, a number of avenues are suggested for future research. First, given the considerable variability in research methodology used in studies of subtypes of aggression, greater exploration is warranted in this area. Further research is needed to

elucidate optimal methods of classification and measurement of aggressive subtypes. As discussed previously, the necessary and sufficient elements associated with instrumental and reactive violence vary across models (see Table 1). For example, both harm/pain and acquisition of resources were considered instrumental motives in the current study. However, some previous studies have excluded purely harm-motivated violence (e.g., Cornell et al., 1996). Another difference across models that bears further exploration is the relative role of impulsivity/planning of the violent act versus having a non-frustration-related goal for the violence. In the case of robbery, offences may have very little planning, but have a motive of gaining resources. As such, they were classified as instrumental in the current study. It is unknown which conceptualizations optimally capture the nature of each subtype of violence, and whether different research findings may be attributable to these differences in conceptualization. Future methodological studies should focus on examining the specific elements of the subtypes of aggression.

In the current research, instrumental and reactive violence were treated as dichotomous, with the understanding that they might represent two ends of a spectrum ranging from purely reactive to purely instrumental, as proposed by Woodworth and Porter (2002). Although initially coded on a four-point scale in the current study, the scale was collapsed into two categories to increase reliability, with the awareness that this might reduce the ability to detect certain relationships. Use of a two-level scale is also consistent with a number of previous research studies. However, research to-date has not conclusively determined whether aggressive subtypes are best represented as a single, bipolar (or multi-polar) construct, or as two separate dimensions, either orthogonal or intercorrelated (Campbell et al., 1999; Meloy, 2006). Further research is needed to clarify

this.

An additional methodological issue concerns the designation of an *act* as instrumental or reactive, and the subsequent classification of the *actor*. In this dissertation, possible predictors were examined for one specific *act* of violence committed by a given individual (the actor), as was the method used by Woodworth and Porter (2002). In contrast, other studies have examined patterns of behaviour, using a variety of approaches to summate prior acts of aggression and then classify the *actor* (e.g., Cornell et al., 1996; Kockler et al., 2006; Stanford, Houston, Mathias et al., 2003). As mentioned above, it is conceivable that different or additional predictors might exist for a pattern of behaviour in contrast to those for a single act. Future research will need to examine this issue both from a methodological standpoint, and to determine whether the findings of the current research extend to individuals who have a pattern (however defined) of instrumental or reactive violence.

Given the findings of the current study concerning psychopathology and index offence violence severity, it would be worthwhile to examine this issue further. Violence prediction schemes (e.g., HCR-20, VRAG) are designed to predict "violence", of an unspecified level of severity. Developing predictive models to determine the likely severity of the violent recidivism would clearly be of great utility for risk management. Future studies of subtypes of aggression would also benefit from including an examination of violence severity of the offences.

Another feature that bears future investigation is the issue of the time frame of the prediction of violence. The current study was postdictive in nature, with both the predictor variables (mental health history, childhood maltreatment) and the outcome

variable (index offence violence) having already occurred. There is some evidence that predictors of violence can differ for short-term versus longer-term time frames (e.g., McDermott et al., 2008). As such, prospective research of varying time frames would be beneficial to extend the findings of the current research.

This leads to a related area of investigation, that of the development and refinement of violence prediction instruments. Currently, the focus of such instruments is on "violence" as a unitary construct (e.g., Cormier et al., 2005; Webster et al., 1997). However, it would clearly be useful to predict the type of violence for which an individual might be at greater risk, and to identify concomitant risk management targets. McDermott and colleagues (2008) proposed that the predictive utility of current risk assessment measures might depend on the subtype of aggression. In their recent investigation, the authors found that different aspects of violence risk assessment tools were predictive of impulsive, predatory, and psychotic violence in an inpatient forensic psychiatric population. It would be beneficial if the developing body of knowledge on predictors of subtypes of violence were to be incorporated into research on violence risk assessment measures. Such research would ideally include instrumental, reactive, and non-violent offences. This would hopefully allow for the risk prediction and risk management tools to become more focused at the level of subtype of violence.

In addition to focusing on the prediction of violence based on offender characteristics, future research should focus on the reverse relationship – the prediction of the possible type of offender based on the subtype of violence (often referred to as "profiling"; Woodworth & Porter, 2000). As discussed above, criminal investigations may benefit from knowledge of likely perpetrator profiles for a given violent offence.

Knowledge of the subtype of violence, as determined by details of the crime, may aid in identifying likely suspects. Further person-centred research (e.g., cluster analysis), in addition to variable-based studies, may aid with this objective.

Another area for future research concerns the setting of the violent behaviour. Offender files in the current study contained insufficient details concerning institutional aggression to allow for an examination of this variable. However, there may be differences in the predictors for subtypes of institutional versus community violence (see McDermott et al., 2008). In addition, it may be useful to examine violence subtype consistency across settings.

The number of perpetrators involved in the index offence of offenders in the current study ranged from one to five. It is conceivable that the different perpetrators involved in a given offence differed in terms of mental health and childhood maltreatment history. The relative and combined influence of the characteristics of the different perpetrators is unknown. Similarly, the very presence of multiple perpetrators versus a single perpetrator may have had an influence on the type of violence that was perpetrated. For example, the presence of pro-criminal peers might increase the likelihood of planning a violent offence (i.e., instrumental violence) via social pressure; alternatively, it might increase the likelihood of responding violently to provocation (e.g., via a need to maintain social status among peers). Recent research suggests that the presence of multiple perpetrators is associated with instrumental violence in homicide offences (Juodis, Woodworth, Porter, & ten Brinke, 2009). Future research should further examine these issues.

The research presented in this dissertation focused exclusively on male offenders.

As discussed previously, there are differences in the characteristics of violence perpetrated by men and women, with women apparently more likely to engage in violence with romantic partners and family members, and men more likely to engage in violence toward friends or strangers (Hiday et al., 1998; Robbins et al., 2003). In addition, women are more likely to engage in violence in the home, whereas men are more likely to engage in violence in public (Robbins et al., 2003). There are also sex differences concerning risk factors for violence, with psychopathology associated with a greater increase in risk for violence in women than in men (Hodgins, 1992). Women's violence also appears less likely to be preceded by substance use (Robbins et al., 2003). Given these differences in violence between men and women, the predictors of subtype of violence identified in the current study may not equally apply to female offenders. Thus, future research should investigate predictors of violence subtypes in female offender populations. However, securing a sufficiently large sample of severely violent female offenders is likely to be a challenge in Canada, due to the small number of federally incarcerated violent female offenders (CSC, 2007c). Researchers may have to include women with lower-level violent offences and/or female offenders who have been released to the community to ensure a sufficient sample size.

Research into subtypes of aggression also bears further theoretical development. Although several authors have discussed possible reasons why certain clinical characteristics might be associated with a given subtype of aggression (e.g., Meloy, 1988; Woodworth & Porter, 2002), there has been very little development of any underlying theory of aggressive subtypes. In this dissertation, I proposed underlying elements of affective dysregulation, impulsivity, (lack of) empathy, (decreased) sensitivity to

punishment, and (increased) sensitivity to reward to explain specific proposed associations between mental health history and subtypes of violence. However, it was beyond the scope of the current research to directly examine this theoretical framework, and measures of these constructs were not available in offender files. Future research should measure these constructs and examine the relationship of these underlying clinical constructs to different forms of psychopathology and the subtypes of violence. In addition, it may be useful to distinguish between traits and clinical states, as alluded to in Meloy's (2006) discussion of the different roles of mental disorder and mental state. Underlying personality characteristics and mental states might have differential relationships with an act of aggression (for which mental states might be the strongest predictor) versus a pattern of aggressive behaviour (for which personality characteristics or mental disorders may also play a significant role).

As discussed previously, research on subtypes of aggression seems to have focused almost exclusively on risk-factor or variable-based approaches as opposed to using perpetrator- or individual-focused approaches. With the exception of Tweed and Dutton (1998), the current study appears to be the first to attempt an offender-focused approach to predicting violence subtypes. The development of the four clusters in the current study was preliminary; future research is warranted to validate the clusters identified in the current study. There was limited evidence for the utility of the clusters in the current study in predicting violence subtype, however. It would be useful for future research to examine groups of offenders in relation to patterns of offending, not just single acts. Identifying groups of individuals at risk of certain motivational subtypes of violence would allow for intervention programs to be tailored specifically to those

groups. Cluster analyses could be conducted with variables other than those examined in the current study, such as those identified in this dissertation as predictive of violence subtype (e.g., using substance misuse history and intoxication at the time of the offence to create clusters). Further, previous research with Canadian federal offenders has identified clusters of alcohol and drug users (Lightfood & Hodgins, 1993) that may be useful to examine in relation to the subtypes of violence.

Summary and Conclusions

In conclusion, this dissertation research has identified significant mental health predictors for instrumental and reactive subtypes of criminal violence in adult male offenders. In particular, alcohol use history, stimulant intoxication, and polysubstance intoxication emerged as the strongest predictors of violence subtype, individually and in combination. Both polysubstance intoxication and alcohol use history were associated with an increased likelihood of reactive violence, whereas stimulant intoxication was exclusively associated with instrumental violence. This research also led to the development of a predictive model for violence subtype, which has a greater-than-chance accuracy level. This model can be tested with other samples to further examine and refine its predictive utility. In addition, the findings of this dissertation indicate the importance of considering substance use in conjunction with psychopathy in relation to subtypes of violence. Although psychopathy itself was not a significant predictor of violence subtype, the interaction between psychopathy (PCL-R-2 Facet 3; deviant lifestyle) and substance intoxication contributed to the prediction of subtype of violence. Specifically, the social deviance aspect of psychopathy was predictive of instrumental violence, but only for

non-intoxicated offenders. Thus, the findings of the current study highlight the importance of substance use to violent offending, and in particular, the relevance of examining the specific *type* of substance of use.

This dissertation also highlighted the relatively high prevalence of psychopathology and maltreatment history in male offenders. Further, the association between childhood maltreatment and adult psychopathology received additional confirmation. Results suggested that childhood maltreatment itself is not a significant predictor of subtype of violence in adult male offenders, however.

Due to some of the methodological limitations discussed above, it is possible that certain weaker predictors for violence subtype were not identified. Future research will be needed to definitively rule out factors that did not emerge as pertinent in the current study. The findings of this dissertation suggest many important avenues for further exploration, and have notable implications for violence risk assessment and intervention.

References

Alia-Klein, N., O'Rourke, T. M., Goldstein, R. Z., & Malaspina, D. (2007). Insight into illness and adherence to psychotropic medications are separately associated with violence severity in a forensic sample. *Aggressive Behavior, 33,* 86-96.

Allen, P., Freeman, D., & McGuire, P. (2007). Slow habituation of arousal associated with psychosis proneness. *Psychological Medicine, 37,* 577-582.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.

Bandura, A. (1978). Social learning theory of aggression. *Journal of Communication, 28(3)r,* 12-29.

Barratt, E. S. (1991). Measuring and predicting aggression within the context of a personality theory. *Journal of Neuropsychiatry, 3(2),* S35-S39.

Barratt, E. S., Stanford, M. S., Dowdy, L., Liebman, M .J., & Kent, T. A. (1999). Impulsive and premeditated aggression: A factor analysis of self-reported acts. *Psychiatry Research, 86,* 163-173.

Barratt, E. S., Stanford, M. S., Felthous, A. R., & Kent, T. A. (1997). The effects of phenytoin on impulsive and premeditated aggression: A controlled study. *Journal of Clinical Psychopharmacology, 17(5),* 341-349.

Bell, R. Q. (1979). Parent, child, and reciprocal influence. *American Psychologist, 34,* 821-826.

Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin, 106(1),* 59-73.

Berman, M. E., Fallon, A. E., & Coccaro, E. F. (1998). The relationship between personality psychopathology and aggressive behavior in research volunteers. *Journal of Abnormal Psychology, 107,* 651-658.

Berridge, C. W. (2006). Neural substrates of psychostimulant-induced arousal. *Neuropsychopharmacology, 31,* 2332-2340.

Berstein, D. P., Stein, J. A. & Handelsman, L. (1998). Predicting personality pathology among adult patients with substance use disorders: Effects of childhood maltreatment. *Addictive Behaviors, 23,* 855-868.

Bjørnebekk, G. (2007). Dispositions related to sensitivity in the neurological basis for activation of approach-avoidance motivation, antisocial attributes and individual differences in aggressive behavior. *Social Behavior and Personality, 35,* 1251-1264.

Black, M. S., Forbey, J. D., Ben-Porath, Y. S., Graham, J. R., McNulty, J. L., Anderson, S. V., & Burlew, A. K. (2004). Using the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) to detect psychological distress and dysfunction in a state correctional setting. *Criminal Justice and Behavior, 31,* 734-751.

Boer, D. P., Hart, S. D., Kropp, P. R., & Webster, C. D. (1997). *Manual for the Sexual Violence Risk - 20.* Burnaby, British Columbia, Canada: The British Columbia Institute Against Family Violence.

Briere, J., & Elliott, D. M. (2003). Prevalence and psychological sequelae of self-reported childhood physical and sexual abuse in a general population sample of men and women. *Child Abuse and Neglect, 27,* 1205-1222.

Brink, J. H. (2005). Epidemiology of mental illness in a correctional system. *Current Opinion in Psychiatry, 18*, 536-541.

Brink, J. H., Doherty, D., & Boer, A. (2001). Mental disorder in federal offenders: A Canadian prevalence study. *International Journal of Law and Psychiatry*, *24*, 339-356.

Brochu, S., Cousineau, M.-M., Gillet, M., Cournoyer, L.-G., Pernanen, K., & Motiuk, L. (2001). Drugs, alcohol, and criminal behaviour: A profile of inmates in Canadian federal institutions. *Forum on Corrections Research, 13(3),* 20-24.

Broomhall, L. (2005). Acquired sociopathy: A neuropsychological study of executive dysfunction in violent offenders. *Psychiatry, Psychology, and Law, 12(2),* 367-387.

Brunelle, C., Douglas, R. L., Pihl, R. O., & Stewart, S. H. (2009). Personality and substance use disorders in female offenders: A matched controlled study. *Personality and Individual Differences, 46,* 472-476.

Bushman, B. J. & Anderson, C. A. (2001). Is it time to pull the plug on the hostile versus instrumental aggression dichotomy? *Psychological Review, 108(1),* 273-279.

Butcher, J. N. (2004). Personality assessment without borders: Adaptations of the MMPI-2 across cultures. *Journal of Personality Assessment, 82,* 90-104.

Campbell, A., Muncer, S., McManus, I. C., & Woodhouse, D. (1999). Instrumental and expressive representations of aggression: One scale or two? *Aggressive Behavior, 25,* 435-444.

Campbell, M. A., Porter, S., & Santor, D. (2004). Psychopathic traits in adolescent offenders: An evaluation of criminal history, clinical, and psychosocial correlates. *Behavioral Sciences and the Law, 22,* 23-47.

Chase, K. A., O'Leary, K. D., & Heyman, R. E. (2001). Categorizing partner-violent men within the reactive-proactive typology model. *Journal of Consulting and Clinical Psychology, 69(3),* 567-572.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155-159.

Cooke, D.J. & Michie, C. (1997). An item response theory analysis of the Hare Psychopathy Checklist-Revised. *Psychological Assessment, 9,* 3-14.

Connor, D. F., Steingard, R.J ., Anderson, J. J. & Melloni, R. H. (2003). Gender differences in reactive and proactive aggression. *Child Psychiatry and Human Development, 33,* 279-294.

Connor, D. F., Steingard, R. J., Cunningham, J. A., Anderson, J. J., & Melloni, R. H. Jr. (2004). Proactive and reactive aggression in referred children and adolescents. *American Journal of Orthopsychiatry, 74(2),* 129-136.

Conrod, P. J., Pihl, R. O., Stewart, S. H., & Dongier, M. (2000). Validation of a system of classifying female substance abusers on the basis of personality and motivational risk factors for substance abuse. *Psychology of Addictive Behaviors, 14,* 243-256.

Conrod, P. J., Stewart, S. H., Pihl, R. O., Côté, S., Fontaine, V., & Dongier, M. (2000). Efficacy of brief coping skills interventions that match different personality profiles of female substance abusers. *Psychology of Addictive Behaviors, 14,* 231-242.

Cormier, C. A., Rice, M. E., Harris, G. T., & Quinsey, V. L. (2005). *Violent offenders: Appraising and managing risk* (2nd ed.). Washington, DC: American Psychological Association.

Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, G., & Pine, D. (1996). Psychopathy in instrumental and reactive violent offenders. *Journal of Consulting and Clinical Psychology, 64*, 783-790.

Corrado, R. R., Cohen, I., Hart, S., & Roesch, R. (2000). Comparative examination of the prevalence of mental disorders among jailed inmates in Canada and the United States. *International Journal of Law and Psychiatry, 23,* 633-647.

Correctional Service Canada (2007a). CSC launches a comprehensive mental health strategy. *Let's Talk/Entre Nous, 32(1),* 4-6.

Correctional Service Canada (2007b). *Quick facts: Changing offender population.* Ottawa, Ontario, Canada: Author.

Correctional Service Canada (2007c). *Women offender statistical overview 2007.* Ottawa, Ontario, Canada: Author.

Criminal Code, R.S.C. 1985, c. C-46.

Crow, Y. J. (1995). A continuum of psychosis, one humane gene, and not much else: The case for homogeneity. *Schizophrenia Research, 17,* 135-145.

Daniel, A.E., Robins, A.J., Reid, J.C. & Wilfley, D.E. (1988). Lifetime and six-month prevalence of psychiatric disorders among sentenced female offenders. *Bulletin of the American Academy of Psychiatry and the Law, 16*, 333-342.

Dodge, K. A., Bates, J. E., & Pettit, G. S. (1990). Mechanisms in the cycle of violence. *Science, 250*, 1678-1683.

Dodge, K. A. & Coie, J. D. (1987). Social-information-processing factors in reactive and proactive aggression in children's peer groups. *Personality and Social Psychology, 53,* 1146-1158.

Dollard, J., Doob, L., Miller, N., Mowrer, O., & Sears, R. (1939). *Frustration and aggression.* New Haven, CT: Yale University Press.

Dowden, C. & Brown, S. L. (2002). The role of substance abuse factors in predicting recidivism: A meta-analysis. *Psychology, Crime, and Law, 8,* 243-264.

Dyce, J. A. (1997). The Big Five Factors of personality and their relationship with personality disorders. *Journal of Clinical Psychology, 53,* 587-593.

Edens, J. F., Marcus, D. K., Lilienfeld, S. O., & Poythress, Jr., N. G. (2006). Psychopathic, not psychopath: Taxometric evidence for the dimensional structure of psychopathy. *Journal of Abnormal Psychology, 115,* 131-144.

Epstein, S. (1979). The stability of behavior: I. On predicting most of the people much of the time. *Journal of Personality and Social Psychology, 37(7),* 1097-1126.

Eron, L. D. (1987). The development of aggressive behavior from the perspective of a developing behaviorism. *American Psychologist, 42,* 435-442.

Federal Bureau of Investigation. (2007). *Crime in the United States: 2006.* Washington, DC: U.S. Department of Justice.

Fergusson, D. M., Horwood, L. J., & Lynskey, M. T. (1996). Childhood sexual abuse and psychiatric disorder in young adulthood: II. Psychiatric outcomes of childhood sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry, 35,* 1365-1374.

Fishbein, D. (2000). Neuropsychological function, drug abuse, and violence: A conceptual framework. *Criminal Justice and Behavior, 27,* 139-159.

Fondacaro, K. M., Holt, J. C., & Powell, T. A. (1999). Psychological impact of childhood sexual abuse on male inmates: The importance of perception. *Child Abuse and Neglect, 23,* 361-369.

Foster, J. F., & Trimm, R. F., IV (2008). On being eager and uninhibited: Narcissism and approach-avoidance motivation. *Personality and Social Psychology Bulletin, 34,* 1004-1017.

Friedman, A. S. (1998). Substance use/abuse as a predictor to illegal and violent behavior: A review of the relevant literature. *Aggression and Violent Behavior, 3,* 339-355.

Friedrich, W. N. & Boriskin, J. A. (1976). The role of the child in abuse: A review of the literature. *American Journal of Orthopsychiatry*, *46*, 580-590.

Fulero, S. M. (1995). Review of the Hare Psychopathy Checklist-Revised. In Conoley, J.C. & Impara, J.C. (Eds.), *Twelfth Mental Measurements Yearbook* (pp 453-454). Lincoln, NE: Buros Institute.

Garson, G. D. (2009). *Logistic regression*. Retrieved November 10, 2009, from Statnotes: Topics in Multivariate Analysis: http://faculty.chass.ncsu.edu/garson/pa765/statnote.htm

Gendreau, P., Goggin, C. E., & Law, M. A. (1997). Predicting prison misconducts. *Criminal Justice and Behavior, 24,* 414-431.

Grann, M., Langstroem, N., Tengstroem, A. & Stalenheim, E. (1998). Reliability of file-based retrospective ratings of psychopathy with the PCL-R. *Journal of Personality Assessment, 70,* 416-426.

Green, M. J., & Malhi, G. S. (2006). Neural mechanisms of the cognitive control of emotion. *Acta Neuropsychiatrica, 18,* 144-153.

Green, M. J., Cahill, C. M., & Mahli, G. S. (2007). The cognitive and neurophysiological basis of emotion dysregulation in bipolar disorder. *Journal of Affective Disorders, 103,* 29-42.

Gudjonsson, G. H., & Sigurdsson, J. F. (2000). Differences and similarities between violent offenders and sex offenders. *Child Abuse and Neglect, 24,* 363-372.

Haapasalo, J., & Moilanen, J. (2004). Official and self-reported childhood abuse and adult crime of young offenders. *Criminal Justice and Behavior, 31,* 127-149.

Hamberger, L. K., & Hastings, J. E. (1986). Personality correlates of men who abuse their partners: A cross-validation study. *Journal of Family Violence, 1,* 323-341.

Hathaway, S. R., & McKinley, J. C. (1991). *Minnesota Multiphasic Personality Inventory-2 (MMPI-2)*. Minneapolis, MN: University of Minnesota Press.

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

Hare, R. D. (1996). Psychopathy: A clinical construct whose time has come. *Criminal Justice and Behavior, 23,* 25-55.

Hare, R. D. (1999). Psychopathy as a risk factor for violence. *Psychiatric Quarterly*, *70,* 181-197.

Hare, R. D. (2003). *The Psychopathy Checklist Revised (PCL-R): 2nd Edition.* Toronto, Ontario, Canada: Multi-Health Systems.

Hare, R. D., Harpur, T. J, Hakstian, A. R., Forth, A. E., Hart, S. D., & Newman, J. P. (1990). The Revised Psychopathy Checklist: Descriptive statistics, reliability, and factor structure. *Psychological Assessment, 2,* 338-342.

Hart, S. D., & Hare, R. D. (1989). Discriminant validity of the Psychopathy Checklist in a forensic psychiatric population. *Psychological Assessment, 1,* 211-218.

Hart, S. D., Hare, R. D., & Forth, A. E. (1994). Psychopathy as a risk factor for violence: Development and validation of a screening version of the Revised Psychopathy Checklist. In J. Monahan & H. Steadman (Eds.). *Violence and mental disorder: Developments in risk assessment* (pp. 81-98). Chicago, IL: University of Chicago Press.

Heilbrun, A. B., Jr., Heilbrun, L. C., & Heilbrun, K. L. (1978). Impulsive and premeditated homicide: An analysis of subsequent parole risk of the murderer. *Journal of Criminal Law and Criminology, 69(1),* 108-114.

Hemphill, J. F., Hare, R. D., & Wong, S. (1998). Psychopathy and recidivism: A review. *Legal and Criminological Psychology, 3*, 141-172.

Hernadez-Avila, C. A., Burleson, J. A., Poling, J., Tennen, H., Rounsaville, B. J., & Kranzler, H. R. (2000). Personality and substance use disorders as predictors of criminality. *Comprehensive Psychiatry, 41,* 276-283.

Hiday, V. A., Swartz, M. S., Swanson, J. W., Boram, R. & Wagner, H. R. (1998). Male-female differences in the setting and construction of violence among people with severe mental illness. *Social Psychiatry and Psychiatric Epidemiology, 33,* S68-S74.

Hoaken, P. N. S., & Stewart, S. H. (2003). Drugs of abuse and the elicitation of human aggressive behavior. *Addictive Behaviors, 28,* 1533-1554.

Hodges, H. J. (2007). *Psychopathy as a predictor of instrumental violence among civil psychiatric patients.* Unpublished master's thesis, Drexel University, Philadelphia.

Hodgins, S. (1992). Mental disorder, intellectual deficiency, and crime: Evidence from a birth cohort. *Archives of General Psychiatry, 49,* 476-483.

Hodgins, S. (1995). Major mental disorder and crime: An overview. *Psychology, Crime, and Law, 2,* 5-17.

Holmes, R. M. & Holmes, S. T. (1998). *Contemporary perspectives on serial murder.* Thousand Oaks, CA: Sage Publications.

Hosser, D., Raddatz, S., & Windzio, M. (2007). Child maltreatment, revictimization, and violent behavior. *Violence and Victims, 22,* 318-333.

Houston, R. J., Stanford, M. S., Villemarette-Pittman, N. R., Conklin, S. M., & Helfritz, L. E. (2003). Neurobiological correlates and clinical implications of aggressive subtypes. *Journal of Forensic Neuropsychology, 3(4),* 67-87.

Howard, R. C., & Menkes, D. B. (2007). Changes in brain function during acute cannabis intoxication: Preliminary findings suggest a mechanism for cannabis-induced violence. *Criminal Behavior and Mental Health, 17,* 113-117.

Jaskiw, G. E., Blumer, T. E., & Gutierrez-Esteinou, R. (2003) Comparison of inpatients with major mental illness who do and do not consent to low-risk research. *Psychiatry Research, 119*, 183-188.

Johnson, J. G., Cohen, P., Smailes, E., Kasen, S., Oldham, J. M., Skodol, A. E., et al. (2000). Adolescent personality disorders associated with violence and criminal behavior during adolescence and early adulthood. *American Journal of Psychiatry, 157,* 1406-1412.

Johnson, R. J., Ross, M. W., Taylor, W. C., Williams, M. L., Carvajal, R. I., & Peters, R. J. (2005). A history of drug use and childhood sexual abuse among incarcerated males in a county jail. *Substance Use and Misuse, 40,* 211-229.

Juodis, M., Woodworth, M., Porter, S., & ten Brinke, L. (2009). Partners in crime: A comparison of individual and multi-perpetrator homicides. *Criminal Justice and Behavior, 36(8),* 824-839.

Kaufmann, H. (1965). Definitions and methodology in the study of aggression. *Psychological Bulletin, 64,* 351-364.

King, S., Waschbusch, D. A., Pelham, W. E., Frankland, B. W., Andrade, B. F., Jacques, S., & Corkum, P. V. (2009). *Journal of Abnormal Child Psychology, 37,* 579-589.

Kingsbury, S. J., Lambert, M. T., & Hendrickse, W. (1997). A two-factor model of aggression. *Psychiatry, 60(3),* 224-232.

Kirsch, L. G., & Becker, J. V. (2007). Emotional deficits in psychopathy and sexual sadism: Implications for violent and sadistic behavior. *Clinical Psychology Review, 27(8),* 904-922.

Kockler, T. R., Stanford, M. S., Nelson, C. E., Meloy, J. R., & Sanford, K. (2006). Characterizing aggressive behavior in a forensic population. *American Journal of Orthopsychiatry, 76(1),* 80-85.

Koivisto, H. & Haapasalo, J. (1996). Childhood maltreatment and adulthood psychopathy in light of file-based assessments among mental state examinees. *Studies on Crime and Crime Prevention, 5,* 91-104.

Kropp, P. R., Hart, S. D., Webster, C. D., & Eaves, D. (1995). *Manual for the Spousal Assault Risk Assessment Guide (Second Ed.).* Burnaby, British Columbia, Canada: The British Columbia Institute Against Family Violence.

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33,* 159-174.

Leeman, R. F., Grant, J. E., & Potenza, M. N. (2009). Behavioral and neurobiological foundations for the moral and legal implications of intoxication, addictive behaviors and disinhibition. *Behavioral Sciences and the Law, 27,* 237-259.

LePine, J. A., & Dyne, L. V. (2001). Voice and cooperative behavior as contrasting forms of contextual performance: Evidence of differential relationships with Big Five personality characteristics and cognitive ability. *Journal of Applied Psychology, 86,* 326-336.

Lightfoot, L., & Hodgins, D. C. (1993). Characteristics of substance-abusing offenders: Implications for treatment programming. *International Journal of Offender Therapy and Comparative Criminology, 37,* 237-250.

Longato-Stadler, E., von Knorring, L., & Hallman, J. (2002). Mental and personality disorders as well as personality traits in a Swedish male criminal population. *Nordic Journal of Psychiatry, 56,* 137-144.

Martorell, G. A., & Bugental, D. B. (2006). Maternal variations in stress reactivity: Implications for harsh parenting practices with very young children. *Journal of Family Psychology, 20,* 614-647.

McClellan, D. S., Farabee, D., & Crouch, B. M. (1997). Early victimization, drug use, and criminality: A comparison of male and female prisoners. *Criminal Justice and Behavior, 24,* 455-476.

McDermott, B. E., Quanbeck, C. D., Busse, D., Yastro, K., & Scott, C. L. (2008). The accuracy of risk assessment instruments in the prediction of impulsive versus predatory aggression. *Behavioral Sciences and the Law, 26,* 749-777.

McDermott, B. E., Edens, J. F., Quanbeck, C. D., Busse, D., & Scott, C. L. (2008). Examining the role of static and dynamic risk factors in the prediction of inpatient violence: Variable- and person-focused analyses. *Law and Human Behavior, 32,* 325-338.

McDermott, P. A., Alterman, A. I., Cacciola, J. S, Rutherford, M. J., Newman, J. P., & Mulholland, E. M. (2000). Generality of the Psychopathy Checklist-Revised factors over prisoners and substance-dependent patients. *Journal of Consulting and Clinical Psychology, 68,* 181-186.

McEllistrem, J. E. (2004). Affective and predatory violence: A bimodal classification system of human aggression and violence. *Aggression and Violent Behavior, 10,* 1-30.

Meloy, J. R. (1988). *The psychopathic mind: Origins, dynamics, and treatment.* Northvale, NJ: Jason Aronson Inc.

Meloy, J. R. (2006). Empirical basis and forensic application of affective and predatory violence. *Australian and New Zealand Journal of Psychiatry*, *40*, 539-547.

Miller, J. D., & Lynam, D. R. (2003). Psychopathy and the Five-Factor model of personality: A replication and extension. *Journal of Personality Assessment, 81,* 168-178.

Miller, M. M., & Potter-Efron, R. T. (1989). Aggression and violence associated with substance abuse. *Journal of Chemical Dependency Treatment, 3,* 1-36.

Millon, T., Davis, R., & Millon, C. (1997). *Millon Clinical Multiaxial Inventory – III (MCMI-III): Manual (2nd ed.).* Minneapolis, MN: National Computer Systems, Inc.

Moeller, F. G., Dougherty, D. M., Barratt, E. S., Oderinde, V., Mathias, C. W., Harper, R. A., et al. (2002). Increased impulsivity in cocaine dependent subjects independent of antisocial personality disorder and aggression. *Drug and Alcohol Dependence*, *68*, 105–111.

Monahan, J. (1992). Mental disorder and violent behavior. *American Psychologist, 47,* 511-521.

Moran, P. B., Vuchinich, S., & Hall, N. K. (2004). Associations between types of maltreatment and substance use during adolescence. *Child Abuse and Neglect, 28,* 565-574.

Motiuk, L. L., & Porporino, F. J. (1992). *The prevalence, nature and severity of mental health problems among federal male inmates in Canadian penitentiaries.* Ottawa, Ontario, Canada: Correctional Service Canada, Research Branch.

Motiuk, L. L., & Vuong, B. *Homicide, sex, robbery and drug offenders in federal corrections: An end-of-2004 review.* Ottawa, Ontario, Canada: Correctional Service Canada, Research Branch.

Munro, B. H., & Page, E. B. (1993). *Statistical methods for health care research* (2nd ed.). Philadelphia: J. B. Lippincott.

Nedopil, N., Hollweg, M., Hartmann, J., & Jaser, R. (1995). Comorbidity of psychopathy with major mental disorders. *Issues in Criminological and Legal Psychology, 24,* 115-118.

Nelson, E. C. et al. (2002). Association between self-reported childhood sexual abuse and adverse psychosocial outcomes. *Archives of General Psychiatry, 59,* 139-145.

Nestor, P. G. (2002). Mental disorder and violence: Personality dimensions and clinical features. *American Journal of Psychiatry, 159,* 1973-1978.

Newman, J. P., & Kosson, D. S. (1986). Passive avoidance learning in psychopathic and nonpsychopathic offenders. *Journal of Abnormal Psychology, 95(3),* 252-256.

Newman, J. P., Kosson, D. S., & Patterson, C. M. (1992). Delay of gratification in psychopathic and nonpsychopathic offenders. *Journal of Abnormal Psychology, 101,* 630-636.

Okey, J. L. (1992). Human aggression: The etiology of individual differences. *Journal of Humanistic Psychology, 32,* 51-64.

Overall, J. E., & Magee, K. N. (1992). Replication as a rule for determining the number of clusters in hierarchical cluster analysis. *Applied Psychological Measurement*, *16(2)*, 119-128.

Patrick, C. J. & Zempolich, K. A. (1998). Emotion and aggression in the psychopathic personality. *Aggression and Violent Behavior, 3(4),* 303-338.

Pedhazur, E. J. (1997). *Multiple regression in behavioral research: Explanation and prediction* (3rd ed.). Fort Worth, TX: Harcourt Brace College Publishers.

Peters, R.H., Greenbaum, P.E., Edens, J.F., Carter, C.R. & Ortiz, M.M. (1998). Prevalence of DSM-IV substance abuse and dependence among prison inmates. *American Journal of Drug and Alcohol Abuse, 24*, 573-587.

Petry, N. M. (2002). Discounting of delayed rewards in substance abusers: Relationship to antisocial personality disorder. *Psychopharmacology, 162,* 425-432.

Pihl, R. O., & Hoaken, P. N. S. (1997). Clinical correlates and predictors of violence in patients with substance use disorders. *Psychiatric Annals, 27,* 735-740.

Pocket Criminal Code 2004 (2003). Toronto, Ontario, Canada: Thomson-Carswell.

Porter, S., Peace, K. A., Cooke, B., & Woodworth, M. (2005). *Developmental characteristics as predictors of psychopathy and type of aggression in homicide offenders*. Manuscript in preparation.

Poulin, F., & Boivin, M. (2000). Reactive and proactive aggression: Evidence of a two-factor model. *Psychological Assessment*, *12*, 115-122.

Raine, A., Meloy, J. R., Bihrle, S., Stoddard, J., LaCasse, L., & Buchsbaum, M. S. (1998). Reduced prefrontal and increased subcortical brain functioning assessed using positron emission tomography in predatory and affective murderers. *Behavioral Sciences and the Law, 16,* 319-332.

Rasmussen, K., Storsæter, O., & Levander, S. (1999). Personality disorders, psychopathy, and crime in a Norwegian prison populations. *International Journal of Law and Psychiatry, 22,* 91-97.

Retzlaff, P., Stoner, J., & Kleinsasser, D. (2002). The use of the MCMI-III in the screening and triage of offenders. *International Journal of Offender Therapy and Comparative Criminology, 46,* 319-332.

Robbins, P. C., Monahan, J., & Silver, E. (2003). Mental disorder, violence, and gender. *Law and Human Behavior, 27,* 561-571.

Rosenzweig, S. (1977). Outline of a denotative definition of aggression. *Aggressive Behavior, 3,* 379-383.

Rotter, M., Way, B., Steinbacher, M., Sawyer, D., & Smith, H. (2002). Personality disorders in prison: Aren't they all antisocial? *Psychiatric Quarterly, 73,* 337-349.

Ruggiero, J., Berstein, D. P., & Handelsman, L. (1999). Traumatic stress in childhood and later personality disorders: A retrospective study of male patients with substance dependence. *Psychiatric Annals, 29,* 713-721.

Salekin, R. T., Rogers, R., & Sewell, K.W. (1996). A review and meta-analysis of the Psychopathy Checklist and Psychopathy Checklist-Revised: Predictive validity and dangerousness. *Clinical Psychology: Science and Practice, 3*, 203-215.

Shield, A. & Cicchetti, D. (1998). Reactive aggression among maltreated children: The contribution of attention and emotion dysregulation. *Journal of Clinical Child Psychology, 27,* 381-395.

Simmel, C., Brooks, D., Barth, R. P., & Hinshaw, S. P. (2001). Externalizing symptomatology among adoptive youth: Prevalence and preadoption risk factors. *Journal of Abnormal Child Psychology, 29,* 57-69.

Skeem, J. L., Miller, J. D., Mulvey, E. P., Tiemann, J., & Monahan, J. (2005). Using a Five-Factor lens to explore the relation between personality traits and violence in psychiatric patients. *Journal of Consulting and Clinical Psychology, 73,* 454-465.

Skeem, J. L., & Mulvey, E. P. (2001). Psychopathy and community violence among civil psychiatric patients: Results from the MacArthur Violence Risk Assessment study. *Journal of Consulting and Clinical Psychology, 69,* 358-374.

Skodol, A. E., Gunderson, J. G., Pfohl, B., Widiger, T. A., Livesley, W. J., & Siever, L. J. (2002). The borderline diagnosis: I. Psychopathology, comorbidity, and personality structure. *Biological Psychiatry, 51, 936-950.*

Smith, S. S., & Newman, J. P. (1990). Alcohol and drug abuse-dependence disorders in psychopathic and nonpsychopathic criminal offenders. *Journal of Abnormal Psychology, 99,* 430-439.

Speece, D. L. (1995). Cluster analysis in perspective. *Exceptionality, 5(1),* 31-44.

Stafford, E., & Cornell, D. G. (2003). Psychopathy scores predict adolescent inpatient aggression. *Assessment, 10*(1), 102-112.

Stalenheim, E. G., & von Knorring, L. (1996). Psychopathy and Axis I and Axis II psychiatric disorders in a forensic psychiatric population in Sweden. *Acta Psychiatrica Scandinavica, 94,* 217-223.

Stanford, M. S., Greve, K. W., & Dickens, Jr., T. J. (1995). Irritability and impulsiveness: Relationship to self-reported impulsive aggression. *Personality and Individual Differences, 19(5),* 757-760.

Stanford, M. S., Greve, K. W., & Gerstle, J.E. (1997). Neuropsychological correlates of self-reported impulsive aggression in a college sample. *Personality and Individual Differences, 23,* 961-965.

Stanford, M. S., Houston, R. J., Matthias, C. W., Villemarette-Pittman, N. R., Helfritz, L. E., & Conklin, S. M. (2003). Characterizing aggressive behavior. *Assessment, 10,* 183-190.

Stanford, M. S., Houston, R. J., Villemarette-Pittman, N. R., & Greve, K. W. (2003). Premeditated aggression: Clinical assessment and cognitive psychophysiology. *Personality and Individual Differences, 34,* 773-781.

Statistics Canada. (2007). *Uniform Crime Reporting Survey*. Ottawa, Ontario, Canada: Author.

Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., Grisso, T., et al. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of General Psychiatry, 55*, 393-401.

Steele-Williams, J. (2002). *Psychopathy in instrumental and reactive violent offenders using MMPI-2 scales as predictors.* Unpublished doctoral dissertation, Spalding University, Louisville, KY.

Stewart, D., Gossop, M., Marsden, J., & Rolfe, A. (2000). Drug misuse and acquisitive crime among clients recruited to the National Treatment Outcome Research Study (NTORS). *Criminal Behaviour and Mental Health, 10,* 10-20.

Strack, S. & Millon, T. (2007). Contributions to the dimensional assessment of personality disorders using Millon's model and the Millon Clinical Multiaxial Inventory (MCMI-III). *Journal of Personality Assessment, 89,* 56-69.

Swanson, J. W., Borum, R., Swartz, M. S., & Monahan, J. (1996). Psychotic symptoms and disorders and the risk of violent behavior in the community. *Criminal Behavior and Mental Health, 6,* 317-338.

Swanson, J. W., Holzer, C. E., Ganju, V. K., & Jono, R. T. (1990). Violence and psychiatric disorders in the community: Evidence from the Epidemiological Catchment Area surveys. *Hospital and Community Psychiatry, 41*, 761-770.

Swogger, M. T., & Kosson, D. S. (2007). Identifying subtypes of criminal psychopaths: A replication and extension. *Criminal Justice and Behavior, 34,* 953-970.

Taylor, J., Kemper, T. S., Loney, B. R., & Kistner, J. A. (2006). Classification of severe male juvenile offenders using the MACI clinical and personality scales. *Journal of Clinical Child and Adolescent Psychology, 35(1),* 90-102.

Teplin, L. A. (1994). Psychiatric and substance abuse disorders among male urban jail detainees. *American Journal of Public Health, 84*, 290-293.

Trestman, R. L. (1997). Clinical correlates and predictors of violence in patients with personality disorders. *Psychiatric Annals, 27,* 741-744.

Trevethan, S. & Rastin, C. J. (2004). *A profile of visible minority offenders in the federal Canadian correctional system.* Ottawa, Ontario, Canada: Correctional Service Canada, Research Branch.

Tweed, R. G. & Dutton, D. G. (1998). A comparison of impulsive and instrumental subgroups of batterers. *Violence and Victims, 13(3),* 217-230.

Tyrer, P., Cooper, S., Herbert, E., Duggan, C., Crawford, M., Joyce, E. *et al.* (2007). The Quantification of Violence Scale: A simple method of recording significant violence. *International Journal of Social Psychiatry, 53,* 485-497.

Verdejo-García, A., Lawrence, A. J., & Clark, L. (2008). Impulsivity as a vulnerability-marker for substance-use disorders: Review of findings from high-risk research, problem gamblers and genetic association studies. *Neuroscience and Biobehavioral Reviews, 32,* 777-810.

Vereycken, J., Vertommen, H., & Corveleyn, J. (2002). Authority conflicts and personality disorders. *Journal of Personality Disorders, 16,* 41-51.

Vitale, J. E., & Newman, J. P. (1998, May). *Social information processing in incarcerated adult male offenders.* Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

Vitaro, F., Brendgen, M., & Tremblay, R. E. (2002). Reactively and proactively aggressive children: Antecedent and subsequent characteristics. *Journal of Child Psychology and Psychiatry, 43*, 495-505.

Vitaro, F., Gendreau, P. L., Tremblay, R. E., & Oligny, P. (1998). Reactive and proactive aggression differentially predict later conduct problems. *Journal of Child Psychology and Psychiatry, 39*, 377-385.

Vitiello, B., Behar, D., Hunt, J., Stoff, D., & Ricciuti, A. (1990). Subtyping aggression in children and adolescents. *Journal of Neuropsychiatry, 2,* 189-192.

Vogel-Sprott, M., Easdon, C., Fillmore, C., Finn, P., & Justus, A. (2001). Alcohol and behavioral control: Cognitive and neural mechanisms. *Alcoholism: Clinical and Experimental Research, 25,* 117-121.

Wang, E. W., & Diamond, P. M. (1999). Empirically identifying risk factors related to violence in corrections. *Behavioral Sciences and the Law, 17,* 377-389.

Waschbusch, D. A., Willoughby, M. T., & Pelham, W.E. (1998). Criterion validity and the utility of reactive and proactive aggression: Comparisons to attention deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder, and other measures of functioning. *Journal of Clinical Child Psychology, 27,* 396-405.

Webster, C. D., Douglas, K. S., Eaves, D., & Hart, S. D. (1997). *HCR-20: Assessing risk for violence; version 2.* Burnaby, British Columbia, Canada: Mental Health Law and Policy Institute, Simon Fraser University.

Weiler, B. L., & Widom, C. S. (1996). Psychopathy and violent behaviour in abused and neglected young adults. *Criminal Behaviour and Mental Health, 6,* 253-271.

Weinshenker, N. J., & Siegel, A. (2002). Bimodal classification of aggression: Affective defense and predatory attack. *Aggression and Violent Behavior, 7,* 237-250.

White, H. R., & Widom, C. S. (2003). Does childhood victimization increase the risk for early death? A 25-year prospective study. *Child Abuse and Neglect, 27,* 841-853.

Widiger, T.A., Cadoret, R., Hare, R., Robins, L., Rutherford, M., Zanarini, M., et al. (1996). DSM-IV antisocial personality disorder field trial. *Journal of Abnormal Psychology*, *105*, 3-16.

Widom, C. S. (1989a). The cycle of violence. *Science, 244,* 160-166.

Widom, C. S. (1989b). Child abuse, neglect, and adult behavior: Research design and findings on criminality, violence, and child abuse. *American Journal of Orthopsychiatry, 59(3),* 355-367.

Widom, C. S., Schuck, A. M., & White, H. R. (2006). An examination of pathways from childhood victimization to violence: The role of early aggression and problematic alcohol use. *Violence and Victims, 21(6),* 675-690.

Wise, E. A. (1996). Comparative validity of MMPI-2 and MCMI-II personality disorder classifications. *Journal of Personality Assessment, 66,* 569-582.

Woodworth, M. (2001). *Motivation and violence characteristics of homicide perpetration as a function of psychopathy.* Unpublished master's thesis, Dalhousie University, Halifax, Nova Scotia, Canada.

Woodworth, M., & Porter, S. (2002). In cold blood: Characteristics of criminal homicides as a function of psychopathy. *Journal of Abnormal Psychology, 111*, 436-445.

Woodworth, M., & Porter, S. (2000). Historical foundations and current applications of criminal profiling in violent crime investigations. *Expert Evidence, 7(4),* 241-264.

Wong, S. C. P., Olver, M. E., & Stockdale, K. C. (2009). The utility of dynamic and static factors in risk assessment, prediction, and treatment. In J. T. Andrade (Ed.), *Handbook of violence risk assessment and treatment: New approaches for mental health professionals* (pp. 83-120). New York, NY: Springer Publishing Co.

Offender Inclusion Criteria

All offenders whose offence for which they are currently incarcerated (Index Offence) is classified as "violent" (as per charges below) are eligible for participation. Names and codes for charges (below) are derived from the 2004 Canadian Criminal Code (CCC). Parallel charges with different names/codes from either earlier or more recent versions are also admissible.

Offences Classified as "Violent", as per the CCC (2004):

1. *Assaults*: Assault (265. (1)); Assault with a weapon or causing bodily harm (267); Aggravated Assault (268. (1)); Unlawfully Causing Bodily Harm (269); Torture (269.1 (1)); Assaulting a Peace Officer (270. (1)); Sexual Assault With a Weapon, Threats to a Third Party, or Causing Bodily Harm (272. (1)); and Aggravated Sexual Assault (273. (1)).

Excluding: Criminal Harassment (264. (1)); Uttering Threats (264.1 (1)); Disarming a Police Officer (270.1 (1)); and Sexual Assault (271. (1))

2. *Kidnapping, Hostage Taking, and Abduction*: Kidnapping (279 (1) & (2)); Hostage Taking (279.1 (1)); Abduction of a Person Under Sixteen (280. (1)); Abduction of a Person Under Fourteen (281); Abduction (283.(1))

Excluding: Abduction in Contravention of Custody Order (282.(1))

3. *Homicide*: Murder (229 & 230); Manslaughter (232); Infanticide (233); Killing Unborn Child in Act of Birth (238.1); Attempted Murder (239); Accessory After Fact to Murder (240); and Criminal Negligence (219. (1); 220; 221)

Appendix B:

Data Coding and Collection Form

Subject #: _ _ _

Coder:_____   Selected for double coding: _____   Data entered: _____

NOTE: THIS FORM SHOULD BE USED IN CONJUNCTION WITH THE *CODING MANUAL*. **INSTRUCTIONS FOR CODING THE VARIABLES ARE AVAILABLE IN THE MANUAL.**

Mental Health Variables:

A. Substance Use:

1. Presence of Substance Use History (DRUGHX)
        0. No history
        1. History of use

2. Substance Use Diagnostic Status (SUDSDX)
        0. No Dx
        1. Dx of a Substance Use Disorder

3. Stimulant Dx (STIMDX)
        0. No stimulant Dx
        1. Dx of Stimulant Abuse/Dependence

4. Alcohol Dx (ETOHDX)
        0. No ETOH Dx
        1. Dx of ETOH Abuse/Dependence

5. Cannabis Dx (THCDX)
        0. No THC Dx
        1. Dx of THC Abuse/Dependence

6. Opiate Dx (OPIATEDX)
        0. No Opiate Dx
        1. Dx of Opiate Abuse/Dependence

7. Other Drug Dx (SUDNOSDX)
        0. No other SUDs Dx
        1. Dx of Abuse/Dependence for Other Drug

8. List all <u>specific</u> substance use disorder diagnoses (SUDNAME)

[data entry: enter as a list]

9. Number of Drugs for Which Abuse/Dependence Criteria is Met (NUSUDDX)
        -Numerical value   _____

10. Any History of Stimulant Use, Abuse, or Dependence, i.e., inclusive of STIMDX (STIMUSE)
            0. No stimulant use
            1. Presence of stimulant use

11. Any History of Alcohol Use, Abuse, or Dependence, i.e., inclusive of ETOHDX (ETOHUSE)
            0. No alcohol use
            1. Presence of alcohol use

12. Any History of Cannabis Use, Abuse, or Dependence, i.e., inclusive of THCDX (THCUSE)
            0. No THC use
            1. Presence of THC use

13. Any History of Opiate Use, Abuse, or Dependence, i.e., inclusive of OPIATDX (OPIATUSE)

            0. No opiate use
            1. Presence of opiate use

14. Any History of Other Use, Abuse, or Dependence, i.e., inclusive of OTHERDX (OTHRUSE)
            0. No Other Use
            1. Presence of Other Use

15. Number of Drugs for Which There is a History of Use, i.e., inclusive of NUSUDDX (NUDRGUSE*)*
        -Numerical Value   _____

16. List all <u>specific</u> substances for which there is a history of use (SULIST):

[data entry: enter as a list]

17. Intoxication Status During the Index Offence (INTOXIO)
        0. No evidence of intoxication
        1. Report of intoxication

18. Offender Report of Intoxication During Index Offence (OFFTOX)
        0. No offender self-report of intoxication
        1. Offender reports intoxication

19. Police/Official Report of Intoxication During Index Offence (COPTOX)
        0. No police/official report of intoxication
        1. Police/Official report of intoxication

20. Substance Used During Offence (INTOXTYP):
        0. Unknown
        1. Stimulants
        2. Alcohol
        3. THC
        4. Opiate
        5. Other
        6. More than one substance
        7. Conflicting reports about substance type
        999. Not applicable

        If conflicting reports about substance type (7, above), enter drug types and source of report for each type:

    21. Conflicting drug types (TYPES1):

    _____
    _____
    _____
    _____
    _____
    [data entry: Enter information as string variable]

22. List the Specific Drug(s) Used During Offence or N/A (DRUGIO):

[date entry: enter as list]

23. Withdrawal Status During the Index Offence (WITHDRAW):
        0. No evidence of withdrawal
        1. Report of withdrawal

24. Offender Report of Withdrawal During Index Offence (OFFWDR)
>> 0. No offender self-report of withdrawal
>> 1. Offender reports withdrawal

25. Police/Official Report of Withdrawal During Index Offence (COPWDR)
>> 0. No police/official report of withdrawal
>> 1. Police/Official report of withdrawal

26. Substance of Withdrawal (OFFTYPE)
>> 0. Unknown
>> 1. Stimulants
>> 2. Alcohol
>> 3. THC
>> 4. Opiate
>> 5. Other
>> 6. More than one substance
>> 7. Conflicting reports about substance type
>> 999. Not applicable

>> *If conflicting reports about substance type (7, above), enter drug types and source of report for each type*:

27. Conflicting drug types (TYPES2):

>> _____
>> _____
>> _____
>> _____
>> _____
>> [Data entry: Enter as a string variable]

28. List the Specific Drug(s) for which there is withdrawal during the index offence or N/A (DRUGWDR):

_____

[date entry: enter as list]

B. Psychiatric/Psychotropic Medication History:

29. History of Psychiatric/Psychotropic Medications as a Child/Youth (CHILDRX):
> 0. No psychotropic medications prescribed as a youth
> 1. Psychotropic prescribed medications as a youth
> 888. Unknown

> *If applicable, specify the types of medications if known, or indicate unknown or N/A:*

30. Type(s) of Psychiatric/Psychotropic Medication(s) Prescribed as a Child/Youth (RXTYPE1):

_____

_____

[data entry: enter as a list]

31. History of Psychiatric/Psychotropic Medications as an Adult (ADULTRX):
0. No psychotropic medications prescribed as an adult
1. Psychotropic prescribed medications as an adult
888. Unknown

If applicable, specify the types of medications if known, or indicate unknown or N/A:

32. Type(s) of Psychiatric/Psychotropic Medication(s) Prescribed as an Adult (RXTYPE2):

_____

_____

_____

[data entry: enter as a list]

33. Medication History at the Time of the Index Offence (RXIO):
0. No psychotropic/psychiatric meds prescribed at time of index offence
1. Offender had a prescription for psychiatric/psychotropic meds at the time of index offence
888. Unknown

34. Type(s) of Psychiatric/Psychotropic Medication(s) Prescribed at the time of the Index Offence (RXTYPE3):

_____

_____

[data entry: enter as a list]

C. Psychiatric History – Axis I & II Diagnoses:

35. Presence or History of Axis I Diagnoses Other than SUDs (MIDX)
0. No history of Non-SUDs Axis I Dx
1. History of at least one non-SUDs Axis I Dx

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

36. Onset of Axis I Disorder(s) (DXONSET)
0. Onset(s) prior to the index offence (all disorders)
1. Onset(s) subsequent to the index offence (all disorders)
2. Onsets both prior and subsequent to the index offence (multiple disorders, different timing of onset)

888. Unknown/Unclear timing of onset
999. Not Applicable

37. Presence or History of Mood Disorder (MOODDX)

0. No Hx of Mood disorder
1. Hx of Mood Dx

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

38. Onset of Mood Disorder (MDONSET)
0. Onset prior to the index offence
1. Onset subsequent to the index offence
888. Unknown/Unclear timing of onset
999. Not Applicable

39. Presence or History of Anxiety Disorder (ANXDX)
0. No Hx of Anxiety disorder
1. Hx of Anxiety Dx

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

40. Onset of Anxiety Disorder (ADONSET)
0. Onset prior to the index offence
1. Onset subsequent to the index offence
888. Unknown/Unclear timing of onset
999. Not Applicable

41. Presence or History of Schizophrenia or other Psychotic Disorder (PSYCDX)

0. No Hx of psychotic disorder
1. History of psychotic disorder

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

42. Onset of Psychotic Disorder (PSONSET)
0. Onset prior to the index offence
1. Onset subsequent to the index offence
888. Unknown/Unclear timing of onset
999. Not Applicable

43. Presence or History of Impulse Control Disorders, Including ADHD and Impulse Control Disorders Not Elsewhere Classified (IMPDX)
0. No history of impulse control disorders
1. History of impulse control disorders

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

44. Onset of Impulse Control Disorder (ICDONSET)
0. Onset prior to the index offence
1. Onset subsequent to the index offence
888. Unknown/Unclear timing of onset
999. Not Applicable

45. Presence or History of an Adjustment Disorder (ADJUSTDX)

0. No Hx of adjustment disorder
1. History of adjustment disorder

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

46. Onset of Adjustment Disorder (ADONSET)
0. Onset prior to the index offence
1. Onset subsequent to the index offence
888. Unknown/Unclear timing of onset
999. Not Applicable

47. Presence or History of Other Axis I Disorders, excluding childhood-specific disorders such as ODD, CD (OTHERDX)
0. No History of Other Axis I Disorder
1. History of Other Axis I Disorder

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

48. Onset of Other Axis I Disorder (ODONSET)
0. Onset prior to the index offence
1. Onset subsequent to the index offence
888. Unknown/Unclear timing of onset
999. Not Applicable

49. List all of the applicable specific diagnoses (be as specific as possible (e.g., adult ADHD vs. childhood ADHD)(DXNAME)

_____

_____

[data entry: enter as a list]

50. Number of Axis I Disorders, Excluding SUDs (NUMIDX)
-numerical value   _____

51. Number of Axis I Disorders, Including SUDs (NUDX)
-numerical value   _____

52. Presence or History of a DSM Personality Disorder (PDDX)
        0. No history of a DSM Personality Disorder diagnosis
        1. History of DSM Personality Disorder Diagnosis

53. Presence or History of DSM Cluster A (Paranoid, Schizoid, Schizotypal) Personality Disorder Diagnosis (PDADX)
        0. No history of Cluster A PD Dx
        1. History of Cluster A PD Dx

54. Presence or History of Paranoid Personality Disorder Diagnosis (PPDDX)
        0. No history of Paranoid PD Dx
        1. History of Paranoid PD Dx

55. Presence or History of Schizoid Personality Disorder Diagnosis (SPDDX)
        0. No history of Schizoid PD Dx
        1. History of Schizoid PD Dx

56. Presence or History of Schizotypal Personality Disorder Diagnosis (STPDDX)
        0. No history of Schizotypal PD Dx
        1. History of Schizotypal PD Dx

57. Presence or History of DSM Cluster B (Antisocial, Borderline, Histrionic, Narcissistic) Personality Disorder Diagnosis (PDBDX)
        0. No history of Cluster B PD Dx
        1. History of Cluster B PD Dx

58. Presence or History of Antisocial Personality Disorder Diagnosis (ASPDDX)
        0. No history of ASPD Dx
        1. History of ASPD Dx

59. Presence or History of Borderline Personality Disorder Diagnosis (BPDDX)
        0. No history of Borderline PD Dx
        1. History of Borderline PD Dx

60. Presence or History of Histrionic Personality Disorder Diagnosis (HPDDX)
        0. No history of Histrionic PD Dx
        1. History of Histrionic PD Dx

61. Presence or History of Narcissistic Personality Disorder Diagnosis (NPDDX)
        0. No history of Narcissistic PD Dx
        1. History of Narcissistic PD Dx

62. Presence or History of DSM Cluster C (Avoidant, Dependent, Obsessive-Compulsive) Personality Disorder Diagnosis (PDCDX)
        0. No history of Cluster C PD Dx
        1. History of Cluster C PD Dx

63. Presence or History of Avoidant Personality Disorder Diagnosis (APDDX)
        0. No history of Avoidant PD Dx
        1. History of Avoidant PD Dx

64. Presence or History of Dependent Personality Disorder Diagnosis (DPDDX)
        0. No history of Dependent PD Dx
        1. History of Dependent PD Dx

65. Presence or History of Obsessive-Compulsive Personality Disorder Diagnosis (OCPDDX)
        0. No history of Obsessive-Compulsive PD Dx
        1. History of Obsessive-Compulsive PD Dx

66. Presence or History of DSM Personality Disorder NOS Diagnosis (PDNOSDX)
        0. No history of PD NOS Dx
        1. History of PD NOS Dx

D. Psychiatric History – Subthreshold Mental Health Symptoms:

67. Presence or History of Axis I Symptoms That Do Not Meet Diagnostic Threshold (MISX)
        0. No history of Axis I Sx
        1. History of Axis I Sx

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

68. Onset of Axis I Symptoms (SXONSET)
        0. Onset(s) prior to the index offence (all sets of symptoms)
        1. Onset(s) subsequent to the index offence (all sets of symptoms
        2. Onsets both prior to and subsequent to the index offence (sets of symptoms have different timings of onset)
        888. Unknown/Unclear timing of onset
        999. Not Applicable

69. Presence or History of Mood Sx (MOODSX)
        0. No Hx of Mood Symptoms
        1. Hx of Mood Sx

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

70. Onset of Mood Symptoms (MSONSET)
        0. Onset prior to the index offence
        1. Onset subsequent to the index offence
        888. Unknown/Unclear timing of onset
        999. Not Applicable

71. Presence or History of Anxiety Symptoms (ANXSX)
        0. No Hx of Anxiety symptoms
        1. Hx of Anxiety Sx

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

72. Onset of Anxiety Symptoms (ASXONSET)
        0. Onset prior to the index offence
        1. Onset subsequent to the index offence
        888. Unknown/Unclear timing of onset
        999. Not Applicable

73. Presence or History of Symptoms of Psychosis (PSYCSX)
        0. No Hx of psychotic symptoms
        1. History of psychotic symptoms

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

74. Onset of Psychotic Symptoms (PSXONSET)
        0. Onset prior to the index offence
        1. Onset subsequent to the index offence
        888. Unknown/Unclear timing of onset
        999. Not Applicable

75. Presence or History of Impulse Control Problem Symptoms (IMPSX)

        0. No history of impulse control problems
        1. History of impulse control problems

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

76. Onset of Impulse Control Problem Symptoms (ISXONSET)
        0. Onset prior to the index offence
        1. Onset subsequent to the index offence
        888. Unknown/Unclear timing of onset
        999. Not applicable

77. Presence or History of Other Mental Health Symptoms (OTHERSX)
        0. No History of Other Mental Health Symptoms
        1. History of Other Mental Health Symptoms

If there is a history (1, above), then indicate 0, 1 or 2; otherwise N/A (999):

78. Onset of Other Mental Health Symptoms (OSXONSET)
        0. Onset prior to the index offence
        1. Onset subsequent to the index offence
        888. Unknown/Unclear timing of onset
        999. Not Applicable

79. List all of the applicable <u>specific</u> symptoms e.g., "anxiety", "insomnia" (SXNAME)

_____

_____

[data entry: enter as a list]

E. Clinical Levels of Personality Traits:

i. MCMI-III

80. Valid MCMI-III Profile Available? (MCMI)
        0. No/Invalid Profile
        1. Yes, Valid Profile

If there is a valid MCMI-III profile available, complete the following sections on Axis I and II scale scores, otherwise skip to MMPI-2 section [data entry: indicate 999 for all if No/Invalid Profile (0, above)]:

MCMI-III Axis I Scales:

81. Anxiety Scale Score (MCMIA):
        -numerical value   _____

82. Clinical Elevation on Anxiety Scale (i.e., BR score ≥ 75) (MCMI11)
        0. No elevation
        1. Anxiety scale ≥ 75

83. Somatoform Scale Score (MCMIH):
        -numerical value   _____

84. Clinical Elevation on Somatoform Scale (i.e., BR score ≥ 75) (MCMI12)
        0. No elevation
        1. Somatoform scale ≥ 75

85. Bipolar Scale Score (MCMIN):
        -numerical value   _____

86. Clinical Elevation on Bipolar Scale (i.e., BR score ≥ 75) (MCMI13)
        0. No elevation

1. Bipolar scale ≥ 75

87. Dysthymia Scale Score (MCMID):
    -numerical value   _____

88. Clinical Elevation on Dysthymia Scale (i.e., BR score ≥ 75) (MCMI14)
    0. No elevation
    1. Dysthymia scale ≥ 75

89. Alcohol Dependence Scale Score (MCMIB):
    -numerical value   _____

90. Clinical Elevation on Alcohol Dependence Scale (i.e., BR score ≥ 75) (MCMI15)
    0. No elevation
    1. Alcohol Dependence scale ≥ 75

91. Drug Dependence Scale Score (MCMIT):
    -numerical value   _____

92. Clinical Elevation on Drug Dependence Scale (i.e., BR score ≥ 75) (MCMI16)
    0. No elevation
    1. Drug Dependence scale ≥ 75
93. PTSD Scale Score (MCMIR):
    -numerical value   _____

94. Clinical Elevation on PTSD Scale (i.e., BR score ≥ 75) (MCMI17)
    0. No elevation
    1. PTSD scale ≥ 75

95. Thought Disorder Scale Score (MCMISS):
    -numerical value   _____

96. Clinical Elevation on Thought Disorder Scale (i.e., BR score ≥ 75) (MCMI18)
    0. No elevation
    1.Thought Disorder scale ≥ 75

97. Major Depression Scale Score (MCMICC):
    -numerical value   _____

98. Clinical Elevation on Major Depression Scale (i.e., BR score ≥ 75) (MCMI19)

0. No elevation
1. Major Depression scale ≥ 75

99. Delusional Disorder Scale Score (MCMIPP):
    -numerical value   _____

100 Clinical Elevation on Delusional Disorder Scale (i.e., BR score ≥ 75) (MCMI110)
    0. No elevation
    1. Delusional Disorder scale ≥ 75

MCMI-III Axis II Scales:

101. Schizoid Scale Score (MCMI1):
    -numerical value   _____

102. Clinical Elevation on Schizoid Scale (i.e., BR score ≥ 75) (MCMI21)
    0. No elevation
    1. Schizoid scale ≥ 75

103. Avoidant Scale Score (MCMI2A):
    -numerical value   _____

104. Clinical Elevation on Avoidant Scale (i.e., BR score ≥ 75) (MCMI22)
    0. No elevation
    1. Avoidant scale ≥ 75

105. Depressive Scale Score (MCMI2B):
    -numerical value   _____

106. Clinical Elevation on Depressive Scale (i.e., BR score ≥ 75) (MCMI23)
    0. No elevation
    1. Depressive scale ≥ 75

107. Dependent Scale Score (MCMI3):
    -numerical value   _____

108. Clinical Elevation on Dependent Scale (i.e., BR score ≥ 75) (MCMI24)
    0. No elevation
    1. Dependent scale ≥ 75

109. Histrionic Scale Score (MCMI4):
    -numerical value   _____

110. Clinical Elevation on Histrionic Scale (i.e., BR score ≥ 75) (MCMI25)
    0. No elevation
    1. Histrionic scale ≥ 75

11. Narcissistic Scale Score (MCMI5):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

112. Clinical Elevation on Narcissistic Disorder Scale (i.e., BR score ≥ 75) (MCMI26)
　　　0. No elevation
　　　1. Narcissistic scale ≥ 75

113. Antisocial Scale Score (MCMI6A):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

114. Clinical Elevation on Antisocial Scale (i.e., BR score ≥ 75) (MCMI27)
　　　0. No elevation
　　　1. Antisocial scale ≥ 75

115. Sadistic Scale Score (MCMI6B):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

116. Clinical Elevation on Sadistic Scale (i.e., BR score ≥ 75) (MCMI28)
　　　0. No elevation
　　　1. Sadistic scale ≥ 75

117. Compulsive Scale Score (MCMI7):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

118. Clinical Elevation on Compulsive Scale (i.e., BR score ≥ 75) (MCMI29)
　　　0. No elevation
　　　1. Compulsive scale ≥ 75

119. Negativistic Scale Score (MCMI8A):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

120. Clinical Elevation on Negativistic Scale (i.e., BR score ≥ 75) (MCMI210)
　　　0. No elevation
　　　1. Negativistic scale ≥ 75
121. Masochistic Scale Score (MCMI8B):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

122. Clinical Elevation on Masochistic Scale (i.e., BR score ≥ 75) (MCMI211)
　　　0. No elevation
　　　1. Masochistic scale ≥ 75

123. Schizotypal Scale Score (MCMIS):
　　　-*numerical value*　　　　＿＿＿＿＿＿＿＿＿＿＿＿

124. Clinical Elevation on Schizotypal Scale (i.e., BR score ≥ 75) (MCMI212)
    0. No elevation
    1. Schizotypal scale ≥ 75

125. Borderline Scale Score (MCMIC):
    -*numerical value*   _____

126. Clinical Elevation on Borderline Scale (i.e., BR score ≥ 75) (MCMI213)
    0. No elevation
    1. Borderline scale ≥ 75

127. Paranoid Scale Score (MCMIP):
    -*numerical value*   _____

128. Clinical Elevation on Paranoid Scale (i.e., BR score ≥ 75) (MCMI214)
    0. No elevation
    1. Paranoid scale ≥ 75

ii. MMPI-II Clinical Scales:

129. Valid MMPI-II Profile Available? (MMPI)
    0. No/Invalid Profile
    1. Yes, Valid Profile

If there is a valid MMPI-II profile available, complete the following sections on Clinical Scale scores, otherwise skip to PCL-R variables [data entry: indicate 999 for all if No/Invalid Profile (0, above)]:

130. Hypochondriasis Scale Score (MMPI1HS):
    -*numerical value*   _____

131. Clinical Elevation on Hypochondriasis Scale (i.e., T-score ≥ 66) (MMPI1)
    0. No elevation
    1. Hypochondriasis scale ≥ 66

132. Depression Scale Score (MMPID):
    -*numerical value*   _____

133. Clinical Elevation on Depression Scale (i.e., T-score ≥ 66) (MMPI2)
    0. No elevation
    1. Depression scale ≥ 66

134. Hysteria Scale Score (MMPIHY):
    -*numerical value*   _____

135. Clinical Elevation on Hysteria Scale (i.e., T-score ≥ 66) (MMPI3)
     0. No elevation
     1. Hysteria scale ≥ 66

136. Psychopathic Deviate Scale Score (MMPIPD):
     -*numerical value*   _____

137. Clinical Elevation on Psychopathic Deviate Scale (i.e., T-score ≥ 66) (MMPI4)
     0. No elevation
     1. Psychopathic Deviate scale ≥ 66

138. Masculinity/Femininity Scale Score (MMPIMF):
     -*numerical value*   _____

139. Clinical Elevation on Masculinity/Femininity Scale (i.e., T-score ≥ 66) (MMPI5)
     0. No elevation
     1. Masculinity/Femininity scale ≥ 66

140. Paranoia Scale Score (MMPIPA):
     -*numerical value*   _____

141. Clinical Elevation on Paranoia Scale (i.e., T-score ≥ 66) (MMPI6)
     0. No elevation
     1. Paranoia scale ≥ 66

142. Psychasthenia Scale Score (MMPIPS):
     -*numerical value*   _____

143. Clinical Elevation on Psychasthenia Scale (i.e., T-score ≥ 66) (MMPI7)
     0. No elevation
     1. Psychasthenia scale ≥ 66

144. Schizophrenia Scale Score (MMPISC):
     -*numerical value*   _____

145. Clinical Elevation on Schizophrenia Scale (i.e., T-score ≥ 66) (MMPI8)
     0. No elevation
     1. Schizophrenia scale ≥ 66

146. Hypomania Scale Score (MMPIMA):
     -*numerical value*   _____

147. Clinical Elevation on Hypomania Scale (i.e., T-score ≥ 66) (MMPI9)

0. No elevation
1. Hypomania scale ≥ 66

148. Social Introversion Scale Score (MMPISI):
      -*numerical value*   _____

149. Clinical Elevation on Social Introversion Scale (i.e., T-score ≥ 66) (MMPI10)
      0. No elevation
      1. Social Introversion scale ≥ 66

F. Psychopathy:

150. CSC PCL-R assessment results available? (CSCPCLR)
      0. No
      1. Yes

If yes (1, above), then complete variables 137-146 for the PCL-R administered closest in time to the index offence.
      Note year of testing: _____

151. File-based Psychopathy Status (FPCLSTAT)
      0. PCL-R Score Less than 30
      1. PCL-R Score at least 30

152. File-based Psychopathy Rank (FPCLRANK)
      0. PCL-R Score less than 20 (low)
      1. PCL-R Score 20-29 (medium)
      2. PCL-R Score 30 and above (high)

153. File-based PCL-R Score (FPCLSCOR)
      -numerical value, 0 - 30   _____

154. File-based PCL-R Factor 1 score (FPCLF1)
      -numerical value   _____

155. File-based PCL-R Factor 2 score (FPCLF2)
      -numerical value   _____

156. File-based PCL-R-2 Facet 1 score, if applicable (FPCL1F)
      -numerical value   _____

157. File-based PCL-R-2 Facet 2 score, if applicable (FPCL2F)
      -*numerical value*   _____

158. File-based PCL-R-2 Facet 3 score, if applicable (FPCL3F)

-numerical value _____

159. File-based PCL-R-2 Facet 4 score, if applicable (FPCL4F)
  -numerical value _____

160. File-based PCL-R percentile (FPCLPERC)
  -numerical value _____

Additional PCL-R-2 results (if not available, indicate N/A i.e., 999 for all variables)
  Year of testing: _____

161. Psychopathy Status – 2nd assessment (PSTAT2)
  0. PCL-R Score Less than 30
  1. PCL-R Score at least 30

162. Psychopathy Rank - 2nd assessment (PRANK2)
  0. PCL-R Score less than 20 (low)
  1. PCL-R Score 20-29 (medium)
  2. PCL-R Score 30 and above (high)

163. 2nd PCL-R-2 Score (PSCOR2)
  -numerical value, 0 - 30 _____

164. 2nd PCL-R-2 Factor 1 score (PCLF12)
  -numerical value _____

165. 2nd PCL-R-2 Factor 2 score (PCLF22)
  -numerical value _____

166. 2nd PCL-R-2 Facet 1 score (PCL1F2)
  -numerical value _____

167. 2nd PCL-R-2 Facet 2 score (PCL2F2)
  -numerical value _____

168. 2nd PCL-R-2 Facet 3 score (PCL3F2)
  -numerical value _____

169. 2nd PCL-R-2 Facet 4 score (PCL4F2)
  -numerical value _____

170. 2nd PCL-R-2 percentile (PPERC2)
  -numerical value _____

Additional PCL-R-2 results (if not available, indicate N/A i.e., 999 for all variables)
   Year of testing: _____

171. Psychopathy Status – 3ʳᵈ assessment (PSTAT3)
   0. PCL-R Score Less than 30
   1. PCL-R Score at least 30

172. Psychopathy Rank - 3ʳᵈ assessment (PRANK3)
   0. PCL-R Score less than 20 (low)
   1. PCL-R Score 20-29 (medium)
   2. PCL-R Score 30 and above (high)

173. 3ʳᵈ PCL-R-2 Score (PSCOR3)
   -numerical value, 0 - 30   _____

174. 3ʳᵈ PCL-R-2 Factor 1 score (PCLF13)
   -numerical value   _____

175. 3ʳᵈ PCL-R-2 Factor 2 score (PCLF23)
   -numerical value   _____

176. 3ʳᵈ PCL-R-2 Facet 1 score (PCL1F3)
   -numerical value   _____

177. 3ʳᵈ PCL-R-2 Facet 2 score (PCL2F3)
   -numerical value   _____

178. 3ʳᵈ PCL-R-2 Facet 3 score (PCL3F3)
   -numerical value   _____

179. 3ʳᵈ PCL-R-2 Facet 4 score (PCL4F3)
   -numerical value   _____

180. 3ʳᵈ PCL-R-2 percentile (PPERC3)
   -numerical value   _____

II. Childhood Maltreatment History:

181. Childhood Maltreatment History (MALTXHX)
   0. No reported history
   1. Reported History

182. Offender Self-Report of Maltreatment (SRABUSE)
   0. No offender self-report of maltreatment

1. Offender reports having been maltreated or reports experiences consistent with maltreatment

183. Collateral Report of Offender Maltreatment (CABUSE)
      0. No collateral reports of offender maltreatment
      1. Collateral reports of offender having been maltreated

184. Official Reports of Offender Maltreatment (OFFABUSE)
      0. No official reports of offender maltreatment
      1. Official reports of offender maltreatment

185. Offender Perception of Maltreatment
      0. Offender does not perceive childhood experiences as maltreatment
      1. Offender perceives himself to have been maltreated as a child
      888. Unknown/unclear

Notes: [Note here if there are ambiguous reports from any of the sources; for example, if there was an official investigation or suspicion of maltreatment, but it was not substantiated]

---

186. Childhood History of Sexual Abuse (SEXABUSE)
      0. Absence of reported history of sexual abuse
      1. Reported history of sexual abuse

187. Childhood History of Physical Abuse (PHYSABUS)
      0. Absence of reported history of physical abuse
      1. Reported history of physical abuse

188. Childhood History of Physical Neglect (NEGLECT)
      0. Absence of reported history of neglect
      1. Reported history of neglect

189. Childhood History of Emotional/Psychological Abuse (PSYCABUS)
      0. Absence of reported history of emotional abuse
      1. Reported history of emotional abuse

190. Number of Types of Abuse to Which Offender was Exposed (NUMABUSE)
      -Numerical value   _____

III. Violence-related Variables:

A. Institutional Aggression

191. History of Institutional Violence or Aggression (INSTVIOL)
      0. No reported history of institutional violence or aggression
      1. Reported history of institutional violence or aggression

192. **Type of Most Recent <u>Institutional</u> Violence/Aggression (IATYPE):**
      1. Primarily Reactive
      2. Reactive-Instrumental
      3. Instrumental-Reactive
      4. Primarily Instrumental
      888. Unable to Code/insufficient information
      999. Not applicable

      If Instrumental (i.e., 3 or 4 above):

      193. Type of Instrumental <u>Institutional</u> Violence (IITYPE):

            1. Primary Instrumental
            2. Secondary Instrumental
            3. Combination Instrumental
            888. Unable to Code/insufficient information
            999. Not Applicable

194. Category of <u>Institutional</u> Aggression (IACAT):
      1. Homicide
      2. Assault
      3. Abduction/Kidnapping/Hostage Taking
      4. Other
      888. Unable to Code/insufficient information
      999. Not Applicable

195. Severity of Institutional Aggression (IASEVERE)
See manual for VAS severity scale. Enter # corresponding to severity rating:

_____
(0-100)

B. Index Offence Violence

196. <u>Index Offence</u> Violence Charge(s) (IOCHARGE)
Specify violence charge(s)

      _____

      [data entry: enter as a list]

197. Type of <u>Index Offence</u> Violence (IOTYPE):
      1. Primarily Reactive

2. Reactive-Instrumental
3. Instrumental-Reactive
4. Primarily Instrumental
888. Unable to Code/insufficient information

If Instrumental (i.e., 3 or 4, above):

198. Type of Instrumental <u>Index Offence</u> Violence (IIOTYPE):
    1. Primary Instrumental
    2. Secondary Instrumental
    3. Combination Instrumental
    888. Unable to Code/insufficient information
    999. Not Applicable

199. Category of <u>Index Offence</u> Violence (IOCAT):
    1. Homicide
    2. Assault
    3. Abduction/Kidnapping/Hostage Taking
    4. Other

200. Severity of <u>Index Offence</u> Violence (IOSEVERE):
See manual for VAS severity scale. Enter # corresponding to severity rating:

_____
(0-100)

201. Presence of Sexual Violence in the <u>Index Offence</u> (SEXVIOLE):
    0. No evidence of sexual violence
    1. Sexual violence evidence
    888. Unclear/ambiguous

202. Evidence of Gratuitous/Excessive Violence in the Index Offence (EXCESSIV):
    0. No evidence of gratuitous/excessive violence
    1. Evidence of gratuitous/excessive violence
    888. Unclear/ambiguous

IV. <u>Offender & Victim Demographic Variables</u>

203. Age Of Offender at Time of Index Offence (AGE)
    numerical variable: _____

204. Number of Years Since Index Offence (YRSCRIME)
    numerical variable: _____

205. Number of Victims of Index Offence (NUVICS)
    numerical variable: _____

206. Age Category of First Victim of Index Offence (AGECVIC1)
    0. Child/Youth (Under 18)
    1. Adult (18+)
    888. Unknown/Not enough information

207. Age Group of First Victim of Index Offence (AGEVIC1)
    1. Baby/Young Child (5 and under)
    2. Child (6 – 12)
    3. Teenager (13 – 19)
    4. Young Adult (20 – 30)
    5. Adult (31 – 59)
    6. Senior (60 and up)
    888. Unknown/Not enough information

208. Age Category of Second Victim of Index Offence (AGECVIC2)
    0. Child/Youth (Under 18)
    1. Adult (18+)
    888. Unknown/Not enough information
    999. Not applicable

209. Age Group of Second Victim of Index Offence (AGEVIC2)
    1. Baby/Young Child (5 and under)
    2. Child (6 – 12)
    3. Teenager (13 – 19)
    4. Young Adult (20 – 30)
    5. Adult (31 – 59)
    6. Senior (60 and up)
    888. Unknown/Not enough information
    999. Not applicable

210. Age Category of Third Victim of Index Offence (AGECVIC3)
    0. Child/Youth (Under 18)
    1. Adult (18+)
    888. Unknown/Not enough information
    999. Not applicable

211. Age Group of Third Victim of Index Offence (AGEVIC3)
    1. Baby/Young Child (5 and under)
    2. Child (6 – 12)
    3. Teenager (13 – 19)
    4. Young Adult (20 – 30)
    5. Adult (31 – 59)
    6. Senior (60 and up)
    888. Unknown/Not enough information
    999. Not applicable

212. Age Category of Fourth Victim of Index Offence (AGECVIC4)
    0. Child/Youth (Under 18)
    1. Adult (18+)
    888. Unknown/Not enough information
    999. Not applicable

213. Age Group of Fourth Victim of Index Offence (AGEVIC4)
    1. Baby/Young Child (5 and under)
    2. Child (6 – 12)
    3. Teenager (13 – 19)
    4. Young Adult (20 – 30)
    5. Adult (31 – 59)
    6. Senior (60 and up)
    888. Unknown/Not enough information
    999. Not applicable

214. Age Category of Fifth Victim of Index Offence (AGECVIC5)
    0. Child/Youth (Under 18)
    1. Adult (18+)
    888. Unknown/Not enough information
    999. Not applicable

215. Age Group of Fifth Victim of Index Offence (AGEVIC 5)
    1. Baby/Young Child (5 and under)
    2. Child (6 – 12)
    3. Teenager (13 – 19)
    4. Young Adult (20 – 30)
    5. Adult (31 – 59)
    6. Senior (60 and up)
    888. Unknown/Not enough information
    999. Not applicable

216. If More than One Index Offence Victim, From Same or Different Age Category? (AGESVICS) [*Refer to prior variables regarding age categories*]
    0. Same Age category
    1. Different Age categories
    888. Unable to Code/insufficient information
    999. Not applicable

217. Relationship with the Index Offence Victim #1 (RELATEV1)
    1. Male Stranger.
    2. Female Stranger.
    3. Involved in a common-law/marriage relationship/serious girlfriend (or has recently split-up from one of the aforementioned).
    4. Family member (e.g. immediate family, uncles, aunts, grandparents, cousins, plus immediate family in-laws).

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5. Friend (or family friend; or family friend's child).
6. Co-worker/business partner/casual acquaintance.
888. Unknown/Not enough information to determine

218. Relationship with the Index Offence Victim #2 (RELATEV2)
1. Male Stranger.
2. Female Stranger.
3. Involved in a common-law/marriage relationship/serious girlfriend (or has recently split-up from one of the aforementioned).
4. Family member (e.g. immediate family, uncles, aunts, grandparents, cousins, plus immediate family in-laws).
5. Friend (or family friend; or family friend's child).
6. Co-worker/business partner/casual acquaintance.
888. Unknown/Not enough information to determine
999. Not applicable

219. Relationship with the Index Offence Victim #3 (RELATEV3)
1. Male Stranger.
2. Female Stranger.
3. Involved in a common-law/marriage relationship/serious girlfriend (or has recently split-up from one of the aforementioned).
4. Family member (e.g. immediate family, uncles, aunts, grandparents, cousins, plus immediate family in-laws).
5. Friend (or family friend; or family friend's child).
6. Co-worker/business partner/casual acquaintance.
888. Unknown/Not enough information to determine
999. Not applicable

220. Relationship with the Index Offence Victim #4 (RELATEV4)
1. Male Stranger.
2. Female Stranger.
3. Involved in a common-law/marriage relationship/serious girlfriend (or has recently split-up from one of the aforementioned).
4. Family member (e.g. immediate family, uncles, aunts, grandparents, cousins, plus immediate family in-laws).
5. Friend (or family friend; or family friend's child).
6. Co-worker/business partner/casual acquaintance.
888. Unknown/Not enough information to determine
999. Not applicable

221. Relationship with the Index Offence Victim #5 (RELATEV5)
1. Male Stranger.
2. Female Stranger.
3. Involved in a common-law/marriage relationship/serious girlfriend (or has recently split-up from one of the aforementioned).

4. Family member (e.g. immediate family, uncles, aunts, grandparents, cousins, plus immediate family in-laws).
5. Friend (or family friend; or family friend's child).
6. Co-worker/business partner/casual acquaintance.
888. Unknown/Not enough information to determine
999. Not applicable

222. Sex of Index Offence Victim #1 (VIC1SEX)
0. Male
1. Female
888. Unknown

223. Sex of Index Offence Victim #2 (VIC2SEX)
0. Male
1. Female
888. Unknown
999. Not applicable

224. Sex of Index Offence Victim #3 (VIC3SEX)
0. Male
1. Female
888. Unknown
999. Not applicable

225. Sex of Index Offence Victim #4 (VIC4SEX)
0. Male
1. Female
888. Unknown/Not enough information to determine
999. Not applicable

226. Sex of Index Offence Victim #5 (VIC5SEX)
0. Male
1. Female
888. Unknown/Not enough information to determine
999. Not applicable

227. If More than One Victim of Index Offence, Same/Different Genders? (VICSSEX)
1. All Male
2. All Female
3. Both Male(s) and Female(s)
888. Unable to Code/insufficient information
999. Not Applicable

228. Reported number of Perpetrators of the Index Offence, Including the Current Offender (NUMPERP)

_____

V. Offender Criminal/Institutional History

229. Number of Prior Federal Incarcerations (FEDTIME):
   numerical variable: _____

230. Total Number of Convictions for Violent Offences (VICONVIC):
   numerical variable: _____

231. Total Number of Lifetime Revocations (REVOKES):
   numerical variable: _____

232. Reported History of Any Mental Health Treatment/Intervention <u>Prior</u> to the Current Index Offence (TREATED):

      0. No reported history of prior mental health treatment/intervention
      1. Reported history of prior mental health treatment/intervention

Appendix C:

Coding Manual

"Instrumental and Reactive Violence: The Role of Mental Health Factors and Maltreatment History in the Manifestation of Violent Offending"

CODER INFORMATION & INSTRUCTION SHEET

CONTENTS

1. CODING MATERIALS

Necessary Materials for Coding:

• Data Collection Sheet & Coding Scheme
• This instruction sheet
• Offender file

Optional Materials for Coding (may be helpful when coding):
• Note-taking form
• List of variable types

2. GENERAL INSTRUCTIONS

- **The Data Collection Form is to be used to collect & code all of the relevant study variables. All instructions for coding the variables are contained <u>in this manual</u>. Please refer to this manual as you use the Data Collection Form**
- Many variables will require that you have reviewed all the file material <u>before</u> selecting a response to that variable
- Coding sheet has instructions for both coder & data-entry person (e.g., variable names and instructions for data entry)
- Only <u>one</u> response option can be indicated for any given variable
- Make sure responses to variables within sections are consistent – for some variables, a response to an earlier variable may determine how you have to respond to a later variable
- N/A is a response option for relevant variables
- Feel free to write notes on the Data Collection Form – this may be especially useful as you are deciding which response option to select for certain variables. It is always better to have more data/information collected than less!
- If there is important information or explanation for your rating on a given variable, leave a "Comment" on the coding form next to the variable [e.g., Number of perpetrators: "*Comment: offender denies any accomplices but reports of others involved*"], and it will get entered into the database.
- When in doubt, ask!

3. INDEX FOR VARIABLES THAT REQUIRE INSTRUCTIONS FOR CODING

4. VARIABLE DEFINITIONS AND CODING INSTRUCTIONS:

I. Mental Health Variables*:*

Terminology relevant to this section:

Dx = Diagnosis. This refers to a diagnostic label provided to an offender by a psychiatrist or psychologist, or in some cases by a general practitioner. This information will usually be found in the context of a psychiatric or psychological assessment report, usually under the heading "Diagnoses" or "Diagnostic Impressions", but also occasionally in a case report under a section devoted to mental health/psychiatric/psychological history (e.g., "According to a psychological assessment report dated XYZ, offender X was diagnosed with…).

Sx = Symptoms. For the purpose of this study, this refers to symptoms that are associated with an Axis I Mental Disorder, excluding Substance Use Disorders. The presence of symptoms alone does not imply a diagnosable disorder. Symptoms may exist that are 'subthreshold', meaning that they do not reach a threshold for diagnosis of a disorder. See section I.D for further information on this topic.

NOS = Not Otherwise Specified

A. Substance Use:

SUDs = Substance Use Disorder

Substance Use Diagnosis/Disorder: Refers to an official, DSM diagnosis of Substance Abuse or Substance Dependence. A diagnosis of a *Substance Use Disorder* is present if a psychologist or psychiatrist describes the substance use as "abuse" or "dependence", or uses a term like "alcoholic," in a diagnostic formulation/diagnosis section of a report, or used the specific diagnostic label (e.g., "Stimulant Abuse Disorder"), or if another report says that a "diagnosis" of a substance use disorder was made by a psychologist or psychiatrist. For the purpose of this study regarding the section on diagnosis, this excludes diagnoses of Substance Intoxication and Substance Withdrawal, as they are coded separately.

The term *Substance Use Disorder* is inclusive of specific alcohol and drug use disorders. If there are specific alcohol or drug use diagnoses, then the individual has a Substance Use Disorder. However, an individual may receive the diagnosis of Substance Use Disorder, without receiving a specific substance use diagnosis (the specific drugs may not be known, or the specific diagnosis may not be in the report). Thus, while mention of a specific drug use disorder always requires that the more general Substance Use Disorder variable also be selected, the reverse is not always the case.

Types of substances/drug classes:

Stimulants: Includes Cocaine, Amphetamine and related substances (e.g., Methamphetamine/"Speed", Dextroamphetamine/Dexedrine, Methylphenidate [e.g., Ritalin]), MDMA/Ecstasy[13])

Cannabis: Includes Marijuana, Hash, and Hash Oil

Opiates: Includes Heroin, Morphine, Codeine, Hydromorphone, Methadone, Oxycodone/ "OxyContin", Fentanyl

Other drugs: Includes all other types of drugs, such as Hallucinogens (e.g., LSD/ "Acid", Mescaline, Psilocybin/ "Magic Mushrooms", Peyote, PCP, Ketamine/ "Special K"); Sedatives (e.g., prescription sleeping medication); Anxiolytics (e.g., Valium/Diazepam, etc.); Inhalants (e.g., gasoline, glue, paint thinner, etc.), with the exception of Caffeine, and Nicotine

Number of Drugs for Which Abuse/Dependence Criteria is Met: This variable is a tally of all of the specific drugs for which a substance use disorder diagnosis has been made. Generally, it will be consistent with what you have indicated for the previous substance class/type variables concerning abuse/dependence. Thus, if you indicated that the offender does not have any of the various types of abuse/dependence disorders, the number here should be 0. However, this number will not be an exact sum of the previous variables if the offender happens to have/had more than one substance use disorder from the same category of disorders. For example, if the offender has been diagnosed with both a Cocaine Use Disorder (abuse or dependence) AND an Amphetamine Use Disorder, you would indicate that there was a history of a Stimulant Use Disorder (both of these substances are stimulants) for that variable, but would count the 2 drugs separately when adding up the number of drugs for which a substance use disorder diagnosis was made. Thus, this variable is a count of the number of drugs for which there is an abuse/dependence diagnosis, *not* just the number of categories of drugs that they have diagnoses in. In many cases, these numbers will be exactly the same, as in most cases the individual won't have diagnoses for more than one drug within one drug category.

B. Psychiatric/Psychotropic Medication History:

This section is intended to capture the psychiatric/psychotropic medication history of the offender. Psychiatric/psychotropic medications are those prescribed for mental health symptoms. A prescription for such medications does not imply that there is a specific diagnosed mental disorder, as such medications are often used to treat specific symptoms,

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[13] Although MDMA is an amphetamine-like drug that also has hallucinogenic affects, it is classified solely as a Stimulant drug for the purposes of this study, given the clear stimulant effects and common mixing ("cutting") with amphetamines when sold

as opposed to disorders. It is not feasible to list here all the possible psychiatric medications that an offender may have been prescribed; you will normally be able to infer that a medication is psychiatric/psychotropic because of the reason it was prescribed (e.g., "offender X was prescribed XYZ for depression…"). This information will typically be contained in psychiatric assessment reports/consultations, and in the mental health/psychiatric history section of a psychological assessment report. When in doubt as to whether a given medication is psychotropic/psychiatric, ask.

This section includes variables concerning childhood medication history (for which there will be less information), adult history, and prescriptions at the time of the index offence. Please list the specific medication names relevant to each variable, as available.

C. Psychiatric History (Axis I & II Disorders):

Mental Health Diagnosis: An offender may be described as having symptoms or traits of a disorder, or may even be taking medication for certain symptoms (e.g., "anxiety), but this is not equivalent to a DSM diagnosis of a mental disorder. Only actually diagnosed mental disorders should get indicated in this section of the coding scheme. Diagnoses are typically listed under a heading "diagnoses" or "diagnostic impressions" or something along these lines, in a psychiatric or psychological report. Similarly, they may be listed under "psychiatric/psychological/mental health history" in other reports.

Axis I Disorders: These are Clinical Disorders. These do not include Personality Disorders or Mental Retardation (which are Axis II Disorders).

Mood Disorders:
- Major Depressive Disorder
- Dysthymic Disorder/Dysthymia
- "Clinical Depression" **note:** The term "Depression" alone does not infer an actual diagnosis, unless it is used in the context of a diagnostic formulation, such as under the heading Diagnosis
- Depressive Disorder NOS
- Bipolar Disorders (Bipolar I, & II; Cyclothymic Disorder/Cylclothymia; Bipolar Disorder NOS)
- Mood Disorder due to a General Medical Condition
- Substance Induced Mood Disorder (*make sure to also code for the substance*)

For the purpose of this study, if the Mood Disorder is accompanied by Psychotic Features (e.g., "Bipolar I with Mood Congruent Psychotic Features"), code this as a Psychotic Disorder, not a Mood Disorder, and remember to make a note about the specific diagnosis on the coding sheet

Anxiety Disorders:
- Agoraphobia (w/out Panic Disorder)
- Panic Disorder with Agoraphobia
- Panic Disorder w/out Agoraphobia

- Social Phobia
- Obsessive-Compulsive Disorder
- Posttraumatic Stress Disorder (PTSD)
- Acute Stress Disorder
- Generalized Anxiety Disorder (GAD)
- Anxiety Disorder due to a General Medical Condition
- Substance Induced Anxiety Disorder (*make sure to also code for the substance*)
- Anxiety Disorder NOS

For the purposes of this study, Simple Phobias (e.g., re: animals, heights, blood, enclosed spaces, vomiting, etc.) are not classified under either Anxiety Disorders or Other Mental Disorders. If there is a diagnosis of a simple phobia, include it in the list of diagnoses (variable 28) without coding it as a diagnosis.

Schizophrenia or other Psychotic Disorders:
- Schizophrenia
- Schizophreniform Disorder
- Schizoaffective Disorder
- Delusional Disorder
- Brief Psychotic Disorder
- Shared Psychotic Disorder/Folie à Deux
- Substance Induced Psychotic Disorder (*make sure to also code for the substance*)
- Psychotic Disorder NOS
- Any Mood Disorder with Psychotic Features (*for the purposes of this study*)

Impulse Control Disorders:
- Intermittent Explosive Disorder
- Kleptomania
- Pyromania
- Pathological Gambling
- Trichotillomania
- Impulse Control Disorder NOS
- ADHD (*for the purposes of this study*)

Adjustment Disorders: Includes Adjustment Disorder with Depressed Mood, with Anxiety, with Mixed Anxiety and Depressed Mood, with Disturbance of Conduct, With Mixed Disturbance of Emotions and Conduct, and Unspecified (*make sure to specify the type in the list of diagnoses)*

Other Axis I Disorders:
- Somatoform Disorders (e.g., Hypochondriasis, Pain Disorder, Somatization Disorder, Conversion Disorder, Body Dysmorphic Disorder, Undifferentiated Somatoform Disorder, Somatoform Disorder NOS)
- Factitious Disorders (e.g., Factitious/Munchausen Disorder, Factitious/Munchausen Disorder by Proxy)

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- Dissociative Disorders (e.g., Dissociative/Psychogenic Amnesia, Dissociative Fugue, Dissociative Identity Disorder/Multiple Personality Disorder, Depersonalization Disorder, Dissociative Disorder NOS)
- Sexual and Gender Identity Disorders (Sexual Dysfunctions, Paraphilias, Gender Identity Disorders, and Sexual Disorder NOS)
- Delirium, Dementia, Amnestic, and other Cognitive Disorders
- Eating Disorders (e.g., Anorexia Nervosa, Bulimia Nervosa)
- Sleep Disorders (Parasomnias, Dyssomnias, Sleep Disorders Due to General Medical Condition, Substance Induced Sleep Disorders)

Onset of Axis I Disorders: For each type of disorder, indicate the apparent timing of onset of the problem: Prior to the current (index) offence, subsequent to committing the offence, or unknown/unclear. This allows for the distinction between pre-existing conditions, and those that have developed possibly as a result of incarceration (e.g., adjustment anxiety). Onset is not applicable to personality disorders or traits, as they are by definition long-standing.

DSM Personality Disorders: These are personality disorders following the DSM classification/diagnostic system, non-specific to a version of the DSM (i.e., not restricted to DSM-IV-TR). The variable "DSM Personality Disorder NOS" should be taken to include both this specific diagnosis ("Personality Disorder NOS"), as well as personality disorders not listed in the DSM-IV section on personality disorders, such as Depressive Personality Disorder, Passive-Aggressive/Negativistic Personality Disorder, and Sadistic Personality Disorder, if a diagnosis has been made of these disorders. For the latter disorders, please make a note on the coding form of the specific diagnosis.

As with previous sections, response options need to be consistent within this section. There is a hierarchy of variable types within this section (as with previous sections): There are specific variables for the specific diagnoses, and then more broad variables for the general cluster of diagnoses (Cluster A, Cluster B, and Cluster C), and then overarching variable for history of a personality disorder, which is inclusive of all the other variables. A history of one of the specific diagnoses automatically indicates that there is a history of the applicable Cluster of personality disorders, which automatically indicates that there is a history of personality disorder. Response selections need to reflect this. It is however in theory possible that one of the "higher-order" variables might be indicated as present, without providing more specificity at one of the "lower" levels, if the specific information is not available in the report.

D. Mental Health Symptoms

This section refers to psychiatric symptoms for which no diagnosis was made. An example of this would be symptoms of anxiety or depression, or memory impairment symptoms, that did not receive a diagnosis. This section follows the same categories as the Axis I diagnoses section, but refers to symptoms for which no diagnosis was made, or are not associated with a full-blown disorder (i.e., they may not be severe enough, or they may not meet other diagnostic criteria), or it is not clear in the reports whether there has

been an actual Axis I disorder diagnosis. Thus, 'mood symptoms' refers to symptoms of any of the mood disorders listed above, such as symptoms of depression or mania. Note: due to the plethora of possible mental health symptoms, and the many types of disorders they may be associated with, it is not feasible to provide a list of symptoms for different categories of mental health problems. As some symptoms are associated with multiple types of disorders, it may also not be possible to determine which category a symptom falls under. When in doubt, ask.

*If an offender has had a diagnosis of a specific disorder (e.g., Major Depressive Disorder), do not also indicate the specific symptoms associated with this class of disorder (e.g., depression) in this category, unless the symptoms occurred at a separate time from when the offender was experiencing the full-blown disorder. Thus, if an offender at one time had a Major Depressive Disorder (MDD), which later went into remission, and then later experienced some symptoms of depression that were not sufficiently severe to be diagnosed as MDD, you should indicate that there is a history of both a Mood Disorder (in the Axis I Disorders section), and Mood Symptoms (in the Mental Health Symptoms section). However, if an offender is described as having symptoms of depression, and is then subsequently diagnosed with MDD as a result of those symptoms, you would only indicate that there is a history of a Mood Disorder, not Mood symptoms.

*As with the diagnoses sections, make sure your responses are consistent in this section. Thus, if the offender has symptoms of anxiety, make sure you indicate that there is a *History of Axis I Symptoms*. This is basically a summary variable, to indicate whether the offender has a history of any mental health *symptoms*, such as are specified in the rest of the mental health symptom section. If you have indicated that they have any of the subsequent types of symptoms (e.g., mood symptoms, anxiety symptoms, etc.), then you must also indicate *present* for this variable. It might be easier to complete this variable *after* completing the subsequent variables on the specific types of mental health symptoms.

*Finally, make sure to indicate what the symptoms were that were indicated in the file (in the symptom list).

"*Impulse Control Symptoms'* bears a special note. This is the parallel to the diagnosis variable, but it is likely that many offenders will have some symptoms explicitly listed in their files that will fall under this variable. Relevant symptoms include impulsivity, inattention, hyperactivity, angry outbursts, emotional regulation problems, and poor frustration tolerance. For these to be indicated under this variable, they must be identified in a psychiatric or psychological assessment report. However, it excludes gambling, fire-setting, theft, and hair pulling (which at a pathological level, are considered impulse control disorders), because these are less "symptoms" than they are "behaviours".

"Other Mental Health Symptoms": This refers to symptoms associated with the disorders classified under "Other Axis I Disorders" (as listed above). For example, such symptoms could include insomnia, notable memory problems (e.g., as a result of a head injury, as a

result of a organic brain disease, as a result of drug use), unexplained bodily (somatic) symptoms, dissociative symptoms etc. Ask when in doubt as to whether something counts as a 'mental health symptom'.

Onset of Mental Health Symptoms: For each type of mental health symptom, indicate the apparent timing of onset of the problem: Prior to the current (index) offence, subsequent to committing the offence, or unknown/unclear. This allows for the distinction between pre-existing symptoms, and those that have developed possibly as a result of incarceration (e.g., adjustment anxiety).

NOTE: RAW TEST DATA: (applicable to both Personality test data and Psychopathy)

If more than one set of test results (e.g., 2 MCMI-III's on file), fill out the variables for the test completed closest in time to the index offence (look at the testing dates). In all cases, leave a comment on the form that there were X numbers of whichever test (note dates), and indicate which one you used for coding.

E. Clinical Levels of Personality Traits:

Information for these variables can be drawn directly from available computer generated MCMI & MMPI reports (raw test data). Determining validity of MMPI-2 and MCMI-III profiles: If a computer printout of the test results is available, profile validity will be indicated in the output. These will take reviewing to note where the pertinent info is on the profile & profile reports. Validity is indicated right on the profile for the MCMI-III (sometimes on a separate profile printout for the MMPI-2), but there is also a discussion of validity in the generated reports for both these tests (sometimes the location is in different places in the MMPI-2 printout, depending on version –but will listed under a section titled "profile validity"). This is good to review as there might be some relevant comments to note (e.g., the test is generally valid – says valid on the profile – but there might be indication of a response bias – "client responded in socially acceptable manner".) Indicate this information very briefly as a Comment on the coding form.
In addition, use the following scale cutoffs to determine invalidity:

MCMI-III	*MMPI-2*
V-Scale score = 2	*? Scale score ≥ 30*
Scale X raw score < 34 or >178	*L Scale score ≥ 80*
	F Scale score ≥ 91

Reminder: test results DO NOT COUNT toward the diagnosis or symptom sections of the coding form. On psych reports, there is usually an interpretation of test results/hypotheses from testing, but it should generally be clear that this is in reference to testing, not a clinical conclusion per se (look at the beginning of a paragraph for the source of the info in that paragraph).

F. Psychopathy:

The specific information for this section will be available on a score sheet (raw test data).

Note: PCL-R vs. PCL-R-2: <u>Percentiles:</u> These two versions of the PCL have different percentiles for the same scores, as there was an updated normative sample for the PCL-R-2. Thus, <u>do not</u> use the percentile that is indicated in the assessment report. You will need to check the <u>PCL-R-2</u> table to get the percentile (appended to manual). For offenders that DO NOT have raw PCL-R/PCL-R-2 data, but DO have PCL-R/PCL-R-2 results reported in an assessment report (sometimes a percentile is reported, sometimes just yes/no re: psychopathy), make note of the situation on the coding form, and note whatever information IS provided (e.g., "offender had PCL-R, no raw data, 23 percentile"), but DO NOT fill out the actual variables. I will attempt to back calculate as much info as possible, with the PCL-R & PCL-R-2 manuals. <u>Factor & Facet scores:</u> sometimes these have not been calculated. The PCL-R does not provide facet scores. In addition, the calculation of the factor scores is slightly different (for factor 2). You will need to calculate the facet and factor scores by hand. This is very straightforward, and involves adding up certain item scores. The specific items that compose the facets and factors are listed on a calculation sheet appended to the manual (along with the percentile table).

II. Childhood Maltreatment History:

This section includes the following types of maltreatment history information: whether there is any reported history of any type of maltreatment – by the offender, collateral contacts (e.g., family members, friends, or others interviewed in relation to the offender), or by official sources (e.g., Children's Aid Services, police reports); the source of the maltreatment report; offender perception of maltreatment; and specific types of maltreatment. With regards to offender report of maltreatment, this variable includes both an offender's description of his childhood experiences that is consistent with the below-listed definitions, <u>and/or</u> the offender's explicit report of having experienced abuse/maltreatment. Thus, the offender does not have to perceive his childhood experiences as abusive to "count" as self-report of maltreatment, if the description of the experiences is in fact consistent with maltreatment. Conversely, an offender might explicitly describe his experiences as maltreatment (e.g., offender states that he was "abused" as a child). There is a separate variable to indicate whether or not the offender perceives himself to have been maltreated as a child; this variable is independent of the prior maltreatment variables (i.e., it should be completed even if there is no report of maltreatment – in which case, the selected response option for this variable should be "offender does not perceive childhood experiences as maltreatment", as the offender has not reported any maltreatment). This information might not always be available, but offenders are often directly queried about whether they were maltreated or abused as a child – their response to this type of question indicates their perception of their childhood experiences (i.e., do they explicitly state that they have been "abused"/ "maltreated"/ 'neglected" etc). The <u>description</u> of their childhood experiences may or may not be consistent with their <u>perception</u> (explicit report).

Definitions of types of maltreatment[14]:

<u>Sexual Abuse:</u> Nonconsensual (as per the Canadian Criminal Code) sexual activities directed toward the offender as a child (i.e., less than 18 y/o). The abuser(s) may perform

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[14] Derived from Moran, Vuchinich, and Hall (2004), and White and Widom (2003).

or force the child to perform or watch sexual activities. Such activities include invitations to sexual activities, sexual touching or fondling, penetration, sodomy, and incest.

<u>Physical Abuse</u>: An adult knowingly and willfully using physical force (hitting, slapping, punching, kicking, or using objects), to inflict harm upon the offender as a child (i.e., less than 18 y/o). Injuries resulting from physical abuse may include bruises, welts, burns, abrasions, lacerations, wounds, cuts, and fractures; however, the absence of documented physical injury does not preclude the presence of physical abuse.

<u>Physical Neglect</u>: Parental or caregiver deficiencies during the offender's childhood that go beyond those acceptable by the community and professional standards. This occurs when the parents/caregivers have failed to provide adequate nutrition, clothing, shelter, and/or medical attention to their children (i.e., less than 18 y/o).

<u>Emotional Abuse</u>: A parent or caregiver intentionally harming the offender as a child (i.e., less than 18 y/o) with words or interactions, including yelling, degrading, name-calling, ostracizing, and belittling.

III Violence-Related Variables:
Violence is defined per the 2004 Canadian Criminal Code, and includes offences classified as Assaults, Robbery, Kidnapping/Hostage taking/Abduction, and Homicide. The following types of offences are considered to be "Violent Offences" (as per the Canadian Criminal Code[CCC]) for the purpose of this study, and for coding in this section[15]:

> *"Assaults" as per CCC, including:*
> *-Assault (265. (1))*
> *-Assault with a weapon or causing bodily harm (267)*
> *-Aggravated Assault (268. (1))*
> *-Unlawfully causing bodily harm (269)*
> *-Torture (269.1 (1))*
> *-Assaulting a peace officer (270. (1))*
> *-Sexual Assault with a weapon, threats to a third party, or causing bodily harm (272. (1))*
> *-Aggravated Sexual Assault (273. (1))*
> *but excluding:*
> *-Uttering threats (264.1 (1))*
> *-Criminal Harassment (264)*
> *-Disarming a police officer (270.1 (1))*
> *-Sexual assault (271. (1))* (w/no physical violence)
>
> *AND "Robbery"(343)*

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[15] If an apparently violent charge is not listed above, please see me.

AND "Kidnapping, Hostage Taking, and Abduction", as per CCC, including:
-Kidnapping (279 (1) & (2))
-Hostage taking (279.1 (1))
-Abduction of a person under sixteen (280. (1))
-Abduction of a person under fourteen (281)
-Abduction (283.(1))
but excluding:
-Abduction in contravention of custody order (282.(1))

AND "Homicide" as per CCC (222.(1), including:
-Murder (229 & 230)
-Manslaughter (232)
-Infanticide (233)
-Killing unborn child in act of birth (238.1)
-Attempted murder (239)

-Accessory after fact to murder (240)
-Criminal Negligence (219. (1); 220; 221)

When coding, if there is a discrepancy between official reports and the offender's description in terms of how the offence would be coded, code using the <u>official</u> report.

Institutional Aggression/Violence: Violence committed while incarcerated

Index Offence Violence: Violence for which offender is currently incarcerated. Note: Some offenders have multiple, unrelated index offences that got rolled into their current sentence (concurrent or consecutive). If this is the case, list ALL the violent offence charges in the variable for charge name (196). However, select the *most severe/most violent offence* (e.g., murder>aggravated assault), and complete the codings (including substance intoxication/withdrawal at the time of offence) for that offence specifically. Make a note on the coding form as to which offence was selected (e.g., "Comment: Coded for 2nd degree murder). Also make note as to whether all the violent offences occurred at the same time, or whether they were separate offences (e.g., "Comment: Multiple separate offences"). In a few instances, the original index offence was violent, and there has been a subsequent charge for a violent offence *that occurred in the institution* (i.e., toward another inmate or staff member). IF they have an index offence that was committed in the community (e.g., original offence), *code for that offence*, and code for the institutional violence charge under the previous section on institutional violence.

Motivational Type of Violence[16]:
This variable is a classification scheme for subtypes of violence. This violence classification scheme mainly considers the degree of instrumental gain, purpose of the offence, impulsivity vs. planning of the offence, and level of antecedent arousal

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[16] Modified from Woodworth & Porter, 2002

(emotionality) associated with the offence. Violence is classified into one of the following subtypes: Reactive, Reactive-Instrumental; Instrumental-Reactive, and Instrumental. Specific characteristics of, and "evidence" relevant to each subtype of violence are described below.

Reactive Violence:
-Primary motive appears to be anger or displaying aggression
-Evidence for spontaneous, hostile, and angry behaviour (e.g., rage) that was primarily engaged in to harm the victim (as opposed to being intended to achieve/obtain an external goal) following provocation and/or conflict.
-*Evidence of provocation,* without a "cooling off" period between the time of the provocation and the time of the violent offence.
-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 violent offences was committed. If there was a "cooling off" period, the files may indicate that the interpersonal conflict or dispute actually led to an instrumental violent offence which was committed for reasons of revenge or retribution, rather than being a reaction to the immediate dispute.
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 between the incident in question and the violent offences.
-Violent offence crime scene appears careless and spontaneous.
-Violent offences 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)

Reactive/Instrumental Violence: When there is clear evidence of both reactive and instrumental behaviour regarding the violent offence, yet the primary cause could be attributed to Reactive violence. Thus, the evidence would suggest that the violence was unplanned and reactive but that there was also a secondary instrumental, opportunistic component.

Instrumental/Reactive Violence: When there is clear evidence of both instrumental and reactive behaviour regarding the violent offence, yet the primary cause could be attributed to Instrumental violence. Thus, if there is clearly a crime occurring for an obvious external gain and the violence is as a result of this instrumental act, but occurred as a reaction to unplanned events within the crime context, this would constitute mixed instrumental/reactive violence.

Instrumental Violence:
-Evidence of planning
-Evidence of some type of goal. This could include reasons such as:
      *Revenge or retribution for past events (such as stealing from the offender)
      *Monetary gain
      *Drugs or alcohol

*A female (two individuals competing over the same woman)
　　　　*Jealousy
　　　　*To escape custody/remain at large
　　　　*Sexual motivation (e.g., a sexual assault that is planned out)
-Violent offences committed for a clearly identifiable purpose other than "hot-blooded" spontaneous anger, frustration, or provocation.
-Premeditated and motivated by a clear external stimulus
Note: Jealousy in-and-of itself is not sufficient evidence of an instrumentally violent offence. Jealousy *can* be an instrumental motive, provided that there are other elements of instrumentality, such as premeditation/planning, "cooling off" time; however, jealousy may also be relevant to *reactive* violence, if it results in spontaneous anger/emotional reaction and unplanned, emotionally-driven violence. The other elements of the crime will be relevant for this distinction.

Unable to Code: 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 an violent offence, but 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). This response option should be selected when it is unclear about what the possible motive or rationale for the violent offence may be (e.g., the violent offence does not appear to have been provoked or planned). In most cases, this second possibility will be in violent offences that have been committed against women or strangers for no apparent or obvious reason, and may be more likely to be associated with homicide, as the victim cannot provide insight into possible motives.

**Tips on determining the subtype of violence:
-Check the examples provided at the end of this manual to see if any of them are similar to the offence you are trying to code
-List out all the pieces of evidence relevant to the type of violence, i.e., concerning planning or impulsivity, emotional reaction & anger, goal or motive, altercation or provocation, time frame of events ("cooling off" period, or all one event), etc. Although you can't just tally them up or assign points to them, this can help suggest which category is the *closest* fit
-Have another coder review the index offence, and discuss the coding. Getting someone else's input is always helpful.
-Run the offence by the PI, for input.

Type of Instrumental Violence: If the offence was either Instrumental or Instrumental Reactive, code the motivation for the instrumental violence:

Primary Instrumental: The violent offence was committed primarily for the reason of causing pain or discomfort to the victim (e.g., Revenge/retribution, jealousy, intention to harm woman or child, to obtain nonconsensual sex)

<u>Secondary Instrumental</u>: The violent offence was committed for a reason that was not primarily intended to inflict harm upon a victim; the offence was committed to obtain goods (i.e., for monetary gain, or for drugs/alcohol)

<u>Combination Instrumental</u>: The violent offence was committed for both pain/harm reasons and to obtain goods

**Note that this variable ONLY applies for instrumentally motivated offences, not reactive or reactive-instrumental offences.

Category of Violence: "Homicide" means any offence in which the victim is killed (see violence list for the actual charges for which this is inclusive). Code for the most severe violence in the index offence (e.g., if one victim killed, and 2 "only" injured, select homicide)

Severity of Violence: Violence severity is rated using the Violence Assessment Scale (VAS)[17]. The scale is provided on the following page. Instructions for the scale are as follows:

The VAS is a measure of violence severity for a given violent offence. The scale ranges from 0 – 100, with 10 anchor points. In addition, it includes 5 anchored categories of severity that indicate <u>minimum</u> scores for certain behaviours or outcomes (indicated in **bold** in the scale). The VAS is analogous to the DSM-IV Global Assessment of Functioning (GAF) in terms of format and rating: the included scores and descriptors serve as anchor points; use intermediate scores (e.g., 33; 45; 78) as appropriate to indicate violence severity that falls between anchor points. In contrast to the GAF, the VAS is rated from least severe (low scores) to most severe (high scores). On the coding form, fill in the number (0-100) corresponding to your rating of violence severity using the VAS.

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[17] Alia-Klein, O'Rourke, Goldstein, & Malaspina (2007)

100   Murder or disabling injuries that involved repeated clubbing, stabbing, shooting, or mutilating over an extended period of time to one or more victims as in mass murders and elaborated torture and/or disfigurement. Setting up of explosives where people reside and/or work. Kidnapping a group of people as in hijacking an aircraft.

90   Murder or severe injury that involved stabbing, shooting, running over, or strangling. Disabling injuries that require extensive, long-term medical treatment and hospitalization such as multiple broken bones, internal injuries, head injury with loss of consciousness. Causing permanent damage to victim.

≥81   Homicide

80   Violent behavior toward others that likely requires a short hospital stay. Causing first or second degree burns, deep cuts, broken bones, concussion, or other head injury. Slamming against the wall or shaking hard (when victim is young). Threat with a loaded firearm in hand as in armed robbery. Rape and/or extensive, physically injurious sexual assault.

≥71   Threat with a loaded firearm

70   Violent behavior toward others that likely requires emergency medical attention. Causing broken jaw, teeth, wounds requiring stitches. Sexual assault (no penetration), molestation, endangering, and/or harming vulnerable persons (children, elderly, disabled, etc.). Setting a fire where and when people are presumed to be present.

60   Threatening with a knife or other sharp or hard instrument. Throwing things at victim and causing harm. Punching, kicking, and leaving bruises, bites, minor cuts, and scratches. Assault resulting in medical attention. Killing and/or torture of animals. Breaking and entering where persons are presumed to be present.

≥51   Threat with a knife or other object

50   Physical assault without use of weapon of any kind. Hitting, slapping, and pushing around. Verbal threats of murder or severe injury within a threatening context. Setting of fire or breaking and entering at inhabited locations but not when anyone is presumed to be present. Unwanted sexual contact such as brushing against or grabbing sexually.

≥41   Physical assault without a weapon

40   Clear potential for physical harm. Physical threat including raising a fist, or making assault contact a near miss. Purposefully driving into things, throwing things without aiming at persons. Invading personal space and grabbing of arm or hair. Lewd gestures. Ignoring a restraining order. Stalking with a progressively threatening pursuit.

30   No physical harm. Damage to property, bullying by using extremely loud voice and/or sudden outward gestures. Following with unwanted indirect contact (by third party, phone, or mail), trespassing, and invading privacy (consider repetition of stalking and/or harassing—more intense than below).

≥21   Damage to property

20   Clear aggression toward others. Isolated following, charging but not making physical contact. Threatening/intense eye contact, screaming, banging on a door,

disturbing the peace. Cursing at and/or spitting on someone (when no infection can be established). Behavior does not change and/or escalate with redirection.

10　Mild aggression toward others. Approaching repeatedly without foul language, raising voice, slamming a door. Disrupting ongoing activity by barging in and/or grabbing things away to instigate. Noticeable psychomotor agitation. Not responding to requests to cease the behavior. Not responding to redirection.

Sexual Violence: Includes any evidence of sexual activity/assault/offence, either prior to, during or after the violent offence. *Note: For the purposes of coding a violent offence that has a sexual component: the instrumental/reactive continuum should be considered when determining if the offence should be labeled as instrumental, reactive, or a combination of the two. Sexual violence will not automatically be assumed to be one type of violence or the other.

Gratuitous or Excessive Violence: This is a subjective rating of "unnecessary" or excessive violence used during the commission on the violent offence. Gratuitous violence is violence that is extreme, and goes beyond the degree of violence necessary to accomplish the "goal" of the violent offence (be it instrumental or reactive in nature). This type of violence is characterized by a considerable amount of injury intentionally inflicted upon the victim so as to maximize pain/suffering, and would typically be associated with homicide, or attempted homicide (although possibly a lesser charge depending on plea agreements). Evidence of gratuitous violence could include: Prolonged torture, mutilation, sadistic sexual behaviour, and/or an "extreme" number of injuries/wounds. While difficult to define "extreme" in terms of the number of wounds/injuries, one study[18] used the conservative criteria of 15 stab wounds (the average in their sample of homicide offenders), as a criterion for "excessive". Given that we don't only want to include homicide offenders, there is no minimum number of wounds/injuries necessary for the current study; however, the injuries or level of violence should appear atypical.

IV. Offender and Victim Variables:
Age of Offender at Time of Offence: This is usually documented in the Criminal Profile Report. The age itself may be provided, or the year of birth of the offender, and the year the crime took place. Note that the year the offender was actually convicted of the crime is likely not the same as the year in which the offence took place. Also, the age of the offender at the time the report was written is also likely older than when the crime actually took place. Based on information provided, even if the age at the time of offence is not given explicitly, it should be easy to calculate (approximately) from other information given.

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[18] Laajasalo and Häkkänen (2006)

Number of years Since Index Offence: This is the actual number of years that have passed since the commission of the offence. Note that available reports may be several years old – make sure you calculate this based on the current year (use 2007), and the year the index offence was committed (note, NOT the year of conviction/sentencing)

# of Victims: Based on victims of the index offence, and includes victims of crimes that were part of the index offence <u>and for which the crimes are classified</u> by this coding <u>scheme</u> as <u>violent.</u>

Relationship with Victim: Stranger = someone that the offender has had no encounters with previously and no knowledge of; Acquaintance = Met before; know of through someone else

V. Offender Criminal/Institutional History:

This information should be contained within the Criminal Profile Report (Case management report), and also often within the Psychological Assessment Report in summary form.

Federal vs. Provincial sentences: In coding whether the offender has previously received a federal sentence, this may explicitly be indicated in the file (e.g., "this is a first-time federal offender" or "this is the 3rd federal sentence"…), or you may have to determine federal sentences from the described convictions & sentencing. If the latter, note that sentences of up to 2 years less a day are Provincial, and sentences of 2 years or more are Federal.

Convictions: Refers to being found Guilty for a given offence. Charges for which there was no Guilty finding (i.e., findings of Not Guilty or Not Criminally Responsible, or dismissal of charges), or a reversal of a conviction on appeal, are not included

Convictions for Violence: this refers to any convictions during the offender's lifetime for violent offences. Thus, it includes federal or provincial sentences, and is inclusive of any Violent Crimes as per the definition above. It is also inclusive of Young Offender convictions.

Revocations: Refers to the revocation of a Conditional Release (e.g., parole violation -> parole is revoked, i.e., offender is sent back to the institution). There can only be one revocation per conditional release.

History of Mental Health Treatment may be mentioned in the Criminal Profile Report/Case Management Report and/or the Psychological Assessment Report. This includes treatment/intervention for substance use problems.

5. CASE EXAMPLES FOR SUBTYPES OF VIOLENCE[19]:

WARNING:
CONTAINS CONTENT OF A VIOLENT NATURE THAT MAY BE
DISTURBING

Reactive Violence:

Example 1:
An offender in an extremely inebriated state 'snapped' and shot his friend twice allegedly because the friend had urinated in the offender's bed while he was sleeping in it. The offender had no history of serious violence and had apparently reported before the homicide that he was becoming agitated over his friend constantly using him for various purposes. The case file information suggested that the offender may have been relieving years of "suppressed anger" from being exploited by his friend and other individuals.

Example 2:
After a day of heavy drinking the offender entered a hotel with a friend. For undetermined reasons he became involved in a heated verbal dispute with the desk clerk. The offender proceeded to kick and beat the desk clerk to death.

Example 3:
An offender became involved in a fight with an unknown victim in a bar following a verbal insult toward the perpetrator. The offender proceeded to stab the victim with his pocket knife.

Example 4:
An offender chances upon his spouse engaged in a sexual encounter with another male, becomes enraged, and proceeds to murder one or both of individuals.

Reactive/Instrumental Violence:

Example 1:
The offender became extremely agitated over his female friend's refusal to enter a romantic relationship with him. During an argument he proceeded to murder the victim by stabbing her over 60 times. Afterwards, the offender took some of the victim's possessions to sell.

Example 2:
The offender and his co-accused were walking to an evening party after smoking marijuana and snorting cocaine. As they were walking they encountered the victim and some type of verbal dispute or argument ensued as they passed by each other. They attacked the victim and then rolled his unconscious body into a water-filled ditch where

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[19] Some case examples modified from Woodworth (2001).

he died as a result of drowning. Before they rolled the victim into the water-filled ditch they searched his pockets for money.

Example 3:
An offender became involved in a fight with an unknown victim in a bar following a verbal insult toward the perpetrator. The offender proceeded to stab the victim with his pocket knife. After the unplanned bar fight, the perpetrator elected to rob the victim as well.

Instrumental/Reactive Violence:

Example 1:
The offender and two companions invited the victim to a residence to convince him to pay back one of the offender's friends the money that he owed him. However, evidence indicated that "events got out of hand" (the offender had not apparently planned on murdering the victim) and the offender proceeded to beat the victim to death with a baseball bat.

Example 2:
The offender and his common-law wife planned to rob their next-door neighbour. After the unsuspecting neighbour let them in, the victim and the offender's wife became involved in a heated argument. The offender and his common-law wife hit the victim over the head with a fire extinguisher and kicked him in the chest. The victim died as a result of blunt trauma to the head and chest and the couple stole a stereo and 40$.

Example 3:
An offender planned to commit a bank robbery, but in the process became agitated by a bank teller and proceeded to shoot the teller and/or other individuals present at the time.

Instrumental Violence:

Example 1:
The offender was involved in a money scam in which he extorted a few thousand dollars from the female victim. Once he had successfully obtained the money, he drove her to a remote location and murdered her.

Example 2:
An offender who had been having violent sexual fantasies learned the walking routine of a teen-aged school-girl. After careful planning, he waited in some bushes and abducted her in a quiet rural area as she walked home from school. He then took her to a barn on a farm and indecently assaulted and murdered her. Afterwards he attempted to hide her body under some hay.

Examples 3-6:
A "hitman" fulfilling a contract; a spouse killing the other spouse for the insurance money; a murder as part of a drug trafficking conflict; a biker murder.

Example 1:
A 22 year-old offender broke into the apartment of a senior citizen (aged 67) who suffered from cerebral palsy and brutally attacked and sadistically murdered the woman. It was unclear from file evidence if he had known this woman before the homicide and had planned to enter her apartment, or if it was completely spontaneous behaviour. In addition, the offender had no history of any type of similar deviant behaviour and was described as having had "normal heterosexual relationships" in the past. Finally, the offender maintained his innocence and refused to discuss the incident or any possible motivations for the offence.

Example 2:
 An offender was convicted of murdering a good female friend and then storing her remains (in a hockey bag) in a barn on his property. He steadfastly maintained his innocence, had a "minimal" criminal history, and had apparently never displayed any evidence of mental illness or abnormal behaviour. The file contained very little information, and there was no indication of difficulties between the two friends before the victim was murdered. The offender had been gaining financially from the victim's death by using her credit cards and bank accounts, although it is completely unclear if this was a planned result of the homicide, or the result of a spontaneous, reactive homicide.

Example Vignettes of Offence Types

WARNING:
CONTAINS CONTENT OF A VIOLENT NATURE THAT MAY BE
DISTURBING

<u>PRIMARILY INSTRUMENTAL</u>

-<u>Primary Instrumental</u>

Ex. 1: HOMICIDE: Offender broke up with girlfriend (victim) after hearing rumours that she was dating someone else. Stalked victim for several weeks prior to offence. Followed to alleged boyfriend's house. Finally decided to confront victim and brought a weapon; claimed planned to intimidate. Hit multiple times in the face/head with pipe.

Ex. 2: UNLAWFUL CONFINEMENT & ASSAULT: Offender believed victim had "ratted out" offender for prior crime, so decided to get revenge. Went to victim's house with 3 accomplices. Punched and kicked victim, dropped stereo on head; restrained victim's parents at knife point.

-<u>Secondary Instrumental</u>

Ex. 1: FORCIBLE CONFINEMENT: Offender arrived at a bank with his face concealed. He demanded access and money from the two female employees, while threatening with a handgun. He forced the two employees into a car outside the bank, and the held one at gunpoint while sending the other to get an arriving employee. The offender brought all employees into the bank and taped up their hands, and locked them in the vault. He took the money and escaped in one of the victims' cars.

Ex. 2: HOMICIDE: Prior negative history between victim and subject. Planned to rob victim of money and drugs. Armed with knife, broke into residence of victim. Victim stabbed in back and chest multiple times. Demanded money from family members of victim.

-<u>Combination Instrumental</u>

Ex. 1: UNLAWFUL CONFINEMENT & ROBBERY WITH FIREARM: Offender wanted quick source of money and revenge against a man he believed had sexually abused a friend. Planned in advance. Broke into victim's home armed with pellet gun and knife. Taped victim's mouth shut, held gun to neck, made victim accompany offender and accomplices to victim's store, where they took money and goods. Brought victim back home and left taped to chair.

Ex. 2: ROBBERY & AGGRAVATED ASSAULT: The offender robbed a man emptying a VLT. The victim had allegedly hurt the offender's son a few years prior to the offence, and there was animosity between the victim and offender. The offender saw the victim emptying the VLT, and attacked the victim with a bat after he left the bar. The offender took money, watch, and jewellery.

INSTRUMENTAL-REACTIVE

-Primary Instrumental

Ex. 1: AGGRAVATED ASSAULT: Victim had had a prior argument with the offender's girlfriend. Offender decided to attack in retaliation. Encountered on the street - hit in head with bottle, kicked on ground.

Ex. 2: HOMICIDE & AGGRAVATED ASSAULT: Offender and accomplices crashed a party, bringing bats with them for purpose of starting fight. Offender threatened one victim, who a friend of the offender had animosity towards. This victim, the offender, and the friends of both parties went outside, where a fight ensued. Hearing the fights, neighbours tried to intervene. One neighbour who tried to intervene was struck in the head with a bat, and subsequently died from several blows to the head.

-Secondary Instrumental

Ex. 1: ROBBERY & ASSAULT: Offender disguised face with scarf, took wooden stake found outside of gas station, and demanded money from attendant. Before had chance to get money, hit victim multiple times, and then fled.

Ex. 2: HOMICIDE: Offender and accomplices decided to rob someone for money after their cocaine supply ran out. Armed with a night stick. The accomplices were supposed to control the victim while he was robbed, but he managed to punch the offender, who subsequently beat him to death.

REACTIVE-INSTRUMENTAL

Ex. 1: HOMICIDE: Offender and accomplice having party in motel room. Victim (a stranger) walked by, and asked if he could join party. Later a fight ensued with the victim; the victim was knocked out and dragged to the bathroom. The hotel clerk appeared having heard reports of the altercation by other residents of the motel – the hotel clerk was subsequently stabbed to death (to prevent witness to beating of first victim); the offender/accomplice subsequently slit the throat of the first victim. Both victims died of stab wounds to neck.

Ex. 2: HOMICIDE: Offender and victim were together in truck of the victim. Both victim and offender involved in the drug trade. The offender and victim got into a dispute over

the quality of cocaine the victim had sold the offender. During the argument the offender shot the victim in the head. The offender subsequently stole the wallet of the victim..

PRIMARILY REACTIVE

Ex. 1: AGGRAVATED ASSAULT: Two groups of individuals got into a verbal dispute outside a bar. The offender was called a name by the victim, and subsequently stabbed the victim.

Ex. 2: HOMICIDE: Resident of rooming house where offender lived asked offender about someone he didn't know, then hit offender with a pool cue. Offender and victim proceeded to fight, and two roommates of offender came to assist. Victim was severely beaten and died of blunt force trauma.

UNABLE TO DETERMINE/CODE

Ex. 1: AGGRAVATED ASSAULT: Offender went to mother's house early in the morning, and requested she join him for coffee. While walking, the offender took out a knife and advised her he was going to kill her and himself. The offender then stabbed his mother, and then himself. He subsequently began ringing doorbells asking for help for himself. The motive for the offence was unclear; the offence was unprovoked and the offender was very agitated. Possible revenge for prior perceived abuse, but not clear.

Ex. 2: ASSAULT W/WEAPON: The victim reported to police that she (offender's girlfriend) had been held against her will for two days, during which time the offender assaulted her, dragged her by her hair, and threatened to kill her if she tried to leave. Appears to have been precipitated by accusation of victim that offender was using crack. The offender denies any confinement or assault other than pushing the victim when she threw a phone at him (offence reported after the fact).