Affective Aggression in Adult Male Prisoners: The Role of Prior Exposure to
Violence, Psychopathy, Hostile Attribution Bias and Anger

by

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the Faculty of Graduate Studies and Research
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Abstract

Hostile attribution bias, a cognitive distortion, is a belief that the intentions of a person's behavior are harmful or hostile. The current research project investigated the relationships between prior exposure to violence, psychopathy, hostile attribution bias, state anger and affective aggression among 70 adult male offenders incarcerated in a medium-security federal penitentiary in Canada. Some link between psychopathy and prior exposure to violence was found. This research confirmed previous studies of differing populations that offenders were more likely to rate hostile intent in Hostile Scenarios than Ambiguous Scenarios, and more in Ambiguous Scenarios than Benign Scenarios. A significant relationship between psychopathy and hostile attribution bias was found only in Ambiguous Scenarios. Further, offenders with a hostile attribution bias reported feeling angry, and were more likely to resort to more aggressive behaviors. By testing a proposed model of affective aggression, additional information was gained. First, prior exposure to violence had a direct effect on aggression, but was not a direct predictor of hostile attribution bias. Second, psychopathy had both a direct relationship to aggression, and an indirect relationship to aggression for Ambiguous Scenarios, with hostile attribution bias and anger acting as mediating factors. Third, hostile attribution bias was indirectly related to aggression with state anger as the mediating factor. Fourth, anger was a direct predictor of affective aggression.

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CHAPTER I

There is much heterogeneity amongst aggressive individuals (Blackburn, 1993). Not only are there different types of aggression (i.e., reactive versus proactive), there are several factors which influence aggressive behavior, such as motivational cues for aggression, arousal level, skill deficits, emotional regulation and impulsivity (Serin, 1991). There has been a long history of psychological research on human aggression, with theoretical basis in social psychology and personality theory. Recent emphasis has been based on Bandura's (1973) social learning perspective. To this end, any research on aggression must clearly define these parameters. In doing so, a better understanding of the specific differences among violent offenders, both theoretically and empirically, can be gained, to determine more precise risk assessments for reoffending, and effective treatment interventions to lower the risk of future violence.

Anderson, Anderson, Dill, and Deuser (1998) have provided a fairly comprehensive account of factors which have been found in research to correlate with aggressive behavior. They grouped these factors as either Situational or Personological. Situational factors include those which the individual is exposed to in the environment, such as exposure to extreme climate, culture, pain, aggressive models, and violent media. Personological

factors are specific characteristics of the individual (e.g., hostility trait, gender, emotional reactivity, and antisocial personality). One major focus in current research on aggression has been mental processes (Toch, 1969). Bandura (1973) and Berkowitz (1990) suggested that these mental processes are crucial mechanisms in aggressive acts. The theoretical origins of the mental processes of social aggression can be found within cognitive structuralist theory (Piaget, 1965), personal construct theory (Kelly, 1955) and attribution theory (Jones & Davis, 1965). However, no single process has been deemed inclusive in depicting interpersonal aggression. Rather, explanations have leaned towards complex, interconnections of a number of predisposing and precipitating factors, with a co-occurrence with environmental elements.

Although there are many determinants of aggressive behavior, this study narrowed the focus on four factors which have been proposed to influence reactive or affective aggression: prior exposure to violence, psychopathy, hostile attribution bias and state anger. Only reactive aggression was of primary interest, as opposed to proactive aggression. With reactive, or affective, aggression, the primary motive is that of harming the target person, as a response to a prior incident of provocation. On the other hand, the primary motive of proactive or instrumental aggression is to obtain a desirable goal, such as material gain.

The primary interest in this research endeavor was the relationship between affective aggression and a cognitive bias, known as hostile

attribution bias. This bias is the tendency to causally attribute hostile intent a person's behaviors. Further, factors of interest proposed to effect hostile attribution bias were prior exposure to violence and psychopathy. The following review of the literature on affective aggression consists of an overview of the theoretical and empirical bases to the relationships between hostile attribution bias, anger and aggression, and how psychopathy and prior exposure to violence are proposed to affect aggression through the influence on hostile attribution bias and anger. This review is restricted to the cognitive-based perspectives, which have been the primary focus on aggression research within the last two decades.

Theory

Specifically in reactive aggression, it has been proposed that the mental decisions and actual act of aggression is mediated by attributions of hostile intentions on the actions of the other person (Epstein & Taylor, 1967). Novaco and Welsh (1989) suggest that it is the appraisals and expectations in the interpretation of potentially provocative situations which are relevant to facilitating an aggressive response. Within cognitive psychology perspectives, Bandura's (1973) social learning theory of aggression provides the basis for models explaining these interpretative processes involved, including hostile attribution bias.

Social Information Processing Model

To account for the hostile attribution bias, one model that has been proposed is the Social Information Processing (SIP) Model. The following is a brief overview. In the last decade social information theorists (Dodge & Schwartz, 1997; Huesmann, 1998) have proposed a comprehensive model of the mental processes which mediate the association between a social situation or event and the chosen act to aggress. One relevance of this model is that it provides a theoretical account of how early socialization affects later aggressive behavior. Moreover, there is an assertion that an aggressive response to a specific event or situation emanates from a systematized series of distinct, sequential mental operations. It is through these operations that social situations are represented internally and interpreted on an ongoing basis. That is, a stable pattern for each of these mental operations is developed, which in turn provides "personality-like" characteristics that guide future aggressive behavior (Dodge, Lochman, Laird, & Zelli, 2002). Further, behavioral responses are generated, which become more likely and stable over time by experiencing similar situations. Stable aggressive behavior is hypothesized to result as a function of the development of distortions or deficits in the social information processing in at least one of these stages of the mental processes. According to the SIP model, one cognitive distortion which increases the likelihood that reactive aggressive behavior will result is hostile attribution bias.

Much of the recent research on hostile attribution bias and affective aggression has been directed by a model proposed by Dodge and his colleagues (Crick & Dodge, 1994; Dodge, 1980). The basic premise of this model is that the social cognitions leading to aggression are biased by an over-attribution of hostile intentions of others, even in situations whereby such a bias is not warranted (Dodge, 1980). Each stage of cognitively processing the situation is described by a specific mental operation or set of operations, which are proximal (i.e., directly underlying the behavior). This mental processing is assumed to be sequential, though feedback between stages is acknowledged. Being skilled in these mental mechanisms is proposed to be demonstrative of social competency. Having difficulties or deficiencies in these mechanisms is proposed to lead to deviant social behavior, such as affective aggression.

Dodge and Crick's social information processing model is comprised of six stages: encoding of social cues; interpretation of social cues; clarification of goals; response access or construction; response evaluation and decision; and behavioral enactment (Dodge & Crick, 1996). The first stage involves a sensory role of encoding the cues or stimuli into short term memory. Due to the over abundance of incoming stimuli, this process involves selective attention to cues in the social environment which are of specific relevance to the individual. Dodge proposes that an aggressive individual is hyper-vigilant to cues which are perceived as threatening to oneself. In research, it has

been found that aggressive children encode and attend to fewer pieces of information about a situation, prior to judging the intent of the other person (Dodge & Newman, 1981; Dodge, Pettit, McClaskey, & Brown, 1986; Dodge & Tomlin, 1987; Finch & Montgomery, 1973; Milich & Dodge, 1984); are not likely to seek additional information (Slaby & Guerra, 1988); and are likely to attend to hostile cues (Dodge & Frame, 1982; Gouze, 1987).

The second stage, interpretation of social cues, is comprised of storing information into long-term memory, with a meaningful abstraction of the situation. It is in this stage that attempts are made to ascribe meaning to the encoded cues. This may involve independent processes such as causal analysis of the situation, inferences on the motives and intentions of the involved individuals, and inferences on the meaning of the event for oneself and others. Dodge hypothesizes that aggressive children are more likely to attribute an individual's intentions in a situation as hostile, than nonaggressive children. He refers to this distortion as a hostile attribution bias. Even in situations in which there has been previous positive, nonthreatening interactions with an individual, the aggressive person is more likely to attribute hostile intent on the individual's actions.

The third stage is the assessment of attaining desired goals. These goals could be either instrumental (such as obtaining an object or position), or interpersonal (such as obtaining friendship or peer group regard). Dodge proposes that goals are influenced by factors such as orientation (e.g., an

angry person may more likely choose goals with hostile themes); transient circumstances (e.g., fatigue, prominence of desired object); and emotional states of the person (e.g., frustration). Dodge hypothesizes that aggressive children appraise goals such as dominance and control more positively than relational goals such as friendship. Studies have generally found that aggressive children prefer hostile goals during interpersonal encounters (Slaby & Guerra, 1988), and place higher value on goals for dominance and revenge than do nonaggressive children (Lochman, Meyer, Rabiner, & White, 1991; Lochman, Wayland, & White, 1993).

In the fourth stage, response access or construction, there is a search in long-term memory of previously learned social behaviors, or the construction of new responses. Dodge hypothesizes that aggressive children are likely to access responses which are hostile or aggressive in nature, due to having a large repertoire of highly accessible aggressive responses in long term memory. This is similar to the concept of scripts proposed by Huesmann (1988), as well as others (Cantor & Kihlstrom, 1982; Markus, 1977; Novaco & Welsh, 1989). Scripts, also described as schemas or prototypes, are abstract depictions of pertinent information. These scripts are latent knowledge structures which have developed over time, based on meaningful generalizations of past experiences.

Aggression scripts are assumed to develop over time from learning experiences which facilitate aggression (Bandura, 1986). Social knowledge

structures link past aggressive interpersonal experiences of provocation in one's memory to one's unique representation of the current stimuli. It is the accumulation of these types of memories which provides scripts on rules or general response decisions on how to respond to future provocation.

Learning how to perceive, interpret, judge and react to situations is proposed to begin from infancy (Lochman & Dodge, 1998). Therefore, aggressive behavioral scripts are learned and used to interpret actions of others, which assist in guiding one's own reactions to future similar situations. As these scripts develop, they become more complex and interconnected, and often difficult to change. In fact, longitudinal studies indicate that aggression scripts may become solidified about the age of eight or nine (Huesmann, 1998).

In this manner, scripts provide cognitive heuristics that simplify processing of complex social situations. Therefore, when encountered by situations similar to past experiences, a person would continue to encode, store and interpret social stimuli in a manner consistent with existing scripts. Moreover, when required, these scripts then provide specific repertoire of behaviors from which the person can choose to act. Huesmann (1998) proposes that scripts for hostile situations may be developed through a process of social learning, whereby the intentions of others is perceived more likely than not as hostile. He further hypothesizes that aggressive individuals are more likely to choose an aggressive response to these types of situations due these scripts of hostile intent than nonaggressive children. Repeated use

of these scripts to guide aggressive responses to hostile situations leads to aggressive behaviors, which in turn become stable and resistant to change over time (Graham, 1998; Huesmann, 1988). Hence, Dodge et al. (2002) propose that these stages of mental operations and latent knowledge structures combined will directly impact on the likelihood of future aggressive behavior.

In examining violence among adult male offenders, Serin and Kuriychuk (1994) also propose cognitive schemas as the core of a model of aggression. They suggest that through the social learning process, persistently violent men develop schemas which are biased towards hostile attributions regarding the intent of others' behaviour during social interactions. Moreover, they argue that persistently violent men are more likely to be impulsive and subsequently are less likely to utilise all available information regarding the social interaction than to access these hostile schemas.

The fifth stage in Dodge's model of aggression is response evaluation and decision, wherein a decision is made on specific response to the situation. Dodge hypothesizes that aggressive children are more likely to value an aggressive response choice and perceive this as easier to enact than other behavioral choices. Studies have found that aggressive children believe that hostile behavior will result in tangible rewards, group approval, reduction in aversive consequences, enhancement of self-esteem, and positive feelings (Crick & Dodge, 1989; Guerra & Slaby, 1989; Perry, Perry, &

Rasmussen, 1986; Slaby & Guerra, 1988); have negative outcome expectations for more prosocial behaviors (Crick & Dodge, 1989); and highly value the outcome of aggressive behavior (Boldizar, Perry, & Perry, 1989).

The last stage is the actual enactment of the response which has been decided upon. In aggressive children, with hostile attribution bias as a basis for decision-making of the response, it is proposed that the outcome would be an reactive aggressive.

Dodge et al. (2002) have demonstrated the convergent, discriminant and construct validities of the distinctiveness of four stages of the mental processing in their SIP model (i.e., hostile attribution bias, generation of aggressive responses to the hypothetical scenarios, evaluation of presented responses to the scenarios, and endorsement of instrumental versus social goals). Eight hypothetical scenarios were presented to 387 kindergarten children who were identified by teachers as having behavioral problems. Four scores were obtained, corresponding to each of the mental stages, from the children's responses to these scenarios. First, distinction between each of four stages of mental processing (i.e., internal consistency of the response patterns in each mental processing stage), was evidenced by finding high correlations between the items within each of the four subscores for the eight scenarios (within-construct), and low correlations between items from different stages (across-construct). In addition, confirmatory factor analysis revealed that the data attained significantly fit the model proposed in that

each item significantly loaded to its corresponding factor (i.e., mental stage), and that each of the four factors were inter-correlated. Convergent and discriminant validities were demonstrated by finding nonsignificant results from testing alternative models which suggested items correlated across factors and that factors were not correlated.

In 1994, Crick and Dodge proposed a reformulation of this model to include the following aspects. First, rigidity of the sequential, linear direction of the mental processes in the model was changed to allow for feedback loops to previous stages of the model, assuming that individuals could be mentally process information at multiple levels at any given time. However, the processing of the information remains to follow a linear, time-related sequence. As well, one largely neglect area of the previous model is the role of emotion, particularly anger, in information processing. Crick and Dodge (1994) suggest that emotion can impact upon any of the stages involved in the model or, conversely, the stages of mental processing can impact upon emotions which can then influence subsequent stages. However, the specific place of anger in Crick and Dodge's SIP model remains unclear. As such, there is a paucity of studies addressing the exact nature of the role of emotions in social information processing (Crick, 1995; Graham, 1998).

General Affective Aggression Model

Another model of affective aggression which addresses the role of hostile attribution bias in aggression has been proposed by Anderson,

Anderson and Deuser (1996), labeled the General Affective Aggression Model (GAAM; see Figure 1). In their model, they include the specific role of affect in reactive aggression, which has not been adequately addressed by Dodge's model. Although they assume developmental and learning processes, as described in Dodge's model, Anderson et al. focus on possible precipitating factors, identified as input variables, which lead to cognitive processes (e.g., hostile attribution bias) that subsequently invoke aggression. Similar to the model by Dodge, the processes are described as sequential. However, Anderson et al. state that the pathways by which these sequential processes occur is not necessarily limited to one particular route. In fact, they suggest that domain-specific theories should be formulated to hypothesize the impact of specific input variables being considered. For example, the impact of temperature on aggression would be hypothesized as influencing and interacting with very different processes to produce an aggressive response than the processes impacted upon by a variable such as the availability of a weapon (Anderson et al., 1996). The following is a brief description of the model proposed by Anderson et al.

The GAAM was developed to incorporate major theories of affective aggression, and to accommodate existing empirical research findings on aggression. The GAAM is the only model of affective aggression that explicitly incorporates situational variables, attitudes, and traits in a multistage model. The major theoretical influences are Berkowitz's cognitive neoassociation

Figure 1. General Affective Aggression Model

Note. From "The Interactive Relations Between Trait Hostility, Pain, and Aggressive Thoughts," by K. B. Anderson, C. A. Anderson, K. E. Dill and W. E. Deuser, 1998, *Aggressive Behavior*, 24, p. 164. Copyright 1998 by Wiley-Liss, Inc. Reprinted with permission from the second author.

model (CNA; Berkowitz, 1990), Geen's affective aggression model (Tulloch, 1994), Bandura's social learning theory (Bandura, 1973), Dodge's social information processing model (Crick & Dodge, 1994), and Huesmann's theory of aggressive schemas (Huesmann, 1988). Overall, the model suggests that there are various basic inputs which, through a series of stages, increase the likelihood of forming a hostile attribution bias or state of anger, which then leads to the choice of an aggressive response. However, the GAAM does not restrict these pathways to any specific order. In fact, Anderson et al. suggest that domain-specific theories are required to generate predictions for a particular input variable. As well, they do not suggest that the input variables operate independently of one another. There is some expectation that some interactions occur.

The model of aggression by Anderson et al. consists of four stages or levels: Basic Input Variables, Present Internal State, Appraisal Processes, and Outcome. Basic Input Variables are factors which are provoking to the individual, categorized as either situational or personological. Situational variables may be anything in the person's situation which may influence the person's current state. Examples of acute situational variables are the presence of guns, pain, discomfort (e.g., heat or cold temperature), frustrating events (e.g., failure of a school grade), or the use of substances. Chronic situational variables are those which the individual experiences over time, such as exposure to a violent environment over a sustained period of time.

Personological variables are individual differences such as an aggressive personality, attitudes, values and beliefs about violence, and personality traits such as hostility. The suggestion is that both of these types of input variables (situational and personological) provide a linkage to a hostile attribution bias by invoking specific current internal states of the individual.

The second level is whereby the input variables influence the current internal state of the individual through at least one of three routes: cognitive schemata, affective state and state of arousal. In the cognitive schemata route, there is an accessibility to hostile-related scripts for situations similar to those in the input variables, which then are used as guides to interpret the incoming information. The affective state is the invoking of emotional states such as anger or hostility. Finally, the state of arousal is the actual physiological or perceived state of arousal, such as increased heart rate, or blood pressure. Anderson et al. suggest that though these three routes are defined as independent, they are actually interconnected by influencing each other. Further, the actual activation of any of these internal states by the input variables could occur so rapidly that distinguishing between a direct priming effect of an input variable and an indirect effect (i.e., influence from another internal state) may be unattainable. However, they explain that specific transversing from any of these internal routes to another, or from a specific input variable to one of these routes, is dependent upon the domain-specific theory that is being hypothesized for any set of input variables. For example,

Anderson, Anderson, Deuser, and DeNeve (1995) found that hot temperature was significantly related to aggression, through an impact on affective and arousal routes, but not cognitive schemata. However, they found that pain did transverse through the cognitive route by its relationship to hostile thoughts. Similar findings were reported for the situational variable of viewing pictures of weapons (Anderson et al., 1996) and watching media violence (Anderson, 1997). However, watching media violence also had an impact on the state of affect (i.e., higher levels of anger).

The third level, the appraisal processes, is the interpretation of the current situation and one's own emotional state. Anderson et al. hypothesize that aggressive individuals attribute hostile intent more often to the actions of a person in a situation of possible provocation than nonaggressive individuals. Further, there is the possibility of an affective reaction to the situation, such as anger at the involved person. A hostile interpretation of these situations is suggested to be based on the easy accessibility of cognitive hostile-related schemata, as argued by others such as Dodge (Crick & Dodge, 1994) and Huesmann (1998). Anderson et al. suggest further that there may be a secondary appraisal of the situation. However, these secondary appraisal processes require more thought, effort and awareness. These processes may include: (1) obtaining additional information about the situation; (2) reinterpreting the input variables or the invoked current internal states; (4) exploring alternative prosocial responses not found in hostile

scripts; (5) evaluating one's abilities to carry out alternative responses (i.e., self-efficacy expectations); and (6) considering the consequences for choosing alternative nonaggressive responses. Anderson et al. suggest that the activation of the secondary appraisal is dependent on factors such as (a) the relevance of the situation to the individual; (b) the accessibility to resources; (c) the availability of additional information; and (d) the availability of sufficient time to assess the situation, the validity of the hostile script and the appropriateness of the behavioral response to the situation.

The last level of the GAAM is the actual behavioral response which is chosen. The actions most likely taken are based on those which are easily accessible, on the hostile behavioral scripts which were activated by the impact of the input variables on the current internal states, and on the appraisal processes used. It is proposed that aggressive individuals have well-developed and easily accessible set of aggressive scripts. These scripts provide the increased likelihood of choosing an aggressive response. Moreover, this is more likely to occur in situations in which very little secondary appraisal processes of the situation occur and in situations of ambiguity in the intent of the actions of the person.

Research on Hostile Attribution Bias

Research in the last decade indicates that aggressive individuals are more likely to present with a hostile attributional bias than nonaggressive individuals. However, this has been demonstrated primarily with aggressive

children and adolescents. Limited research has been done with adults, especially adult offenders. The following is a summary of these empirical studies.

Hostile Attribution Bias in Different Populations

Children/Adolescents. Nasby, Hayden and DePaulo (1980) were the first to report findings that extremely aggressive children inappropriately attribute hostile intent to others. Other researchers investigating hostile attributions in children have found similar results (e. g., Dodge, 1993; Dodge & Crick, 1990; Dodge, Murphy, & Buchsbaum, 1984; Dodge & Somberg, 1987; Dodge & Tomlin, 1987; Graham, 1998; Graham & Hudley, 1994; Graham, Hudley, & Williams, 1992; Lochman, 1987; Lochman & Dodge, 1994, 1998; Mallick & McCandless, 1966; Nelson & Crick, 1999; Ray & Cohen, 1997; Steinberg & Dodge, 1983; VanOostrum & Horvath, 1997; Waas, 1988). Although most of this research has reported hostile attribution bias among aggressive boys, similar findings have been noted among aggressive girls (Coie, Dodge, Terry, & Wright, 1991; Crick, 1995; Crick & Dodge, 1996; Dodge, Bates, & Pettit, 1990; Dodge et al., 1986; Dodge & Tomlin, 1987; Dorsch & Keane, 1994; Guerra & Slaby, 1989; Katsurada & Sugawara, 1998; Lochman & Dodge, 1998; Quiggle, Garber, Panak, & Dodge, 1992; Steinberg & Dodge, 1983; Zelli, Dodge, Lochman, & Laird, 1999). Hostile attribution bias has also been found among juvenile delinquents (Dodge, Price, Bachorowski, & Newman, 1990; Guerra,

Huesmann, & Zelli, 1993; Guerra & Slaby, 1989; Lochman & Dodge, 1994; Slaby & Guerra, 1988). Lochman and Dodge (1998) suggest that these findings among aggressive adolescents would suggest that with repeated exposure to such provocative situations, a hostile attribution bias may be activated prior to middle childhood and continue into adolescence. They conclude that once set, cognitive distortions of hostile attribution biases appear to be self-sustaining over time and resistant to change.

Adults. Very little research has been conducted on hostile attribution bias with adults, especially with offenders. Almost all of the studies have concluded that aggressive adults, male or female, are more likely to demonstrate hostile attribution bias than nonaggressive adults. However, unlike research of children and adolescents, the methodology used to derive at these conclusions varies greatly.

Early experimental studies examining this bias in aggressive adults utilized a game of responding more quickly to a flash stimulus than an opponent. In winning a game, the participant would be allowed to administer shock of varying degrees to the opponent. Studies by Epstein and Taylor (1967), Taylor (1967), and Ohbuchi and Oku (1980) found that hostile adult participants (male and female) are more likely to administer higher intensity of shocks to their opponents when they are led to believe that their opponents shocked them maliciously (i.e., at high intensity) than nonhostile participants. In addition, Taylor (1967) found that these hostile participants demonstrated

higher levels of physiological arousal. Yet, Ohbuchi (1982) did not find such significant differences between hostile and nonhostile participants. This could be due to the fact that Ohbuchi identified hostile participants, by using the Suspicion and Resentment scale of the Buss-Durkey Inventory. This has not been a method of classifying aggressiveness in other studies, which suggests that this type of classification may not reflect a valid distinction between aggressive and nonaggressive individuals.

Epps and Kendall (1995) developed an instrument, Hostile Attributions Inventory (HAI), to examine hostile attribution bias among adults. The HAI consists of 22 scenarios consisting of either hostile, benign or ambiguous actions of actors in each scenario. As in the methodology used by Dodge and his colleagues to assess hostile attribution bias, Epps and Kendall asked 172 (89 male and 83 female) undergraduate university students to rate the degree of hostile intent in the actions of the actor. They found that aggressive students, identified by high scores on anger/aggression attitudes and behavior measures, more often attributed hostile intent to the actor in both hostile and ambiguous scenarios than nonaggressive students. Another study by Mikulincer (1998) also used the scenarios by Epps and Kendall (1995) and found that insecure, ambivalent people, who do not believe in others' benevolence, revealed more hostile attribution bias than secure people. However, this was found only in ambiguous, not hostile, scenarios. In addition, this study found that insecure, ambivalent participants rated

themselves as more angry in these scenarios if the incidents would happen to them. This provides some basis for the role of anger in judging the actions of others in situations of provocation. Two others studies have also used hypothetical situations to examine hostile attribution bias in adults and found similar results. In using videotaped scenarios, Eckhart, Barbour, and Davidson (1998) found that martially violent men are more likely to attribute hostile intent in hostile or benign scenarios between two intimate partners than martially distressed or martially satisfied men. As well, Flory, Mathews, and Owens (1998) found adults who were deemed hostile and held varying occupational positions, were more likely to believe hostile intent of peers in ambiguous scenarios.

Studies by Huesmann and his colleagues examined hostile attribution bias indirectly by the use of a cued-recall paradigm (Zelli, Cervone, & Huesmann, 1996; Zelli, Huesmann, & Cervone, 1995). Participants were exposed to sentences either ambiguous, benign or hostile in content and were asked to recall these sentences, when given either hostile or nonhostile cues. Participants were either asked to just recall the sentences (spontaneous condition), or asked to think about the intent of the actors in the sentences when attempting to recall the sentences (deliberate condition). They found that undergraduate university students who were classified as highly aggressive, according to self-report of varying aggressive acts, were more likely to recall more information when hostile cues were provided under

conditions of spontaneous recall than deliberate recall (Zelli et al., 1995). These results were found even when specific types of recalled information was examined such as the actor and the action of the sentence (Zelli et al., 1996). However, no difference in recall of information was found between the two groups in the deliberate conditions. In the spontaneous conditions, aggressive participants recalled more actor and action information of the sentence with hostile cues, whereas the nonaggressive participants recalled no more actor and action information of the sentence with nonhostile cues than with hostile cues. Zelli et al. (1996) suggest that there may be numerous nonhostile cues which could be used by an individual to semantically store into memory any information regarding the behaviors and actors depicted in the sentences. However, there may be only a very narrow subset of hostile cues from which to draw. Therefore, it would be difficult to select one particular nonhostile cue which is equally likely to be chosen by individuals to store in memory than hostile cues to represent the most common hostile interpretation of the given sentence.

A few studies have been completed by Anderson and his colleagues which have utilized other methodologies for examining hostile attribution bias in adult undergraduate students. In one study participants who watched violent movie clips reported feeling more hostile than those who watched nonviolent movie clips (Anderson, 1997). In further analyses, students who were rated with high trait hostility were found not to differ in their reaction time

in reading aggressive versus nonaggressive words. Yet, students not rated with high trait hostility were affected by watching the violent video clips. They read aggressive words faster than nonaggressive words, in comparison to those who watched nonviolent movie clips. Another study also reported support of hostile attribution bias in aggressive undergraduate students (Dill, Anderson, Craig, & Deuser, 1997). They reported that students with aggressive personalities, as rated by the Buss and Perry scale and the Caprara Irritability Scale, were more likely to finish sentence completion tasks by choosing aggressive endings to stories in which the intent of the peer was either ambiguous or hostile than nonaggressive students (Dill et al., 1997). In a third study, Anderson et al. (1998) asked participants to rate the degree of similarity of word pairs whereby either one word was aggressive and the other was nonaggressive; both words were aggressive; or both words were nonaggressive. They found that students who were under distress or pain (i.e., having their arms held in the air for period of time) and who scored high on trait hostility, more often rated word pairs as aggressive and similar in all conditions than other groups, particularly with the word pairs in which one word was aggressive and the other nonaggressive. Anderson et al. (1998) suggested that input variables such as pain and trait hostile have an effect on aggression through cognitive processes.

Studies investigating hostile attribution bias with adult offenders have only begun in the last decade. Similar to the study by Dill et al. (1997),

Copello and Tata (1990) also examined a sentence completion task as a measure of hostile attribution bias, among 27 adult males (9 violent offenders, 9 nonviolent offenders and 9 nonoffenders). They found that offenders were more likely to choose aggressive endings than nonoffenders, but no differences were found between violent and nonviolent offenders. One explanation for the nonsignificant results could be that participants were not asked to reflect on the sentences as if the incidents were happening to them. Thus, as indicated in previous studies, the sentences did not invoke emotional or cognitive arousal (Dodge & Frame, 1982; Dodge & Somberg, 1987; Zelli et al., 1999). Additionally, these nonsignificant results may suggest a need for further classification of violent offenders which would distinguish those types which would present with hostile attribution biases from those who would not.

Three studies which examined hypothetical scenarios found violent psychopathic offenders were more likely to have hostile attribution bias than nonviolent offenders or violent nonpsychopathic offenders (Blackburn & Lee-Evans, 1985; Seager, 1996; Serin, 1991). These will be discussed in another section of the review examining the relationship between psychopathy, hostile attribution bias and aggression.

In a dissertation to examine the relationship between psychopathy and hostile attributions among adult male offenders (17 nonviolent and 33 violent offenders), Seager (1996) used two measures of hostile attribution bias. One

measure was an adaptation of social vignettes developed by Serin (1988). The second measure was a binocular rivalry task in which offenders were presented with pairs of pictograms in a stereoscope (one violent and one nonviolent pictogram presented to each eye). In the binocular task, participants were asked to describe what they viewed. The basic premise is that such a task taps into an individual's schema of the world (i.e., being a hostile environment for aggressive individuals) in that an individual's response will focus on the dominating features of the visual field which are consistent with his/her schema. He found that past violent behavior was significantly correlated to both measures of hostile attribution bias: Serin's Vignettes and one score on the binocular task, Rivalry Weapon, which was the total number of incidents reported by the participants whereby injury to victim was perceived. Violent behavior consisted for the total number of reported assaults, murder and robbery (charges and convictions in the institution or community).

Overall, research with adults, both offender and nonoffender samples, has indicated that aggressive individuals are more likely to present with hostile attributions than nonaggressive individuals. Further, this has been demonstrated even with the use of more varied measures than the method of presenting hypothetical scenarios to participants which has been primarily used in the child/adolescent research.

Ambiguous Situations

Typically in hypothetical scenarios, used to measure hostile attribution bias, the actions of a person are portrayed as either benign, hostile or ambiguous. Benign Scenarios are situations in which the person's actions are clearly intended to be non-aggressive. In Hostile Scenarios, the other person's actions are clearly hostile in nature; and in Ambiguous Scenarios, the other person's actions are not clearly defined as either hostile or non-aggressive. Attributional theorists propose that hostile people habitually interpret others' actions as hostile, especially when social cues fail to indicate a clear intent or are ambiguous (Dodge & Crick, 1990). Indeed, research has consistently found that aggressive individuals are more likely to present with hostile attribution bias when given hypothetical scenarios in which the intent of the actor's actions are unclear or ambiguous (Aydin & Markova, 1979; Crick, 1995; Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge & Newman, 1981; Dodge et al., 1986; Dodge & Somberg, 1987; Dorsch & Keane, 1994; Epps & Kendall, 1995; Feldman & Dodge, 1987; Graham, 1998; Guerra & Slaby, 1989; Katsurada & Sugawara, 1998; Milich & Dodge, 1984; Nasby et al., 1980; Nelson & Crick, 1999; Quiggle et al., 1992; Ray & Cohen, 1997; Schwartz et al., 1998; Slaby & Guerra, 1988; Steinberg & Dodge, 1983; VanOostrum & Horvath, 1997; Waas, 1988; Webster-Stratton & Lindsey, 1999; Zelli et al., 1999). Aggressive individuals display a marked tendency toward interpreting ambiguous social cues as provocative. However, some

studies with adult participants have also found this with scenarios in which the intent of the actor's actions are benign (Eckhart et al., 1998) or clearly hostile (Epps & Kendall, 1995).

Measures of Hostile Attribution Bias

Findings that aggressive individuals were more likely to present with hostile attribution bias than nonaggressive individuals have been found with procedures consisting of (a) providing participants with hypothetical stories which are either read, listened to, or displayed on videotape, from which to assess the intent of the aggressor and victim (Crick, 1995; Crick & Dodge, 1996; Dodge, 1980; Dodge & Frame, 1982; Dodge & Tomlin, 1987; Dodge et al., 1984; Dodge et al., 1986; Dodge & Somberg, 1987; Dorsch & Keane, 1994; Guerra, Huesmann, & Zelli, 1993; Katsurada & Sugawara, 1999; Nelson & Crick, 1999; Quiggle et al., 1992; Ray & Cohen, 1997; Schwartz, Dodge, Coie, Hubbard et al., 1998; VanOostrum & Horvath, 1997); (b) experimental situations whereby participants are victims to ambiguous, benign or hostile acts of a peer and asked to judge the intent of their peer (Dodge, 1980; Lochman & Dodge, 1998; Steinberg & Dodge, 1983); (c) cued-recall tasks whereby participants are asked to recall stimuli provided in the past with hostile and nonhostile cues (Dodge & Frame, 1982; Zelli et al., 1995, 1996); or (d) other types of procedures such as Seager's (1996) binocular rivalry task, or one in which Nasby et al. (1980) asked participants

to rate hostile attributions to facial photos of women depicting strong emotions which were either benign or ambiguous.

There are some concerns with the methodological approaches which have been used to examine hostile attribution bias. The vast majority of studies have used hypothetical social situations. However, there may be difficulties in the interpretation of these results. Typically, this approach requires participants' conscious and deliberate evaluations of a particular social situation, whether or not the participants have actually encountered such as incident. The focus of this approach is primarily on conscious cognitive processes, even though aggressive behavior is often subconscious or occurs as "automatic" processing. Furthermore, by asking participants to deliberate on these situations, other factors may be introduced in the actual judgements made which may not otherwise be present when ordinarily experiencing similar situations. For example, participants who typically make hostile attribution judgements may consider contextual information of a situation hypothetically presented that would not normally be considered, thereby reducing the hostile attribution bias effect. Conversely, participants who typically do not have a hostile attribution bias may in such conditions entertain possible hostile intents not otherwise automatically considered.

It has been suggested in the criminal justice research literature that offenders are often requested to complete self-report questionnaires (such as those required for responding to hypothetical scenarios) which may be

relevant for decisions making to their case (i.e., institutional placement and release outcomes) (Kroner & Weeks, 1996). As such, offenders may provide a specific response bias which would favor desirable outcome from these evaluations. Therefore, Kroner and Weeks (1996) recommend that any study conducted on offender populations should examine possibilities for response bias which would affect results found, particularly when self-report measures are used. Indeed, findings from studies by Bettman (1998) and Simourd and Mamuza (2000) indicated strong evidence of a relationship between the hostile attributions measure used and response bias. These two studies found significant correlations between choice of aggressive behavior and response bias, and between anger response to the scenarios and response bias. This demonstrates that, particularly among offender populations, the assessment of hostile attribution bias and any subsequent processes which occur thereafter (i.e., anger or aggressive response choice) which are self-reported by participants may be affected by motives for faking, rather than pure reflections of self-appraisal. Any future research in the area of cognitive distortions, such as hostile attribution bias, where self-report measures are utilized should examine the effect of response bias.

Despite this, there has been substantial evidence of differences between aggressive and nonaggressive individuals, both children and adults, when using hypothetical scenarios as situations of provocation. This would suggest some validity in the use of this measure to comment on the hostile

attribution bias among aggressive individuals which leads to aggression. Moreover, as discussed earlier, Dodge et al. (2002) demonstrated within-construct internal consistency, and convergent and discriminant validity in the use of hypothetical scenarios for assessing hostile attribution bias among children. However, as suggested by previous studies (Bettman, 1998; Simourd & Mamuza, 2000), any study examining hostile attribution bias, using hypothetical scenarios, should consider the impact of possible socially desirable responses.

Hostile Attribution Bias Related to Aggression

Not only are aggressive individuals more likely than nonaggressive individuals to have hostile attribution bias, but they are also more likely to retaliate aggressively as a result of this bias. Some research has suggested that this aggressive retaliation due to a hostile bias can begin as young as 7 years and continue into adulthood (Darley, Klossen, & Zanna, 1978; Dodge, 1980; Mallick & McCandless, 1966). Guerra et al. (1993) found that participants in their study who presented with hostile attribution bias from hypothetical situations, also reported that they would likely react to these situations in hostile manners (verbally and physically). Other studies have reported similar findings (Dodge & Somberg, 1987; Graham, 1998). Some studies have found that under experimental conditions, aggressive children subjected to situations where intentions of their peer's actions were ambiguous, responded in aggressive manners, whereas nonaggressive

children did not (Dodge, 1980; Dodge & Frame, 1982; Lochman & Dodge, 1998). Aggressive behavior, as rated by teachers, was also found to be predicted by a hostile attribution bias (Dodge et al., 2002). Studies which have compared hostile attribution bias in different types of aggression have demonstrated that the bias is found more among aggressive individuals who perpetrate reactive type of violence, rather than proactive or instrumental violence (Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge, Lochman, Harnish, & Bates, 1997; Schwartz et al., 1998).

For aggression among adults, much less research has been completed. A series of studies examined whether adult participants would administer shock to their opponents when they perceived their opponents as hostile (Epstein & Taylor, 1967; Ohbuchi & Oku, 1980; Taylor, 1967). It was found that those who were identified as aggressive would consistently administer shock. On the other hand, a study by Simourd and Mamuza (2000) did not find a significant relationship between hostile attribution bias and criminal behavior. However, this may have been due to the fact that they did not separate violent criminal behavior from nonviolent criminal behavior. As well, they found that hostile attribution bias did not correlate with the Aggression Questionnaire, a measure of four components of aggression (physical aggression, verbal aggression, anger and hostility).

*Hostile Attribution Bias and Psychopathy**Psychopathy: A General Description*

Cleckley (1976) has provided the theoretical basis to most of the focus of research in North America. He described psychopathy as a personality disorder with persistent disregard for social norms and conventions, including use of aggression. Psychopathy is distinguishable from other personality disorders by distinct patterns of interpersonal, affective and behavioral symptoms. The pronounced interpersonal characteristics associated with psychopathy have been generally described as “unstable interpersonal relations, poor occupational functioning, and increased involvement in criminal activity” (Hart, Hare, & Harpur, 1992, p. 104). Furthermore, psychopaths are described as having a sense of self-grandiosity, and being egocentric, manipulative, domineering, forceful and cold-hearted. Affectively, they have shallow emotions, are unable to bond with people or to have long-term goals, and lack empathy, anxiety or remorse. In their behaviors, they are impulsive, risk-takers and have no regard to social norms, particularly in terms of substance abuse, criminal behavior or responsibilities. These behaviors serve the purpose of only satisfying personal needs, with no regard for the wellbeing or needs of others. There is also a suggestion of a low frustration tolerance level. Moreover, there is a lack of inhibition for inflicting physical injury to others among psychopaths, as well as limited emotional consequence to the psychopath for aggressively acting out on others (Hare,

1979). The psychopathic personality characteristics have been found to be first evident at an early age (Frick, O'Brien, Wootton, & McBurnett, 1994) and well established by early adolescence (Forth, Hart, & Hare, 1990). These personality characteristics influence continued perpetration of antisocial behaviours throughout the psychopathic's lifespan (Harpur & Hare, 1996).

Psychopathy Checklist-Revised

Over the last two decades, Hare and his colleagues have developed a well-used and well validated measure of psychopathy, known as the Psychopathy Checklist-Revised (PCL-R) (Hare, 1991). Early developments are based on classification of psychopaths proposed by Cleckley (1976). At its current state, the PCL-R is a 20-item measure in which scoring is based on the use of collaborate information from a semi-structured interview and file review. The PCL-R has been found to consist of two factors. Factor 1 is described as corresponding to affective interpersonal characteristics which correspond to the callous regard of others. Items loading onto this factor include glibness, grandiose self worth, pathological lying, conning, lack of remorse, shallow affect, lack of empathy, and failure to accept responsibility for one's actions. Factor 2 is descriptive of behaviors relating to an antisocial, criminal lifestyle, with items including boredom, parasitic lifestyle, poor behavior controls, early behavior problems, lack of long term or realistic goals, impulsive, irresponsible, juvenile delinquency and revocation of

conditional release. The PCL-R administration and scoring is only to be completed by a trained clinical professional (see PCL-R manual, Hare, 1991).

PCL-R and Violent Recidivism

There is strong empirical research reporting a link between psychopathy and aggressive behavior, particularly among offender and mental health populations (Hare, 1996). There is substantial evidence of the predictive relation between individuals who score high on the Psychopathy Checklist–Revised and violent behavior or recidivism, particularly among offender populations in the Canadian correctional populations. As well, a number of studies have found that PCL-R scores are better predictors of violent recidivism than personality disorder diagnoses as provided by the Diagnostic and Statistical Manual of Mental Disorders (DSM IV; American Psychiatric Association, 1994). For example, Hart et al. (1988) found a higher correlation between PCL-R scores and violent recidivism ($r = .33$) than between antisocial personality disorder diagnoses and violent recidivism ($r = .20$). Other studies reported similar results. Harris, Rice and Quinsey (1993) reported violent recidivism correlated higher with PCL-R scores ($r = .42$) than with APD (antisocial personality disorder diagnoses; $r = .25$). They further reported a correlation between violent recidivism and PCL-R scores of .34 for a sample of 618 offenders and only a correlation between violent recidivism and APD of .26.

Retrospective studies have found that psychopathic offenders commit significantly higher rates of past violent offences in the community and institutions than nonpsychopathic offenders (Cooke, 1995; Hare, 1981, 1991; Hare & McPherson, 1984; Serin, 1991). Further, psychopathy has been shown to predict violent behavior following release from a hospital environment or correctional facility (Quinsey, Rice, & Harris, 1995; Serin, 1996; Serin & Amos, 1995). Psychopathy has also been shown to predict violence favourably over other predictor variables such as demographic variables, criminal history and other actuarial risk measures (Serin, 1996).

A thorough review of these studies are presented by Hemphill et al. (1998). From their review, studies consistently revealed that PCL-R scores significantly improved the prediction of violent recidivism, even after factors such as age at release, repeat offence, previous violation of conditional release, type of release granted (Hart, Kropp, & Hare, 1988); previous violent convictions (Rice, Harris, & Quinsey, 1990); previous violent offence, admissions to corrections, previous criminal convictions, convictions history (Harris, Rice, & Cormier, 1995); and age, race, and violence history (Heilbrun, Hart, Hare, Gustafson, Nunez, & White, 1998) were entered into the analyses for outcome criteria of violent behavior. Of the six studies which examined PCL-R and violence, Hemphill et al. found that the correlation between PCL-R scores and violent recidivism ranged from .06 to .34, with an average of .22. In examining the relationship between PCL-R Factor 1 scores, Factor 2

scores and violent behavior, research has demonstrated that both of these factors equally contribute to predicting violent recidivism. Furthermore, the predictive ability of the PCL-R with recidivism was consistently found across different follow up periods of times. In a post-release study of mental health patients, Harris et al. (1995) found that the correlation between PCL-R and violent recidivism was .42, while an earlier study found a correlation of .33 (Harris et al., 1993). Serin (1996) reported a correlation of .28. Hemphill and Hare (1995) suggested from their meta-analysis findings that PCL-R total scores reliably predict violent re-offending in varied offender groupings, across different settings, and at different time periods. However, in their comprehensive review, Hemphill et al. (1998) reported that most of the research on psychopathy using the PCL-R has been conducted predominantly with Caucasian, males, on average 30 years of age, who have been incarcerated at either provincial or federal Canadian institutions. Thus the generalizability of these findings must consider these factors.

Much less research has been conducted on the relationship between psychopathy (as measured by PCL-R) and institutional violence. Also pertinent to risk assessment management is that of successful identification of risk to violence during incarceration. By doing so, allocation of limited institutional resources to effectively manage violent individuals and to best prevent violence towards other inmates, staff and society at large is desirable. Some studies have found a significant positive correlation between PCL-R

scores and institutional misbehavior (Forth et al., 1990; Hare & McPherson, 1984; Wong, 1995). However, it is important to note that other studies have not found a significant relationship between psychopathy and institutional violence (Edens, Poythress, & Lilienfeld, 1999; Brandt, Kennedy, Patrick, & Curtin, 1997; Rogers, Jahansen, Chang, & Salekin, 1997). Some of these studies have been criticized for having unclear operationalization of measuring violence and non-independent criterion measures (Cunningham & Reidy, 1998). For example, Hare and McPherson (1984) indicated that a group of adult male offenders incarcerated in a provincial institution in Canada identified as psychopaths (scored 6 or more on a 7-point psychopathy scale) significantly used more guns, and fought more often and were more aggressively homosexual than nonpsychopathic offenders. However, this outcome criterion measure of aggression was vaguely defined as "assessments of aggressive and violent behavior both in and out of prison." Thus it is unclear which aspect provided information regarding institutional violence. In another study of 227 federally-incarcerated male offenders, Hare and McPherson found that psychopaths had significantly more convictions for violent offences (possession of weapon, robbery, assault, kidnapping, fighting and any violent crime); had significantly more incidents (as indicated in institutional files) of weapon use (possession, threatening with, and actual use); and had significantly more aggressive behaviors while incarcerated (verbal abuse, verbal threats, easily annoyed or

irritated, belligerent and fighting) than nonpsychopaths. Serin, Peters and Barbaree (1990) found that psychopaths are more likely than nonpsychopaths to have institutional maladjustment (i.e., lower work placement levels assigned while incarcerated, more segregation time received, and fewer day parole plans).

Psychopathy and Reactive/Instrumental Violence

One study attempted to differentiate between violent offenders who commit reactive aggression from those who commit instrumental aggression, and attempted to determine whether this classification could be made on the basis of psychopathy. Cornell et al. (1996) administered the PCL-R to 36 violent offenders who committed only reactively violent offences (i.e., aggression committed as a reaction to "dispute or interpersonal conflict with the victim"), 32 violent offenders who committed at least one instrumentally violent offence (i.e., aggression committed for a "clearly identifiable purpose other than responding to provocation or frustration") yet may have committed reactively violent offences, and 38 nonviolent offenders. In comparing offence patterns in the violent offences, they reported that instrumentally violent offenders were more likely to plan their offence and had an identifiable goal. Reactively violent offenders were more likely to commit violent offences when they believed they were provoked, were in a state of anger, and knew their victims. Similar findings were found in another group of offenders referred for pretrial forensic evaluation by Cornell et al. In comparing PCL-R scores and

particular items of the PCL-R, instrumentally violent offenders had higher scores than reactively violent offenders on the following scores: total PCL-R scores, Factor 2 on the PCL-R, items Pathological Lying, Conning-Manipulative, Callous-Lacks Empathy, Parasitic Lifestyle, Poor Behavioral Control, Promiscuous Sexual Behavior, Lacks Realistic Goals, Impulsivity, Irresponsibility, and Criminal Versality. With the forensic group of offenders, similar findings were reported. Reactively violent offenders had higher PCL-R item scoring than nonviolent offenders for Conning-Manipulative, Parasitic Lifestyle, Poor Behavioral Control, and Lacks Realistic Goals. Cornell et al. argued that their findings suggest that instrumentally violent offenders are more psychopathic than reactively violent offenders and nonviolent offenders. However, it is important to keep in mind that almost all instrumentally violent offenders were found to have committed at least one offence of reactive violence. Also, some of the instrumental violence committed also contained elements of reactive violence (e.g., shooting a victim during the commission of a robbery who provoked the offender). Moreover, within their reactively violent offender group, they also reported that some of these violent offences were committed with planning (e.g., planning the murder of a spouse), without provocation from the victim, and no admittance of anger. Therefore, the distinction between instrumental and reactive violence is not definitive and concise. Though they found that instrumental violence is more associated with psychopathy than reactive violence, this does not minimize the

importance of the relationship between psychopathy and reactive violence. All offenders who committed instrumentally violent offences were also convicted of reactively violent crimes. Therefore, it may be suggested that instrumentally violent offenders are more advanced in their use of violence, in that they are more willing to use violence in other situations other than for instrumental gain. Nonetheless, the fact that all instrumentally violent offenders also committed reactive violence indicates the importance of psychopathy and reactive violence, which needs to be explored more thoroughly.

Psychopathy and Hostile Attribution Bias

In fact, it has been first proposed by Blackburn (Blackburn & Lee-Evans, 1985) that it is the psychopathic violent offender who would more likely attribute hostile intent and thus view the world as hostile than nonpsychopathic offenders. Using Blackburn's measure of psychopathy to categorize 60 male patients in a hospital for dangerous psychiatric patients (Special Hospitals Assessment of Personality and Socialization), Blackburn and Lee-Evans examined reactive responses to varying types of situations. They administered an adaptation of the Situations-Reactions (S-R) Inventory (Endler & Hunt, 1968), which is a self-report measure of 14 situations and 12 possible reactions to these situations. The situations in the S-R Inventory range from "mildly annoying to the highly threatening." The reactions are both covert and overt such as hitting someone, feeling tense or angry, and

sweating. They found that psychopaths reacted significantly more strongly overall than nonpsychopaths, and that the reactions by psychopaths were more intense (i.e., higher levels of aggression) with anger-evoking situations and ones which involved attacks against them. This was not found for frustrating situations presented. They stated that their findings suggest psychopaths are more likely to have angry reactions to threats or actual situations of provocation, but not to situations of frustration. Moreover, they suggest that one explanation of these results is that psychopaths have a cognitive hostile attribution bias towards situations of provocation, whereas nonpsychopaths do not, by being hyper-vigilant to personal attacks. This is similar to findings in studies of hostile attribution bias which found that aggressive children are more likely to have a hostile attribution bias when they are the direct receiver of the negative outcome than if they are observing peers who are the recipients of aggression (Dodge & Frame, 1982; Dodge & Somberg, 1987; Zelli et al., 1999). That is, hostile attribution bias is more prevalent when situations are emotionally and cognitively relevant to the self. Blackburn and Lee-Evans suggest further that specific characteristics of psychopaths may contribute to these hostile attributions: "lack of affection or trust, lack of guilt or self-criticism, and impulsive overreactions to ostensibly trivial events" (p. 100). In other studies Blackburn reported that psychopaths are more likely to be hostile toward others, are easily aroused by anger,

exhibit direct expressions of anger (Blackburn, 1986), and are mistrusting of others of others (Blackburn, 1987).

For his dissertation, Serin (1988) designed six social vignettes to be used with adult offenders, based on research by Gembora (1986, as cited by Serin, 1988). These vignettes are typical situations of provocation that offenders experience (e.g., an inmate having his radio on too loud on the range). These vignettes were presented such that the actions of the person in the vignette were ambiguous. Serin presented the vignettes to 21 violent psychopathic offenders (as measured by the PCL-R and prior offence history), 45 violent nonpsychopathic offenders and 21 nonviolent, nonpsychopathic offenders. He found that violent psychopaths were more likely to attribute hostile intent in the actions of actors in the vignettes than the other two groups, especially for those vignettes which were rated by the offenders as more provocative. He further reported a significant correlation of .22 between PCL-R scores and the hostile attribution bias scores.

Seager (1996), in his dissertation, with 50 adult male offenders, found that high ratings on hostile attribution for four of Serin's Vignettes correlated significantly with the Psychopathy Checklist–Revised ($r = .66$). This was also found for other measures of hostile attribution bias; that is, the two binocular tasks, Rivalry Weapon (total number of incidents reported from the visual presentations whereby injury to victim was perceived) ($r = .58$), and Rivalry Violence (total number of crime-related or violent incidents from the visual

presentations reported) ($r = .47$). Moreover, in stepwise multiple regression analyses, he reported that 26 percent of the variance in Violence Rating scores (i.e., number of all violent charges, convictions or institutional charges offenders received) was accounted for by hostile intent ratings from Serin's Vignettes and the scores from the Rivalry Weapon binocular task ($p < .0001$). In specific forced-entry methods of regression, Seager also reported that 49% of the PCL-R scores were accounted for by Rivalry Weapon scores and hostile intent ratings from Serin's Vignettes.

Finally, Bettman (1998) examined Dodge's SIP model to assess hostile attributions, as well as the relationship between psychopathy, hostile attribution bias and aggression in his dissertation. He devised four vignettes to assess hostile attribution bias in 208 federally incarcerated adult male offenders. He found that each stage of the model (encoding of cues, interpretation of cues as hostile, clarification of goals, response access and response decision) was significantly related to total number of self-reported fights and number of violent convictions. However, he partialled out the effects of state anger prior to these analyses. He also found that all of the stages of the social information processing model significantly correlated with the PCL-R, and that they contributed a significant proportion of the variance in PCL-R Total scores. In predicting violent offences, after accounting for PCL-R Total scores, though still significant, the incremental value of hostile

attribution bias diminished considerably. His findings suggested a significant role of hostile attributions to both psychopathy and aggressive behavior.

Overall, it appears that there is some evidence in affective aggression research for the importance of examining the link between psychopathy and hostile attribution bias. The three studies with adult male offenders which have examined this relationship have all reported similar and positive findings.

Hostile Attribution Bias and Prior Exposure to Violence

The notion that “violence begets violence” has been given considerable attention by media, the public and scientific research. The premise is that of intergenerational transmission of violence, that adults who perpetrate violence have once also been victims of this violence at the hands of family members. Moreover, it has been suggested and evidenced that this cycle of violence not only begins by being victimized in the home, but also by being exposed to violence by others means, namely being victimized outside the family unit and the witnessing of violence being perpetrated onto others.

There has been much theoretical and empirical literature examining the development of aggression based on prior exposure to violence. Most of the theoretical basis for this has been from a social learning perspective. That is, it is suggested that aggression, as a responsive behavior to situations of provocation, can be acquired through the observation of violence, either through witnessing or being subjected to violence (Bandura, 1973). This

theoretical basis can also be used to explain intergenerational transmission of violence: a home in which violence is regularly accepted and committed against family members provides for the child a model from which to learn acts of violence as acceptable forms of resolutions to situations. These aggressive behavioral scripts then become entrenched as a form of attaining desirable goals, stable and persistent in adulthood (Olweus, 1984). In much the same way, peers may also act as role models of violence, through the interaction with particular social groups who reinforce violence as acceptable social behaviors (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979).

There is an abundance of research demonstrating that violent offenders report being victims of abuse and neglect in childhood (Rivera & Widom, 1990). Moreover, there is some evidence that children who have either been victims of violence or have witnessed violence have demonstrated an increased likelihood of perpetrating violence (Falshaw, Browne, & Hollin, 1996). Widom (1989) suggested that one in six children who are victims of violence will develop a pattern of violent behavior in adolescence. As well, reviews of research on abused children have found that a number of studies report that aggressive children were more likely than nonaggressive children to come from physically abusive homes (Bolton et al., 1981; Spiegel, 1989).

Studies which examined the impact of witnessing violence have concentrated primarily on witnessing violence in the home (i.e., inter-parental

violence) or the exposure to extreme television violence. In this paper, only studies on the effect of direct witnessing violence, rather than indirect such as media violence, is considered. Earlier studies have reported that in experimental studies of viewing aggressive role models, children and adolescents have subsequently imitated these aggressive behaviors (e.g., Bandura, 1973). However, Widom (1989) points out that these studies have failed to examine the long-term consequences to this type of modelling of aggressiveness, and questions the generalizability of this behavior to real-life situations.

Later studies examining backgrounds of aggressive children have found that aggressive individuals reported witnessing significantly more incidents of violence in their childhood. For example, Selner-O'Hagan, Kindlon, Buka, Raudenbush and Earls (1998) found that violent offenders reported three times more than nonviolent offenders the witnessing of a shooting during the past year. Lewis, Shanok, Pincus and Glaser (1979) found 79% violent and only 20% of nonviolent children witnessed violence in their childhood homes between parents. As well, in a fairly extensive review, Kolbo, Blakely, and Engleman (1996) noted that the vast majority of studies which examined the relationship between domestic violence and children's maladaptive behaviors, reported a positive correlational relationship (i.e., 23 of the 26 studies). This was found even when mediating factors such as frequency and duration of the exposure to domestic violence were

considered. As well, several other studies have noted that aggressive children and adolescents were more likely to be exposed to domestic violence (e.g., Cummings, Hennessy, Rabideau, & Cicchetti, 1994; Spaccerelli, Coatsworth, & Bowden, 1995) or community violence (e.g., Farrell & Bruce, 1997; Fitzpatrick, 1997; Flannery, Singer, Williams, & Castro, 1998; Gordon-Smith & Tolan, 1998; Miller, Wasserman, Neugebauer, Gorman-Smith, & Kamboukos, 1999; Schwab-Stone et al., 1995; Schwartz & Proctor, 2000) than nonaggressive children/adolescents. Miller et al. (1999) even found that exposure to community violence was correlated to aggression at different time periods (i.e., at 15 months and 30 months).

Of the very few studies which have also examined the relationship between witnessing violence in childhood and aggressiveness as an adult, there have been very modest but consistent findings of a positive relationship. Bach-y-Rita and Veno (1974) found 53% of habitually violent offenders witnessed their parents engaging in physical conflicts. In a survey study of adults, nationally represented, Owens and Straus (1975) found a significant correlation between witnessing violence and approval of violence as an adult ($r = .29$) and between witnessing violence and the commission of violence ($r = .31$). Another study by Kalmuss (1984) examined the impact of either or both the witnessing of childhood home violence and the victimization of violence as a child at home on later adulthood marital aggression. They found that witnessing parental violence was related to marital violence in adulthood (i.e.,

6% of the cases), which was higher than when only victimization was present (i.e., 3%). However, the relationship was stronger when both witnessing and being a victim of violence was present (i.e., 12%). Seager, Johnson, and Dhaliwal (2000) conducted a preliminary study with 360 adult male offenders incarcerated in a medium-security institution to examine factors related to aggression, such as the extent of witnessing violence. Initial results indicated that only thirty-two percent of the offenders ($n = 115$) reported never witnessing violence between two male offenders. However, when age was controlled, witnessing violence was significantly related to self-reported number of self-initiated aggression against a female ($r = .32, p < .01, n = 73$) and self-initiated aggression against a male ($r = .21, p < .05$). Further, witnessing offender-to-offender aggression was significantly correlated to victimization from females ($r = .38, p < .01$) and victimization from males ($r = .41, p < .01$). Therefore, it was found that witnessing violence not only related to aggression, but to victimization.

However, other studies have found that abused delinquents were not more violent than nonabused delinquents (e.g., Alfaro, 1978; Bolton et al., 1981; Kratcoski, 1982). Overall, empirical evidence has not been firmly established that this progression from victim to offender of violence is necessarily inevitable. Rather victimization is only one potential factor contributing to the development of aggressive behavior, given that the majority of such victims of violence do not progress to the perpetration of

violence (Widom, 1989). Some of the concern in the studies findings pertain to the methodology used. In an extensive review of the victim to offender literature, Bolton, Reich and Guteirres (1981) noted that though much research has been conducted, only 20 percent could be classified as research-based, and moreover, of these 84 percent were based on case records or aggregated statistics. Additionally, some studies indicated that abused children were more likely to identify with the victims than with the perpetrator of violence, or were more likely to become withdrawn than aggressive.

There are several methodological concerns in research linking exposure to violence to aggressive behavior, as defined as either witnessing and being victimized by violence. Reviews of studies on exposure to violence have noted the following problems: small sample sizes; lack of control or comparison groups; reliance on parental reporting of the level of violence and the level of child's behavioral problems with no collaborating evidence; and the assumption of classifying children as being exposed to violence by the mere fact of their current status of living in a shelter for battered women (Kolbo et al., 1996; Spiegel, 1989). As well, there is a lack of consistency and standardization in defining the specific exposure to violence (Falshaw et al, 1996). Measures of witnessing or exposure to violence vary considerable from study to study. For example, Edleson (1999) argues that studies have defined witnessing violence as either giving an eye-witness account of the

violence, hearing the violence from another part of the room, being used in a direct event of violence (e.g., being in the mother's arm while the mother is being abuse), or seeing the aftermath of a violent episode. Differences in defining witnessing violent behavior impacts on the estimates for the frequency of exposure to violence. Therefore, replication of such studies may be difficult. In terms of being victimized, often times, children being studied are examined homogeneously with little or no consideration between individualized or compounded impact of differential victimization, such as neglect, physical or sexual abuse and emotional abuse (Spiegel, 1989). Most of the studies have grouped together abused children as those who are either physically abused or neglected, which may obscure significant behavioral outcomes of violence. However, it is noteworthy that the isolation of a specific form of abuse is difficult given the propensity of the overlap of different forms of abuse.

Selner-O'Hagan et al. (1998) provide additional concerns with how studies have measured exposure to violence: (a) including questionable items of exposure to violence such as witnessing drug trafficking deals; (b) including exposure to media violence or hearing about violence from someone else; and (c) not separating witnessing violence from being victimized by violence. However, it is also noteworthy that it would be difficult to distinguish between groups of children who have witnessed violence from those who have been victimized by violence, since often children report both witnessing and being

victims of violence. Therefore, there is an appreciation for the difficulty in determining the unique contribution of each form of exposure to violence to the development of aggressive behavior. For example, Rosenbaum and O'Leary (1981) found that male batterers were more likely to report a childhood home environment in which domestic violence occurred than non-batterers. However, eighty-two percent of these men also indicated that they were physically abused.

Another limitation which should be recognized in this type of research is the "retrospective recall bias" which is the difficulty in recalling accurately and comprehensively, without distortion, the actual portrayal of extent of exposure of violence from the past (Widom, 1989). Additionally, when asked to recall information from long periods of time, often how the individuals may perceive and recall this information is dependent upon subsequent interpretation and the context within which the individual places this information (e.g., selective memory). As well, the individual may provide information in a manner which best suits his purpose. For example, offenders may distort the extent of violence in their past environment to account for their current aggressiveness, if this may produce a desirable outcome for themselves (Widom, 1989).

There has been no study which has specifically examined the relationship between exposure to violence, hostile attribution bias and aggression. However, Anderson et al. (1998) have suggested that chronic

situational variables such as exposure to violence (e.g., media violence, or viewing weapons) may have an indirect effect on aggression by impacting on cognitive distortions such as hostile attribution bias. Moreover, Schwartz and Proctor (2000) suggest that exposure to witnessing violence could predict aggression through the mediation of social information processing or social learning mechanisms such as those proposed by Crick and Dodge (1994) and Anderson et al. (1995). They state that violent community exposure may serve as learning contexts for children, which may influence the development of belief systems and cognitive schemata of aggression. These schemas may then guide future aggressive behavioral choices as acceptable response choices to situations of provocation.

Hostile Attribution Bias and Anger

It has been proposed by several researchers that emotion, particularly anger, plays a significant role in the explanation of reactive aggression (Anderson et al., 1995; Crick & Dodge, 1994). It is well developed in the literature that there is a link between anger and affective aggressive behavior, beginning with the attention by Novaco's (1978) cognitive-behavioral research, which defines anger as "a state of heightened physiological arousal which is cognitively labeled as anger, and typically accompanied by antagonistic cognitions" (p. 135). Though anger is not always linked to all types of aggression, currently it is widely accepted that anger is common in specific types of aggression such as affective aggression in which there are

antecedents and motivations to invoke the emotion of anger (Geen, 1990). Moreover, the suggestion is that hostile evaluations of other's intentions to their actions may be caused or related to physiological arousal of anger emotions (Betancourt and Blair, 1992; Quigley & Tedeschi, 1996). As stated earlier, anger may act as either an antecedent (Averill, 1983) or subsequent reaction (Novaco, 1978) to hostile appraisals of another's intent of action. Recent attributional theorists have proposed that these cognitions (i.e., hostile attribution bias) determine feelings (such as anger) which in turn guide aggressive behavior (Weiner, 1980).

There is some evidence that demonstrates the link between anger, cognition and aggression. For example, Zillmann (1983) has shown that residual arousal of anger can influence aggressive responses by increasing one's anger at the offending party. Weiner, Amirkhan, Folkes and Verette (1987), in a survey concerning times when people had not fulfilled social obligations, found that the more that intentional harm was attributed to the harm-doer, the more that anger was felt by those who had been harmed. Novaco (1978) found a link between the state of anger and violence among mental health patients, and further that anger is not a prerequisite of offender violence, but is a common antecedent (Novaco & Welsh, 1989).

In terms of relationship between hostile attribution bias, anger and aggression, there has been general agreement that anger does play a significant role. However, theoretical perspectives on which factor has the

effect on which (i.e., hostile attributions on anger or visa versa) to lead to aggression has been mixed. For example, Crick and Dodge (1996) acknowledge the importance of anger in their social information processing model, but have only suggested that anger can either be an antecedent to cognitions of hostile attribution bias, or follow these cognitions. Anderson et al. (1995) propose that following a particular situation of provocation, hostile attribution bias can be invoked by a current internal state of anger. However, they also state that anger can be invoked particularly at the target person in the situation at the same time (i.e., parallel) as the hostile attribution bias is formed, similar to that suggested by Berkowitz (1990). In their recent formulation of anger and aggression, which is similar to a social information-processing model such as that suggested by Dodge (Dodge & Crick, 1990), Novaco and Welsh (1989) suggest that situations of provocation are first cognitively processed, which then lead to an internal emotional state of anger. Similarly, Geen's (1990) model of aggression provides a more definitive position on how anger plays a role in affective aggression. He proposes that the individual first makes judgements on the situation of provocation, namely the intentionality of the person in the situation, which is dependent upon prior accessible cognitive schemata. Then to the extent that this situation is perceived as hostile, feeling of anger results.

Very little research has been conducted to examine the role that anger plays with hostile attribution bias. Aggressive children who were identified as

having hostile attribution biases also reported feeling more anger than nonaggressive children (Crick, 1995; Graham, 1998; Guerra et al., 1993). Similar findings have also been reported in studies with adult participants (Anderson, 1997; Anderson et al., 1998; Mikulincer, 1998). As well, state anger has been correlated with hostile attribution bias by Seager (1996) with male adult offenders ($r = .77$). Quigley and Tedeschi (1996) propose that harm, attributions of intention and justifications predict both anger and blame. They found that among introductory psychology students, hostile attribution bias was significantly correlated to both anger and blame when judging the intent of a person in a situation of provocation that the participants reported being directly involved in. One study, which investigated the psychometric properties of a newly devised instrument of hostile attribution bias, the Hostile Interpretations Questionnaire (HIQ; Simourd & Mamuza, 2000), found nonsignificant correlations between hostile attribution bias (a subscore of the HIQ) and anger (Novaco Anger Scale), and between hostile attribution bias and aggression (Aggression Questionnaire). Moreover, they found that hostile attribution bias did not correlate with total number of convictions, total number of different offences, or total number of institutional misconducts. However, to note, the HIQ hostile attribution bias subscale had a borderline level of internal consistency ($\alpha = .67$), and further, the measures of criminal behavior consisted of both aggressive (assault) and nonaggressive behavior (theft).

Some studies have shown that when participants were required to judge the actions of others, they would report more anger feelings when judging the harm-doer as having control over the situation than when the harm-doer did not (Meyer & Mulherin, 1980; Weiner, 1980; Weiner et al., 1987). Graham et al. (1992) in a study with adolescents, rated as either aggressive or nonaggressive by teachers and peers, found that aggressive adolescents reported being more angry than nonaggressive adolescents, regardless of the hypothetical scenarios (i.e., ambiguous, hostile or prosocial), and reported choosing more aggressive responses to these scenarios. Similarly, Guerra et al. (1993) found that this anger was also related to hostile attribution bias which was then also linked with aggressive behavior among aggressive delinquents.

Overall, it appears that anger is an important factor for the examination of the relationship between hostile attribution bias and aggression. However, there has been very little research conducted on the relationship of these three variables. Further, much less can be stated about this relationship for adults, especially offenders.

Purpose of Study

The research on affective aggression has demonstrated a hostile attribution bias among individuals with known histories of aggressive behaviors or aggressive traits. Further, this finding is most evident when participants are presented with hypothetical situations of provocation in which

the intentions of a person's actions are ambiguous. However, our understanding of this phenomenon is still limited. First, though the last decade provided much research on children and adolescents, there is a paucity of empirical research on the hostile attribution bias among aggressive adults. Moreover, even less is understood about hostile attribution bias among violent adult offenders, who engage in most destructive aggressive behavior. Limited research with adult offenders has thus far only pertained to the use of ambiguous hypothetical scenarios as a measure of hostile attribution bias. However, nothing is known of the extent to which adult offenders attribute hostile intent to situations in which the person's intentions are either benign or hostile.

A second area of research on hostile attribution bias not fully explored, especially among adult offenders, is that of the specific precursors of hostile attribution biases. Moreover, it is unknown how these factors contribute to affective aggression, in relation to hostile attribution bias. Two such factors which were of primary interest in this paper were prior exposure to violence (both witnessing and victimization of violence) and psychopathy.

A third area which also requires further investigation is the influence of hostile attribution bias on the emotional affect of anger, and how this impacts on aggression. This has not been examined with adult male offenders. These three areas of research on hostile attribution bias were the foci of the present study with federally incarcerated adult male offenders.

Present Studies

Hypotheses

Investigating these areas of research interest on hostile attribution bias entailed the following specific hypotheses.

1. It was hypothesized that there would be a positive relationship between prior exposure to violence and psychopathy. That is, offenders who are identified as more psychopathic would have been exposed to more violence in the past, both in terms of witnessing violence and victimization.

2. It was hypothesized that offenders who are more psychopathic would endorse stronger hostile attribution bias.

3. It was hypothesized that offenders who have been exposed to more violence in the past (witnessing and victimization) would endorse stronger hostile attribution bias.

4. As found in previous research with nonoffenders, it was hypothesized offenders would more likely attribute hostile intent to the actions of a person in a hypothetical scenario when the actions were hostile than ambiguous or benign. Further, these offenders would more likely attribute hostile intent when the actions of a person were ambiguous than benign.

5. It was hypothesized that, as suggested by Geen (1990), offenders who attributed hostile intent to the actions of a person in a situation of provocation would more likely report subsequent anger.

6. Finally, it was hypothesized that reported anger at a person would be significantly related to an increased likelihood that the offender would choose to act out aggressively. Moreover, other direct relationships to aggression were prior exposure to violence and psychopathy.

Proposed Model

As a further extension to these hypotheses, the current research endeavor also proposed and tested a model of reactive aggression. The specific model proposed in this research paper is outlined in Figure 2. This proposed model is an adaptation from the General Affective Aggression Model provided by Anderson et al. (1998; see Figure 1).

In the GAAM, it is suggested that personological and situational variables contribute to affective aggression directly, and indirectly, by influencing hostile attribution bias in incidents of provocation. The proposed model in this paper suggested that one pertinent situational variable is exposure to violence (both witnessing violence and victimization), and one pertinent personological variable is psychopathy. While it is acknowledged that other personological variables may affect aggression, psychopathy was examined in this model because psychopathy has been significantly linked to aggression especially with violent offenders (e.g., Hare, 1981; Hare & McPherson, 1984; Williamson, Hare, & Wong, 1987). Furthermore, it is suggested that these input variables contribute to aggression through two mediating factors: hostile attributions and state anger. Another component to

the proposed model is that, as suggested by Geen (1990) and Novaco and Welsh (1989), hostile attribution bias contributes to aggression through its influence on state anger as the mediating factor. Finally, it is proposed that anger has a direct link to aggression, which is influenced by both input variables and hostile attribution bias.

Therefore, in summary, it is proposed that for affective aggression, the two input variables, prior exposure to violence and psychopathy, have both direct and indirect contributions to aggression. It is suggested that their indirect relationship to aggression is mediated by both hostile attribution bias and anger. Also hypothesized in this model is that there is a relationship between prior exposure to violence and psychopathy. However no implied effect or causal relationship is proposed, only a covariance between these two. Further, hostile attribution bias is proposed to have a direct influence on anger, but indirect relationship to aggression via anger as the mediating variable. Finally, it is hypothesized that anger has a direct influence on aggression. Hence, as seen in Figure 2, the relationships of the factors in this proposed model are unidirectional, as indicated by the straight arrows on the model. This model is identified as recursive in that the pathways are all unidirectional.

Figure 2. Proposed model of predicting aggressive responses, based on situational and personological input variables, hostile attributions, and emotional response.

Pilot Investigation into Psychometrics of Measures

Prior to testing the above mentioned hypotheses and proposed model, one pertinent task consisted of investigating the specific instruments which would be used to test these hypotheses. Since some of the area of research interest has not been tested with adult male offenders, the instruments used in previous research may not be applicable for use with adult male offenders. Specifically, the three instruments of concern were those which measured hostile attribution bias, prior exposure to violence, and affective aggression to situations of provocation.

First, previous research with adult offenders has only utilized measures consisting of hypothetical scenarios which are offender-specific, and contain ambiguous intents of the actors. One such measure is Serin's Vignettes. This measure is restrictive in that it only consists of ambiguous vignettes (i.e., the intentions of the person in the vignettes are ambiguous) which are primarily in a context specific to offenders. However, the Hostile Attributions Inventory (HAI; Epps & Kendall, 1995) consists of scenarios that represent typical situations which may be experienced by adults in a western society. In addition, there are three types of scenarios in the HAI: Benign, Hostile and Ambiguous, in respect to the intentions of a person's actions. To this end, the Hostile Attributions Inventory was compared with Serin's Vignettes in Study 1. It was predicted that the adult male offenders will attribute hostile intent in both offender-specific situations and general situations. Moreover, it was

expected that adult male offenders would differentially attribute hostile intent to different types of scenarios (i.e., Benign, Hostile, and Ambiguous). Hence, since this is the first attempt to the use of the HAI with adult male offenders, psychometric properties were examined.

Second, only one instrument could be found in the research literature which attempts to most comprehensively measure extent of prior exposure to violence: My Exposure to Violence (Selner-O'Hagan et al., 1998). However, again, this measure has not been used with adult male offenders. Therefore, Study 1 sought to determine its psychometric properties.

Third, the Hostile Attributions Inventory consists of a general, open-ended question to measure aggression as an outcome criterion. The question asks participants "What would you do if this happened to you?" However, no method of scoring the responses have been provided by Epps and Kendall (1995). For this, Study 1 examined a rating scheme used in another research study (VanOostrum & Horvath, 1997).

Therefore, in this research endeavor, two studies were conducted. Study 1 was a pilot investigation of the psychometric properties of instruments proposed for use in Study 2. These instruments were measures of hostile attribution bias, prior exposure to violence, and aggression responses to situations of provocation. Study 2 consisted of testing the hypotheses and proposed model of affective aggression.

CHAPTER II: Study 1

Purpose of Study 1

Study 1 was a preliminary examination of the psychometric properties of instruments under consideration for use in Study 2 (the investigation of the hypotheses and model proposed), since these have not been previously researched with adult male offenders. First, psychometric properties of and comparisons between the Hostile Attributions Inventory and Serin's Vignettes as measures of hostile attributions bias were examined. Second, psychometric properties of the My Exposure to Violence instrument as a measure of prior exposure to violence were explored. Third, the reliability and validity of one aggression measure, that is, the aggression response choice to hypothetical scenarios, were investigated.

Method

Setting

Participants for Study 1 were selected from a medium-security Canadian federal penitentiary in the Prairies Region, which is under the jurisdiction of the Correctional Service of Canada. At the time of data collection, this penitentiary had a total of 420 inmates. Thirty-one percent of these offenders ($n = 131$) were currently serving a sentence for a violent nonsexual offence, thirty-one percent ($n = 130$) were serving a sentence for a sexual offence and twenty-nine percent ($n = 121$) were serving a sentence for

a non-violent offence. Thirty-eight of the offenders (9%) were serving time in the maximum-security unit at this institution.

Participants

The participants consisted of 30 adult male offenders who were incarcerated at the time at the medium-security penitentiary. Half of these participants were Caucasian. Of the remaining, 46.7 percent were either Metis ($n = 2$) or Native ($n = 12$). One participant was Asian. The age of the participants ranged from 20 to 56 years, with a mean age of 34.1 years ($SD = 10.6$ years).

All participants were federally-sentenced inmates, indicating that they were serving a sentence of at least two years. The length of sentence for these participants ranged from 730 days (i.e., 2 years) to life imprisonment. A sentence of life imprisonment in Canada is for a conviction of first and second degree murder. In this study, seven participants were serving a life sentence. Of those with a determinate sentence, the sentence length ranged from 730 days (i.e., 2 years) to 4195 days (i.e., 11 years and 6 months), with an average sentence length of 1630 days (i.e., 4 years, 5 months and 20 days).

On average, the total number of convictions for prior and current violent offences was 2.90 ($SD = 2.50$), ranging from none to nine. Violent offences consisted of murder, attempted murder, assault, uttering threat, weapons-related offence and armed robbery. Twenty percent ($n = 6$) of the participants had no prior or current violent conviction. Approximately 17

percent ($n = 5$) had only one violent conviction. The remaining 63.3 percent ($n = 19$) of the participants had two or more violent convictions.

Measures

Hostile Attributions Inventory. The Hostile Attributions Inventory (HAI; Epps & Kendall, 1995) is a measure of hostile attribution bias. The HAI consists of 21 scenarios: seven Benign Scenarios, eight Hostile Scenarios, and six Ambiguous Scenarios. In all scenarios, there is a situation in which a person is taking action towards another individual. The scenario is written in the first person, such that the individual who is acted upon is the reader (i.e., the participant).

Instructions were provided to the participant that they would be read a series of scenarios in which "there is the potential for an emotional response on the part of one person (called "you" in the scenarios)." The participants, however, were not told of the scenario types. The participants were asked to make three ratings after each scenario was read. The first rating assessed Intentionality of the person's actions: "How sure are you that the offending actions of the other person in each scenario were intentional acts (as opposed to unintentional or accidental)." Participants rated Intentionality on a 9-point scale, where 1 = "I am not at all sure the action was intentional;" 5 = "I am moderately sure the action was intentional;" and 9 = "I am very sure the action was intentional".

The second rating was the Hostile Intent Rating in which the participant was to rate: "How sure are you that the offending actions of the other person in each scenario were intended to be hostile (i.e., intended to bring some harm or discomfort to you, as opposed to benign)." Again, this rating was given on a 9-point rating scale, in which 1 = "I am not at all sure the action was hostile;" 5 = "I am moderately sure the action was hostile;" and 9 = "I am very sure the action was hostile." The third rating was labelled Anger Rating. In this rating, participants were asked: "How angry would you be if the situation happened to you." Rating was again on a 9-point rating system whereby 1 = "not at all angry;" 5 = "moderately angry;" and 9 = "very angry."

Epps and Kendall (1995) provided results of a preliminary study examining the psychometric properties of the Hostile Attributions Inventory. They administered the HAI to 72 male and female college undergraduate students and found that the scenario types (Benign, Hostile, and Ambiguous) were distinctly identifiable. Internal consistency of the scales were not reported. The actions of the person in Hostile Scenarios were rated by participants as more hostile than the actions of a person in Benign or Ambiguous scenarios. Moreover, actions in Ambiguous scenarios were perceived as more hostile than Benign scenarios. Further, participants who were grouped as aggressive (identified using the Buss-Durke Hostility Inventory) were found to rate their Anger significantly higher in both Hostile

Scenarios and Ambiguous Scenarios than nonaggressive participants, but not in Benign Scenarios.

For the administration of the HAI in Study 1, some of the language in the scenarios was changed from the original HAI. It has been reported that 60 percent of adult male offenders being supervised by Correctional Service of Canada, tested upon entry into the correctional system, functioned below high school entrance levels, and 90% functioned below high school completion levels (Lilly, 1996). Therefore the language in the scenarios was altered to permit a reading/comprehension level that was below high school. In addition, five scenarios (four were Hostile and one was Ambiguous) relating to a college school environment were not used. It was deemed that it would be unlikely that these types of situations could be generalizable to offender populations. By eliminating these scenarios, a total of sixteen scenarios were presented to participants: seven Benign Scenarios, four Hostile Scenarios and five Ambiguous Scenarios. The sequence in which these scenarios were presented to the participants were such that no two scenarios from each of the categories (Benign, Hostile and Ambiguous) were presented one after the other. Appendix A provides the specific ordering and wording of the scenarios that were presented to the participants.

For the current research project, a measure of aggression was also of interest. Thus an approach similar to that used by VanOostrum and Horvath (1997) was used. In their study, they provided participants with hypothetical

scenarios and for each scenario asked the open-ended question, "What would you say or do in response?" The responses were recorded verbatim and scored using an 8-point system which rated the most aggressive response for each scenario (see Appendix B). This rating score for Study 1 was labelled Scenario Aggression Response (SAR) Rating. The rating system consisted of the following: (0) no aggressiveness in the response; (1) negative attitude (sarcasm); (2) mild verbal aggression (name calling); (3) severe verbal aggression (swearing); (4) aggression toward an object (punching a wall); (5) revenge or retaliation (replying with similar form of aggression as the other person); (6) mild physical aggression (pushing); and (7) severe physical aggression (hitting).

Based on the administration of the Hostile Attributions Inventory, along with the additional Scenario Aggression Response question, a total of sixteen variables relating to the HAI were obtained for Study 1. Four variables were obtained for each type of scenario (i.e., Benign, Hostile, and Ambiguous): Intentionality Rating, Hostile Intent Rating, Anger Rating, and Scenario Aggression Response Rating. In addition, scores on the four variables were averaged across all scenarios to obtain an All Intentionality Rating, All Hostile Intent Rating, All Anger Rating, and All Scenario Aggression Response Rating.

Serin's Vignettes. In addition to the Hostile Attributions Inventory, Serin's Vignettes (1988) were administered as another measure of hostile

attribution bias (see Appendix C). Serin developed a set of six hypothetical scenarios specifically to be used with offender populations. These scenarios represent typical incidents of provocation which are likely to be experienced by offenders. Similar to the HAI, the scenarios in Serin's Vignettes are written in the first person, such that the actions of the person in the scenario are being taken against the participants. Three of these scenarios are typical of incidents occurring in an environment of incarceration. All six scenarios are set such that the intentions of the other person's action are ambiguous. The specific questions used to test hostile attribution bias with offenders with these scenarios are open-ended. The responses are coded according to attribution, problem definition, and hostile goal selection. Probing continues until the item is scored. Though in this study these opened questions were asked, the three questions asked from the Hostile Attributions Inventory were also asked to obtain measures of Intentionality Rating, Hostile Intent Rating, and Anger Rating. This was done to enable similar analyses to the HAI and to compare results from the HAI with Serin's Vignettes.

According to the instructions for the administration of Serin's Vignettes, for each scenario, participants are provided with six possible responses and asked, "Choose what you would do in this situation from the list of options below." These responses were recorded for participants in Study 1. However, the method used with the HAI to obtain the Scenario Aggression Response Rating was also applied to Serin's Vignettes. That is, participants were first

asked, "What would you say or do in response?" These responses were recorded verbatim for scoring. Next, participants were asked which response they would choose out of those provided from Serin's Vignettes, specific to the scenario. Based on this administration of Serin's Vignettes, four relevant variables were obtained: Mean Intentionality Rating, Mean Hostile Intent Rating, Mean Anger Rating, and Mean Scenario Aggression Response Rating.

Though research on Serin's Vignettes has been previously described in Chapter One, a brief summary will be provided here. As part of his dissertation, Serin (1991) developed this measure and administered it to 87 adult male offenders who were incarcerated in a medium-security Canadian federal institution. He did not report inter-rater reliability for scoring, test-retest of the measure, or internal consistency of the items for this measure. It was thus the intent of Study 1 to provide this information. Serin did report that Anger Ratings significantly correlated to the Hostile Intent Ratings. He suggested that this is an indication that these six vignettes were provocative to adult male offenders and that hostile intent is related anger. He also found that violent psychopathic offenders were more likely to attribute hostile intent in the scenarios than nonviolent psychopathic offenders or nonviolent, nonpsychopathic offenders.

My Exposure to Violence. Only one comprehensive instrument in the research literature could be found that attempts to measure the extent of

exposure a person has had to violence, in terms of witnessing violence and victimization. This fairly recent development is the My Exposure to Violence (My ETV) measure, by Selner-O'Hagan and her colleagues (Selner-O'Hagan et al., 1998). The My ETV measure was designed to systematically assess the extent of exposure to different types of violence that children and youth experience. The total exposure to violence is measured as occurring either the person's lifetime and in the past year. It included both incidents of witnessed violence (10 events) and victimization (8 events). The ten witnessed violent events consist of seeing someone sexually assaulted, killed, shot, shot at, seriously threatened, attacked with a weapon, chased or hit, as well as seeing a dead body or hearing gunfire. The eight victimization events in this measure are being sexually assaulted, shot, shot at, seriously threatened, attacked with a weapon, chased, hit or being home during a break-in. Information for both types of exposure to violence (witnessing violence or victimization) is obtained through a highly structured interview schedule of specific sequencing and wording of the questions. Diversity of the exposure to violence is measured by asking "Have you EVER experienced this?" for each violent event, both in the lifetime and in the past year. Frequency of exposure to violence is measured by asking how many times each violent event was experienced, both in the lifetime and in the past year. Frequency responses are recorded on a 5-point scale: 0 = never; 1 = once; 2 = two to three times; 3 = four to ten times; 4 = more than ten times. Additional

questions in this measure are the age at which the person was first exposed to each violent event; the relationship of the perpetrator of each violent event which occurred to the participant; the location of the violent events and the relationship of the victim to the participant for the violent events which were witnessed.

Selner-O'Hagan et al. (1998) provided results of a preliminary study of the reliability and construct validity of the My ETV measure. They administered the My ETV measure to 80 participants, 49 male and 31 female. The participants' ages were distributed across 3-year intervals (i.e., aged 9, 12, 15, 18, 21, and 24). In this study, six frequency of violence subscales of the My Exposure to Violence measure were calculated: Violence Seen—Lifetime; Violence Seen—Past Year; Victimization—Lifetime; Victimization—Past Year; Total Exposure—Lifetime; Total Exposure—Past Year. Twenty-three of these participants were administered this measure a second time between two to four weeks after the initial testing period for test-retest reliability. For the six subscales, test-retest reliability ranged from .75 (Victimization—Lifetime and Violence Seen—Past Year) to .94 (Victimization—Past Year) and internal consistency ranged from Cronbach's alpha coefficients of .68 (Victimization—Past Year) to .93 (Total Exposure—Lifetime and Total Exposure—Past Year).

Selner-O'Hagan et al. (1998) also examined construct validity through item analysis. That is, they examined the distribution of items and person on the logit scale for total exposure in the past year and throughout the lifetime.

Results showed a fairly wide range of endorsement of being exposed to the violent events. There were tendencies of more extreme events such as being a victim of a sexual assault or witnessing a murder being at the lower end of the frequencies; and less extreme events such as being hit or seeing someone chased being at the higher end of the frequencies. However, based on this analysis, two violent events (i.e., being home during a break in and witnessing a sexual assault) were eliminated from a subsequent revision of the My Exposure to Violence measure. Though these events were not predicted to be as extreme as being sexually assaulted or being shot, these items nonetheless were reported by participants to be experienced approximately at the same frequency and received high logit scores.

Further, construct validity was assessed by examining correlations of the My ETV measure with factors that Selner-O'Hagan et al. (1998) hypothesized are related to exposure to violence: age, race, gender, level of neighbour violence, and self-reported offending. As expected, they found: (a) younger participants reported being less exposed to violence than older participants; (b) African-American participants reported significantly more total exposure than White participants in the past year but not in lifetime; (c) males reported more total exposure to violence than females; (d) those who lived in high-crime neighbours reported more total exposure than those in low-crime neighbours; and (e) those who reported committing at least one violent event

(based on the Self Report of Offending), also reported more exposure to violence.

Since this preliminary study by Selner et al. (1998) has been published, there has been a further revision of the My Exposure to Violence measure. In this current revised version, another category of exposure to violence has been added (i.e., Violence Heard), and additional violent events have been added to the other two categories (Violence Seen and Victimization). The new category, Violence Heard, consists of five items: being told that someone the person knew had either been shot, been killed due to violence, been sexually assaulted, died suddenly, or committed suicide. Further, an additional item for the Violence Seen subscale is seeing someone badly hurt in an accident. The Victimization Subscale consists of additional two items: being in an accident where the person or someone else has been badly hurt and being in a natural disaster such as a tornado or forest fire. Study 1 administered this revised version of the My Exposure to Violence measure to participants since this was the set of instructions to the My ETV which were made available. This full instrument and instructions are provided in Appendix D. It is acknowledged, however, that some of the items in this revised version of the My ETV measure are extraneous to violence as defined for the purpose of the current research project (i.e., only interpersonal events of violence). Therefore Study 1 examined the My ETV measure both with and without these extraneous events. That is, analyses were conducted

with the full scale and the abbreviated version which eliminated non-interpersonal violence items.

Procedure

An eligible list of inmates at the federal penitentiary was compiled by screening offenders with the Offender Management System (OMS). The OMS is a computerized system currently used by Corrections Service of Canada as a tracking system on detailed information regarding the offender while supervised by Corrections Service of Canada. This offender information includes basic offender demographics, detailed offence history, and the institution-based and community-based case management of the offender. Excluded from this current research project were offenders placed in maximum-security, identified sexual offenders, inmates with mental health concerns, and inmates currently on segregation status. Sexual offenders were identified as those with either a previous or current conviction for a sexually-related offence. They were excluded due to the distinctiveness of this group from other offender types and due to the specific proactive nature of their offences. As well, inmates identified with mental health concerns or living in a specialized mental health unit were not included in this study, due to possible limited comprehension required for participation in Study 1, due to differing motivational and causal factors related to their offences, and due to differing environmental exposure in the institution. Finally, segregated inmates were excluded due to their lack of exposure to violence perpetrated

by others while incarcerated and due to limited accessibility to these offenders. From the 420 offenders incarcerated at the institution at the time that data was collected for Study 1, 228 offenders were eligible for this research project through this exclusion process.

Participants were randomly selected from the 228 eligible inmates at this institution and interviewed until the required number of subjects (i.e., 30) was obtained. Randomization was accomplished through the SPSS for Windows software program, under Select Cases: Random Sample function. This function generates a random sample of a user-specified number of cases. Initially thirty inmates were randomly selected with this procedure. When all offenders from this list were contacted but participation from less than 30 was obtained, another randomized list of thirty inmates was generated. Of forty adult male inmates approached, ten refused to participate (indicating a refusal rate of 25%).

Participants were individually brought to an interview room and asked to voluntarily participate in this study. Confidentiality issues were discussed and resolved prior to continuance with study participation. Those who agreed to participate were asked to complete and sign an informed consent form (Appendix E). The thirty male offenders who consented to participate were individually interviewed by the primary researcher (G.D.).

To control for a possible order of test effect, one half of the participants were administered the Hostile Attributions Inventory first and then Serin's

Vignettes. The other half of the participants were administered these measures in reversed order. All participants were administered My Exposure to the Violence measure last. This ordering of instrument administration was done to first establish some rapport with participants required to obtain the sensitive information regarding violence exposure from the My ETV measure. All instructions and instruments were verbally provided to each participant. The length of time to complete test administration was approximately one hour for each participant. At the end of the session, participants were provided with verbal (Appendix F) and written (Appendix G) debriefing.

Results

Hostile Attributions Inventory

Internal consistency for the subscales for the Hostile Attributions Inventory are provided in Table 1. The range of the Cronbach coefficient alphas was from .40 to .94. The internal consistency of the Intentionality Rating Subscales was low, ranging from .40 to .57. The coefficient alpha for the Intentionality Ratings for all sixteen scenarios was somewhat higher ($\alpha = .67$). Internal consistency was higher for Hostile Intent Ratings. These Cronbach coefficient alphas ranged from .51 for Hostile Scenarios to .71 for Benign Scenarios. The coefficient alpha for all sixteen scenarios was .81. Internal consistency was higher for Anger Ratings than for Hostile Intent Ratings or Intentionality Ratings, ranging from .83 to .94.

Table 1

Summary Statistics of the Hostile Attributions Inventory and Serin's Vignettes in Study 1

Scales	Mean	SD	Cronbach's Alpha
Intentionality Ratings			
HAI – Benign Scenarios (7 items)	3.55	1.37	.46
HAI – Ambiguous Scenarios (5 items)	3.93	1.44	.40
HAI – Hostile Scenarios (4 items)	5.83	1.56	.57
HAI – All Scenarios (16 items)	4.24	1.09	.67
Serin's Vignettes (6 items)	4.48	1.83	.73
Hostile Intent Ratings			
HAI – Benign Scenarios (7 items)	3.15	1.68	.71
HAI – Ambiguous Scenarios (5 items)	3.18	1.49	.56
HAI – Hostile Scenarios (4 items)	5.28	1.52	.51
HAI – All Scenarios (16 items)	3.69	1.32	.81
Serin's Vignettes (6 items)	3.84	1.81	.79
Anger Ratings			
HAI – Benign Scenarios (7 items)	4.21	1.91	.85
HAI – Ambiguous Scenarios (5 items)	3.73	1.98	.83
HAI – Hostile Scenarios (4 items)	4.20	2.10	.83
HAI – All Scenarios (16 items)	4.06	1.87	.94
Serin's Vignettes (6 items)	4.51	2.18	.86

Table 1 also provides the means and standard deviations for the Hostile Attributions Inventory subscales. A mean of 3.69 for Hostile Intent Ratings and a mean of 4.06 for Anger Ratings for all sixteen scenarios of the HAI indicate that the participants found these scenarios provocative. For the Intentionality Ratings, t-test analyses revealed that the mean Intentionality Rating for Hostile Scenarios was significantly higher than for either Benign Scenarios ($t[1,29] = -6.82, p < .001$) or Ambiguous Scenarios ($t[1,29] = 5.83, p < .001$). However there was no difference between the mean Intentionality Ratings for Ambiguous Scenarios and Benign Scenarios.

T-tests were conducted for each pair of scenario type for the Hostile Intent Rating to test mean differences. Results indicated that similar to Intentionality Ratings, the mean Hostile Intent Rating for Hostile Scenarios was significantly higher than for Benign Scenarios ($t[1,29] = -6.88, p < .001$) and Ambiguous Scenarios ($t[1,29] = 7.0, p < .001$). However, a significant difference was not found in the mean for Hostile Intent Ratings between Benign Scenarios and Ambiguous Scenarios. This differs from findings reported by Epps and Kendall (1995) who did find that Ambiguous Scenarios were rated higher for hostile intent than Benign Scenarios.

T-test results comparing scenario types also indicated that the mean Anger Rating in the Benign Scenarios ($t[1,29] = 2.22, p < .05$) and the Hostile Scenarios ($t[1,29] = 2.31, p < .05$) was significantly higher than in Ambiguous

Scenarios. However, there were no significant differences between the means Anger Rating between Benign Scenarios and Hostile Scenarios.

With the Hostile Attributions Inventory, criterion validity was examined by correlating Hostile Intent Ratings with Anger Ratings for each type of scenario. It was predicted that there would be a positive correlation for each type of scenario. These correlations are found in Table 2 and were found to be significant for all types of scenarios. That is, the correlation between Hostile Intent Ratings and Anger Ratings for Benign Scenarios was .66 ($p < .001$), for Ambiguous Scenarios was .54 ($p < .01$), and for Hostile Scenarios was .55 ($p < .01$).

Table 2 also provides correlations between ratings across different types of scenarios. Within the Hostile Intent Ratings, significant correlations were found between the different types of scenarios. For example, the Hostile Intent Ratings between Benign Scenarios and Hostile Scenarios was .44, between Benign Scenarios and Ambiguous Scenarios was .69, and between Hostile Scenarios and Ambiguous Scenarios was .41. Moreover, the correlations between the Anger Ratings for the three types of scenarios in the HAI were also significant: the correlation for the Anger Ratings between Benign Scenarios and Hostile Scenarios was .84, between Benign Scenarios and Ambiguous Scenarios was .82 and between Hostile Scenarios and Ambiguous Scenarios was .85. This suggests that Hostile Intent Ratings, and

Table 2

Intercorrelations of Hostile Intent Ratings and Anger Ratings for the Hostile Attributions Inventory and Serin's Vignettes in Study 1

		Hostile Intent Ratings				Anger Ratings		
		SAMB	HBEN	HHOS	HAMB	SAMB	HBEN	HHOS
Hostile Intent Ratings	HBEN	.55**						
	HHOS	.45*	.44*					
	HAMB	.48**	.69***	.41*				
Anger Ratings	SAMB	.66***	.42*	.51**	.40*			
	HBEN	.65***	.66***	.44*	.56**	.83***		
	HHOS	.48**	.42*	.55**	.45**	.78***	.84***	
	HAMB	.55**	.34	.47**	.54**	.79***	.82***	.86***

Note. SAMB = Serin's Vignettes; HBEN = Hostile Attributions Inventory–Benign Scenarios; HHOS = Hostile Attributions Inventory–Hostile Scenarios; HAMB = Hostile Attributions Inventory–Ambiguous Scenarios.

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

even more so, Anger Ratings, were highly consistent, regardless of the type of scenario.

Serin's Vignettes

Internal consistency for the subscales of Serin's Vignettes are provided in Table 1. The range of the Cronbach coefficient alphas was from .73 to .86, indicating acceptable levels of reliability. As seen in Table 2, the correlation between Hostile Intent Ratings and Anger Ratings for Serin's Vignettes was found to be .66 ($p < .001$). A mean of 3.84 for Hostile Intent Ratings and a mean of 4.51 for the Anger Ratings for all sixteen scenarios indicate that the participants found these scenarios provocative.

Comparison between Hostile Attributions Inventory and Serin's Vignettes

Comparisons were made for the three types of ratings (Intentionality, Hostile Intent and Anger) between the Hostile Attributions Inventory and Serin's Vignettes. T-test comparisons revealed that the mean Intentionality Rating for Serin's Vignettes was significantly higher than the mean ratings for Benign Scenarios of the HAI ($t[1, 29] = -3.14, p < .01$) and significantly lower than the mean ratings for Hostile Scenarios of the HAI ($t[1, 29] = 4.20, p < .001$). However, as expected, there were no differences between the mean Intentionality Rating for Serin's Vignettes and Ambiguous Scenarios of the HAI.

For Hostile Intent Ratings, the mean ratings for Serin's Vignettes were significantly higher than the mean ratings for Benign Scenarios ($t[1, 29] = -$

2.30, $p < .05$) and for Ambiguous Scenarios ($t[1, 29] = -2.13$, $p < .05$). This suggests that Ambiguous Scenarios in Serin's Vignettes were rated by the offenders as more provocative than Ambiguous Scenarios in the HAI. Moreover, as expected, Hostile Intent Ratings for Serin's Vignettes were significantly lower than those for Hostile Scenarios ($t[1, 29] = 4.44$, $p < .001$).

Participants had higher Anger Ratings for Serin's Vignettes than any of the scenarios in the Hostile Attributions Inventory. The mean Anger Rating for Serin's Vignettes was significantly higher than the mean rating for either Benign Scenarios ($t[1, 29] = -10.91$, $p < .001$), Ambiguous Scenarios ($t[1, 29] = -11.62$, $p < .001$), or Hostile Scenarios ($t[1, 29] = -10.75$, $p < .001$) or.

Intercorrelations between the subscales of the Hostile Attributions Inventory and Serin's Vignettes are presented in Table 2. For the Hostile Intent Ratings, Serin's Vignettes correlated significantly with all three types of scenarios in the HAI: correlation of .55 with Benign Scenarios, .45 with Hostile Scenarios, and .48 with Ambiguous Scenarios. This was also found with the Anger Ratings; Serin's Vignettes significantly correlated with Benign Scenarios ($r = .83$), Hostile Scenarios ($r = .78$), and Ambiguous Scenarios ($r = .79$) of the HAI.

Scenario Aggression Response Ratings

Inter-rater reliability of the 8-point scoring system of the Scenario Aggression Response (SAR) Ratings was examined. For this analysis, two judges independently scored the Scenario Aggression Response Ratings for

all responses provided by the participants for each of the sixteen scenarios in the Hostile Attributions Inventory and each of the six scenarios in Serin's Vignettes. One judge was the primary researcher of this study. The other independent judge was an undergraduate psychology student.

One method of assessing inter-rater reliability was similar to that used by VanOostrum and Horvath (1997). In this approach, the SAR scoring by each judge was totaled for each type of scenario, and then the subscores for Judge 1 were correlated with subscores for Judge 2. Correlations between the ratings of the two judges are given in Table 3. These significant correlations ranged from .84 to .96.

However, another approach to inter-rater reliability was used to examine in more detail the extent of agreement between the SAR Ratings made by Judge 1 and Judge 2. In total, each judge rated 660 responses (i.e., SAR responses to each of the 16 scenarios of the HAI and each of the 6 scenarios of Serin's Vignettes for each of the 30 participants). Extent of total agreement was represented by the percentage of ratings by Judge 1 that were exactly the same as Judge 2. Table 4 provides the percentage of agreement in the scoring for each type of scenario in the Hostile Attributions Inventory and Serin's Vignettes. It was found that total agreement in the scoring of Scenario Aggression Response responses was moderately achieved, ranging from 53.3 percent to 60.8 percent. Overall, perfect agreement between the two judges' ratings was achieved on 57.5 percent of

Table 3

*Inter-rater Reliability for Scenario Aggression Response Ratings in Study 1:
Correlation between ratings by Judge 1 and Judge 2 for each Scenario Type*

SAR Subscales	Correlation between Judge 1 and Judge 2 SAR Ratings
HAI – Benign Scenarios	.95***
HAI – Ambiguous Scenarios	.84***
HAI – Hostile Scenarios	.88***
HAI – All Scenarios	.96***
Serin's Vignettes	.94***

Note. SAR = Scenario Aggression Response.

*** $p < .001$.

Table 4

*Inter-rater Reliability for Scenario Aggression Response Ratings in Study 1:
Percentage of Total Agreement between Judge 1 and Judge 2 Ratings*

SAR Subscales	Number of Ratings	Percentage of Total Agreement
HAI – Benign Scenarios (7 items)	210	53.3
HAI – Ambiguous Scenarios (5 items)	120	60.7
HAI – Hostile Scenarios (4 items)	150	60.8
HAI – All Scenarios (16 items)	480	57.5
Serin's Vignettes (6 items)	180	58.0

Note. SAR = Scenario Aggression Response.

the HAI scenarios scored and 58 percent of Serin's Vignettes scored. Upon closer examination, 66 percent of the discrepant ratings occurred when one judge assessed the response as not at all aggressive whereas the other judge scored the response as aggressive to at least some extent.

A third approach for assessing inter-rater reliability of the Scenario Aggression Response Ratings was to calculate Cohen's Kappa. Results of these Kappa coefficients are provided in Table 5. A Cohen's kappa of .37 for all sixteen scenarios in the Hostile Attributions Inventory and a Cohen's kappa of .43 for Serin's Vignettes were found ($p < .001$). Although these coefficients were significant, they were not considered high. Further, Kappa's could not be computed for Hostile and Ambiguous Scenarios due to the empty cells in the data for analysis, as noted in Table 5.

Table 6 provides summary statistics for the Scenario Aggression Response Ratings for the HAI and Serin's Vignettes. These statistics were provided, based on Judge 1 ratings, Judge 2 ratings and an average between Judge 1 and Judge 2 ratings. For Judge 1 ratings, internal consistency was found to be moderately high for all ratings. All these Cronbach coefficient alphas were above .70, with the exception for Hostile Scenarios ($\alpha = .43$). However, for Judge 2 ratings, lower internal consistency was found for two ratings, namely for Ambiguous Scenarios ($\alpha = .49$) and Hostile Scenarios ($\alpha = .46$). When Judge 1 and Judge 2 ratings were averaged, internal consistency remained low for Hostile Scenarios ($\alpha = .49$).

Table 5

Inter-rater Reliability for Scenario Aggression Response Ratings in Study 1:

Cohen's Kappa for ratings by Judge 1 and Judge 2 for each Scenario Type

SAR Subscales	Number of Pairs		T	P
	of Ratings	Kappa		
HAI – Benign Scenarios	210	.31	7.46	.001
HAI – Ambiguous Scenarios	150	—		
HAI – Hostile Scenarios	120	—		
HAI – All scenarios	480	.37	13.17	.001
Serin's Vignettes	180	.43	10.59	.001

Note. SAR = Scenario Aggression Response. For Ambiguous Scenarios, Cohen's Kappa could not be calculated because there were no ratings of 5 (revenge or retaliation) by Judge 1 and no ratings of 4 (aggression towards an object); 5 (revenge or retaliation); or 6 (mild physical aggression) by Judge 2. For Hostile Scenarios, Cohen's Kappa could not be calculated because there were no ratings of 4 (aggression towards an object) by Rater 2.

Table 6

Summary Statistics of the Scenario Aggression Response Ratings in Study 1

SAR Subscales	Number of Items	Mean	SD	Cronbach's Alpha
Judge 1				
HAI – Benign Scenarios	7	.96	.95	.75
HAI – Ambiguous Scenarios	5	.81	.97	.71
HAI – Hostile Scenarios	4	1.13	1.03	.43
HAI – All Scenarios	16	.95	.94	.88
Serin's Vignettes	6	1.33	1.36	.75
Judge 2				
HAI – Benign Scenarios	7	1.26	.97	.77
HAI – Ambiguous Scenarios	5	1.10	.91	.49
HAI – Hostile Scenarios	4	1.48	1.22	.46
HAI – All Scenarios	16	1.26	.92	.85
Serin's Vignettes	6	1.50	1.26	.75
Average of Judge 1 and Judge 2				
HAI – Benign Scenarios	7	1.11	.95	.79
HAI – Ambiguous Scenarios	5	.95	.90	.64
HAI – Hostile Scenarios	4	1.30	1.09	.49
HAI – All Scenarios	16	1.11	.91	.88
Serin's Vignettes	6	1.42	1.29	.76

Note. SAR = Scenario Aggression Response.

In comparing the mean SAR Ratings among the three types of scenarios between Judge 1 and Judge 2, t-test analyses revealed that Judge 2 consistently rated the participants' responses as more aggressive than Judge 1. That is, the mean Scenario Aggression Response Rating by Judge 2 was significantly higher than the mean rating by Judge 1 for Benign Scenarios ($t[1, 29] = -5.33, p < .001$), Ambiguous Scenarios ($t[1, 29] = -3.05, p < .01$), and Hostile Scenarios ($t[1, 29] = -3.25, p < .01$). There were no differences in the SAR Ratings between Judge 1 and Judge 2 for Serin's Vignettes.

Table 7 provides correlations between SAR Ratings across different types of scenarios. These correlations were calculated using the average SAR Ratings between Judge 1 and Judge 2. All of these correlations were fairly high and significant. The SAR Ratings correlations between Benign Scenarios and Hostile Scenarios was .82, between Benign Scenarios and Ambiguous Scenarios was .84, and between Hostile Scenarios and Ambiguous Scenarios was .79. Further, the SAR Ratings for Serin's Vignettes correlated significantly with those ratings for Benign Scenarios ($r = .81$), Ambiguous Scenarios ($r = .84$) and Hostile Scenarios ($r = .84$). This suggests high consistency in the SAR Ratings, across the types of scenarios.

Criterion validity was examined by investigating the relationship of the Scenario Aggression Response (SAR) Ratings with Hostile Intent Ratings and with Anger Ratings. Again, the SAR Ratings used were those calculated by taking the average of the rating provided by Judge 1 and Judge 2. The SAR

Table 7

Correlations between Hostile Intent Ratings, Anger Ratings and Scenario Aggression Response—Judge Average Ratings in Study 1

		Scenario Aggression Response – Judge Average Ratings (SAR–JA)			
Subscales		HBEN	HHOS	HAMB	SAMB
Hostile Intent Ratings	HBEN	.48**	.29	.45*	.43*
	HHOS	.16	.27	.22	.26
	HAMB	.54**	.50**	.56**	.46*
	SAMB	.55**	.61***	.66***	.72***
Anger Ratings	HBEN	.73***	.67***	.66***	.70***
	HHOS	.51*	.67***	.50**	.63***
	HAMB	.57**	.68***	.64***	.66***
	SAMB	.59**	.67***	.69***	.73***
SAR–JA Ratings	HHOS	.82***			
	HAMB	.84***	.79***		
	SAMB	.81***	.84***	.84***	

Note. SAMB = Serin's Vignettes; HBEN = Hostile Attributions Inventory–Benign Scenarios; HHOS = Hostile Attributions Inventory–Hostile Scenarios; HAMB = Hostile Attributions Inventory–Ambiguous Scenarios.

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

Ratings correlated significantly with most of the Hostile Intent Ratings and Anger Ratings (see Table 7). For Benign Scenarios, the SAR Ratings significantly correlated with the corresponding Hostile Intent Ratings ($r = .48$, $p < .01$) and Anger Ratings ($r = .73$, $p < .001$). As well, for the Ambiguous Scenarios, the SAR Ratings significantly correlated with the Hostile Intent Ratings ($r = .56$, $p < .01$) and Anger Ratings ($r = .64$, $p < .001$). However, for Hostile Scenarios, the SAR ratings did not significantly correlate with the corresponding Hostile Intent Ratings ($r = .27$), but did correlate significantly with the Anger Ratings ($r = .67$, $p < .001$). For Serin's Vignettes, the SAR Ratings significantly correlated with Hostile Intent Ratings ($r = .72$, $p < .001$) and Anger Ratings ($r = .73$, $p < .001$).

My Exposure to Violence

With the My Exposure to Violence measure, twelve subscales were obtained, a set of four scales for each of the types of three violence exposure (i.e., Violence Seen, Violence Heard and Victimization). Half of these scores represent the violence to which participants were exposed throughout their lifetime, and the other half of these scores represent the violence to which participants were exposed in the past year. Additionally, each set of these scales were subdivided, to measure diversity and frequency of the violence exposure. Diversity, labeled "Ever," was based on asking the participant, "Have you ever experienced (a particular type of violence)." These scales

represent the total number of different violent events which participants endorsed being exposed to, within each type of violence exposure.

Frequency of violence exposure, within each type of violence exposure, labeled "Total Times" was based on the question, "How many times have you experienced incidents of (a particular type of violence)." Total times was based on a forced-choice, 5-point rating system of either never, once, two to three times, four to ten times, or more than ten times. Therefore, overall, there are twelve subscales: Violence Seen–Ever in Lifetime; Violence Seen–Total Times in Lifetime; Violence Seen–Ever in Past Year; Violence Seen–Total Times in Past Year; Violence Heard– Ever in Lifetime; Violence Heard–Total Times in Lifetime; Violence Heard–Ever in Past Year; Violence Heard–Total Times in Past Year; Victimization–Ever in Lifetime; Victimization–Total Times in Lifetime; Victimization–Ever in Past Year; and Victimization–Total Times in Past Year. Four other scales represent these subscores, combining the types of violence exposure: Total Exposure–Ever in Lifetime; Total Exposure–Total Times in Lifetime; Total Exposure–Ever in Past Year; Total Exposure–Total Times in Past Year.

Table 8 reveals the internal consistency of the subscales for the My ETV measure. The first two columns of Cronbach coefficient alphas for each subscale represents internal consistency when considering all 25 violent events of the My ETV, including the non-interpersonal violence items. First, internal consistency of Lifetime subscales were examined. Coefficient alphas

Table 8

Internal Consistency of My Exposure to Violence (My ETV) in Study 1

My ETV Subscales	All items		Interpersonal Violence Items	
	Number of Items	Cronbach's Alpha	Number of Items	Cronbach's Alpha
Violence Seen				
Lifetime–Ever	10	.83	9	.82
Lifetime–Total Times	10	.83	9	.82
Past Year–Ever	10	.78	9	.77
Past Year–Total Times	10	.76	9	.75
Violence Heard				
Lifetime–Ever	5	.76	3	.79
Lifetime–Total Times	5	.74	3	.70
Past Year–Ever	5	.73	3	.73
Past Year–Total Times	5	.70	3	.62
Victimization				
Lifetime–Ever	10	.76	8	.75
Lifetime–Total Times	10	.74	8	.75
Past Year–Ever	10	.51	8	.46
Past Year–Total Times	10	.41	8	.45

(table continues)

My ETV Subscales	All items		Interpersonal Violence Items	
	Number of Items	Cronbach's Alpha	Number of Items	Cronbach's Alpha
Total Exposure				
Lifetime—Ever	25	.88	20	.87
Lifetime—Total Times	25	.89	20	.88
Past Year—Ever	25	.85	20	.85
Past Year—Total Times	25	.85	20	.83

for Lifetime exposure to violence ranged from .74 to .83 for these subscales. Higher internal consistency was found for the Violence Seen subscales (that is $\alpha = .83$ for Ever and Total Times subscales of Violence Seen) than for the other types of exposures to violence (i.e., $\alpha = .76$ for Ever and $\alpha = .74$ for Total Times for both Violence Heard and Victimization). When all violent events were considered, that is, regardless of type of exposure (Seen, Heard or Victimization), internal consistency for the Total Exposure in Lifetime subscales was even higher. That is, the coefficient alphas were .88 for Total Exposure—Ever in Lifetime for all items and .89 for Total Exposure—Total Times in Lifetime for all items of the My ETV measure.

When examining exposure to violence for the Past Year subscales, lower internal consistency was found. The Cronbach alphas ranged from .41 to .78. Internal consistency was at acceptable levels for Violence Seen ($\alpha = .78$ for Ever and $\alpha = .76$ for Total Times) and Violence Heard ($\alpha = .73$ for Ever and $\alpha = .70$ for Total Times). However, low Cronbach alphas were found for Victimization ($\alpha = .51$ for Ever and $\alpha = .41$ for Total Times). Interestingly, the internal consistency was high when all 25 items were considered on the My ETV for exposure to violence in the past year ($\alpha = .85$ for Ever and Total Times).

Closer examination of the items in the My ETV measure revealed that five violent events were not true reflections of interpersonal “violence” which was in fact of particular interest for this research project. In the Violence Seen

subscale, the non-interpersonal violence item was "seeing a serious accident where someone else was hurt badly or died." For the Violence Heard subscale, the two non-interpersonal violence items were being told "someone you knew died suddenly" or "someone you knew had killed themselves." As well for the Victimization subscale the two non-interpersonal violence items were "being in a natural disaster like a fire, flood, tornado or earthquake" and "being in a serious accident where you were hurt." Psychometric properties of the My ETV measure with these particular non-interpersonally violent events were not found in research literature of the My ETV measure, and thus comparisons were not possible.

Once these items were removed from the subscales, internal consistency of the My ETV subscales was re-analyzed. Results of these Cronbach alphas are found in Table 8, along with the number of items considered in each subscale, under the heading "Interpersonal Violence Items." As indicated in this table, internal consistency patterns remained similar to those found for the subscales when considering all 25 items of the measure. Internal consistency was found higher for Lifetime subscales than for Past Year subscales. Further, higher internal consistency was found for Violence Seen than for Violence Heard and Victimization. The Total Exposure subscales remained high, ranging from .83 to .88.

The next examination of the My Exposure to Violence measure pertain to the prevalence rates of the exposure to specific violent events. Prevalence

rates for offenders in Study 1 were compared with those provided by Selner-O'Hagan et al. (1998) in their preliminary study of the My ETV with eighty participants (49 males and 31 female) from the community. However, the study by Selner-O'Hagan et al. did not provide prevalence rates for non-interpersonal violent events seen (i.e., seeing someone in an accident) or victimized by (i.e., being in an accident or a natural disaster) or for any of the violent events heard, and therefore these comparisons were not made.

The first comparison between the two studies examined the Lifetime subscales. The percentage of participants from each study who indicated that they "ever" experienced each specific violent event in their lifetime are provided in Table 9. Chi-square analyses were conducted for prevalence rates of each type of violent event exposure. As expected, results indicated that for Violence Seen—Ever in Lifetime items, significantly more offenders from Study 1 reported seeing the following events than the participants (i.e., nonoffenders) from the Selner-O'Hagan et al. study: seeing someone being attacked with a weapon (73% versus 51%), shot (57% versus 28%), killed (53% versus 23%) and threatened (80% versus 50%). There was a trend indicating that more participants from Study 1 (i.e., 50%) also reported seeing someone being shot at than those from the Selner-O'Hagan et al. study (30%, $p = .051$). There was no difference in the prevalence rates between the two studies for seeing someone being chased or hit, or finding a dead body.

Table 9

Comparison of Lifetime Violence Exposure between Study 1 and Selner et al. (1998)

	Lifetime Exposure (%)		
		Selner et al.	
My ETV Subscales	Study 1 (<i>n</i> = 30)	(1998) (<i>n</i> = 80)	<i>p</i> level
Violence Seen			
Person chased	77	65	.242
Person hit	93	88	.506 ^a
Person attacked w/weapon	73	51	.037
Someone shot	57	28	.004
Someone shot at	50	30	.051
Gunfire nearby	60	77	.066
Someone killed	53	23	.002
Someone threatened	80	50	.004
Found dead body	27	36	.343
Seen Accident	67	—	—
Violence Heard			
Told someone shot	63	—	—
Told someone killed	70	—	—
Told someone raped	67	—	—
Told someone committed suicide	80	—	—
Told someone died suddenly	63	—	—

(table continues)

	Lifetime Exposure (%)		
		Selner et al.	
My ETV Subscales	Study 1 (<i>n</i> = 30)	(1998) (<i>n</i> = 80)	<i>p</i> level
Victimization			
Chased	57	43	.184
Hit	90	68	.017
Attacked with weapon	67	28	.000
Shot	10	5	.388 ^a
Shot at	40	18	.013
Sexually assaulted	10	14	.754 ^a
Threatened	73	43	.004
In serious accident	53	—	—
Natural disaster	30	—	—

Note. My ETV = My Exposure to Violence. Percentages are unavailable for some violent events in Selner et al. (1998) study because they did not report these data in their published study.

^a Fisher's Exact Test was used since frequency in one of the cells in the 2X2 table was less than 5.

For Victimization–Ever in Lifetime items, participants in Study 1 reported more victimization than those from the Selner-O'Hagan et al. study. Chi-square analyses revealed that significantly more Study 1 participants reported being hit (90% versus 68%) , attacked with a weapon (67% versus 28%), shot at (40% versus 18%) and threatened (73% versus 43%) than the participants from the Selner-O'Hagan et al. study. No differences were found between the two studies for prevalence rates of being chased, shot or sexually assaulted.

Next, prevalence rates for violence exposure in the past year were compared between participants in Study 1 and those in the Selner-O'Hagan et al. study. Findings for the past year comparisons were in the opposite direction to that found for comparisons for the lifetime prevalence rates between the two studies. These comparisons, along with the level of significance from the Chi square analyses comparing the two studies are found in Table 10. For Violence Seen–Past Year, it was revealed that participants from the Selner O'Hagan et al. study reported more exposure to violence than participants from Study 1. That, is, significantly more participants from the Selner O'Hagan et al. study reported seeing someone getting chased (58% versus 23%), for shot at (21% versus 3%) in the past year than Study 1 participants. Furthermore, significantly more participants from the Selner O'Hagan et al. study reported hearing gunfire nearby (66% versus 7%) and finding a dead body (24% versus 0%) in the past year than

Table 10

Comparison of Violence Exposure in the Past Year between Study 1 and Selner et al. (1998)

My ETV Subscales	Past Year Exposure (%)		<i>p</i> level
		Selner et al.	
	Study 1 (<i>n</i> = 30)	(1998) (<i>n</i> = 80)	
Violence Seen			
Person chased	23	58	.001
Person hit	53	79	.209
Person attacked w/weapon	27	31	.640
Someone shot	3	16	.107 ^a
Someone shot at	3	21	.022 ^a
Gunfire nearby	7	66	.000
Someone killed	0	11	.110 ^a
Someone threatened	57	36	.053
Found dead body	0	24	.003
Seen Accident	3	—	—
Violence Heard			
Told someone shot	13	—	—
Told someone killed	20	—	—
Told someone raped	20	—	—
Told someone committed suicide	27	—	—
Told someone died suddenly	40	—	—

(table continues)

My ETV Subscales	Past Year Exposure (%)		<i>p</i> level
	Study 1 (<i>n</i> = 30)	Selner et al. (1998) (<i>n</i> = 80)	
Victimization			
Chased	7	23	.055
Hit	33	31	.835
Attacked with weapon	7	15	.343 ^a
Shot	0	4	.561 ^a
Shot at	3	8	.671 ^a
Sexually assaulted	0	3	.999 ^a
Threatened	27	20	.451
In serious accident	7	—	—
Natural disaster	0	—	—

Note. My ETV = My Exposure to Violence. Percentages are unavailable for some violent events in Selner et al. (1998) study because they did not collect this data in their published study.

^a Fisher's Exact Test was used since frequency in one of the cells in the 2X2 table was less than 5.

Study 1 participants. Although a higher percentage of participants from Study 1 indicated that they saw someone being threatened than those from the Selner O'Hagan et al. study (57% versus 36%), the p level did not reach significance. For Victimization, no differences were found, though a higher percentage of participants from the Selner O'Hagan et al. study reported being chased in the past year than those from Study 1 (23% versus 7%).

Another measure of extent of previous exposure to violence was the frequency of exposure to the violent events. Table 11 provides the number of times participants reported being exposed to specific violent events throughout their lifetime. For Violence Seen–Total Times in Lifetime, a large percentage of participants indicated that they were highly exposed to seeing someone being hit (i.e., 70% of the participants reported seeing someone being hit more than ten times in their lifetime), and seeing someone being seriously threatened (i.e., 60% reported seeing this more than ten times in their lifetime).

Participants reported much less lifetime exposure to violent events in the Violence Heard and Victimization subscales. Not more than five participants reported hearing of violence more than ten times for any of the violent events. Five participants reported hearing that someone they knew had died suddenly. However, of the interpersonal violent events, only three participants indicated hearing more than ten times in their lifetime that someone they knew were killed. Most of the participants who indicated

Table 11

Frequency of Lifetime Violence Exposure in Study 1

My ETV Subscales	Lifetime Exposure (%)				
	Never	Once	2-3x	4-10x	>10x
Violence Seen					
Someone chased	23.3	10.0	20.0	13.3	33.3
Someone hit	6.7	3.3	3.3	16.7	70.0
Someone attacked with weapon	26.7	0	6.7	26.7	40.0
Someone shot	43.4	16.7	26.7	6.7	6.7
Someone shot at	50.0	16.7	3.3	23.3	6.7
Gunfire nearby	40.0	3.3	13.3	20.0	23.3
Someone killed	46.7	20.0	20.0	10.0	3.3
Someone threatened	20.0	0	10.0	10.0	60.0
Found dead body	73.3	13.3	3.3	3.3	6.7
Seen accident	33.3	16.7	33.3	13.3	3.3
Violence Heard					
Told someone shot	36.7	20.0	23.3	10.0	6.7
Told someone killed	30.0	23.3	16.7	20.0	10.0
Told someone raped	33.3	16.7	16.7	33.3	0
Told someone committed suicide	20.0	26.7	26.7	13.3	13.3
Told someone died suddenly	36.7	13.3	13.3	20.0	16.7

(table continues)

My ETV Subscales	Lifetime Exposure (%)				
	Never	Once	2-3x	4-10x	>10x
Victimization					
Chased	43.3	10.0	16.7	13.3	16.7
Hit	10.0	6.7	10.0	23.3	50.0
Attacked with weapon	33.3	16.7	16.7	13.3	20.0
Shot	90.0	10.0	0	0	0
Shot at	60.0	13.3	13.3	6.7	6.7
Sexually assaulted	90.0	6.7	0	0	3.3
Threatened	26.7	6.7	10.0	13.3	43.3
In serious accident	46.7	33.3	10.0	10.0	0
Natural disaster	70.0	16.7	13.3	0	0

hearing of violence perpetrated against someone only reported hearing a specific violent either once or two to three times in their lifetime. Forty-three percent reported hearing one to three times that someone they knew had been shot; 40% reported hearing one to three times that someone had been killed; and 33.4% reported hearing one to three times that someone had been sexually assaulted.

High frequency violent events that participants reported being victims to throughout their lifetime consisted of being hit (50% reported this occurred more than ten times) and being threatened (43.3% reported this occurred more than ten times). On the other hand, low frequency violent events in the Victimization subscale were being shot (only 10% reported having this occurred to them once), being sexually assaulted (only 10% reported this occurring to them in their lifetime), and being in a natural disaster (only 30% reported that this occurred to them one to three times in their lifetime).

Table 12 presents the frequency distribution of exposure to violence in the past year. It may be gleaned from this table that not much violence was reported occurring in the past year by the participants. Moreover, if participants did report being exposed to a specific type of violence, in the past year the frequency was quite low. For Violence Seen, majority of the participants reported never seeing someone being chased (77%), attacked with a weapon (73%), shot (98%), shot at (97%), or killed (100%). Further, 93 percent reported not hearing gunfire nearby, all reported not finding a dead

Table 12

Frequency of Violence Exposure in the Past Year in Study 1

My ETV Subscales	Lifetime Exposure (%)				
	Never	Once	2-3x	4-10x	>10x
Violence Seen					
Someone chased	76.7	10.0	10.0	3.3	0
Someone hit	46.7	0	13.3	33.3	6.7
Someone attacked with weapon	73.3	3.3	20.0	0	3.3
Someone shot	97.7	3.3	0	0	0
Someone shot at	96.7	0	3.3	0	0
Gunfire nearby	93.3	0	0	6.7	0
Someone killed	100.0	0	0	0	0
Someone threatened	43.3	3.3	20.0	10.0	23.3
Found dead body	100.0	0	0	0	0
Seen accident	96.7	3.3	0	0	0
Violence Heard					
Told someone shot	86.7	6.7	3.3	0	3.3
Told someone killed	80.0	16.7	3.3	0	0
Told someone raped	80.0	13.3	3.3	3.3	0
Told someone committed suicide	73.3	10.0	13.3	3.3	0
Told someone died suddenly	60.0	26.7	10.0	3.3	0

(table continues)

My ETV Subscales	Lifetime Exposure (%)				
	Never	Once	2-3x	4-10x	>10x
Victimization					
Chased	93.3	3.3	3.3	0	0
Hit	66.7	16.7	13.3	3.3	0
Attacked with weapon	93.3	3.3	0	3.3	0
Shot	100.0	0	0	0	0
Shot at	96.7	3.3	0	0	0
Sexually assaulted	100.0	0	0	0	0
Threatened	73.3	6.7	10.0	6.7	3.3
In serious accident	93.3	6.7	0	0	0
Natural disaster	100.0	0	0	0	0

body, and 97 percent reported not being in a serious accident in the past year. Participants only reported seeing someone being hit or threatened with some frequency within the last year. In fact 23 percent reported seeing someone threatened more than ten times in the past year.

For Violence Heard within the past year, again majority of the participant did not report hearing of violence. More than 80% of the participants reported not hearing of interpersonal violence in the past year. Only one participant reported hearing of violence of a specific type more than ten times (i.e., being told that someone they knew had been shot).

For Victimization in the past year, majority of the participants again reported low frequency of victimization. Over 90% reported not being chased, attacked with a weapon, shot, shot at, sexually assaulted, in a serious accident or in a natural disaster. Very few participants reported being victim to a specific type of violence more than three times in the past year. Only one participant reported being threatened more than ten times in the past year, being hit four to ten times, and being attacked four to ten times.

One last examination of the psychometric properties of the My Exposure to Violence measure was that of construct validity. As evidence of construct validity, Selner O'Hagan et al. (1998) examined the extent to which exposure to violence was related to age, gender, race, violence offending, and neighborhood crimes. As predicted, they found that more exposure to violence was significantly correlated to participants who were older, male and

African Americans, reported perpetrating more violence, and lived in higher crime areas. Therefore, it was predicted that participants in Study 1 who reported more exposure to violence would be older and have more official violent convictions. Table 13 presents the correlations between each Total Times subscale of the My Exposure to Violence measure (defined as the total number of violent incidents participants reported being exposed to) with age of the participants at the time of administration of the My ETV measure and with number of violent offences participants were convicted of either prior to or current to the sentence they were serving. Correlations were calculated for exposure to violence both in the lifetime and in the past year. For exposure in the lifetime, age and violent offence history did not correlate to any of the types of exposures (i.e., Seen, Heard, or Victimization). For exposure to violence in the past year, there was an inverse and significant correlation between age and Violence Seen and Victimization. That is, younger participants reported seeing and being victim to violence more often than older participants, in the last year. There was no significant correlation between violence exposure in the past year and violent convictions.

Table 13

*Correlations between Prior Exposure to Violence, Age and Violent**Convictions in Study 1*

My ETV – Total Times Subscales	Age	Number of Prior and Current Violent Convictions
Lifetime Exposure		
Violence Seen	-.27	.25
Violence Heard	-.11	.22
Victimization	-.29	.20
Past Year Exposure		
Violence Seen	-.45*	.22
Violence Heard	-.27	.22
Victimization	-.48**	.09

* $p < .05$. ** $p < .01$.

Discussion

The purpose for Study 1 was to provide information on the psychometric properties of some of the measures for use in Study 2 with federally-incarcerated adult male offenders. Based on the results from Study 1, investigation of the hypothesized relationships between precipitating factors, hostile attribution bias, anger and aggression was enabled. The following is a discussion of how the Hostile Attributions Inventory, Serin's Vignettes, the Scenario Aggression Response Ratings, and the My Exposure to Violence measure was to be applied in Study 2, along with limitations of Study 1.

Hostile Attributions Inventory

Results from Study 1 suggested that the Hostile Attributions Inventory is a reliable and valid measure for use with federally-incarcerated adult male offenders. Adequate internal consistency was found for the Hostile Intent Ratings as a measure of hostile attributions. Moreover, high internal consistency was found for all Anger Ratings. However, low internal consistency was found for the Intentionality Ratings for all three types of scenarios. With this finding and due to the fact that information from the Intentionality Rating was not required to test the hypotheses in Study 2, it was decided that for Study 2, these ratings would not be used in further analyses.

It was also found that for the Hostile Attributions Inventory, in comparing the mean Hostile Intent Ratings across the three types of

scenarios, results were similar to that for nonoffender samples. First, the mean Hostile Intent Ratings and Anger Ratings for all sixteen scenarios indicated that adult male offenders found these scenarios to be provocative. Further, adult male offenders attributed hostile intent in people's actions more when the behaviors are hostile than ambiguous or benign. However, unlike findings from Epps and Kendall (1995), differences in the mean Hostile Intent Ratings were not found between Ambiguous and Benign Scenarios. For Anger Ratings, the adult male offenders indicated that they would be more angry to Hostile Scenarios than Ambiguous Scenarios, and more angry to Ambiguous Scenarios than Benign Scenarios. However, there were no differences in the mean Anger Ratings between Hostile and Benign Scenarios. Overall, differences in Hostile Intent Ratings between different scenario types suggest that subsequent studies on hostile attributions among offenders should entail an examination of all three types of scenarios.

Criterion validity for the HAI for adult male offenders was also adequately demonstrated with results from Study 1. The significant positive correlations between Hostile Intent Ratings and Anger Ratings for the three scenario types suggested that the higher the participants rated the hostile intent of the actions of the other person in the scenarios, the more likely they indicated that they would become more angered if such incidents occurred to them.

As well, significant correlations were found between each type of rating (Hostile Intent and Anger), regardless of the type of scenario. This would suggest a consistency in these ratings. Interestingly, inter-correlations of Anger Ratings for the three types of scenarios were higher than those inter-correlations of Hostile Intent Ratings for the three types of scenarios. The high inter-correlations of the Anger Ratings for the three types of scenarios indicate that male offenders are in relative standing to their level of anger consistently across the three scenarios. This consistency in ratings is more evident in anger ratings than with attributing hostile intent to others' actions across the different scenario types.

Based on the examined psychometric properties of the Hostile Attributions Inventory, it appears to be a valid and reliable measure for use with federally-incarcerated adult male offenders. Therefore, for Study 2, the HAI was used as a measure of hostile attribution bias. As well, no further changes to the administration of the HAI measure were made in Study 2.

Serin's Vignettes

Study 1 also found that Serin's Vignettes had acceptable reliability and validity as a measure of hostile attributions. Internal consistency reached acceptable levels for the Hostile Intent Ratings and Anger Ratings. The moderately high mean Hostile Intent Ratings and Anger Ratings suggest that these scenarios were found to be provocative to the adult male offenders. As well, the significant correlation between the mean Hostile intent Ratings and

Anger Ratings for Serin's Vignettes suggests criterion validity. Results from Study 1 indicate that, overall, Serin's Vignettes appear to be useful in examining hostile attributions among adult male offenders. However, significant is that the investigation of hostile attribution bias among adult male offenders is limited with Serin's Vignettes in that this measure does not have scenarios which are Benign or Hostile.

The purpose of the comparisons between ratings from the Hostile Attributions Inventory and Serin's Vignettes was to ascertain whether either or both measures were necessary for Study 2. If ratings from Serin's Vignettes were significantly different than those provided by the Hostile Attributions Inventory, this may suggest that adult male offenders make hostile attribution biases differently in offender-specific situations and nonoffender-specific situations. Hence, both measures would be necessary. As well, if there were significant differences between ratings from Benign and Hostile in the HAI and ratings from Serin's Vignettes, this would suggest that adult male offenders differentially attribute hostile intent, dependent upon the type of scenario presented. Hence the examination of the HAI with adult male offenders would be deemed beneficial. It was predicted that, based on research literature on other populations such as adolescents and nonoffender adults, (a) adult males offenders would differentially rate hostile intent and anger for the three types of scenarios; and (b) adult male offenders would

rate hostile intent in Ambiguous Scenarios higher in both the HAI or Serin's Vignettes than in Benign Scenarios but lower than in Hostile Scenarios.

In comparing the means of the Intentionality Ratings between Serin's Vignettes and the three scenario types in the HAI, the mean rating from Serin's Vignettes were found to be significantly higher than the mean ratings for Benign Scenarios, lower than those for the Hostile Scenarios, and not different from those for Ambiguous Scenarios. Further, for the Hostile Intent Ratings, the mean rating for Serin's Vignettes was higher than those for Benign and Ambiguous Scenarios, but lower than those for Hostile Scenarios. Overall, there were no difference in the mean Hostile Intent Rating between Serin's Vignettes and the mean rating across all sixteen scenarios combined. Finally, for the Anger Ratings, the mean rating for Serin's Vignettes was significantly higher than those for any of the scenario types in the Hostile Attributions Inventory.

Correlational analysis between the HAI and Serin's Vignettes revealed that construct validity for the Hostile Attributions Inventory for use with adult male offenders appears supportive, given the significant correlations with the Serin's Vignettes which has been shown applicable for such populations.

Given that the Hostile Attributions Inventory had three types of scenarios (i.e., Benign, Ambiguous and Hostile) with which to measure hostile attributions, whereas scenarios in Serin's Vignettes were only ambiguous, it was determined that a more thorough examination of hostile attributions

among adult male offenders was possible with the HAI. As well, from preliminary analyses, Serin's Vignettes did not appear to provide any additional information than which could be obtained from the Hostile Attributions Inventory. Therefore, the Serin's Vignettes measure was not used in Study 2.

Scenario Aggression Response Ratings

Results from the Scenario Aggression Response (SAR) Ratings were less encouraging. First, less than adequate inter-rater reliability in the scoring of the SAR Ratings was found. Though the correlations between the SAR Ratings for Judge 1 and Judge 2 were fairly high for the different types of scenarios, total agreement in the ratings and Cohen's Kappa results suggested that this method of obtaining a measure of aggression from the scenarios was not adequately reliable.

Moreover, moderate levels of internal consistency were achieved for the Scenario Aggression Response Ratings for each scenario type of the HAI as well as for Serin's Vignettes. In comparing the mean SAR Ratings between Judge 1 and Judge 2, t-test analyses revealed that Judge 2 consistently rated the participants' responses as more aggressive than Judge 1.

In examining criterion validity, the SAR Ratings were found to correlate significantly with Hostile Intent Ratings and Anger Ratings for the Ambiguous and Benign Scenarios, but not for Hostile Scenarios. However, the SAR Ratings significantly correlated with the corresponding Anger Ratings for all

three types of scenarios in the HAI. For Serin's Vignettes, the SAR Ratings significantly correlated with both Hostile Intent Ratings and Anger Ratings.

Some difficulties were present in obtaining the responses for the SAR Ratings. During data collection, it was observed that participants had difficulty with providing a specific response. Participants often required prompting from the primary researcher for a specific response which entailed action. Hence the results found for the SAR Ratings may be a reflection of this observation. Given the problematic reliability of the SAR Ratings, interpretations to any of the significant results found in Study 1 could be suspect. Therefore, it was determined that a more structured, reliable, and valid method of obtaining a measure of aggression was required for Study 2.

My Exposure to Violence

High internal consistency was found for the My Exposure to Violence measure for the Lifetime Subscales. Moreover, high internal consistency was found for these subscales, both with and without non-interpersonal violence items. These results suggest that the reliability of the My ETV scale without the non-interpersonal violent items remained high and adequate for representing lifetime violence exposure.

In comparing the prevalence rates of exposure to violence between the adult male offenders in Study 1 and adult nonoffenders in the Selner O'Hagan et al., several differences were found. Significantly more offenders reported seeing someone being attacked with a weapon, shot, killed or seriously

threatened in their lifetime than nonoffenders. As well significantly more offenders reported being hit, attacked with a weapon, shot at or seriously threatened in their lifetime than nonoffenders.

However, results from the Past Year subscales were vastly different. First, lower internal consistency was found. Reliability of these subscales were lower than those found by Selner O'Hagan et al. (1998). Second, the prevalence rates among the offenders in Study 1 for violence exposure in the past year were much less than that found with nonoffenders in the Selner O'Hagan et al. study. In fact, results indicated that significantly less offenders reported seeing someone being chased, shot at, or threatened in the past year than nonoffenders. Further, significantly less offenders reported hearing gunfire nearby or finding a dead body. Interestingly, no significant differences were found between the two groups for victimization in the past year.

Several explanations may account for the results in the comparisons made between the groups for seeing violence in the past year. One suggestion is that adult male offenders who have been living in a medium-security federal institution for the past year may have been actually exposed to less violence than nonoffenders living in the community. There may have been less opportunities to the witnessing and victimization of violence while incarcerated. Another consideration for the differences found could be that there were differences in characteristics of these two samples. In Selner-

O'Hagan et al.'s study, 39% were females, and 44% were younger than 18 years of age (i.e., as young as 9 years old).

Differences in the past year prevalence rates for the two studies could also be accounted for by the possibility that participants in Study 1 were less likely to report witnessing violence that occurred while incarcerated in the institution. The deliberate under-reporting could be due to several reasons. Offenders may be hesitant to report violence that occurs within an institution. These offenders may perceive retaliation from other offenders if it was determined that they had reported witnessing violence which was still under investigation or unsolved by correctional staff. Moreover, they would less likely to report specific violence exposure if their well-being was perceived to be in jeopardy within the institution. Alternatively, some offenders may have developed an offender code of silence to the occurrences of violence in an institution and thus may be reluctant to share this information. This may be more likely in the cases of more serious violence which could be deemed an indictable offence (e.g., seeing someone killed), or deemed an institutional infraction (e.g., assault on another inmate).

Lastly with the My Exposure to Violence, construct validity was briefly examined by correlating the subscales with age and prior history of violent offending. For the Lifetime subscales (Ever and Total Times), age did not correlate to any of the types of exposures (i.e., Seen, Heard, or Victimization). However, Violence Heard significantly correlated to total number of prior and

current violent convictions. For violence exposure in the past year, it was found that younger participants reported seeing and being victim to violence more than older participants. This may again be reflective of hardened "code of silence" attitudes by older offenders who have been incarcerated for longer periods of time. But there was no significant relationship between violence exposure in the past year and violent convictions.

Overall, it is acknowledged that there are some problems with the My ETV instrument as a measure of prior exposure to violence. The My ETV measure is a fairly new instrument in the research of past exposure to violence. Much less is known of its full use with adult offenders. Study 1 was only a preliminary investigation. Second, it is clear that there is some diversity in the events in each category (Seen, Heard, Victimization). Some of these events may be deemed to be more severe forms of violence than others (e.g., being chased versus being shot or sexually assaulted). Moreover, these items are not weighed in any manner. Therefore severity of violence is not reflected in the scoring of this instrument. Hence, the lack of weight to these events does not address the differential impact that each event may have on a person (e.g., the impact of seeing someone chased versus seeing someone killed). Overall, it is acknowledged that the My ETV is only a crude approximation of exposure to violence. However, despite this, it is also recognized that this is currently the best measure thus far to measure past exposure to violence for the purposes of Study 2. As well, there is some

evidence of adequate psychometric properties for the My Exposure to Violence measure to deem it applicable for use with adult male offenders.

However, prior to the use of the My ETV in Study 2, some changes were required. First, eliminated from the administration of the My ETV in Study 2 were questions regarding where the violence occurred and to whom. This was done because such information was not required to test the hypotheses of interest in Study 2.

As well, it was found in Study 1 that in asking frequency questions (i.e., how many times a specific type of violent event occurred), participants were remarkably able to initially respond with a specific number of times, even when the number of incidents reported was relatively high. Therefore, to obtain a more precise measure of frequency, participants in Study 2 were asked exactly how many times they experienced a specific violent event rather than to provide a response from an ordinal scale. Moreover, due to the concerning results found for the Past Year subscales, this information was not collected in Study 2.

Study 1 Limitations

In examining the procedures used in Study 1, there were some problems noted. Participants were interviewed, albeit alone, but in an environment which may not be most conducive to being private and comfortable for the participants. Institutional space availability was at a premium, and therefore the only interview space provided was at the front of

the institution. Of those participants who refused to participate but willing at least to speak with the primary researcher, it was frequently expressed that it was a common perception among inmates that some inmates who enter into that specific area where Study 1 interviews were undertaken, were being interviewed by institutional security staff regarding institutional incidents. Moreover, sometimes the specific interview room provided had large windows which were accessible to visitors to the institution and correctional officers who would sometimes peer into the interview room. Therefore, it is suggested that there may have been a participant selection process for those who did consent to participate. Therefore, for Study 2, arrangements were made to have the interviews conducted in a more confidential and nonthreatening place within the institution.

CHAPTER III: Study 2

Purpose of Study 2

Study 2 consisted of testing the specific hypotheses and the proposed model of affective aggression which were described in Chapter I. Briefly, relationships between factors related to aggression were of interest. More specifically, it was hypothesized that psychopathy is positively correlated with prior exposure to violence and hostile attribution bias. Further, it was hypothesized that past exposure to violence is also positively related to hostile attribution bias. It was hypothesized that these relationships would be demonstrated in a context not necessarily offender-specific, but within general situations of provocation. Hostile attribution biases were hypothesized to be positively correlated with state anger. In turn, it was hypothesized that this affect of anger is positively correlated with aggressive behavior.

As the proposed model in Figure 2 indicated, further hypotheses were based on the direct and indirect contributions of these four factors (i.e., past exposure to violence, psychopathy, hostile attribution bias and state anger) on affective aggression. First, it was proposed that there are both direct and indirect effects of prior exposure to violence and psychopathy on aggression. The indirect effects were proposed to be mediated through hostile attributions and anger. Further it was proposed that hostile attributions would have an indirect effect on aggression with anger as the mediating variable. Finally, it was proposed that anger would have a direct effect on aggression.

Method

Participants

Seventy adult male offenders incarcerated at a medium-security Canadian federal penitentiary in the Prairies Region voluntarily participated in this study. Fourteen (17%) offenders declined to participate. No offenders withdrew from the study once commencing their participation.

Forty percent of the participants were identified by the Offender Management System (OMS) as Caucasian ($n = 28$), whereas the remaining sixty percent were either Metis ($n = 8$) or Aboriginal ($n = 34$). The mean age of the offenders was 31.5 years ($SD = 9.5$ years), with a range from 18 to 63 years. Forty-five (64.3%) participants were single, three were divorced (4.3%) and one was widowed (1.4%). Of the remaining twenty-one (30%) participants currently in a relationship, seventeen were involved in a common-law relationship and four were married.

The range of sentence length the participants were currently serving was from two years to life imprisonment. Seventeen participants were currently serving a life sentence. Of the remaining 53 participants, the sentences ranged from 2 years to 22.49 years, with a mean of 5.97 years.

Slightly more than half of the participants ($n = 37$) were currently serving their first federal term of imprisonment. A federal prison term is identified in the Criminal Code of Canada as a sentence of two years or more. Ten participants (14.3%) were serving their second term and fourteen (20%)

were serving their third term. The remaining nine (12.9%) had served at least four federal terms.

Types of violent and nonviolent charges and convictions were coded. Detailed information of these types are described later in the Measures section of this chapter. This information was obtained by reviewing the official criminal history provided on the CPIC (Canadian Police Information Centre; a RCMP official database of all previous and current offences), institutional case management files, and the OMS computer system. The mean number of prior convictions for the participants was 22.3 ($SD = 17.5$), with a range of 0 to 92 convictions. For current convictions, the mean number of offences was 4.4 ($SD = 4.3$) with a range of 1 to 26. Moreover, the mean number of charges received was 7.9 ($SD = 9.5$) with a range of 0 to 51. Of the prior convictions, on average, participants had 1.8 ($SD = 0.3$) violent offences, 0.4 ($SD = 0.7$) robbery-related offences and 20.1 ($SD = 2.0$) nonviolent offences. Of the current convictions, on average, participants had 0.8 ($SD = 0.1$) violent convictions (with a maximum of 5 convictions), 0.6 ($SD = 1.1$) robbery convictions (maximum of 26) and 3.1 ($SD = 0.5$) nonviolent convictions (maximum of 6). Fifteen (21.4%) participants had no prior or current convictions for violent offences. Further, fifteen (21.4%) participants had only one prior or current violent conviction and the remaining forty (57.2%) participants had two or more violent convictions (prior or current).

Measures

The choice of instruments used in Study 2 was partly based on Study 1 results, which provided a better understanding of the psychometrics of these instruments and their applicability with adult male offenders.

Hostile Attributions Inventory. Descriptive information on this measure can be found in the Measures section of Chapter II (pp. 66).

*Scenario Aggression Response Ratings–Forced Choice*². Due to the results from Study 1, it was determined that a more structured and reliable method of obtaining a measure of aggression from the hypothetical scenarios of the Hostile Attributions Inventory was required, rather than an open-ended question for this measure. One approach used in the research literature is to provide participants with a selection of responses, ranging from nonaggressive to severely aggressive, for each scenario (Serin, 1988). The participants are then asked to select a response from this list that they would most likely choose to enact.

Hence, for each of the sixteen scenarios in the Hostile Attributions Inventory, a set of responses were devised. The specific responses were created by translating each of the general categories of ratings from the coding system used by VanOostrum and Horvath (1997) into specific behaviors (see Appendix B for this coding system). In this coding system, there were eight possible responses, and thus for each of the sixteen scenarios, a master set of eight responses was created. Appendix H provides

the set of eight choice responses created for each scenario. This measure was referred to as the Scenario Aggression Response–Forced Choice (SAR-FC) Ratings.

Inter-rater reliability analyses were conducted to determine the extent of agreement of the master order of each response set from least to most aggressive for each of the sixteen scenarios. Ratings were obtained from four judges. Two of the judges were psychologists, one was a graduate psychology student, and one was an undergraduate honors psychology student with specific concentration in forensic psychology. Two tasks were given to each judge. First, each judge used given the sixteen scenarios, along with corresponding response sets which were randomly ordered. The judges were instructed to read each scenario and then to rank order the eight responses for each scenario from least to most aggressive. Second, judges were provided with the general categories of responses provided by VanOostrum and Horvath (1997), in random order. Judges were asked to rank order these general response categories from least to most aggressive.

Table 14 provides the percentage of judges who agreed with each master rank order for both Task 1 and Task 2. There was 100 percent agreement in the rank ordering for the least (i.e., 0 [nonaggressive]) and most aggressive (i.e., 7 [severe physical aggression]) responses for each of the sixteen scenarios in Task 1, as well for the general categories in Task 2.

Table 14

Percentage of Total Agreement in SAR-FC Ratings Among Four Judges

	Master Rank Order								
Scenario	0	1	2	3	4	5	6	7	Total
Benign									
1	100	100	75	25	0	50	50	100	62.50
4	100	100	100	50	50	75	75	100	81.25
6	100	75	50	50	25	50	75	100	65.63
8	100	75	75	0	0	50	75	100	59.38
10	100	75	75	50	50	25	75	100	68.75
12	100	75	75	100	100	100	100	100	93.75
15	100	100	75	75	75	100	100	100	90.63
Ambiguous									
3	100	100	50	0	25	0	75	100	52.25
7	100	100	100	75	75	50	50	100	81.25
9	100	100	75	0	0	0	75	100	56.25
14	100	75	75	100	50	50	100	100	81.25
16	100	100	75	75	50	50	100	100	81.25
Hostile									
2	100	75	25	0	0	25	75	100	50.00
5	100	25	25	0	0	0	50	100	37.50
11	100	75	50	50	25	75	100	100	71.88
13	100	75	75	75	0	0	100	100	65.63
All	100	82.81	67.19	45.31	32.81	43.75	79.69	100	68.95
General	100	100	100	50	25	25	100	100	75.00

However, less agreement was achieved for the rank ordering of the other six responses for the sixteen scenarios in Task 1. Overall, there was about eighty percent agreement for the second least (i.e., 1 [negative attitude or sarcasm]) and the second most aggressive (i.e., 6 [mild physical aggression]) response. However, lowest agreement was found for the ratings of 2 [mild verbal-name calling], 3 [severe verbal-swearing], 4 [toward object without reference to person] and 5 [revenge/retaliation], ranging from only 33% to 67% agreement.

For the three types of scenarios (Benign, Ambiguous and Hostile), the range of agreement varied. For Benign Scenarios, rank ordering of the set of responses ranged from 63% to 94% agreement. Agreement in the rank ordering of Ambiguous Scenarios was slightly lower, ranging from 52% to 81% agreement. Even lower agreement was found for Hostile Scenarios, ranging from 38% to 72% agreement. Overall, of the eight rankings, across all sixteen scenarios, the average total agreement made by the four judges with the master rank ordering was 69%.

For the rank ordering of the general categories of responses in Task 2, there was 100% agreement for ratings of 0, 1, 2, 6, 7. However, there was only 50% agreement for ratings of 3 [severe verbal], and 25% for ratings of 4 [toward object without reference to person] and 5 [revenge/retaliation]. The overall agreement for the general categories of responses was 75%.

Overall, it was determined that inadequate levels of inter-rater reliability were achieved with the SAR-FC Ratings. Of note, it was found that two

response categories were most often ordered differently for all scenarios by the judges: the response involving aggression toward an object without reference to the person (4); and the response involving any type of revenge or retaliation toward the person with reference to the prior actions of the peer (5). These categories consist of behavior which is nondirect and at times, involving noninterpersonal contact with the target person.

Based on these results for the SAR-FC Ratings, and discussions with the judges, a second set of responses for the sixteen scenarios was devised. Changes consisted of eliminating the nondirect and noninterpersonal violent responses, re-wording some of the responses and removing the words of emotion from the responses. Therefore, for each scenario, six rather than eight possible responses were created for each scenario, again based on the categories of responses provided by VanOostrum and Horvath (1997). The two categories not used in these scenario responses were "a response involving aggression toward an object without reference to the peer" and "a response involving any type of revenge or retaliation toward the peer with reference to the prior actions of the peer" (pp. 53). This newly devised measure of aggression was referred to as the Scenario Aggression Response–Forced Choice 2 (SAR-FC2) Ratings.

For inter-rater reliability, seven different independent judges were given the same two tasks as was done for the SAR-FC Ratings. Task 1 for the judges consisted of rank ordering choice responses for each of the

sixteen scenarios from least to most aggressive. Task 2 involved rank ordering the general categories of responses. Appendix I consists of the specific tasks given to these judges, along with the scenario-specific response choices created for SAR-FC2. Three judges (one male and two female) were psychologists currently employed with Correctional Service of Canada in a maximum-security institution in the Ontario region. The other four judges (all female) were students at University of Saskatchewan. Of these judges, one was enrolled in the undergraduate Psychology program, one was in the Masters Psychology program and two were in the Doctorate Psychology program.

Table 15 provides the percentage of agreement in the SAR-FC2 Ratings among the judges, as compared to the master rank ordering created. There was 100% agreement for the least and most aggressive response (rating for 0 [nonaggressive] or 5 [severe physical aggression]). Moreover, thirteen scenarios had 100% agreement with all seven judges for the master rank ordering of the responses. Only 3 Benign Scenarios had less than 100% agreement, but overall were above 90%. Across all of the scenarios, there was 98.5% agreement in the rank ordering of the responses with the master rank ordering. For the general categories, all seven judges agreed with the rank ordering.

Due to the high inter-rater reliability for the response sets for the sixteen scenarios, this measure of aggression (SAR-FC2 Ratings) was

Table 15

Percentage of Total Agreement in SAR-FC2 Ratings Among Seven Judges

[illegible]

retained and used in Study 2. Four variables of aggression were calculated, consisting of the mean SAR-FC2 Rating for each of the three types of scenarios, and an overall mean SAR-FC2 Rating across the sixteen scenarios. Hence the variables were labeled, Benign Scenario Aggression Response Rating–Forced Choice2 (Benign SAR-FC2); Ambiguous Scenario Aggression Response Rating–Forced Choice2 (Ambiguous SAR-FC2); Hostile Scenario Aggression Response Rating–Forced Choice2 (Hostile SAR-FC2); and All Scenario Aggression Response Rating–Forced Choice2 (All SAR-FC2).

In addition to the SAR-FC2 Ratings as measures of aggression, three other measures of aggression were obtained for Study 2. A second measure was self-reported violence perpetrated throughout the participant's lifetime. The third measure of aggression was based on the official record of violence (i.e., number of prior and current violent convictions). The fourth measure of aggression was history of violent institutional infractions. These three measures are described below.

My Perpetration of Violence. Self-reported aggression was sought as another outcome criterion for aggression to uncover level of violence not formally recorded. Often times, formal offences (convicted or charged) are only a fraction of the extent of violence actually perpetrated. There may be situational circumstances which limit full perpetration of violence in official convictions of violence, such as lack of incriminating or supporting evidence

of the violence perpetrated, lack of witnesses (e.g., in some cases of murder), or lack of victim willingness to testify against the perpetrator. Hence, a self-report information sheet was devised using a format similar to that for the My Exposure to Violence measure. The My ETV covers a wide range of violence which was deemed appropriate for obtaining a comprehensive list of self-perpetrated aggressive behaviors. These behaviors consisted of chasing, hitting, slapping, punching, beating, attacking with a weapon, shooting, shooting at, seriously threatening, killing, and sexually assaulting someone. Therefore, the format which was used for the My ETV measure was also used in this measure, referred to as My Perpetration of Violence (My POV; see Appendix J). A My POV Total score was obtained, reflecting the total number of self-reported acts of violence perpetrated throughout the lifetime, regardless of severity.

Violent Offence History. The number of violent convictions, regardless of severity, for each participant was obtained by reviewing the official criminal history provided on the CIPC (a RCMP official database of all previous and current offences), as well as reading institutional case management files and the OMS computer system. Offences were coded as either violent, robbery, or nonviolent. Violent offences included uttering threats, arson, kidnap/confine, assault, assault peace officer, assault with a weapon, assault causing bodily harm, aggravated assault, other types of assault, murder, attempted murder, and weapons-related offences. Robbery offences included

armed robbery, and robbery with violence. Nonviolent offences consisted of all other offences: property-related, drug-related, driving-related, escape, fail to appear, criminal negligence, obstruct justice, perjury, fraud, mischief, causing disturbance, failure to comply with recognizance, and other minor offences.

Violent Institutional Infractions. Another measure of aggression was the total number of formal violent institutional misconducts for which participants were found guilty. This was collected by examining the participants' institutional files. The manner in which Correctional Service of Canada currently classifies institutional infractions is listed in Appendix K. Three of these infractions were deemed as aggressive behavior, regardless of severity: (f) disrespectful or abusive toward staff that could undermine a staff member's authority; (g) disrespectful or abusive toward any person in a manner likely to provoke a person to be violent; and (h) fights with, assaults or threatens to assault another person.

My Exposure to Violence. Descriptive information on this measure can be found in Measures section of Chapter II (pp. 71). Briefly, changes in the implementation of this measure for Study 2 consisted of the elimination of the questions regarding exposure to violence in the past year and exposure to noninterpersonal violent events, and questions regarding location and identity of the perpetrator/victim of the violence. Moreover, in Study 2, participants were asked to provide the exact, or as close to as possible, number of items

they were exposed to each of the violent events. Though the beginning instructions were identical to those used in Study 1, for each violent event, questions consisted of first asking participants if they were ever exposed to the violent event. If yes, participants were asked, "About how many times has this ever happened?"

Psychopathy Checklist-Revised. The Psychopathy Checklist Revised (PCL-R; Hare, 1991) was used in this study to measure level of psychopathy. The PCL-R is a clinical rating scale, consisting of twenty items on which the offender is evaluated by a trained professional (see Appendix L). Each item is scored on a 3-point scale, based on information gathered from a semi-structured interview and review of collateral information. A score of 0 indicates that the item does not apply to the offender; a score of 1 indicates that the item applies somewhat to the offender; and a score of 2 indicates that the item definitely applies. This scoring is based on an item description provided in the PCL-R manual. Total scores are summed and a commonly used cut-off score of 30 or more is indicative of psychopathy (Hare, 1991, 1996). The manual to the PCL-R provides extensive research findings which support satisfactory reliability and predictive validity of the PCL-R with adult male forensic populations (institutional-based and community-based facilities, and forensic psychiatric hospitals). Predictive validity has been demonstrated through significant links between PCL-R Total scores and recidivism rates of offenders post-release. A good review article discussing predictive validity of

the PCL-R with offender populations has been done by Hemphill et al. (1998) which was described in Chapter I. For Study 2, the primary researcher (G.D.) administered and scored the PCL-R scores. This researcher has received training and approximately two years of supervision by a psychologist qualified to administer and score the PCL-R. In addition, the primary researcher has had clinical experience with the PCL-R for the last five years.

Paulhus Deception Scale. The assessment for socially desirable responding chosen for this study was the Paulhus Deception Scales (PDS; Paulhus, 1984; see Appendix M). The PDS, formerly known as the Balanced Inventory of Desirable Responding (BIDR; Kroner & Weeks, 1996) is a self-report measure consisting of two subscales, with 20 items for each scale: Impression Management (IM) and Self-Deceptive Enhancement (SDE). The IM measures the purposeful attempt to impress others by responding in a socially desirable manner, and the SDE measures the tendency to unconsciously distort self-reports in an exaggeratedly positive manner. Participant read each statement or item and rated the degree to which he agrees the statement reflected himself, based on a 7-point scale. A rating of 1 means "Not True," 4 represents "Somewhat True" and 7 represents "Very True." Reliability and validity of the PDS have been reported by Paulhus (1990). A Cronbach's index of internal consistency (alpha) for all items were noted to be .83, with ranges for the IM subscale being from .68 to .80 and for the SDE being from .74 to .86. As well, test-retest correlations for the IM and

SDE subscales were .65 and .69, respectively. Further, the IM subscale has been found to significantly correlate to traditional "lie" scales (e.g., MMPI Lie scale and Eysenck's Lie Scale; Paulhus, 1984). The SDI subscale significantly correlates to other traditional measures of defense and coping (e.g., Defense Mechanisms Inventory and Ways of Coping Scale; Paulhus, 1984). Kroner and Weekes (1996) reviewed studies which have examined earlier versions of the PDS with offender populations. Their conclusion, based on these studies and their own research in this area, is that the PDS is a valid measure of deception with offender populations.

Procedure

Participants eligible for Study 2 were obtained from the pool of federally-incarcerated male offenders which was compiled for Study 1. However, the participants who were approached in Study 1 were not interviewed in Study 2. Further, at the time of data collection for Study 2, 67 of the eligible offenders had been either transferred, in segregation, or released to the community. Therefore, 121 offenders incarcerated at this federal penitentiary in the Prairies Region were eligible to participate in Study 2. Seventy offenders were randomly selected from this list with the SPSS for Windows software program, under Select Cases: Random Sample function, identical to the procedure used in Study 1. With this procedure, 84 offenders were approached to obtain 70 participants for this study (i.e., 14 refusals).

After a randomized list of participants was compiled, participants were called for an interview individually to explain the process of their participation in this study. A standard recruiting script was used (see Appendix N). If the participants agreed to participate in the study, a consent form was presented and signed by the participant, prior to any data collection (see Appendix O). The measures in this study, particularly pertaining to hostile attribution bias, require that the participants not be aware of what is assessed, to deflect subject-knowledge bias. Therefore, each participant was provided a full debriefing after all measures were collected from the participant (see Appendix P).

The participation of each offender consisted of a session commencing with the completion of the Paulhus Deception Scale. Three participants required assistance from the primary researcher in reading the statements on this measure. Once this was done, the interview-based session consisted of completing measures in the following order, which were verbally instructed and recorded by the primary researcher: Psychopathy Checklist–Revised; My Exposure to Violence questionnaire; My Perpetration to Violence; and Hostile Attributions Inventory (along with the SAR-FC2 Ratings). If the session was too long for a participant, or there were time constraints, the participant was called a second time to complete the data collection process. Finally, after these data were collected, a complete file review was conducted to code the following variables: violent institutional violence; prior/current offence charges

and convictions; age; length of sentence and race. File review was also conducted to collect collateral information to score measures of psychopathy.

Results

Data Characteristics

Preliminary examination of the data consisted of evaluating the assumptions for multivariate normality and linearity. These assumptions were met. None of the data contained missing values. However, for the My Exposure to Violence measure, when asking the total number of times a participant experienced a particular type of violence in his lifetime, some participants were unable to provide exact number of incidents, but reported that the violence was excessive (i.e., daily or weekly for a period of time). To lessen the influence of the distribution of these responses were recorded by giving a value equal to that of the highest number of incidents specifically reported by other participants in this study. In doing so, the skewness and kurtosis of the variables from this measure were within acceptable levels (i.e., between -3.0 and +3.0). Three of the aggression variables (i.e., My Perpetration of Violence Total scores, Total Number of Prior and Current Violent Offences, and Total Number of Violent Institutional Infractions) were positively skewed.

Internal Consistency

Table 16 provides the Cronbach's index of internal consistency for the measures used in Study 2. For the My Exposure to Violence measure, varied

Table 16

Internal Consistency of Measures used in Study 2

Measures	Number of Items in Scale	Cronbach's Alpha
My Exposure to Violence Measure		
Violence Seen		
Ever	9	.67
Total Times	9	.76
Violence Heard		
Ever	3	.40
Total Times	3	.71
Victimization		
Ever	7	.53
Total Times	7	.53
Total Violence Exposure		
Ever	19	.78
Total Times	19	.80
Psychopathy Checklist-Revised(PCL-R)		
PCL-R Total Score	20	.82
PCL-R Factor 1	8	.70
PCL-R Factor 2	9	.79

(table continues)

Measures	Number of Items in Scale	Cronbach's Alpha
Hostile Attributions Inventory		
Hostile Intent Rating		
Benign Scenarios	7	.75
Ambiguous Scenarios	5	.67
Hostile Scenarios	4	.69
All Scenarios	16	.88
Anger Rating		
Benign Scenarios	7	.83
Ambiguous Scenarios	5	.80
Hostile Scenarios	4	.67
All Scenarios	16	.92
Scenario Aggression Response–FC2		
Benign Scenarios	7	.77
Ambiguous Scenarios	5	.65
Hostile Scenarios	4	.65
All Scenarios	16	.89
Paulhus Deception Scale (PDS)		
PDS Total Score	40	.77
Impression Management	20	.78
Self Deceptive Enhancement	20	.69

internal consistency was found, with Cronbach coefficient alphas ranging from .40 to .80. Internal consistency was found to be higher for the three Total Times subscales (i.e., Seen, Heard, and Victimization) than for the three Ever subscales. For Violence Seen, the Cronbach's coefficient alpha for the Ever subscale was .67, and for the Total Times subscale was .76. For Violence Heard, somewhat lower internal consistency was found ($\alpha = .40$ for the Ever subscale and $\alpha = .71$ for the Total Times subscale). Even lower internal consistency was found for the Victimization subscales ($\alpha = .53$ for both the Ever and Total Times subscales). Overall, internal consistency was highest for the My ETV measure when the subscales were summed for all three types of violence exposure. Cronbach coefficient alphas were .78 for Total Exposure–Ever and .80 for Total Exposure–Total Times.

For the Psychopathy Checklist–Revised measure, acceptable levels of internal consistency were obtained. For the PCL-R Total score, alpha was .82. This is slightly lower than the coefficient alphas reported in previous studies which reported ranges from .83 to .91 (Hare, 1991).

For the Hostile Attributions Inventory, moderate levels of internal consistency were found. For the Hostile Intent Ratings, the Cronbach coefficient alphas ranged from .67 for Ambiguous Scenarios to .75 for Benign Scenarios. Higher internal consistency was found for Hostile Intent Ratings across all the sixteen scenarios ($\alpha = .88$). Higher internal consistency was found for the Anger Ratings than Hostile Intent Ratings, ranging from .67 for

Hostile Scenarios to .83 for Benign Scenarios. Across all scenarios, alpha was .92.

Moderate levels of internal consistency was also found for the Scenario Aggression Response–Forced Choice-2 Ratings. The range of Cronbach coefficient alphas was from .65 for Ambiguous and Hostile Scenarios to .77 for Benign Scenarios. For all sixteen scenarios, a higher coefficient alpha was found ($\alpha = .89$).

Acceptable levels of internal consistency was found for the Paulhus Deception Scale, ranging from .69 to .78. This is slightly lower than values of coefficient alphas reported in the PDS manual which indicates ranges from .70 to .86 (Paulhus, 1991).

Inter-rater Reliability

Inter-rater reliability was examined for the Psychopathy Checklist–Revised. In the test site for this study, only one psychologist was utilizing this measure. Of the four cases which were scored by both the psychologist and the primary researcher of this study, the correlation of scores was .83 for PCL-R Total scores, .77 for Factor 1 scores and .89 for Factor 2 scores.

Summary Statistics of Measures

Basic summary statistics of the measures are found in Table 17. The following is a brief description of this information.

Table 17

Summary Statistics for Measures used in Study 2

Measures	Mean	SE	SD	Range
My Exposure to Violence				
Violence Seen				
Ever	5.77	.22	1.85	1-9
Total Times	442.46	70.04	585.99	3-2377
Violence Heard				
Ever	2.11	.11	.91	0-3
Total Times	14.64	3.22	26.98	0-168
Victimization				
Ever	4.20	.17	1.40	1-7
Total Times	174.36	30.07	251.58	2-1015
Total Exposure				
Ever	12.10	.41	3.43	4-18
Total Times	631.21	93.72	784.16	9-2926
Psychopathy Checklist– Revised				
PCL-R Total score	26.84	.78	6.54	6-37
PCL-R Factor 1	9.57	.38	3.22	1-16
PCL-R Factor 2	13.93	.43	3.58	1-18

(table continues)

Measures	Mean	SE	SD	Range
Hostile Attributions Inventory				
Hostile Intent Rating				
Benign Scenarios	3.06	.20	1.64	1-7
Ambiguous Scenarios	3.51	.20	1.71	1-7
Hostile Scenarios	5.27	.22	1.83	1-9
All Scenarios	3.75	.18	1.54	1-9
Anger Rating				
Benign Scenarios	4.43	.22	1.80	1-8
Ambiguous Scenarios	4.11	.22	1.88	1-9
Hostile Scenarios	4.76	.22	1.80	1-9
All Scenarios	4.41	.20	1.69	1-9
Paulhus Deception Scale				
PDS Total Score	159.67	2.78	23.28	118-238
Impression Management	70.23	2.03	16.96	24-25
Self Deceptive Enhancement	89.44	1.40	11.70	66-20

My Exposure to Violence. For the My Exposure to Violence measure, means were provided for the two subscales for each of the three types of violence exposure. Based on the Violence Seen subscales, all participants reported that in their lifetime, they had seen at least three incidents in which violence was perpetrated against another person and that they had been victim to violence on at least two separate incidents. In terms of number of types of violent incidents seen, on average, participants reported seeing 5.77 out of nine possible violent events, ranging from at least one type of violent event to all nine. Seven participants (10%) saw all types of violent events presented in the Violence Seen subscale. Not everyone reported hearing of violence. The mean number of violent events heard was 2.11 out of three, ranging from none to all three. Four participants reported never hearing any of the violent events presented in this subscale, while about forty-one percent ($n = 29$) reported hearing all three types of violent events present in this subscale. For victimization, the mean number of violent events participants reported being victimized by was 4.20 out of seven, with a range of 1 to all seven. Only two participants (2.9%) reported being victimized by all seven types of violent events in this subscale. Overall, for total exposure to violence, participants reported being exposed to a mean of 12.10 violent events out of 19, with a range of four to eighteen violent events. Only one participant reported being exposed to 18 of the 19 violent events presented in the My ETV measure. A series of one-way ANOVA's conducted between Caucasian

($n = 28$) and Aboriginal ($n = 42$) participants found no differences in total number of violent incidents seen ($F(1,68) = .77, p = .385$), heard ($F(1,68) = .27, p = .606$) or victimized by ($F(1,68) = 2.66, p = .108$) in their lifetime or total number of different types of violent incidents heard ($F(1,68) = 1.27, p = .263$). However, significantly more Aboriginal participants were found to have seen ($F(1,68) = 5.07, p = .028$) or be victimized by ($F(1,68) = 5.11, p = .027$) more different types of violent events in their lifetime than Caucasian participants.

Prevalence rates for specific types of violent events participants were exposed to were also examined for Study 2. These were compared with those provided by Selner-O'Hagan et al. (1998), which can be found in Table 18. For Violence Seen, Study 2 offenders reported seeing more types of violence in their lifetimes than Selner-O'Hagan participants. Chi-square analysis indicated that significantly more participants in Study 2 reported seeing someone being chased, hit, attacked with a weapon, shot at and threatened than participants in the Selner O'Hagan et al. study. However, a higher percentage of community participants from the Selner O'Hagan et al. study reported hearing gunfire nearby and finding a dead body than Study 2 participants. There were no differences in the prevalence rates for the two samples for the percentage of participants who reported seeing someone being shot or killed. Yet, a higher percentage of Study 2 offenders reported

Table 18

Comparison of Lifetime Violence Exposure between Study 2 and Selner et al. (1998)

	Lifetime Exposure (%)		
		Selner et	
	Study 2	al (1998)	
My ETV Subscales	(<i>n</i> = 70)	(<i>n</i> = 80)	<i>p</i> level
Violence Seen			
Person chased	93	65	.000
Person hit	100	88	.002 ^a
Person attacked with weapon	89	51	.000
Someone shot	40	28	.105
Someone shot at	57	30	.001
Gunfire nearby	50	77	.000
Someone killed	36	23	.074
Someone threatened	91	50	.000
Found dead body	19	36	.016
Violence Heard			
Told someone shot	57	—	—
Told someone killed	76	—	—
Told someone raped	79	—	—

(table continues)

	Lifetime Exposure (%)		
		Selner et	
	Study 2	al (1998)	
My ETV Subscales	(<i>n</i> = 70)	(<i>n</i> = 80)	<i>p</i> level
Victimization			
Chased	80	43	.000
Hit	97	68	.000
Attacked with weapon	79	28	.000
Shot	10	5	.241
Shot at	54	18	.000
Sexually assaulted	24	14	.099
Threatened	76	43	.000

Note. My ETV = My Exposure to Violence. Percentages are unavailable for some violent events in Selner et al. (1998) study because they did not report these data in their published study.

^a Fisher's Exact Test was used since frequency in one of the cells in the 2X2 table was less than 5.

victimization of violence. This was found for all the violent events, with the exception of being shot or sexually assaulted.

Psychopathy Checklist-Revised. Table 17 reports the summary statistics for the PCL-R Total and Factor 1 and Factor 2 scores. The mean PCL-R Total score was 26.84 ($SD = 6.54$). This is somewhat higher than the mean PCL-R Total score of 23.63 ($SD = 7.92$) reported by Hare (1991) for pooled samples of prisoners ($N = 1192$). Of the seventy participants, twenty-five (35.7%) had scores of 30 or above on the PCL-R which is the recommended cut-off score for psychopathy (Hare, 1991). This is higher than the 24% incidence rate presented by Serin (1991) in his study of adult male offenders in a medium-security institution. Moreover, the range of incidence rates provided by Hart et al. (1992) is about 15 to 25%. A series of one-way ANOVA's conducted between Caucasian ($n = 28$) and Aboriginal ($n = 42$) participants found no differences in psychopathy: PCL-R Total scores ($F(1,68) = 1.11, p = .296$); Factor 1 scores ($F(1,68) = 2.05, p = .157$); and Factor 2 scores ($F(1,68) = 2.47, p = .121$).

Hostile Attributions Inventory. The summary statistics for the Hostile Intent and Anger Ratings from the Hostile Attributions Inventory are also provided in Table 17. In Study 2, a series of one-way ANOVA's conducted between Caucasian ($n = 28$) and Aboriginal ($n = 42$) participants found no differences in Anger Ratings: Benign Scenarios ($F(1,68) = 4.18, p = .045$); Ambiguous Scenarios ($F(1,68) = 2.50, p = .118$); and Hostile Scenarios

($F(1,68) = 1.81, p = .182$). However, significantly more Aboriginal participants rated hostile intent higher, regardless of scenario type, than Caucasian participants scenarios: Benign Scenarios ($F(1,68) = 18.65, p = .000$); Ambiguous Scenarios ($F(1,68) = 11.58, p = .001$); Hostile Scenarios ($F(1,68) = 12.60, p = .001$).

Paulhus Deception Scale. In the current study, the total scores of the Paulhus Deception Scale ranged from 118 to 238, with a mean score of 159.7 ($SD = 23.3$). The mean score of the Impression Management Subscale of the PDS was 70.2 ($SD = 17.0$), with a range of scores from 24 to 125. The mean score of the Self-Deception Enhancement Subscale was 89.4 ($SD = 11.7$), with a range of score from 66 of 120. The mean score for the Impression Management scale is consistent to that found by Mills (2000) for 120 adult male offenders incarcerated in a medium-security Canadian penitentiary ($M = 76, SD = 16.2$).

Scenario Aggression Response–Forced Choice 2. Summary statistics for the four measures of aggression are found in Table 19 (i.e., SAR-FC2 Ratings, My POV scales, violent offences and violent institutional infractions). For the SAR-FC2 Ratings, the means for the different scenarios ranged from 1.17 to 1.52 out of 5. T-tests revealed that the SAR-FC2 Ratings were significantly higher in Hostile Scenarios than Benign Scenarios ($t[1,69] = -2.21, p < .05$) and Ambiguous Scenarios ($t[1,69] = 4.42, p < .0001$). However,

Table 19

Summary Statistics for Aggression Measures used in Study 2

Aggression Measures	Mean	SD	Range
Scenario Aggression Response–FC2			
Benign Scenarios	1.52	1.06	0-6
Ambiguous Scenarios	1.17	.89	0-4
Hostile Scenarios	1.73	1.21	0-5
All Scenarios	1.46	.96	0-6
My Perpetration of Violence			
Total Times	140.33	236.81	1-823
Violent Offences			
Number of current convictions	.84	1.00	0-5
Number of prior convictions	2.41	3.04	0-14
Violent Institutional Infractions	1.66	3.83	0-25

contrary to expectations, t-tests revealed that the SAR-FC2 mean scores for the Benign Scenarios were significantly higher than those for Ambiguous Scenarios ($t[1,69] = 4.42, p < .0001$).

My Perpetration of Violence. Based on the My Perpetration of Violence scales, overall, the mean number of separate incidents in which the participants reported perpetrating violence against someone was 140.33 ($SD = 236.81$). The most frequent type of violence perpetrated was hitting, punching or slapping someone (maximum times of 525 incidents, with a mean of 105.24 ($SD = 179.37$) times). Low frequency of violence perpetrated was killing someone ($M = .36, SD = .57$), shooting someone ($M = 2.19, SD = 9.81$) and shooting at someone ($M = 2.04, SD = 7.91$). One -way ANOVA's conducted between Caucasian ($n = 28$) and Aboriginal ($n = 42$) participants found no differences in the aggression measures: Benign SAR-FC2 ($F(1,68) = 1.42, p = .237$); Ambiguous SAR-FC2 ($F(1,68) = .36, p = .551$); Hostile SAR-FC2 ($F(1,68) = .38, p = .542$); My Perpetration of Violence Total scores ($F(1,68) = .08, p = .785$); Prior and Current Violent Convictions ($F(1,68) = 2.29, p = .135$); and Violent Institutional Infractions ($F(1,68) = .16, p = .688$).

Participant Response Biases

The purpose in using the Paulhus Deception Scale was to determine whether there was a tendency of participants to attempt to make a good impression on their responses or towards self-deception. Table 20 reveals the correlations between all self-report measures obtained from this study and the

Table 20

Correlations between Response Bias and Self-Report Measures

			PDS
Self-Report Measures	SDE	IM	Total
<hr/>			
Hostile Attributions Inventory			
Hostile Intent Rating			
Benign Scenarios	-.10	-.25*	-.23
Ambiguous Scenarios	-.16	-.30*	-.30*
Hostile Scenarios	-.05	-.47***	-.36**
All Scenarios	-.12	-.36**	-.32**
Anger Rating			
Benign Scenarios	-.14	-.48***	-.42***
Ambiguous Scenarios	-.17	-.45***	-.41***
Hostile Scenarios	-.03	-.52***	-.40**
All Scenarios	-.13	-.52***	-.45***
Scenario Aggression Response–FC2			
Benign Scenarios	-.16	-.38**	-.36**
Ambiguous Scenarios	-.21	-.37**	-.37**
Hostile Scenarios	-.21	-.53***	-.49***
All Scenarios	-.20	-.46***	-.43***
My Perpetration of Violence			
Total Times	.06	-.25*	-.15

Note. SDE = Self Deception Enhancement Subscale; IM = Impression Management Subscale; PDS = Paulhus Deception Scale.

* $p < .05$. ** $p < .01$. *** $p < .0001$.

PDS Total score and two subscales (i.e., Self Deception Enhancement and Impression Management). The Hostile Intent Ratings, Anger Ratings and SAR-FC2 Ratings for all three types of scenarios were inversely correlated with the PDS Total score and Impression Management subscale. These significant correlations indicated that hostile attributions, anger and aggression related to these attributions were negatively related to a desire to make a good impression and an attempt to provide socially appropriate responses to scenarios of provocation. For the My Perpetration of Violence, the total number of times reported, across the seven types of violence events (i.e., My POV Total scores) also correlated significantly with the IM subscale.

These results suggest that offenders may be attempting to put on a good impression and therefore, provide socially appropriate responses to scenarios of provocation and to self-reported violence, by choosing lower levels of aggressive ratings to the scenarios and reporting lower levels of self perpetrated violence. Consequently, given these results, it was determined that the Impression Management subscale was to be statistically controlled in subsequent analyses.

Testing Specific Hypotheses

Psychopathy and Prior Exposure to Violence. First it was hypothesized that adult male offenders who score higher on the Psychopathy Checklist–Revised Total scores are more likely to have been exposed to violence (both witnessing and victimization of violence) in their lifetime. Pearson correlations

between Psychopathy Checklist–Revised Total Scores (including Factor 1 and Factor 2 scores) and the subscales of the My Exposure to Violence measure can be found in Table 21. Significant correlations were found between psychopathy and some forms of prior exposure to violence. Overall, offenders with higher PCL-R Total scores, reported being exposed to a significantly higher number of types of violent events (i.e., exposure to a diversity of violence; $r = .29, p < .05$), and a significantly higher number of violent incidents (i.e., frequency of violence; $r = .25, p < .05$) in their lifetime. In examining the specific forms of exposure to violence, offenders with higher PCL-R Total scores reported being exposed to more diverse types of violence which they heard ($r = .28, p < .05$) and were victimized by ($r = .28, p < .05$). As well, for frequency of violence exposure, PCL-R Total scores were correlated with significantly higher number of violent incidents seen ($r = .28, p < .05$), and heard ($r = .27, p < .05$) in the lifetime. A more rigorous test for the significance of the correlations was also examined (i.e., Bonferroni correction), given the number of correlations. When a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/8 = .006$ level, none of these correlations remained significant.

None of the PCL-R Factor 1 scores significantly correlated with the measures of prior exposure to violence. For PCL-R Factor 2 scores, all correlations with My ETV subscales were found to be significant, with the exception with Victimization–Total Times (i.e., total times offenders reported

Table 21

Pearson Correlations between Psychopathy Checklist-Revised and My Exposure to Violence in Study 2

My ETV subscales	PCL-R		
	Total	Factor 1	Factor 2
Violence Seen			
Ever (# of events)	.19	-.04	.26*
Total times	.28*	.20	.32** ^a
Violence Heard			
Ever (# of events)	.28*	.01	.34** ^a
Total times	.27*	.23	.24*
Victimization			
Ever (# of events)	.28*	.04	.34** ^a
Total times	.09	-.04	.21
Total Exposure			
Ever (# of events)	.29*	-.01	.35** ^a
Total times	.25*	.14	.31** ^a

Note. My ETV = My Exposure to Violence; PCL-R = Psychopathy Checklist-Revised.

* $p < .05$. ** $p < .01$.

^a Significant, based on family-wise error rate for testing correlations at $.05/8 = .006$ level of significance.

being victimized in their lifetime). When a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/8 = .006$ level, correlations between PCL-R Factor 2 scores and Violence Seen–Ever and between PCL-R Factor 2 scores and Violence Heard–Total Times became nonsignificant. Overall prior exposure to violence, both in terms of diversity and frequency of violence remained significantly correlated to PCL-R Factor 2 scores.

In summary, results suggested a positive relationship between psychopathy and prior exposure to violence. Higher PCL-R scores related to more violence seen, more number of violent events heard and more types of violent events victimized by. Further prior exposure to violence had a significant relationship with PCL-R Factor 2 scores, but not Factor 1 scores.

Psychopathy and Hostile Attribution Bias. To examine the relationship between psychopathy and hostile attribution bias, Pearson correlations were conducted between PCL-R Total scores and Hostile Intent Ratings for each type of scenario and all sixteen scenarios combined. PCL-R Total scores correlated significantly with Hostile Intent Ratings for Ambiguous Scenarios ($r = .35, p < .01$), Hostile Scenarios ($r = .32, p < .01$) and All Scenarios ($r = .32, p < .01$), but not Benign Scenarios. Factor 1 scores were nonsignificant correlations with Hostile Intent Ratings. Factor 2 scores correlated significantly with all scenario types: Benign ($r = .24, p < .05$); Ambiguous ($r = .29, p < .05$); Hostile ($r = .31, p < .05$); and All ($r = .31, p < .05$).

However, when social desirability in responding (i.e., Impression Management subscale of the PDS; PDS-IM) was controlled for with the Hostile Intent Ratings, all significant results disappeared, except for significant correlations between PCL-R Total scores and Hostile Intent ratings for Ambiguous Scenarios (see Table 22). This suggests that the relationship between psychopathy and hostile attribution bias occurs only under situations of provocation when the person's actions are ambiguous. However, when a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/4 = .0125$ level, this correlation became nonsignificant.

Prior Exposure to Violence and Hostile Attribution Bias. The third hypothesis was that there is a positive relationship between prior exposure to violence and hostile attribution bias. Correlations were conducted between Hostile Intent Ratings for all three types of scenarios and all sixteen scenarios combined, and subscales of the My ETV measure. Prior to partialling out the effects of social desirability of responding (i.e., PDS-IM), there were significant correlations between Hostile Intent Ratings for Hostile Scenarios and two of the subscales of the My ETV measure: Violence Heard–Ever ($r = .31, p < .01$); and Total Exposure–Ever ($r = .29, p < .05$). However, these correlations were no longer significant when response bias was controlled (see Table 23). Since no correlations were significant, family-wise error rates

Table 22

Partial Correlations between Psychopathy Checklist-Revised and Hostile Intent Ratings in Study 2, Controlling for Impression Management

Hostile Intent Rating	PCL-R		
	Total	Factor 1	Factor 2
Benign Scenarios	.15	.04	.15
Ambiguous Scenarios	.27*	.21	.18
Hostile Scenarios	.19	.13	.13
All Scenarios	.22	.13	.17

Note. PCL-R = Psychopathy Checklist-Revised.

* $p < .05$.

Table 23

Partial Correlations between My Exposure to Violence and Hostile Intent Ratings in Study 2, Controlling for Impression Management

My ETV subscales	Hostile Intent Ratings			
	Benign	Ambiguous	Hostile	All
Violence Seen				
Ever (# of events)	-.13	-.03	.10	-.04
Total times	.06	.03	.13	.08
Violence Heard				
Ever (# of events)	.03	.06	.19	.09
Total times	.07	.15	.16	.13
Victimization				
Ever (# of events)	.03	.07	.01	.04
Total times	.05	.01	.01	.03
Total Exposure				
Ever (# of events)	-.05	.03	.13	.02
Total times	.07	.03	.10	.07

Note. My ETV = My Exposure to Violence.

were not computed for these correlations. Overall, the hypothesis that offenders who have been exposed to more violence would endorse strong attribution bias was not supported from the data in this study.

Hostile Intent Ratings Between Scenario Type. The fourth hypothesis in this research project was confirmatory in nature. It was hypothesized that similar to nonoffenders, offenders would attribute more hostile intent for actions presented in Hostile Scenarios than in Ambiguous or Benign Scenarios. Further, offenders would also attribute more hostile intent for actions in Ambiguous Scenarios than Benign Scenarios. Test for this hypothesis consisted of t-tests with the mean Hostile Intent Ratings for the three types of scenarios, found in Table 17. Results indicated that, as expected, offenders rated the actions of persons in Hostile Scenarios as more hostile than those in Benign Scenarios ($t[1,69] = -12.85, p < .0001$) and Ambiguous Scenarios ($t[1,69] = 10.74, p < .0001$). Moreover, the Hostile Intent Ratings were significantly higher in Ambiguous Scenarios than Benign Scenarios ($t = -3.23, p < .002$).

Hostile Attribution Bias and Anger. It was hypothesized that attributing hostile intent would be related to more anger felt. Correlations were conducted between Hostile Intent Ratings and Anger Ratings for the different types of scenarios, as well for all sixteen scenarios together. Significant correlations were found for all three types of scenarios. This was still evident after the effects of social desirability of responding (i.e., PDS-IM) was

controlled (Table 24). That is, Hostile Intent Ratings positively correlated with Anger Ratings for Hostile Scenarios ($r = .61, p < .0001$), Ambiguous Scenarios ($r = .77, p < .0001$), and Benign Scenarios ($r = .71, p < .0001$). As well, when ratings were aggregated for all sixteen scenarios, a significant correlation was found between Hostile Intent Ratings and Anger Ratings ($r = .75, p < .0001$). Moreover, when a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/4 = .0125$ level, these correlations remained significant.

Also found in Table 24 are the correlations between the Hostile Intent Ratings and Anger Ratings, across the three types of scenarios. Significant correlations were found between Hostile Intent Ratings and Anger Ratings, regardless of the type of scenario. That is, Hostile Intent Ratings for Hostile Scenarios also significantly correlated to Anger ratings for Ambiguous Scenarios ($r = .54, p < .0001$) and Benign Scenarios ($r = .53, p < .0001$). Likewise, the Hostile Intent Ratings for Ambiguous Scenarios were related to Anger Ratings for Hostile Scenarios ($r = .55, p < .0001$) and Benign Scenarios ($r = .65, p < .0001$). Slightly lower, but significant correlations were found between Hostile Intent Ratings for Benign Scenarios and Anger Ratings for Ambiguous Scenarios ($r = .51, p < .0001$) and Hostile Scenarios ($r = .50, p < .0001$). Nonetheless, the highest correlations were found between the Hostile Intent Ratings and Anger Ratings for a specific type of scenario. These results suggest that regardless of type of scenario, offenders who perceived

Table 24

Partial Intercorrelations of Hostile Intent Ratings and Anger Ratings in Study 2, Controlling for Impression Management

		Hostile Intent Ratings (HIR)			Anger Ratings (AR)	
		HBEN	HAMB	HHOS	HBEN	HAMB
HIR	HAMB	.74*** ^a				
	HHOS	.63*** ^a	.67*** ^a			
AR	HBEN	.71*** ^a	.65*** ^a	.53*** ^a		
	HAMB	.51*** ^a	.77*** ^a	.54*** ^a	.74*** ^a	
	HHOS	.50*** ^a	.55*** ^a	.61*** ^a	.68*** ^a	.70*** ^a

Note. HBEN = Hostile Attributions Inventory–Benign Scenarios; HHOS = Hostile Attributions Inventory–Hostile Scenarios; HAMB = Hostile Attributions Inventory–Ambiguous Scenarios.

*** $p < .0001$.

^a Significant, based on family-wise error rate for testing correlations at $.05/4 = .0125$ level of significance.

hostile intent in the actions of individuals reported that they would be angered if such scenarios occurred to them.

Direct Predictors of Aggressive Behavior. The last specific hypothesis was for a positive relationship between direct predictors proposed to aggression: prior exposure to violence, psychopathy and anger. It was hypothesized that offenders with higher aggression ratings would be those who had been exposed to more violence in their lifetime, were psychopathic and reported being angry to the scenarios presented. Therefore, Pearson correlational analyses were conducted between the four measures of aggression (Scenario Aggression Response–Forced Choice 2 Ratings, My Perpetration of Violence Total scores, Total Number of Violent Convictions and Total Number of Violent Institutional Infractions) and each predictor.

First, Pearson Correlations between subscales of the My Exposure to Violence and the aggression measures revealed significant relationships. That is, for the Scenario Aggression Response–Forced Choice2 Ratings for each scenario type (i.e., Benign, Ambiguous, and Hostile) correlated significantly with Violence Seen–Total Times (ranging from .26 to .37), Violence Heard–Ever (ranging from .28 to .37), Violence Heard–Total Times (ranging from .34 to .41), and Victimization–Ever (ranging from .29 to .45). Significant results remaining after social desirability bias (i.e., Impression Management scale of the Paulhus Deception Scale) was controlled are found in Table 25. For Violence Seen–Total Times, the only relationship which

Table 25

Partial Correlations between My Exposure to Violence and Measures of Aggression in Study 2, Controlling for Impression Management

Aggression	My Exposure to Violence Subscales					
	1	2	3	4	5	6
SAR-FC2 Ratings						
Benign	.01	.30*	.14	.32**	.19	.15
Ambiguous	.04	.20	.20	.37**	.24*	.01
Hostile	.02	.29*	.19	.34**	.34**	.12
All	.02	.30*	.19	.38**	.27*	.11
My POV Total Score	.35**	.74*** ^a	.22	.57*** ^a	.41*** ^a	.55*** ^a
Prior/Current Violent Convictions	-.05	-.06	-.15	-.09	.12	-.07
Violence Institutional Infractions	.13	.18	.10	.02	.24*	.31**

Note. SAR-FC2 = Scenario Aggression Response–Forced Choice2 Ratings; My POV = My Perpetration of Violence; 1 = Violence Seen–Ever; 2 = Violence Seen–Total Times; 3 = Violence Heard–Ever; 4 = Violence Heard–Total Times; 5 = Victimization–Ever; 6 = Victimization–Total Times.

* $p < .05$. ** $p < .01$. *** $p < .0001$.

^a Significant, based on family-wise error rate for testing correlations at $.05/7 = .007$ level of significance.

became nonsignificant was with Ambiguous SAR-FC2 Ratings. All correlations between the My ETV Violence Heard–Ever subscale and the SAR-FC2 Ratings became nonsignificant. For Victimization (Ever and Total Times), all correlations remained significant, with the exception between Victimization–Ever and Benign SAR-FC2 Ratings. Significant correlations were found between the My Perpetration of Violence Total score and the My ETV subscales (ranging from .30 for Violence Heard–Ever, to .58 for Violence Heard–Total Times). Even when the social desirability bias was controlled, the correlations remained significant (see Table 25). Correlations between prior exposure to violence and violent convictions were not significant. However, there were significant correlations between violent institutional infractions and Victimization–Ever ($r = .24$ $p < .05$) and Victimization–Total Times ($r = .31$ $p < .01$). A family-wise error rate for these intercorrelations between prior exposure to violence and the aggression measures was held at .05 to analyze each correlation at the $.05/7 = .007$ level. In doing so, only correlations between My POV Total scores and most of the My ETV subscales remained significant: (i.e., for Violence Seen–Total Times, Violence Heard–Total Times, Victimization–Ever, and Victimization–Total Times).

The second direct predictor of aggression was psychopathy. Significant relationships were found between the aggression measures and PCL-R Total scores, Factor 1 scores and Factor 2 scores. For PCL-R Total scores, prior to controlling for the social desirability bias, significant

correlations were found only with SAR-FC2 Ratings: for Benign Scenarios, $r = .29$ $p < .05$; for Ambiguous Scenarios, $r = .28$ $p < .05$; for Hostile Scenarios, $r = .44$ $p < .001$; and for All Scenarios, $r = .36$ $p < .01$. However, after partialling out Impression Management (see Table 26), only a significant correlation between PCL-R Total scores and Hostile SAR-FC2 Ratings remained ($r = .32$ $p < .01$). With Factor 1 scores, only a correlation with Hostile SAR-FC2 Ratings was found ($r = .27$ $p < .05$), even after controlling the social desirability bias. With Factor 2 scores, correlations with all SAR-FC2 Ratings (Benign Scenarios, $r = .33$ $p < .01$; Ambiguous Scenarios, $r = .28$ $p < .05$; Hostile Scenarios, $r = .44$ $p < .001$; and All Scenarios, $r = .38$ $p < .01$) and My POV Total scores ($r = .27$ $p < .05$) were significant. However with social desirability bias controlled, only the correlation between Factor 2 scores and Hostile SAR-FC2 Ratings remained significant ($r = .27$ $p < .05$). When a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/7 = .007$ level, none of these correlations remained significant.

For Anger Ratings, Table 27 presents these correlations with the aggression measures, after social desirability of responding has been partialled out (i.e., PDS-IM). For SAR-FC2 Ratings, Anger Ratings significantly correlated to the corresponding SAR-FC2 Ratings for each type of scenarios, as well as for across the sixteen scenarios. For Benign Scenarios, higher Anger Ratings were related to higher SAR-FC2

Table 26

Partial Correlations between Psychopathy Checklist-Revised and Measures of Aggression in Study 2, Controlling for Impression Management

Measures of Aggression	PCL-R		
	Total	Factor 1	Factor 2
SAR-FC2 Ratings			
Benign Scenarios	.19	.09	.19
Ambiguous Scenarios	.17	.11	.14
Hostile Scenarios	.32**	.27*	.27*
All Scenarios	.24*	.16	.22
My POV Total score	.13	.13	.18
Prior/Current Violent Convictions	.21	.07	.18
Violent Institutional Infractions	.07	.06	.16

Note. PCL-R = Psychopathy Checklist-Revised. SAR-FC2 = Scenario Aggression Response–Forced Choice2 Ratings; My POV = My Perpetration of Violence.

* $p < .05$. ** $p < .01$.

Table 27

Partial Correlations between Anger Ratings and Measures of Aggression in Study 2, Controlling for Impression Management

Measures of Aggression	Anger Ratings			
	Benign	Ambiguous	Hostile	All
SAR-FC2 Ratings				
Benign Scenarios	.71*** ^a	.47*** ^a	.55*** ^a	.66*** ^a
Ambiguous Scenarios	.56*** ^a	.68*** ^a	.58*** ^a	.67*** ^a
Hostile Scenarios	.54*** ^a	.56*** ^a	.67*** ^a	.64*** ^a
All Scenarios	.68*** ^a	.61*** ^a	.65*** ^a	.72*** ^a
My POV Total Score	.34** ^a	.19	.28*	.31*
Prior/Current Violent Convictions	.02	.03	.16	.07
Violent Institutional Infractions	.11	-.03	-.03	.03

Note. SAR-FC2 = Scenario Aggression Response–Forced Choice 2 Ratings;
My POV = My Perpetration of Violence.

* $p < .05$. ** $p < .01$. *** $p < .0001$.

^a Significant, based on family-wise error rate for testing correlations at $.05/7 = .007$ level of significance.

Ratings ($r = .71, p < .0001$). Similar significant pairings were found for Ambiguous Scenarios ($r = .68, p < .0001$) and Hostile Scenarios ($r = .67, p < .0001$). When all sixteen scenarios were considered, the correlation between the two ratings was highest ($r = .72, p < .0001$). Moreover, when a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/7 = .007$ level, these correlations were still significant.

Similar to the relationship between Hostile Intent Ratings and Anger Ratings, across the types of scenarios, Anger Ratings correlated significantly with SAR-FC2 ratings. For example, Benign SAR-FC2 Ratings significantly correlated with Anger Ratings for Hostile Scenarios ($r = .54, p < .001$) and for Ambiguous Scenarios ($r = .56, p < .001$). Similar observations were made for SAR-FC2 Ratings for Hostile Scenarios and for Ambiguous Scenarios. However, the highest partial correlations were found between the SAR-FC2 Ratings and Anger Ratings for a specific type of scenario.

Social desirability to responding had an effect on correlations between the My Perpetration to Violence Total score and the Anger Ratings.

Correlations are reported by type of scenario in Table 25. When responding bias was not controlled for, My POV Total scores correlated significantly with Anger Ratings for all scenario types: Benign ($r = .41, p < .01$); Ambiguous ($r = .27, p < .05$); Hostile ($r = .36, p < .01$); and All ($r = .38, p < .01$). However, when PDS-IM was partialled out, the correlation between My POV Total scores and Anger Ratings for Ambiguous Scenarios became nonsignificant.

Further, when a family-wise error rate for these intercorrelations was held at .05 to analyze each correlation at the $.05/7 = .007$ level, only the correlation between My POV Total score and Anger Ratings for Benign Scenarios remained significant.

The last set for correlations between Anger Ratings and measures of aggression were done for violent offence history and institutional violence. However, as indicated in Table 25, none of the correlations were significant. This was found, whether or not social desirability bias was controlled or family-wise error rates were considered.

Structural Equation Modeling Analysis of Proposed Model

Though some useful information has been gained regarding the relationships between the factors of interest (i.e., prior exposure to violence, psychopathy, hostile attributions bias, anger and aggression) from the correlational analyses, a more sophisticated statistical approach was employed to examine the direct and indirect effects of factors on aggression. These relations were proposed in a model in Figure 2. How the specific variables gleaned from the instruments used were integrated into the model is shown in Figure 3. The predictor variables consisted of a situational variable (Prior Exposure to Violence), a personological variable (Psychopathy), and two appraisal variables (Hostile Intent and State Anger). The dependent variable consisted of the four measures of aggression obtained from the Scenario Aggression Response–Forced Choice 2 Ratings, My Perpetration of

Violence Total Scores, Total Number of Prior and Current Violent Convictions and Total Number of Violent Institutional Infractions, whereas those labeled within rectangles represent indicators or measured variables (i.e., PCL-R Total score, Hostile Intent Ratings, and Anger Ratings). Those labeled within rectangles represent indicators or measured variables (i.e., PCL-R Total score, Hostile Intent Ratings, and Anger Ratings), whereas those labeled within the circles in the proposed model represent latent variables, Prior Exposure to Violence and Aggression were defined as latent variables. That is, they were comprised of several indicators. For Prior Exposure to Violence, the six indicators were Violence Seen–Ever, Violence Seen–Total Times, Violence Heard–Ever, Violence Heard–Total Times, Victimization–Ever and Victimization–Total Times. Therefore, both diversity and frequency of prior exposure to violence was considered. Aggression was represented by four indicators: total number of prior and current violent convictions, total number of violent institutional infractions, total number of self-reported acts of violence (i.e., My POV Total score), and Scenario Aggression Ratings–Forced Choice 2 (SAR-FC2) Ratings. All connector lines represent hypothesized direction of the relationship, whereas lack of any lines between latent variables or indicators within the model indicated no hypothesis of these relationships. The one connector line with double arrows (i.e., prior exposure to violence and psychopathy) signifies a relationship between the variables, with no proposed direction of the relationship.

Figure 3. Specific variables integrated into the proposed model of aggression.

Overall, based on this model, it was hypothesized that Prior Exposure to Violence and Psychopathy both have a direct relationship to both Hostile Intent Ratings and Aggression. As well, Prior Exposure to Violence and psychopathy have an indirect effect on aggression, with having Hostile Intent Ratings and Anger Ratings as the mediating variables. It was also hypothesized that Hostile Intent Ratings have a direct relationship to Anger Ratings and indirect relationship to Aggression, through the mediating variable, Anger Ratings. Lastly, it was hypothesized that Anger Ratings have a direct effect on Aggression. The bi-directional line between Prior Exposure to Violence and Psychopathy indicates a hypothesized relationship between them. However, there is no hypothesis regarding the direction of the relationship in terms of cause and effect.

To test the proposed model, the structural equation modelling (SEM) approach of analysis with maximum likelihood estimation was used, a contemporary data-analytic method. The SEM, as opposed to other multivariate methods such as multiple regression, allows for a confirmatory approach to analysing data in that a proposed model of the relationships among predictor variables and dependent variables can be simultaneously compared for a fit to the data. Therefore, with the SEM approach, simultaneous tests of hypotheses of relationships are conducted. Moreover, examination of hypotheses between latent (unmeasurable) variables and observed variables is possible. The first step in the SEM analysis is to

determine the goodness of fit index, which indicates the extent to which the estimated population covariance matrix produced is close to the sample (data) covariance matrix of variables. One goodness of fit index recommended as most reliable, especially for small sample sizes is the comparative fit index (CFI), derived by Bentler (1990, as cited by Byrne, 1994). Values of the CFI range from 0 to 1.00, whereby any values greater than .90 are indicative of an acceptable fit. If the goodness of fitness test is inadequate, the next step of the SEM process is to examine parameters within the model which could be modified (either deleted from or added to the model) to produce an improved and better fitting model.

The EQS (Structural Equations Program; Bentler, 1995) program was the statistical package that was used to perform the SEM analyses. The choice for the EQS program, as opposed to LISREL (Ullman, 1996) was based on the fact that the EQS conducts two tests which recommend modifications to be made to the model to improve the goodness of fit, namely, the Wald Test and the Lagrange Test. The LISREL program does not perform these tests. Results from the Wald Test suggest if certain parameters (i. e., associations between variables) outlined in the proposed model should be eliminated. On the other hand, the Lagrange Test provides recommendations as to which parameters should be added.

The strategy of the SEM analyses of the proposed model was to begin with a general test of the model. This consisted of using variables based on

all sixteen scenarios from the Hostile Attributions Inventory measure.

Therefore, the Hostile Intent Ratings, Anger Ratings and Scenario Aggression Ratings—Forced Choice 2 scores were based on the mean scores for all sixteen scenarios. Based on the results of this SEM analysis, modifications were made to achieve a better fit to the model. Subsequently, separate SEM analyses, with the improved modifications, were conducted for each of the three types of scenarios. Reasons for these modifications are explained below.

Model Testing for All Scenarios. The initial SEM analysis was performed through the EQS program, using participant responses on all sixteen scenarios (i.e., regardless of scenario type) for the variables to test the proposed model (see Figure 3). The independence model which tests the hypothesis that all variables in the model are not correlated was rejected, $\chi^2(78, N = 70) = 415.35, p < .001$. However, support for the hypothesized model for All Scenarios was not found, $\chi^2(59, N = 70) = 135.04, p < .001$, based on a poor goodness of fit (i.e., CFI = .78). This chi-square test revealed that the covariance matrix of the estimated population was significantly different than the sample covariance matrix. Figure 4 provides the results of the SEM analyses, along with the coefficients in standardized form, for Tested Model 1, predicting all four measures of aggression as a latent variable of Aggression, using All Scenarios.

Figure 4. Tested Model 1: Results from SEM analysis for predicting Aggression as a latent variable for All

Scenarios.

Due to the poor fit of the model to the data, post hoc model modification analyses, via the Wald test and Lagrange multiplier test, were conducted. Results from the Wald test indicated that each of the indicators (i.e., Total Number of Violent Convictions, Total Number of Violent Institutional Infractions, All SAR-FC2 Ratings, and the My POV Total score) for the Aggression latent variable should be considered as separate dependent variables in the model, rather than indicators of one latent variable. Moreover, it was recommended that there should be direct, separate paths linking the predictors of aggression (i.e., Prior Exposure to Violence, Anger Ratings and PCL-R Total scores) to each of these four dependent variables. To further explore these four measures of aggression, intercorrelations between these four measures of aggression were computed (Table 28). These correlations revealed that Violent Convictions (prior and current) and Violent Institutional Infractions were not correlated to any of the SAR-FC2 Ratings, regardless of scenario type. Violent Institutional Infractions were only correlated to total number of self-reported violent incidents (i.e., My POV Total score). However, the My POV Total score was correlated to all SAR-FC2 Ratings, with the exception of Ambiguous SAR-FC2 Ratings. All of the SAR-FC2 Ratings were inter-correlated.

The Wald test also indicated that the parameter predicting Hostile Intent Ratings from Prior Exposure to Violence should be dropped from the model. From the Lagrange multiplier test, results suggested that Prior

Table 28

Inter-correlations between Measures of Aggression in Study 2, Controlling for Impression Management

	VPCC	VIC	My POV	SAR-FC2		
				Benign	Hostile	Ambiguous
VIC	.20					
My POV	.01	.34**				
SAR-FC2						
Benign	.04	.10	.38**			
Hostile	.06	.05	.46**	.72**		
Ambiguous	.11	.05	.21	.75**	.72*	
All	.04	.08	.39**	.94**	.88**	.89**

Note. VPCC = Violent Prior and Current Convictions; VIC = Violent Institutional Infractions; My POV = My Perpetration of Violence Total score; SAR-FC2 = Scenario Aggression Response–Forced Choice2 Ratings.

* $p < .05$. ** $p < .01$.

Exposure to Violence should have a direct path to the four measures of aggression, that is, All SAR-FC2 Ratings, My POV Total scores, Total Violent Convictions and Total Violent Institutional Infractions. Therefore, based on these recommended changes, these modifications were made and tested.

The next set of models tested consisted of predicting each measure of aggression separately and eliminating the direct link between prior exposure to violence and hostile attribution bias (i.e., Tested Models 2, 3, and 4).

Tested Model 2, which predicted My Perpetration of Violence Total scores as the measure of aggression using All Scenarios, was re-estimated, $\chi^2(33, N = 70) = 58.61, p < .01, CFI = .91$. A chi-square difference test (which compares the new modified model with the original model) revealed that the Tested Model 2 was significantly improved by the modifications made from the Tested Model 1, $\chi^2_{diff}(27, N = 70) = 79.03, p < .001$. The Tested Model 2, along with the coefficients in standardized form, is provided in Figure 5.

Results indicated that the Prior Exposure to Violence Factor was significantly predicted by all six indicators of this latent variable (i.e., Violence Seen–Ever, Violence Seen–Total Times, Violence Heard–Ever, Violence Heard–Total Times, Victimization–Ever and Victimization–Total Times). Furthermore, 40% of the variance in the My Perpetration of Violence Total scores was accounted for by Anger Ratings, PCL-R Total scores and the Prior Exposure to Violence Factor. Variance was calculated, as suggested by Ullman (1996), by subtracting from the total variance accounted for by the standardized

Figure 5. Tested Model 2: Results from SEM analysis for predicting My Perpetration of Violence Total score for All Scenarios.

solution provided by the EQS program, the amount of variance accounted for by the disturbance associated with the indicators in the solution (i.e., residual). The Prior Exposure to Violence Factor (standardized coefficient = .81), PCL-R Total scores (standardized coefficient = .18), and Anger Ratings for All Scenarios (standardized coefficient = .20) were significant predictors of My Perpetration of Violence Total scores. Those offenders who reported being exposed to more violence in the past, had higher PCL-R scores and reported being more angry to All Scenarios tended to report perpetrating more violence in their lifetime. As well, Hostile Intent Ratings were significant predictors of Anger Ratings (standardized coefficient = .75). However, the direct effect of PCL-R Total scores on Hostile Intent Ratings for All Scenarios was not found to be significant. A significant indirect effect of Hostile Intent Ratings on My Perpetration of Violence Total scores through Anger Ratings, was found (standardized coefficient for the indirect effect = .15, $p < .05$). Offenders who rated higher Hostile Ratings also reported more anger, and perpetrating more number of incidents of violence in their lifetime. Finally, SEM results also indicated a significant relationship between Prior Exposure to Violence Factor and PCL-R Total scores (standardized coefficient = .31).

Next, Tested Model 3, which predicted only the All SAR-FC2 Ratings as a measure of aggression, was re-estimated, $\chi^2(33, N = 70) = 61.92, p < .01$, CFI = .89. A chi-square difference test revealed that the Tested Model 3 was significantly improved by the modifications made to the Tested Model 1,

$\chi^2_{\text{diff}} (26, N = 70) = 75.72, p < .001$. The Tested Model 3, along with the standardized coefficients, is in Figure 6. First, the Prior Exposure to Violence latent variable was significantly predicted by all its six indicators. Furthermore, 32% of the variance in the All SAR-FC2 Ratings was accounted for by Anger Ratings, PCL-R Total scores and the Prior Exposure to Violence latent variable. However, only Anger Ratings for All Scenarios (standardized coefficient = .70) were found to be significant predictors of All SAR-FC2 Ratings. Those offenders who reported being more angry to the scenarios, regardless of type, tended to be those who chose more aggressive responses to the scenarios. Hostile Ratings were significant predictors of Anger Ratings (standardized coefficient = .75). A significant indirect effect of Hostile Intent Ratings on SAR-FC2 Ratings through Anger Ratings was found (standardized coefficient for the indirect effect = .53). Offenders who rated higher in Hostile Intent Ratings also reported being more angered by the situations presented and also chose more aggressive responses to these situations. However, the direct effect of PCL-R Total scores on Hostile Intent Ratings for All Scenarios was not found to be significant.

The Tested Model 4 was designed to predict total number of Violent Convictions (prior and current), using variables pertaining to all sixteen scenarios. The re-estimation of this model was found to be significant in providing a good fit of the model to the data, $\chi^2(33, N = 70) = 57.27, p < .01$, CFI = .89. A chi-square difference test revealed that the Tested Model 4 was

Figure 6. Tested Model 3: Results from SEM analysis for predicting Scenario Aggression Ratings-Forced Choice-2 Ratings (SAR-FC2) for All Scenarios.

Significantly improved by the modifications made to the Tested Model 1, χ^2_{diff} (26, $N = 70$) = 80.37, $p < .001$. Figure 7 provides the Tested Model 4, predicting total Violent Convictions, along with the coefficients in standardized form. However, in reviewing the standardized coefficients, it was found that no significant direct or indirect effects for three of the four independent variables (i.e., Hostile Intent Rating, Anger Ratings, and Prior Exposure to Violence) on Violent Convictions were found. In fact, only 3.2% of the variance in the number of Violent Convictions was accounted for by Prior Exposure to Violence, Anger Ratings and PCL-R Total score. However, the only significant finding was the direct relationship of PCL-R Total scores on total number of Violent Convictions (standardized coefficient = .25, $p < .05$). Therefore, it was decided that further SEM analyses would not be conducted using total number of Violent Convictions.

Similar SEM results to Violent Convictions were found for Institutional Violence. This Tested Model 5 consisted of predicting Violent Institutional Infractions, using variables of all sixteen scenarios. The re-estimation of this model was found to be significant in providing a good fit of the model to the data, $\chi^2(33, N = 70) = 56.67$, $p < .01$, CFI = .89. A chi-square difference test revealed that the Tested Model 5 was significantly improved by the modifications made to the Tested Model 1, χ^2_{diff} (26, $N = 70$) = 80.97, $p < .001$. The Tested Model 5 with the coefficients in standardized form, is given

Figure 7. Tested Model 4: Results from SEM analysis for predicting total Violent Convictions for All Scenarios.

in Figure 8. However, no significant direct or indirect effects of any of the independent variables (i.e., Hostile Intent Rating, Anger Ratings, Prior Exposure to Violence and PCL-R Total scores) were found on Violent Institutional Infractions. Moreover, only 2.8% of the variance in Violent Institutional Infractions was accounted for by Prior Exposure to Violence, Anger Ratings and PCL-R Total score. Due to these nonsignificant findings, further SEM analyses were not conducted for institutional violence.

Based on the significant improvement in the fit of the model to the data from the recommended modifications, the next stage of analyses considered the fit of the modified model for each type of scenario (i.e., Benign, Hostile and Ambiguous). Modifications to the proposed models consisted of eliminating the direct effect of prior exposure to violence on hostile attributions, and separate analyses for the two measures of aggression which were found significant for the model: My POV Total scores and SAR-FC2 Ratings.

Model Testing for Self-Reported Violence Perpetrated By Scenario Type. Three models (Tested Models 6, 7, and 8) were proposed for predicting My POV Total scores, each designed for each type of scenario (i.e., Benign, Hostile and Ambiguous). The Tested Model 6 was based on predicting My Perpetration of Violence Total scores, using only ratings from Benign Scenarios. This model was re-estimated, $\chi^2(32, N = 70) = 61.50, p < .01$, CFI = .89. A chi-square difference test revealed that the Tested Model 6 was

Figure 8. Tested Model 5: Results from SEM analysis for predicting total Violent Institutional Infractions for All Scenarios.

significantly improved by the modifications made to the Tested Model 1, χ^2_{diff} (27, $N = 70$) = 76.14, $p < .001$. The SEM results for the Tested Model 6 is given in Figure 9. Results indicated that the Prior Exposure to Violence Factor was significantly predicted by all six of its indicators. Furthermore, 41% of the variance in the My POV Total scores was accounted for by Anger Ratings for Benign Scenarios, PCL-R Total scores and the Prior Exposure to Violence Factor. The Prior Exposure to Violence Factor (standardized coefficient = .81), PCL-R Total scores (standardized coefficient = .19), and Anger Ratings for Benign Scenarios (standardized coefficient = .24) were significant direct predictors of My Perpetration of Violence Total scores. Those offenders who reported being exposed to more violence in the past, had higher PCL-R scores and reported being angry to the Benign Scenarios tended to report perpetrating more violence in their lifetime. As well, Hostile Ratings were significant predictors of Anger Ratings (standardized coefficient = .71). However, the direct effect of PCL-R Total scores on Hostile Intent Ratings for Benign Scenarios was not found to be significant. A significant indirect effect of Hostile Intent Ratings on My Perpetration of Violence through Anger Ratings was found (standardized coefficient for the indirect effect = .17). Offenders who rated higher Hostile Ratings also reported perpetrating more incidents of violence in their lifetime. Finally, results also indicated a significant relationship between Prior Exposure to Violence Factor and PCL-R Total scores (standardized coefficient = .32) from SEM analyses.

Figure 9. Tested Model 6: Results from SEM analysis for predicting My Perpetration of Violence total score for

Benign Scenarios.

A similar SEM analysis to the Benign Scenarios was conducted for Hostile Scenarios. Results differed slightly. The Tested Model 7, which predicted My Perpetration of Violence Total scores using Hostile Scenarios, was re-estimated, $\chi^2(32, N = 70) = 64.22, p < .001, CFI = .87$. A chi-square difference test revealed that the Tested Model 7 was significantly improved by the modifications made to the Tested Model 1, $\chi^2_{diff}(27, N = 70) = 73.42, p < .001$. The SEM results for the Tested Model 7 is in Figure 10. Results indicated that the Prior Exposure to Violence Factor was significantly predicted by all six indicators of this latent variable (i.e., Violence Seen–Ever, Violence Seen–Total Times, Violence Heard–Ever, Violence Heard–Total Times, Victimization–Ever and Victimization–Total Times). Thirty-nine percent of the variance in the My Perpetration of Violence Total scores was accounted for by Anger Ratings for Hostile Scenarios, PCL-R Total scores and the Prior Exposure to Violence Factor. However, unlike for Benign Scenarios, only Prior Exposure to Violence Factor (standardized coefficient = .81) and Anger Ratings for Hostile Scenarios (standardized coefficient = .17) were significant direct predictors of My Perpetration of Violence Total scores. PCL-R Total scores were not significant predictors. Offenders who reported being exposed to more violence in the past and rated that they would be angry if the Hostile Scenarios occurred to them, tended to report perpetrating more violence in their lifetime. Similar to Benign Scenarios, Hostile Ratings were significant direct predictors of Anger Ratings (standardized coefficient =

Figure 10. Tested Model 7: Results from SEM analysis for predicting My Perpetration of Violence total Score for Hostile Scenarios.

.61) for Hostile Scenarios. As well, like findings for Benign Scenarios, a direct effect of PCL-R Total scores on Hostile Intent Ratings for Hostile Scenarios was not found to be significant. However, unlike for Benign Scenarios, a nonsignificant indirect effect of Hostile Intent Ratings on My POV Total scores through Anger Ratings was found (standardized coefficient for the indirect effect = .10). Finally, results indicated a significant relationship between Prior Exposure to Violence Factor and PCL-R Total scores (standardized coefficient = .31) from SEM analyses.

The last set of SEM analyses conducted for predicting My POV Total scores was the Tested Model 8, using Ambiguous Scenarios. Results were different than those found for either Benign or Hostile Scenarios. First, the Tested Model 8 predicting My Perpetration of Violence Total scores as the measure of aggression was re-estimated, $\chi^2(32, N = 70) = 60.66, p < .01$, CFI = .90. A chi-square difference test revealed that the Tested Model 8 was significantly improved by the modifications made to the Tested Model 1, $\chi^2_{\text{diff}}(27, N = 70) = 76.98, p < .001$. Figure 11 provides the Tested Model 8, predicting My Perpetration of Violence Total scores for Ambiguous Scenarios. Results indicated that the Prior Exposure to Violence Factor was significantly predicted by all six indicators of this latent variable. Furthermore, 42% of the variance in the My Perpetration of Violence Total scores was accounted for by Anger Ratings for Ambiguous Scenarios, PCL-R Total scores and the Prior Exposure to Violence Factor. However, unlike for Benign and Hostile

Figure 11. Tested Model 8: Results from SEM analysis for predicting My Perpetration of Violence Total score for Ambiguous Scenarios.

Scenarios, only Prior Exposure to Violence Factor (standardized coefficient = .81) was found to be a significant direct predictor of My Perpetration of Violence Total scores. Both PCL-R Total scores and Anger Ratings for Ambiguous Scenarios were nonsignificant direct predictors. Those offenders who reported being exposed to more violence in the past tended to be those who reported perpetrating more violence in their lifetime. Similar to both Benign and Hostile Scenarios, Hostile Ratings were significant predictors of Anger Ratings (standardized coefficient = .77). However, unlike for either Benign or Hostile Scenarios, the direct effect of PCL-R Total scores on Hostile Intent Ratings for Ambiguous Scenarios was found to be significant (standardized coefficient = .27). As well, unlike for Benign Scenarios, a nonsignificant indirect effect of Hostile Intent Ratings on My Perpetration of Violence through Anger Ratings for Ambiguous Scenarios was found (standardized coefficient for the indirect effect = .08). Finally, results indicated a significant relationship between Prior Exposure to Violence Factor and PCL-R Total scores (standardized coefficient = .32) from SEM analyses.

Model Testing for Scenario Aggression Response—Forced Choice 2 By Scenario Type. The next set of three proposed revised models (Tested Models 9, 10, and 11) predicted the second significant measure of aggression, SAR-FC2 Ratings from the scenarios, each designed for each type of scenario (i.e., Benign, Hostile and Ambiguous). The Tested Model 9, which predicted Benign SAR-FC2 Ratings as a measure of aggression, was

re-estimated, $\chi^2(32, N = 70) = 68.26, p < .01$, CFI = .86. A chi-square difference test (i.e., comparing the original model tested) revealed that the Tested Model 9 was significantly improved by the modifications made to the Tested Model 1, $\chi^2_{\text{diff}}(27, N = 70) = 69.38, p < .001$. Figure 12 provides the Tested Model 9, along with the standardized coefficients. Similar to that found for the three models predicting My Perpetration of Violence Total scores, Prior Exposure to Violence Factor was significantly predicted by all its six indicators. Furthermore, 31% of the variance in Benign SAR-FC2 Ratings was accounted for by Anger Ratings from Benign Scenarios, PCL-R Total scores and the Prior Exposure to Violence Factor. However, only Anger Ratings for Benign Scenarios (standardized coefficient = .70) were found to be significant direct predictors of Benign SAR-FC2 Ratings. Those offenders who reported being more angry to the Benign Scenarios also tended to be those who chose more aggressive responses to the scenarios. Hostile Intent Ratings were significant predictors of Anger Ratings for Benign Scenarios (standardized coefficient = .71). However, the direct effect of PCL-R Total scores on Hostile Intent Ratings for Benign Scenarios was not found to be significant. A significant indirect effect of Hostile Intent Ratings on SAR-FC2 Ratings through Anger Ratings for Benign Scenarios was found (standardized coefficient for the indirect effect = .50). Offenders who rated higher Hostile Intent Ratings also felt anger, and subsequently chose more aggressive responses to the scenarios.

Figure 12. Tested Model 9: Results from SEM analysis for predicting Scenario Aggression Ratings-Forced Choice2 Ratings (SAR-FC2) for Benign Scenarios.

The results from re-estimating the Tested Model 10 for predicting Hostile SAR-FC2 Ratings were identical to those results from re-estimating the Tested Model 9 for predicting Benign SAR-FC2 Ratings. The model predicting Hostile SAR-FC2 Ratings as a measure of aggression was re-estimated, $\chi^2(32, N = 70) = 61.65, p < .01, CFI = .87$. A chi-square difference test revealed that the Tested Model 10 was significantly improved by the modifications made to the Tested Model 1, $\chi^2_{diff}(27, N = 70) = 75.99, p < .001$. The Tested Model 10, along with the coefficients in standardized form, is provided in Figure 13. Prior Exposure to Violence Factor was significantly predicted by all six measures. Furthermore, 29% of the variance in the Hostile SAR-FC2 Ratings was accounted for by Anger Ratings for Hostile Scenarios, PCL-R Total scores and the Prior Exposure to Violence Factor. However, only Anger Ratings for Hostile Scenarios (standardized coefficient = .64) were significant direct predictors of Hostile SAR-FC2 Ratings. Those offenders who reported being angry to the Hostile Scenarios also tended to be those who chose more aggressive responses to these scenarios. Hostile Intent Ratings were significant direct predictors of Anger Ratings for Hostile Scenarios (standardized coefficient = .61). However, again, the direct effect of PCL-R Total scores on Hostile Intent Ratings for Hostile Scenarios was not found to be significant. A significant indirect effect of Hostile Intent Ratings on SAR-FC2 Ratings through Anger Ratings for Hostile Scenarios was found (standardized coefficient for the indirect effect = .39). Offenders who rated

Figure 13. Tested Model 10: Results from SEM analysis for predicting Scenario Aggression Ratings-Forced Choice2 Ratings (SAR-FC2) for Hostile Scenarios.

higher Hostile Intent Ratings also reported being angry, and then chose more aggressive responses to the situations in Hostile Scenarios.

Finally, the Tested Model 11, which predicted Ambiguous SAR-FC2 Ratings as a measure of aggression, was re-estimated, $\chi^2(32, N = 70) = 67.84, p < .001, CFI = .87$. A chi-square difference test revealed that the Tested Model 11 was significantly improved by the modifications made to the Tested Model 1, $\chi^2_{diff}(27, N = 70) = 69.80, p < .001$. The Tested Model 11, along with the coefficients in standardized form, is provided in Figure 14. Prior Exposure to Violence Factor was significantly predicted by all six indicators of this latent variable (i.e., Violence Seen–Ever, Violence Seen–Total Times, Violence Heard–Ever, Violence Heard–Total Times, Victimization–Ever and Victimization–Total Times). Furthermore, 28% of the variance in Ambiguous SAR-FC2 Ratings was accounted for by Anger Ratings for Ambiguous Scenarios, PCL-R Total scores and the Prior Exposure to Violence Factor. Unlike for Benign and Hostile Scenarios, both Prior Exposure to Violence Factor (standardized coefficient = .64) and Anger Ratings for Ambiguous Scenarios (standardized coefficient = .68) were significant direct predictors of Ambiguous SAR-FC2 Ratings. Those offenders who reported being exposed to more violence in the past, and reported being more angry in the Ambiguous Scenarios, also tended to be those who chose higher levels of violence in response to the situations in the Ambiguous Scenarios. However PCL-R Total scores did not have a significant direct effect on Ambiguous

SAR-FC2 Ratings. Hostile Intent Ratings were significant direct predictors of Anger Ratings for Ambiguous Scenarios (standardized coefficient = .77). However, unlike for Benign and Hostile Scenarios, the direct effect of PCL-R Total scores on Hostile Intent Ratings for Ambiguous Scenarios was found to be significant (standardized coefficient = .27). Similar to that found for Benign and Hostile Scenarios, a significant indirect effect of Hostile Intent Ratings on Ambiguous SAR-FC2 Ratings through Anger Ratings was found (standardized coefficient for the indirect effect = .52). Offenders who were psychopathic, rated higher Hostile Intent Ratings, became angry, and chose more aggressive responses to the scenarios. Finally, results also indicated a significant relationship between Prior Exposure to Violence Factor and PCL-R Total scores (standardized coefficient = .33) from SEM analyses.

It should be noted that the chi-squares for the fit of both the original model (Tested Model 1) and modified models (i.e., Tested Models 2 to 11) on the data were significant. This indicated that these models were still significantly different from the data. However, significant improvement in the fit of the data was found. First, the significance levels for the chi-squares of the difference between the models tested and the data decreased from .001 (for the original model) to .01 (for the modified model). Second, the CFI index for the goodness of fit of the model to the data improved from .78 to .91, an index level which is deemed a desired level for a significant goodness of fit (Ullman, 1996). Overall, these results indicate improvement in the fit of the

Figure 14. Tested Model 11: Results from SEM analysis for predicting Scenario Aggression Ratings-Forced Choice2 Ratings (SAR-FC2) for Ambiguous Scenarios.

final models to the data. However, overall variance accounted for by the factors in the model related to aggression ranged from only 2.8 (for Violent Institutional Infractions) to 42 percent (for My POV total scores, using Ambiguous Scenarios).

Discussion

The primary focus of this research endeavor was to test the proposed model of affective aggression which entailed relationships among factors of a hostile attribution bias (i.e., cognitive distortion), prior exposure to violence, psychopathy and state anger (Figure 2). This model was tested with adult male offenders incarcerated in a medium-security federal penitentiary in Canada. Results from this current research study supported previous research findings. In addition, this study has further contributed to the research area of hostile attribution bias (a cognitive distortion), among adult male offenders, through testing of factors of interest and aggression. Based on these research findings, the outline to the following discussion of Study 2 results consists of (a) the hypotheses of specific relationships among factors; (b) the affective model of aggression proposed; (c) the limitations of Study 2; and (d) implications. As well, future research directions are suggested where relevant.

Hypotheses Examined

Psychopathy and Prior Exposure to Violence. As the first hypothesis for Study 2 predicted, overall, a significant, positive relationship between

psychopathy and prior exposure to violence was found. Overall, this research study provided some evidence that psychopathic offenders are more likely to have been exposed to violence in their lifetime, regardless of the form of violence exposure (i.e., seeing or hearing violence done to others, and being victimized by violence). These findings are consistent with other research that has found a violent past amongst psychopaths. That is, earlier studies have reported that childhood backgrounds of adolescent psychopaths were characterized by witnessing parental conflict and violence (McCord & McCord, 1959), and being raised by abusive parents (Jenkins & Hewitt, 1944). As well, studies have reported that adolescent psychopaths were more likely to have been raised in maladaptive families, consisting of physical punishment (Forth, 1995) and physical and sexual abuse (Marshall & Cooke, 1995). In an extensive longitudinal study of 1069 adults who were abused and/or neglected under the age of 12, Weiler and Widom (1996) found that those abused/neglected had significantly higher PCL-R scores, even when controlling for gender, race, and any violence-related items from the PCL-R than those nonabused/nonneglected.

Results from Study 2 also provided a further understanding of the relationship between psychopathy and prior exposure to violence.

Psychopathy was found to be positively correlated to the extent of violence that offenders reported being exposed to in their lifetime, both in terms frequency and diversity of violence exposure.

Study 2 results revealed that offenders who scored higher on the PCL-R Total scores and Factor 2 scores reported seeing a significantly higher number of violent incidents and more types of violence. However, to note interpretation of these results are made cautiously since these relationships with the PCL-R Total scores became nonsignificant with more rigorous analyses by considering family-wise error rates of significance levels. These findings do suggest that seeing violence done to others, both in terms of frequency and diversity of violence may contribute to behaviors relating to a criminal lifestyle which are characteristic of Factor 2 of the PCL-R. These behaviors consist of antisocial behaviors (including violence), early behavioral problems and juvenile delinquency. Moreover, this is supportive of the social learning perspective which claims that aggressive behavior is learned from direct or vicarious (i.e., modeling) exposure to environments which reinforces aggression as a means of acceptable goal attainment (Bandura, 1986). Over time, with repeated exposures to a violent environment, a pattern of aggressive behavior as a form of goal attainment may stabilize into adulthood. However, whether the acts of violence that offenders see are exactly the same types of violence that they perpetrate was not determined in this study. Future research might examine this link between exposure to various types of violence at various time periods, psychopathy and the perpetration of types of violence in adulthood.

Second, in terms of violence heard, that is, violent incidents perpetrated against others that offenders reported they were told of throughout their lifetime, both frequency and diversity of violence heard were positively correlated to higher PCL-R Total scores and Factor 2 scores. However, when using family-wise error rates for correlational analyses to examine level of significance, all correlations between PCL-R and Violence Heard became nonsignificant, except between PCL-R Factor 2 scores and number of diverse violent events heard. With this in mind, these significant correlations, with more confirmatory research, would seem to support Piaget (1965), that higher cognitive processes are involved in the encoding, interpreting and learning from more distal exposures to violence (such as hearing of violence done to others), which are attained later in life. However, as noted, further research examining this relationship would be required.

Third, in a more limited extent, being victimized by violence was also found to be significantly correlated to psychopathy. It was found that offenders who reported being victimized to a higher number of different types of violence had higher PCL-R Total scores and Factor 2 scores. It is important to note though that these became nonsignificant with the more rigorous test of this correlation with adjustments made through the use of family-wise error rates. In this study, the types of violence examined included various levels of violence (i.e., being chased, hit, attacked with a weapon, shot, shot at, sexually assaulted and threatened). Psychopaths may have learned from

being victimized by multiple forms of violence that aggressive behaviors across different types is successful to goal attainment. However, future research would benefit from comparing the differential impact from being victimized by the different forms of violence on psychopathy and whether a combination of victimization of specific forms of violence are critical in the association with psychopathy. Results from Study 2 did not find a significant correlation between the total number of incidents of victimization and psychopathy. This may suggest that the number of times an offender is victimized by violence does not relate to psychopathy. Based on the findings of Study 2, continued research on the antecedents of psychopathy would benefit from investigating the exposure to violence throughout the lifespan, not only in terms of the specific types of violence exposed to, but also the critical time period when this exposure may have a significant effect, and the critical extent of frequency with which this exposure occurred.

Psychopathy and Hostile Attribution Bias. It was also hypothesized that psychopathy would be related to hostile attribution bias. However, Study 2 results found that psychopathic offenders were more likely to attribute hostile intent on the actions of a person only in situations in which the actions were presented ambiguously. This is similar to findings of previous research. The correlation between Psychopathy Checklist–Revised (PCL-R) Total scores and Hostile Intent Ratings for Ambiguous Scenarios in Study 2 was found to be higher ($r = .27$) than that found by Serin ($r = .22$) but lower than

correlations reported by Seager ($r = .66$) and Bettman ($r = .38$). This relationship became nonsignificant with the more rigorous test of this correlation with adjustments made through the use of family-wise error rate. Therefore, interpretations using only results from Study 2 would not suffice to conclude a relationship. Unlike Seager (1996), the current study found that hostile intent ratings did not correlate with either the Factor 1 or Factor 2 scores of the PCL-R. Both Bettman and Serin did not examine these relationships. To note, though, differences found between Study 2 and Seager's results may be due to the fact that in Study 2, response bias was controlled for, whereas this was not done in the Seager study. In fact, in Study 2, prior to controlling for response bias, PCL-R Factor 2 scores were found to be significantly correlated to Hostile Intent Ratings for Ambiguous Scenarios.

Study 2 did not find a relationship between psychopathy and hostile attribution bias for Benign or Hostile Scenarios. This kind of differential analysis between scenario types was not conducted in any prior research with adult offenders. Based on current findings, psychopaths may be more impulsive and disinhibited in forming hostile judgments on the actions of others and less likely to critically examine alternative judgements, particularly in situations when social cues of hostility are not clear than nonpsychopaths (Serin, 1988). Overall, results of the current study suggest that hostile attribution bias is one component to the construct of psychopathy. Obviously,

much more confirmatory investigation is required to examine psychopathy and hostile attributions for hostile and benign situations, since this is only the first study which has examined the relationship between psychopathy and hostile attribution bias with these types of scenarios.

Prior Exposure to Violence and Hostile Attribution Bias. No direct association was found between prior exposure to violence and hostile attribution bias. This lack of relation was found regardless of the total number of types of violent incidents, or the total number of violent incidents that offenders reported being exposed to. This seems to suggest that there is no direct impact of the extent of prior exposure to violence on the hostile attribution bias. However, the failure to find a relationship between prior exposure to violence and hostile attribution bias may be accounted for by the methodological approach of Study 2, particularly pertaining to the instrument used to measure prior exposure to violence (i.e., My Exposure to Violence). One element not considered in this study was the degree of extremity in particular types of violence measured by the My ETV. That is, the association between the exposure of particular types of violence and hostile attribution bias was not examined in this study. Hence, all types of violence exposures were given equal weight in terms of relating to hostile attribution bias. However, alternatively, perhaps certain types of violence, such as seeing someone being assaulted with a knife on a number of occasions had a greater impact than seeing someone being chased for the same number of

occasions. Maybe only more extreme forms of violence, such as witnessing the killing of someone or the assault of someone with a weapon directly relate to hostile attribution bias. Therefore, it is possible that the high frequency of less extreme forms of violent events (e.g., chasing) that the offenders reported being exposed to may have minimized or masked the effect of less frequent but more extreme forms of violence (e.g., assault with a weapon or murder).

There are no other studies in the research literature which have examined the relationship between prior exposure to violence, as defined by this study (i.e., witnessing and victimization of violence), and hostile attribution bias. Nonetheless, one promising link between prior exposure to violence and hostile attribution bias is indirectly through the association found between psychopathy and prior exposure to violence, and between psychopathy and hostile attribution bias. As such, findings from this study should encourage continued future investigation into the relationship between prior exposure to violence and hostile attribution. Future research endeavors should consider delineating the association between the extent of exposure to particular types of violence and hostile attributions, in light of the noted concerns in the use of the My ETV measure in this study.

Alternatively, it may be that prior exposure to violence, as defined, is not related to hostile attribution bias directly. Therefore, future research should consider other possible situational factors related to violence exposure

that the General Affective Aggression Model proposes to be related to hostile attribution bias. Some suggestions are poor parental child-rearing practices (Patterson, DeBaryshe, & Ramsey, 1989), parental use of and attitudes towards violence (Huesmann, Lefkowitz, Eron & Walder, 1984), and violent peer associates (Baron & Richardson, 1994) which have been proposed to be correlated to future aggressive behavior.

Hostile Attribution Bias in Ambiguous, Hostile and Benign Scenarios.

Similar to previous studies, the current study did find that hostile attribution bias was found for Hostile Scenarios (Epps & Kendall, 1995; Graham et al., 1992) and Benign Scenarios (Eckhart et al., 1998), as well as Ambiguous Scenarios. It was also hypothesized that, similar to findings from studies of nonoffenders (children, adolescents and adults), offenders would more likely attribute hostile intent in Hostile Scenarios than in Ambiguous Scenarios, and more in Ambiguous Scenarios than in Benign Scenarios. Results from this study confirmed this hypothesis. Similar findings have been reported for studies investigating adult populations by Epps and Kendall (1995), Flory et al. (1998) and Mikulincer (1998). However, this is the first study which has examined the difference in the rating between the three types of scenarios with an adult male offender sample. Therefore, more confirmatory research would be beneficial. Regardless, results from Study 2 do suggest that the situations presented to the offenders were correctly labeled in each category,

and that the use of the Hostile Attributions Inventory measure is a valid measure of hostile attribution bias for adult male offenders.

Hostile Attribution Bias and Anger. As hypothesized, offenders who rated hostile intent in the actions of others in scenarios presented also rated that they would become angry if such actions were taken against them. This is in direct support of similar studies on children / adolescents (Crick, 1995; Graham, 1998; Guerra et al., 1993; Weiner et al., 1987), adult nonoffenders (Anderson, 1997; Anderson et al., 1998; Quigley & Tedeschi, 1996), and adult offenders (Mikulincer, 1988; Seager, 1996). Moreover, this positive relationship was found, regardless of the type of scenario (i.e., Hostile, Ambiguous or Benign) presented to the offenders. Regardless of the situation, offenders who interpreted the actions of a person as hostile, indicated that they would become more angry. Structural equation modeling analyses further supported that attributing hostile intent leads to the emotional arousal of anger. These findings support Wiener's (1985) attributional theory which proposes that anger is provoked by attributing a person's intentions as harmful or unpleasant. She maintains that this belief is a necessary condition for anger arousal. Moreover, this provides evidence for the proposed model of affective aggression by Geen (1990) which surmises that when judgements of hostile or malicious intent are made of a situation, this would invoke high levels of stress which consist of physiological or psychological arousal that is primarily anger.

Testing the Models: Direct and Indirect Links to Aggression

In addition to the specific direct relationships which were examined by the specific hypotheses, the test of the complete model proposed served to examine both the direct and indirect relationships of the factors of interest with aggression (Figure 2). Results from the SEM analyses conducted on the proposed models (Figures 4 to 14) provided some support for these relationships. Moreover, modifications to the proposed model resulted in a significant improved fit to the data. These findings constitute unique contributions to previous research on hostile attribution bias and aggression. There still was a significant difference between the tested models and the fit to the data, even though significant improvement in the fit of the data was found. Yet, overall variance accounted for by the factors in the models tested reached 42 percent. Hence, future research should be directed towards examining other significant factors which contribute to aggression.

One overall finding from the SEM analyses of the model was that differences were found for models for each of the three types of scenarios. This would suggest that future studies of hostile attribution bias with offenders should include all three types of scenarios when using hypothetical situations to measure hostile attribution. This is supportive from the perspective of the social information processing model, which proposes that the presence of a specific mental process (i.e., hostile attribution bias) would be dependent on the specific distinctiveness of a social situation (Dodge et al., 2002).

Another finding from the SEM analyses of the model was that the models significantly improved when the measures of aggression were considered separately, rather than as indicators of one latent factor of aggression. A small sample size ($N = 70$) limited the ability to examine further the construct of aggression using the four measures (i.e., Scenario Aggression Response Ratings, My Perpetration of Violence, Number of Violent Convictions and Number of Institutional Infractions), through statistical techniques such as factor analysis. However, the correlation matrix between the aggression measures (Table 26) provided indication that violence as measured may not be a unitary construct. Moreover, factors considered in the current study, namely hostile attribution bias, prior exposure to violence, anger and psychopathy, combined, significantly predicted only two of the measures of aggression: self-reported perpetration of violence and level of aggression response to the hypothetical scenarios. One consideration that must be given to these results is that the model fit the data most closely when these two measures of aggression were considered separately, which may be due to method variance. That is, with the PCL-R being the exception, all measures in this study which significantly contributed to the data fitting the model were self-report. However, measures obtained from official records (i.e., violent offence convictions and institutional violent infractions) did not. The following discusses the results from Study 2 in examining the model proposed in terms of the relationships between each factor of interest (i.e.,

prior exposure to violence, hostile attribution bias, and psychopathy) and the measures of aggression.

Prior Exposure to Violence and Aggression. Prior exposure to violence had a significant direct effect on the total number of incidents of violence that the offenders reported perpetrating in their lifetime. This finding is similar to those found by other studies of children/adolescents (Kolbo et al., 1996; Lewis et al., 1979; Miller et al., 1999), adult nonoffenders (Selner et al., 1998) and adult offenders (Bach-y-Rita & Veno, 1974; Kalmuss, 1984; Owens & Straus, 1975; Seager et al., 2000). These findings support a social learning perspective in that witnessing violence (seeing or hearing) or victimization of violence may lead to the development of responding to situations of provocation in a similarly aggressive manner. Further findings from this study suggest that not only seeing violence, but hearing about violence perpetrated against someone known can also impact future acts of aggression. This supports Bandura's (1973) perspective that aggression can also be acquired through the observation of violence, including vicarious learning.

Prior exposure to violence did not directly predict the level of aggression in response to the hypothetical scenarios. This may be due to similar reasons outlined earlier relating to the issues of methodology and the specific instrument used to measure exposure to violence (i.e., My ETV). Alternatively, not considered in Study 2 were other factors producing a violent environment such as having violent peer associates as a child or adolescent,

which may have also produced more opportunities of learning violence as a method of goal attainment, which may have then led to future aggressiveness.

Overall, this study did not support the proposal by Schwartz and Proctor (2000) that prior exposure to witnessing violence would predict aggression indirectly through its direct relationship with hostile attribution bias, which would act as a mediating factor. Through the correlational analyses and structural equation modeling analyses, prior exposure to violence was not found to have an indirect effect on aggression through hostile attribution bias and state anger. In fact the structural equation modeling analysis results from the Wald Test recommended the elimination of this direct link between prior exposure to violence and hostile attribution bias. One direction for future research is to examine a distal relationship between prior violence exposure and hostile attribution bias through the significant links between prior violence exposure and psychopathy, and between psychopathy and hostile attribution bias. These results may be supporting a premise that the cycle of victimization to perpetration of violence is not necessarily inevitable (Widom, 1989). Therefore, perhaps the inclusion of such a type of exposure to violence may have masked the effect of witnessing violence. Alternatively, however, as previously discussed, these results could be a reflection of the issues related to the specific instrument used to measure prior exposure to violence (i.e., My ETV).

Psychopathy and Aggression. Psychopathy was found to directly impact on the total number of violent incidents offenders reported that they perpetrated in their lifetime, and total number of violent prior and current convictions. This is similar to findings from previous studies (Hemphill et al., 1998; Seager, 1996; Serin, 1988). In addition, when all scenarios were included, psychopathy had a direct link to total number of prior and current violent convictions.

Structural equation modeling analyses indicated that the direct link from psychopathy to institutional misconducts was not significant, as had been also reported by other studies (Edens et al., 1999; Brandt et al., Curtin, 1997; Rogers et al., 1997). However, other studies have found a significant relationship (Hare & McPherson, 1984; Serin et al., 1990). Perhaps a nonsignificant relationship was found in Study 2 due to the specific measure of institutional misconduct used. This study used violent institution infractions for which offenders were actually found guilty. Other studies have not used such a stringent operational definition.

Further, a direct effect of psychopathy on aggressive responses to the hypothetical scenarios was not found, regardless of the scenario type. Serin (1988) also did not find a significant relationship between psychopathy and response of aggression in Ambiguous Scenarios. This may indicate that cognitive distortions, such as hostile attribution bias, as well as the emotional

arousal of anger, may be a necessary condition for psychopaths to chose aggressiveness as a response choice of behavior.

Indeed, this was found when Ambiguous Scenarios were presented. Psychopathy was found to have a significant indirect link to aggression (self-reported perpetration of violence and scenario aggression response ratings), through its direct effect on hostile attribution bias and indirect effect on anger. The fact that psychopathy was found to have a significant indirect effect on the Ambiguous Scenario Aggression Response Ratings (SAR-FC2) through its direct effect on hostile attribution bias and indirect effect on state anger, suggests that psychopathy may be associated with reactive or affective aggression, rather than just instrumental aggression, as suggested previously. Indeed, though Cornell et al. (1996) proposed that psychopathy was only significantly related to instrumental aggression, their study on psychopaths did find a strong overlap of elements of reactive aggression in the acts of psychopaths which were defined as instrumental. Psychopaths may have developed a sense that the world is out to harm them (i.e., hostile attribution bias) and thus be prepared to strike out against others before harm is done to themselves. Impulsivity may play a role in the relation between psychopathy and hostile attribution bias. It may contribute to psychopaths deciding to striking out at someone else without taking the time to reflect on the situation, such as uncovering necessary cues to determine whether or not actual harm was intended, especially when all social cues are not readily

available. Moreover, the specific anger reported by the offenders in this study, in response to Ambiguous Scenarios, may be an indication of psychopaths' low tolerance level (Blackburn, 1993).

Overall, one of the key findings in Study 2 which furthered the research literature on hostile attribution bias and psychopathy is that psychopathy had a significant indirect relationship to aggression (as defined by the SAR-FC2 Ratings), via the mediating variables of hostile attribution bias and state anger for aggressive scenarios responses to Ambiguous Scenarios. That is, the present findings support the perspective that psychopathy is a predictor of hostile attribution bias, which in turn promotes the choice of aggression as a response behavior (Blackburn & Lee Evans, 1985). Findings from the correlational analysis revealed that Factor 2 of the PCL-R also appears to be significant to predicting hostile attribution bias. This may suggest that characteristics in Factor 2 such as poor behavior controls and impulsivity may be relevant in contributing to this type of cognitive distortion. In fact, a study by Seager (1996) supports the relevance of impulsivity by finding significant correlations between impulsivity and hostile attribution bias and psychopathy. Future research should determine the specific role (i.e., direct or indirect effects) that impulsivity plays on hostile attribution bias.

Hostile Attribution Bias and Aggression. The effect of hostile attribution bias was found to have an indirect effect on aggression, through anger as a mediating variable. Aggression in these significant findings was defined by

either aggression response to the scenarios, regardless of type (i.e., Benign, Hostile or Ambiguous), and the total number of self-reported acts of violence. Prior research has demonstrated that there is a significant relationship between hostile attribution bias and aggression with children (Dodge, 1980; Dodge & Frame, 1982; Dodge & Somberg, 1987; Lochman & Dodge, 1998), adolescents (Graham, 1998; Guerra et al., 1993), adult nonoffender (Epstein & Taylor, 1967; Ohbuchi & Oku, 1980; Taylor, 1967), and adult offenders (Bettman, 1998).

Interestingly, hostile attribution bias did not have an indirect link to self-reported violence for the Ambiguous Scenarios, though there was a significant relationship for the other two scenarios. This would seem to suggest that offenders perpetrate violence when they believe that harm is intended for them, particularly when the social cues from the other person's actions are either clearly hostile or clearly nonhostile. These results are similar to those found in others studies reporting similar findings for Hostile Scenarios (Epps & Kendall, 1995; Graham et al., 1992) and Benign Scenarios (Eckhart et al., 1998).

Another key finding in Study 2 was that support was found for the link between hostile attributions and aggression, through the indirect mediator variable, state anger. Prior research studies have not demonstrated how anger played a role in this relationship for adult offenders. This study adds to the current research literature by suggesting that there is an indirect effect of

hostile attribution bias on aggression, through anger. From the SEM analysis, it was found that hostile attribution bias has a direct link to anger which has a direct link to aggression. Crick and Dodge (1996) suggested that anger can either be an antecedent to cognitions of hostile attribution bias, or follow these cognitions. On the other hand, Anderson et al. (1995) stated that anger can be invoked particularly at the target person in the situation at the same time (i.e., parallel) as the hostile attribution bias, similar to that suggested by Berkowitz (1990). However, this current study supports the theoretical perspective of Novaco and Welsh (1989) and Geen (1990) who propose that the individual first makes hostile judgements on intentions of the person. Once this cognitive distortion is formed, then anger is subsequently induced.

Anger and Aggressive Behavior. Finally, it was hypothesized that there would be a positive relationship between state anger and aggression. However, limited support was found in Study 2. Results in this study found that state anger (i.e., ratings of anger by offenders for the hypothetical scenarios) was significantly correlated to some of the measures of aggression used in the study. First, offenders who rated that they would be angry in either Hostile, Ambiguous or Benign Scenarios indicated that they would take more aggressive forms of behavior as response to these scenarios. The results from the structural equation modeling analysis indicated a direct link from the anger ratings to scenario aggression response ratings, for all three types of

scenarios. These findings suggest that emotional arousal plays a significant direct role in affective aggression.

This finding has not been examined in previous research literature with offender populations and therefore comparisons were not possible. However, the current findings are similar to studies that found that aggressive children are more likely to act out aggressively if they perceive that they are the direct recipients of the perceived hostile intentions of a person, than if they were only observing such hostility occurring to someone else (Dodge & Frame, 1982; Dodge & Somberg, 1987; Zelli et al., 1999).

In Study 2, state anger was also found to be positively correlated to self-reporting of the number of incidents of violence perpetrated by the offender throughout the lifetime. However, these correlations were dependent upon the type of scenarios. Higher Anger Ratings for Benign and Hostile Scenarios were associated with higher overall number of self-reported incidents of violence perpetrated by the offenders. However, this relationship for Hostile Scenarios became nonsignificant with the adjustment made to the test of significance using family-wise error rates. Interesting, none of the particular types of violence correlated with Anger Ratings from Ambiguous Scenarios.

No significant relationship between state anger and violent offence history or institutional violence was found, regardless of the types of scenarios the anger ratings were made from. This was revealed by both

correlational and SEM analyses. One possible reason for these nonsignificant findings could be that the violence entailed in the violent offences and institutional infractions were less likely to be reactive or affective aggression (i.e., not related to anger associated with attributing hostile intent on the actions of the other person). The offender's purpose or goal in perpetrating these official records of violence could have been due to motives not related to affective aggression. These acts of violence could be due to more instrumental violence or proactive aggression. However, the reasons for the acts of violence for which the offenders were convicted or received institutional infractions were not examined in this study. Hence, the categorization of the violent offence history and institutional misconducts were not attainable. Reasons for these nonsignificant findings would be supported by Simourd and Mamuza (2000) who suggest that the causal factors for violent behavior such as criminal or institutional misconduct are much more complex, involving other possible intervening factors such as other environmental factors (e.g., the highly supervised environment of a prison setting which may not allow of an inmate to react aggressively immediately from a situation), psychological factors, and coping skills. In fact, one study did not find a relation between a distal measure of aggression (i.e., criminal behavior) and anger/hostility (Loza & Loza-Famous, 1999).

Study 2 Limitations

Generalizability of the results of this research are limited by several methodological considerations. First, Bonferroni corrections were conducted to reduce the possibilities of Type I Error (i.e., rejecting a null hypothesis when it is actually true). However, in doing so, it is acknowledged that there is an increased possibility that Type II Errors may have been made in this study (i.e., accepting a null hypothesis when it is actually false). There may have been some relationships examined which were truly significant that were subsequently rejected. One issue which may have resulted in the false acceptance of the null hypothesis may have been the limited sample size ($N = 70$) which may have significantly impacted on the power of tests conducted in this study.

Another methodological limitation pertains to the specific instrument used to measure prior exposure to violence. Overall, the My Exposure to Violence instrument may be viewed as a cursory attempt to measure the extent to violence that offenders have been exposed to in their lifetime. Thus far in the research literature, it was found to be the most comprehensive, with acceptable psychometrics. However, the My ETV is still quite limited in its capacity to quantify the full extent to which participants were exposed to violence in their lifetime. First, in this current study, low to moderate internal consistency of the items were achieved with the subscales of the My ETV measure. This was particular for the items included in the subscales for

Violence Seen—Ever, Violence Heard—Ever, Victimization—Ever and Victimization—Total Times. Second, the list of specific violent events included in this measure may be too restrictive. The Violence Heard subscale consists of only three items. As well, the items in this measure are not weighed and therefore only the magnitude of the entire measure of prior exposure to violence is obtained. All items, regardless of severity, are deemed of equal importance. However, it is possible that some of the items may have a greater impact on hostile attributions, anger and aggression than others. Indeed, in using this measure, it is suggestive that seeing someone being chased would have the same impact as seeing someone being killed. This may be one reason why a relationship to hostile attributions was not found.

Also important to consider is that it may be possible that the participants did not give an accurate or exact account of the extent of violence they were exposed to in their lifetime. The circumstances of data collection (e. g., prison setting, providing personal, sensitive information in an interview with a researcher unknown to the participant, lack of established rapport) for prior exposure to violence may not have been most ideal for reporting sensitive incidents. Therefore, it is conceivable that more devastating or adversely affecting incidents of violence may have been under-reported. In fact, during the interviews with the offenders, when some offenders were asked if they had seen anyone being killed or if they had killed someone, they would hesitate to provide an answer and then say they would just rather say no,

they had not. This was the response recorded for these offenders. As well, limited memory, impression management and highly specific definitions of the violent incidents may have depressed (or distorted) the actual extent of violence exposure.

For the My Perpetration of Violence measure, under-reporting of self-perpetrated violence may have also occurred. Participants may have been less likely to report violence they perpetrated due to problems with memory recall, impression management, limited definitions of violence provided or purposeful lack of reporting. Participants may not have reported some acts of violence due to severe consequences such as possible charges being laid for more serious offences not yet dealt with officially in the criminal justice system or in the institutional justice system (e.g., serious assaults, murder) or due to fear of retaliation from others within the prison.

The specific participants used in Study 2 may have also limited the generalization of the findings. First, all participants were selected from only one Canadian federal medium-security institution in the Prairies Region. Therefore, there may be implicit differences between these participants and federally-sentenced offenders either incarcerated in other secure facilities with differing security levels, or those offenders on community supervision. Moreover, findings may not be generalizable due to the large proportion of participants who were of Aboriginal ancestry (i.e. 60%). Culture and race may be a confounding variable with the hypotheses tested. The only study which

investigated whether race differences exist in hostile attribution biases examined Caucasian and African boys, and reported nonsignificant results (Lochman & Dodge, 1998). In Study 2, significantly more Aboriginal participants were found to have seen or be victimized by more different types of violent events in their lifetime, and rated hostile intent higher, regardless of scenario type, than Caucasian participants. The limited sample size did not allow for further testing of models to determine whether or not these differences contributed to differential models of affective aggression for these two groups. Further research is necessary to examine the hypotheses for different populations of offenders, both incarcerated in secure facilities and on community supervision, and further examine race/culture as a possible confound.

Lastly, it is noted that most of the instruments (with the exception of offence history, institutional misconducts and PCL-R), were self-report measures. Perhaps other measures should have been included in this study to corroborate information such as prior exposure to violence. Therefore the problems inherent in the use of such instruments, particularly with offender populations should be considered. However, one method of addressing this issue in this Study 2 was the use of the Paulhus Deception Scale for the examination of bias in providing socially desirable responses.

Implications

Overall, these findings are relevant to both researchers and clinicians dealing with affective aggression. In addition to the specific future research targets recommended in this discussion, implications from this study include issues of assessment, prediction and treatment of aggression and related factors such as hostile attribution bias. First, a strong association was found between this cognitive distortion and aggression. Therefore, there is relevance in the continued use of the method of presenting hypothetical scenarios, followed by questions, to obtain a measure of hostile attribution bias for adult male offenders. The advantage of such a method is the ease with which the measure is administered, scored and interpreted.

Also relevant from Study 2 is that a significant link between hostile attribution bias and psychopathy has been demonstrated. Therefore, future assessment issues of psychopathy would benefit from the assessment of hostile attribution bias. Future research is required to determine whether or not hostile attribution bias is a significant risk factor for psychopathy among juvenile or adult offenders. Moreover, if future research can provide evidence of the treatment targets of effectively addressing these types of distortions that are characteristics of psychopaths, perhaps treatment aspects of psychopathy can be addressed.

Moreover, the significant indirect effect of hostile attribution bias on aggression demonstrated that these cognitive distortions represent an

important factor to consider in the assessment of potential violent behavior. Given that a significant indirect link was found between hostile attribution bias and self-reported aggression and the choice of aggression, this study provides a possible method of assessing a cognitive distortion that an offender may demonstrate. This in turn, may be relevant in predicting risk to future aggressive behavior. However, if future use of this measure is to be used in the prediction of aggressive behavior, further empirical investigations should consist of establishing norms and levels of risk to aggressive behavior associated with certain level of the scores achieved on the measure of hostile attribution bias.

Moreover, offenders who demonstrated hostile attribution bias also reported high degree of violence perpetrated in their lifetime. Therefore addressing this cognitive distortion in treatment may prove effectual in reducing the offender's risk for future aggressive behavior. Such treatment targets would consist of providing violent offenders with proper identification of this cognitive distortion in specific situations, and subsequent effective problem-solving strategies, whether the violent offenders are psychopathic or not. In fact, Zamble and Porporino (1988) found that poor coping strategies were significantly related to failure in the community release of offenders. Anger also was found in Study 2 to be directly linked to reactive or affective aggression, which, in turn, provides as another treatment target in addressing such types of violence. Overall these suggested treatment targets may prove

beneficial in the reduction of aggression. In fact, there is some support for success of such treatment targets for reducing future aggression. Hudley and Graham (1993) found that aggressive boys who received an intervention designed to aid in identifying intentionality in the actions of others were less likely to attribute hostile intent and were less aggressive in post-treatment than aggressive boys who did not receive the treatment.

This current research has provided a unique contribution to the literature on the role of hostile attribution bias on affective aggression, as well as other significant predictors of affective aggression. Results indicated that adult offenders who attribute hostile intent on the actions of a person are more likely to choose a more aggressive response. Moreover, psychopathy significantly contributes as a predictor of this cognitive distortion, specifically in situations whereby the cues of the situation are ambiguous or less obvious. These findings have strong implications for possible treatment targets in the intervention for preventing future affective aggression. Further research will be required to make definitive statements regarding hostile attribution bias as a significant predictor of violent recidivism.

Conclusion

This research investigated the relationship between hostile attribution and affective aggression, with the influencing factors of psychopathy and prior exposure to violence and mediating factors of state anger. First, a positive relationship was found between psychopathy (PCL-R Total scores and Factor

2 scores) and prior exposure to violence, both in terms of the total number of violent incidents exposed to and the total number of different types of violence exposed to. Second, similar to previous research findings, offenders from this study were more likely to rate hostile intent of the actions of persons in Hostile Scenarios than in Ambiguous Scenarios. Moreover, offenders were more likely to rate hostile intent in the actions of persons in Ambiguous Scenarios than in Benign Scenarios. However a significant relationship between psychopathy and hostile attribution bias was found only in situations where the social cues in the incident were ambiguous. Third, offenders who judged hostile intent in the actions of others were found to report that they would feel angry if such incidents occurred to them, regardless of the type of scenario (i.e., Benign, Hostile, or Ambiguous). Fourth, offenders who indicated that they would be angry in such situations, reported that they would more likely resort to more aggressive forms of response to the situations.

Based on testing the proposed model of affective aggression in this study, several additional pieces of information were gained. First, prior exposure to violence was found to have a direct effect on some measures of aggression (violent offence history, institutional violence and self-reported violence in the lifetime). However hostile attribution bias and state anger was not found to be mediating factors in this relationship. Second, psychopathy was found to have a direct relationship to aggression as measured by self-reported perpetration of violence and total number of violent convictions.

Moreover, an indirect relationship was also found between psychopathy and aggression (scenario aggression response ratings) for Ambiguous Scenarios, with hostile attribution bias and anger acting as mediating factors. Third, regardless of scenario type, hostile attribution bias was indirectly related to aggression (as defined by the scenario aggression response ratings), when state anger was the mediating factor. Fourth, anger was a direct predictor of aggression, regardless of scenario type presented. Overall, Study 2 provided significant gains in the direct and indirect relationships between precipitating factors of prior exposure to violence and psychopathy, hostile attribution bias (i.e., cognitive distortions), state anger, and aggression. In sum, this study indicates that prior exposure to violence, psychopathy, hostile attribution bias and state anger have implications for the assessment and treatment of future affective aggressive behavior among adult male offenders.

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Appendix A: Hostile Attributions Inventory

Used in Study 1 and Study 2

Hostile Attribution Inventory

You will be read a series of scenarios depicting interpersonal interactions. In each interaction, there is the potential for emotional response on the part of one person prompted by the actions of another. For each task you will be asked to do the following.

- A. First you will be asked to rate how sure you are that the offending actions of the other person in each scenario were intentional acts (as opposed to unintentional or accidental). You will rate this on a scale of 1 to 9 where 1 = I am not at all sure the action was intentional, and 9 = I am very sure the action was intentional.
- B. Then you will rate how sure you are that the offending actions of the other person in each scenario were intended to be hostile (intended to bring some harm or discomfort to you, as opposed to benign). Again, you will rate this on a scale from 1 to 9 where 1 = I am not at all sure the action was hostile, and 9 = I am very sure the action was hostile.
- C. Then, you will be asked to rate how angry you would be if the situation happened to you on a rating scale where 1 = not at all angry, and 9 = as angry as you've ever been.

1. You have a billing problem with a local store. Through no fault of your own, your payments have not been credited to your account. You mail in copies of cancelled checks, and are assured that the problem is resolved. One month later, you receive your bill, again showing your account past due, with a notice that your credit rating has been damaged due to nonpayment. You had previously reported this merchant to the Better Business Bureau. The store's accounts have recently been computerized. On your payment checks, you have unintentionally written in the wrong account number. The credit manager who managed your account becomes demoted.

(a) How sure are you that the store owner's actions were intentional?

1	2	3	4	5	6	7	8	9
Not at				Moderately				Very
all sure				sure				sure

(b) How sure are you that the store owner's motives were hostile?

1	2	3	4	5	6	7	8	9
Not at				Moderately				Very
all sure				sure				sure

(c) How angry would you be if this happened to you?

1	2	3	4	5	6	7	8	9
Not at				Moderately				Very
all angry				angry				Angry

(d) What would you do or say in response?

2. You are traveling on a two-lane highway, and are behind a car going less than the speed limit. When the way is clear, you pull into the left lane to pass. The other driver speeds up, now exceeding the speed limit. You return to your spot behind that driver. The road is hilly and the other driver's car is old. The driver and passengers are apparently teen-aged boys, a group that your experience makes suspect for such behavior. There is much laughter among the car's occupants. There is a bumper sticker on the car that reads "As a matter of fact, I do own the road".
3. You pull into a convenience store, with the intention of purchasing a single item. You do not care for waiting in lines and this was the reason for choosing the convenience store over the more reasonably priced market down the street. However, a long line is forming due to a slow cashier. A wait of 20 minutes ensues. As customers complain to the cashier, service seems to become slower. The cashier stops several times to talk on the phone. The cashier must split time between several tasks. The cashier seems new and not very familiar with the procedures.
4. You have chosen to spend Saturday afternoon of the first warm weekend in spring washing, waxing and detailing the car. Hard work has yielded a fine job and the car gleams. You lend the car to a friend, and it is returned mud-splattered. The person does not have a history of abusing your belongings. This person was known to be jealous of your having such a nice car. The person explains that an unexpected detour dirtied the car. There was not enough time to clean the car before you needed it back.
5. You are at a party with friends, and strike up a conversation with a friend of the opposite sex. The friend is there with a long-time romantic interest, with whom you are also acquainted. The friend's romantic interest sees the pair of you talking, and calls your friend away, thus ending the conversation. As your friend walks away, their boyfriend/girlfriend seems to give you a stern look. You overhear the conversation between them, and it includes several pointed remarks about you. You can see how some of your gestures toward your friend could have been interpreted as flirtatious. As the evening goes on, you sense the friend's romantic interest "keeping an eye" on you.

6. You are in a locker room, showering after exercising. There are twenty-four shower heads, four mounted on each of six free-standing posts. There is clearly no one else in the shower room. A second person comes in, and proceeds to use one of the showers on the same post as the one you are using. This changes the temperature of your shower, and brings you into uncomfortably close proximity to the other person. You are aware that you need more "personal space" than most people you know. The person tries to strike up a conversation with you. You make eye contact to indicate your discomfort, but the person does not move. When you mention that you need shampoo, the person offers you theirs.
7. You are in a restaurant with a romantic interest. It is a special occasion, and the meal is the lead up to a "night on the town". The intention is to create an intimate atmosphere. You are seated at the last available table. The waiter, who recognizes you, spills the full contents of your plate onto your lap. There are no burns, but clothing is ruined, plans for later must be canceled, and the mood of the evening is broken. On a previous trip to this restaurant, you complained about this waiter's service, and left no tip. There is a water spill on the floor, in which the waiter may have slipped. You find it curious that the spilled food went entirely on you, and no one else. The waiter had been courteous to you all evening.
8. You are driving on the expressway at a reasonably high rate of speed, and approaches an area where traffic merges into the high-speed lane from the left. Another car sits at the bottom of the ramp, waiting to merge into the highway. You see that there is room for that car to merge, but the driver hesitates. Then, after the distance is too close for a safe merge, the driver pulls into your lane, forcing you to swerve to miss the car. It is dusk, and your lights are not on. The driver proceeds to weave in and out of traffic. The driver is elderly, and apparently confused. The driver waves his hand, perhaps acknowledging his part in the incident.
9. You are contemplating marriage, and are about to meet the family of the potential spouse. You want to make a good impression, and are anxious about undergoing so close a scrutiny. The conversation turns to education, and you reluctantly acknowledge having completed only one year of college, with no intent to continue. One family member, who has a graduate degree, responds with surprise, saying "One year? Hmmm!". Your friend has warned you that this particular relative is good-hearted, but socially clumsy. Your friend has also warned you that the relative is elitist concerning education. The relative has previously commented on how bright you seem. The tone of the relative's voice appears judgmental.

10. You are driving down the street in urban traffic. You have just had your car engine repaired by a mechanic, to correct a problem with overheating. You have never done business with this mechanic before. At a busy intersection, your car makes a "familiar" sound, overheats, and stalls. You can not get it started. The mechanic was recommended by a friend, who was satisfied with the service. The Better Business Bureau had no negative reports on this mechanic. The mechanic had recommended a more extensive repair than you authorized. You have recently read a consumer's report, stating that car repair rip-offs are increasing.
11. You have just returned home from a trip to the supermarket. You are unpacking your purchases, and you find that several items are damaged and eggs broken, bread and tomatoes crushed. You notice that the bags were poorly packed at the market, with several heavy items on top. An emergency stop may have jostled the packages on the way home. You had cross words for the bagger due to slow service. The bagger is familiar with, and does not like, a member of your family. The bagger spoke to you with an irritated tone of voice.
12. You are walking down a city street on a chilly, rainy day. You look up to see a luxury car approaching on the wet, rutted street. The driver swerves at the last minute, and goes through a puddle. You are sprayed by the water, and stand there soaking wet. You know of persons who have made a game of splashing pedestrians. Your dark clothing may have made it difficult to see you in the dusk. There is a large pothole at the place where the driver swerved. As the car proceeds down the deserted street, you see the driver swerve several more times.
13. You are in a doctor's office for a 9:00 appointment. You arrive on time, and notify the receptionist of your arrival. At 9:30, not having been seen yet, you ask the receptionist about the delay. You are informed that the doctor booked several appointments for the same time, and is seeing one of those patients presently. You recall that you were late for a previous appointment, and the doctor was kept waiting. The receptionist is apologetic, and offers you coffee. You are told that multiple bookings are routine, but were not informed of this policy before you made the appointment. You arrived before the other 9:00 patient.

14. You are home, alone, in the late afternoon. You were awake most of the previous night and are very tired. You have come home early to get some rest. Minutes after going to sleep, you are awakened by the sound of the television set. The person with whom you live has come home and switched the set on with the volume high, then walked out, leaving the set on. The room in which you are sleeping is not visible from the TV room. You are not normally home this time of day. Your roommate mentioned that you had kept them awake with noise last night. You mentioned to your roommate that your intention was to come home early and sleep.
15. You are standing in line to use a bank Automatic Teller Machine (ATM). There are two machines, and 1 line that feeds them both. After a wait of several minutes, you are next in line for either machine. A person walks up as a machine is coming free, and proceeds to the machine, and inserts his card. You believe it was clear that the people standing there were waiting for the ATM. The irregular shape of the waiting queue may not have made it clear that one line fed both machines. The person seems somewhat confused and "out of their element". You remember having made a similar mistake yourself in the past.
16. You are shopping, and return to your parked car to "feed the meter". As you approach, you can see a parking authority employee writing you a ticket. You call out, saying that you are only a few minutes late. You are told that, once the officer has begun writing the ticket, there is no option but to finish it. Several other cars on the block were ticketed, not just yours. The ticket did not identify your car at the time you called out. When you ask why the ticket must be finished once begun, the officer ignores you. The officer is very respectful when speaking to you.

Appendix B: Guidelines for Coding the Scenario Aggression Response

Coding Scheme for Scenario Aggression Response

- 0 = a response categorized as nonaggressive, involving no aggression
- 1 = a response consisting of a negative attitude or sarcasm toward the other male(e. g., What's your problem?)
- 2 = a response consisting of mild verbal aggression only (e. g., I wouldn't be his friend anymore; call him a name)
- 3 = a response consisting of severe verbal aggression only (e. g., swearing, cursing, I would tell him off)
- 4 = a response involving aggression toward an object without reference to the peer(e. g., punching a wall, throwing something)
- 5 = a response involving any type of revenge or retaliation toward the peer with reference to the prior actions of the peer(e. g., doing the same back to him)
- 6 = a response involving mild physical aggression toward the peer (e. g., pushing shoving him)
- 7 = a response involving severe physical aggression toward a person (e.g., hitting a person, beating the guy up)

Any response involving more than one of the above categories will be rated in accordance with the most serious form of aggression described.

Any response that is ambiguous or vague in the exact degree of aggression involved but did suggest hostility or show a negative attitude will be probed further with 'What do you mean? What would you?'. If response is still ambiguous or vague, it will be rated as a 1 on the scale (e.g., get mad, get hostile or get angry)

The following was extracted from the article: VanOostrum, N. & Horvath, P. (1997). The effects of hostile attribution responses to social situations. Canadian Journal of School Psychology, 13, 48-59.

Appendix C: Serin's Vignettes

Serin's Vignettes

I will read to you several situations. I would like you to imagine the situation happening as if you were the person and I'd like to ask you some questions about it later. I will not be able to give you any extra information in addition to the original story. For each scenario, you will be asked a series of questions.

- A. First you will be asked to describe what happened in the situation and why or what caused the conflict.
- B. Then you will be asked to rate how sure you are that the offending actions of the other person in each scenario were intentional acts (as opposed to unintentional or accidental). You will rate this on a scale of 1 to 9 where 1 means that you are not sure at all that the actions were intentional; and 9 means that you are very sure that the actions were intentional.
- C. Then you will be asked to rate how sure you are that the offending actions of the other person in each scenario were intended to be hostile (that means, intended to bring some harm or discomfort to the other person, as opposed to no harm being intended). Again, you will rate this on a scale from 1 to 9 where 1 means that you are not at all sure that the actions were hostile; and 9 means that you are very sure that the actions were hostile.
- D. Next, you will be asked to rate how angry you would be if the situation happened to you. You would rate how angry you would be on a scale from 1 to 9 where 1 means you would not be angry at all; and 9 means that you would be as angry as you have ever been.
- E. Then, you will be asked what you would do if you were in a situation such as that described.

Vignette 1

You asked a buddy, Ted, to do you a favour. You explained to Ted that it was really important. Ted agreed to do it. You have just found out that Ted hasn't done what he promised and now it's too late. This leaves you in a real bind

1. Describe what happened in the situation

2. Why? What caused the conflict?

(a) How sure are you that Ted's actions were intentional?

1	2	3	4	5	6	7	8	9
Not at				Moderately				Very
all sure				sure				sure

(b) How sure are you that Ted's motives were hostile?

1	2	3	4	5	6	7	8	9
Not at				Moderately				Very
all sure				sure				sure

(c) How angry would you be if this happened to you?

1	2	3	4	5	6	7	8	9
Not at				Moderately				Very
all angry				angry				angry

(d) What would you do or say in response?

Vignette 2

It's early Saturday morning and this guy on your range is listening to his radio turned up very loud. You find that you can't read, write, or sleep. You go over to this guy's cell and say, "Why don't you turn that radio down now? I'm trying to sleep and I'm sure other guys are too." The other guy says, "Ya, ya, in a little while." And just ignores you.

Vignette 3

You are at a party with your steady girlfriend or wife and she spends most of the time ignoring you and talking to other men.

Vignette 4

You are at a hotel (bar) with some friends and someone who has been loud and seems quite drunk bumps into you and spills his drink in your lap.

Vignette 5

You come back a bit late from work to the range for supper and find that someone has taken too many portions and there is no meat left for your supper. This is the second time this week this has happened to you.

Vignette 6

You received an upsetting letter from home and immediately request a phone call. Unfortunately your CO-II is not on and the other staff won't give you a telephone call because you had a call earlier this month.

Appendix D: My Exposure to Violence Measure

My Exposure To Violence

The next set of questions are about different violent things that may have happened to you or that you may have seen. Some of the questions ask about violent things that have happened that might be difficult for you to think about. We appreciate you answering the questions as best as you can.

Some of these questions are about things that have happened at any point in your life. Other questions are only about things that have happened to you in the past year.

Here is a card to help you choose an answer during the interview.

How often – The top portion lists the choices for HOW OFTEN something has happened. You can choose:

- (1) once;
- (2) 2 or 3 times;
- (3) 4 to 10 times; or
- (4) more than 10 times.

Sometimes it's hard to remember how often things have happened. If you are not sure, just take your best guess.

Where – The next part lists the choices for WHERE things have happened.

You can choose from:

- (a) inside your home
- (b) in someone else's home
- (c) at school
- (d) somewhere else in your neighbourhood
- (e) outside your neighbourhood
- (f) while incarcerated

Who Did it – The next part lists WHO DID the different things I will ask about.

You can choose from:

- (a) someone in your family
- (b) someone else you know
- (c) someone who was incarcerated with you
- (d) someone else

Who it happened to – The last part lists the choices for WHO the different things happened to. You can choose from:

- (a) someone you knew and felt very close to
- (b) someone you knew, but did not feel very close to
- (c) someone who was incarcerated with you
- (d) someone else

Very Important: When I ask about where different things have happened to you or that you have seen, DO NOT include in your answers things that you have seen or heard about only on TV, radio, the news or in the movies.

- 1 (A) In your whole life, have you EVER seen someone else get chased when you thought they could really get hurt?

If YES:

- (B) About HOW MANY TIMES has this EVER happened?
1 = once; 2 = 2-3x; 3=4-10 times; 4=more than 10x
- (C) If > 10x, how many?
- (D) About how old were you the FIRST TIME you saw this?
- (E) Now just thinking about the PAST YEAR, have you seen someone get chased?

If YES:

- (F) About HOW MANY TIMES has this happened in the past year?
1 = once; 2 = 2-3x; 3=4-10 times; 4=more than 10x
- (G) If > 10x, how many?
- (H) When you saw someone get chased in the PAST YEAR, where did this happen?
(a) Inside your home?
(b) In someone else's home?
(c) At school?
(d) Somewhere else in your neighbourhood?
(e) Somewhere else outside your neighbourhood?
(f) While incarcerated?
- (I) In the PAST YEAR did you see someone get chased by:
(a) Someone in your family?
(b) Someone else you knew?
(c) Someone who was incarcerated with you?
(d) Someone else?
- (J) In the PAST YEAR who did you see get chased:
(a) Someone you knew and felt very close to?
(b) Someone you knew, but did not feel very close to?
(c) Someone who was incarcerated with you?
(d) Someone else?

- 2 (A) In your whole life, have you EVER been chased when you thought that you could really get hurt?

If YES:

- (B) About HOW MANY TIMES has this EVER happened?
1 = once; 2 = 2-3x; 3=4-10 times; 4=more than 10x
- (C) If > 10x, how many?
- (D) About how old were you the FIRST TIME this happened?
- (E) Now just thinking about the PAST YEAR, have you been chased?

If YES:

- (F) About HOW MANY TIMES has this happened in the past year?
1 = once; 2 = 2-3x; 3=4-10 times; 4=more than 10x
- (G) If > 10x, how many?
- (H) When you were chased in the PAST YEAR, where did this happen?
(a) Inside your home?
(b) In someone else's home?
(c) At school
(d) Somewhere else in your neighbourhood?
(e) Somewhere else outside your neighbourhood?
(f) While incarcerated?
- (I) In the PAST YEAR who chased you?
(a) Someone in your family?
(b) Someone else you knew?
(c) Someone who was incarcerated with you?
(d) Someone else?

- 3 (A) In your whole life, have you EVER seen someone else get hit, slapped, punched, or beaten up? This does not include when they were playing or fooling around.
- 4 (A) In your whole life, have you EVER been hit, slapped, punched or beaten up? Again this does not include when you were playing or fooling around?
- 5 (A) In your whole life, have you EVER seen someone else get attacked with a weapon, like a knife or a bat? This does not include getting shot or shot at.
- 6 (A) In your whole life, have you EVER been attacked with a weapon, like a knife or a bat? Again, this does not include getting shot or shot at.
- 7 (A) In your whole life, have you EVER seen someone else get shot? This does not include seeing someone shot with a BB gun or any type of toy gun, like a paint ball or air rifle.

- 8 (A) In your whole life, have you EVER been shot? Again, this does not include seeing someone shot you with a BB gun or any type of toy gun.
- 9 (A) In your whole life, have you EVER seen someone else get shot AT, but not actually wounded?
- 10 (A) In your whole life, have you EVER been shot AT, but not actually wounded?
- 11 (A) OTHER THAN WHAT YOU HAVE ALREADY TOLD ME, in your whole life, have you EVER heard gunfire nearby? This does not include hearing gunfire while hunting or at a shooting range.
- 12 (A) In your whole life, have you EVER seen a serious accident where someone else was hurt very badly or died?
- 13 (A) In your whole life, have you EVER been in a serious accident where you or someone else was hurt very badly or died?
- 14 (A) In your whole life, have you EVER seen someone get killed as a result of violence, like being shot, stabbed, or beaten to death?

- 15 (A) A number of people experience sexual assault or unwanted sexual contact during their lifetime. In this question we are asking about any sexual assault that was forced on you or that you were pressured into, whether it be done by a stranger or someone you knew. In your whole life, have you ever been sexually assaulted, molested or raped?
- 16 (A) OTHER THAN WHAT YOU HAVE ALREADY TOLD ME, in your whole life, have you EVER seen someone threatened to seriously hurt another person? This includes being threatened with a weapon.
- 17 (A) OTHER THAN WHAT YOU HAVE ALREADY TOLD ME, in your whole life, have you EVER been threatened? Again, this includes being threatened with a weapon.
- 18 (A) In your whole life, have you EVER found a dead body?
- 19 (A) In your whole life, have you EVER been in a natural disaster, like a fire, flood, tornado or earthquake?

Now I have a few questions about things that may have happened to people who you know. Please answer each question as best you can.

- 20 (A) In your whole life, have you EVER been told that someone you knew had been shot, but not killed?
- 21 (A) In your whole life, have you EVER been told that someone you knew had been killed?
- 22 (A) In your whole life, have you EVER been told that someone you knew had killed themselves?
- 23 (A) In your whole life, has someone you know EVER died suddenly or been seriously injured, OTHER THAN WHAT YOU HAVE ALREADY TOLD ME?
- 24 (A) In your whole life, have you EVER been told that someone you knew had been raped?

Appendix E: Consent Form for Study 1

Informed Consent Form

The purpose of this Informed Consent Form is to make sure you understand the purpose of this study and what your specific participation will be. The informed consent is to provide sufficient information such that you have an opportunity to decide whether you wish to participate in the study.

Researchers: The primary researcher in this study is Gurmeet Dhaliwal who is completing this study as one part of the requirements for the Doctorate program in Psychology at Carleton University. Her thesis advisors are Dr. Steve Wormith (University of Saskatchewan and Carleton University) and Dr. Adelle Forth (Carleton University).

Purpose: The purpose of this study is to gain a better understanding of offenders' perceptions of violence. We are interested specific factors which may be related to aggressive behaviors. Factors that we will be examining are offenders' background information and cognitive processes involved in choosing aggressive behaviors.

Tasks Required: You will be asked to partake in an interview with the main researcher, Gurmeet Dhaliwal in which she will:

- A. Present different situations that people may experience and ask for your response to these; and
- B. Then will ask you about your background history regarding the types of violence you have been exposed to in your life.

Duration: The interview will take approximately 1 hour to complete.

Confidentiality: All information that you provide in this study will be confidential. That is, none of the information you provide will not be shared with any staff employed in Correctional Service of Canada or National Parole Board. As well, information that you provide will not affect the decisions regarding the management of your case. Two exceptions to this is if you provide information that you are likely to harm yourself or others, or that you abused a minor (under age 18) which has not been reported.

Continued....

Right to Refuse/Withdraw: If you wish to refuse or withdraw from the study at any time, you may do so with no consequence to you or your case management.

My signature below indicates that I have read the above, and that I agree to take part in this study.

Participant's Name

Date

Participant's Signature

Date

Researcher's Name

Date

If you have any questions or concerns please feel free to contact the main researcher, Gurmeet Dhaliwal, through a request to the Psychology Department of your institution; or her thesis supervisor, Dr. Stephen Wormith (Research Department, Regional Prairies Center, Saskatoon).

Should you have any ethical concerns about this study then please contact Dr. M. Senechal (Chair, Dept. of Psychology Ethics Committee, 613-520-2600 ext. 1155). Should you have other concerns about this study then please contact Dr. K. Matheson (Chair, Dept. of Psychology, 613-520-2600, ext. 2648). As well, concerns may be directed to Dr. Terry Nicholaichuk (Chair, Prairies Regional Research Committee, 306-975-4334).

Appendix F: Verbal Debriefing for Study 1

Verbal Debriefing

The main objective of this study is to investigate attributions of hostile intent among offenders. Hostile attribution is a belief that another person will intentionally harm you. We are testing the idea that an offender's background history, such as attitudes and exposure to violence is related to the tendency to attribute hostile intent to others in situations of provocation, similar to those incidents described in the scenarios that I presented to you. The result of this study is to better understand factors relating to future aggressive behaviors and how decisions are made to choose aggressive behavior.

Thank you for participating and appreciate the time you provided towards this research project. However, there may be other inmates in this institution who will be asked to participate in this study. Therefore, we ask that you not talk to other inmates about this study so that their responses will not be biased. Again, as re-assurance to you, none of the information that you provided will be shared with anyone in Correctional Service Canada or the National Parole Board.

Results from this study will not be known for a number of months. Therefore, if you wish to know the general findings from this study, you may contact the main researcher, Gurmeet Dhaliwal (Saskatchewan Penitentiary) at a later time. However, individual results from this study will not be provided to any participants because all results in this study are based on group analysis.

If you have any questions or concerns after participating in this study, please feel free to contact:

- (a) the main researcher, Gurmeet Dhaliwal (Saskatchewan Penitentiary) through a request to the Psychology Department of your institution; or
- (b) her thesis supervisor, Dr. Stephen Wormith (Research Department, Regional Prairies Center, Saskatoon).

If you have any concerns regarding the ethics of this research study, you may contact:

- (1) Dr. Kim Matheson, 613-520-2600, ext. 7513
Chair, Department of Psychology
Carleton University
- (2) Dr. Mary Gick, 613-520-2664
Chair of the Ethics Committee, Department of Psychology,
Carleton University

To note we understand that some of the topics that we discussed in this study may be upsetting for some individuals. If you believe that you need help to deal with difficulties you are experiencing, please feel free to contact me to discuss how help can be provided to you, through your parole officer or the Psychology Department. Another option is that you may put in a referral to either the Health Care Center or the Psychology Department here at the institution.

Appendix G: Written Debriefing Form for Study 1

Information Sheet To Participants

Thank you for participating and I appreciate the time you provided towards this research project. However, there may be other inmates in this institution who will be asked to participate in this study. Therefore, we ask that you not talk to other inmates about this study so that their responses will not be biased. Again, as a re-assurance to you, none of the information that you provided will be shared with anyone in Correctional Service Canada or the National Parole Board.

Results from this study will not be known for a number of months. If you wish to know the general findings from this study, you may contact myself, Gurmeet Dhaliwal, at a later time. However, individual results from this study will not be provided to any participants because all results in this study are based on group analysis.

If you have any questions or concerns after participating in this study, please feel free to contact myself, Gurmeet Dhaliwal, through a request to the Psychology Department; or my thesis supervisor, Dr. Stephen Wormith (Research Department, Regional Prairies Center, Saskatoon).

Should you have any ethical concerns about this study, then you may contact:

- (1) Dr. Kim Matheson, 613-520-2600, ext. 7513
Chair, Department of Psychology
Carleton University

or

- (2) Dr. Mary Gick, 613-520-2664
Chair of the Ethics Committee, Department of Psychology,
Carleton University

To note we understand that some of the topics that we discussed in this study may be upsetting for some individuals. If you believe that you need help to deal with difficulties you are experiencing, please feel free to contact me, through your parole officer or the Psychology Department. Another option is that you may put in a referral to either the Mental Health Center or the Psychology Department.

Appendix H: Scenario Aggression Response - Forced Choice

Task 1 for SAR-FC

For each of the 16 scenarios, there are 8 possible responses to the actions of the person in the scenario. For each scenario, rate the responses from 0 to 7, whereby 0 indicates the least aggressive response and 7 indicates the most aggressive response.

1. You have a billing problem with a local store. Through no fault of your own, your payments have not been credited to your account. You mail in copies of cancelled checks, and are assured that the problem is resolved. One month later, you receive your bill, again showing your account past due, with a notice that your credit rating has been damaged due to nonpayment. You had previously reported this store owner to the Better Business Bureau. The store's accounts have recently been computerized. On your payment checks, you have unintentionally written in the wrong account number. The credit manager who managed your account becomes demoted.
 - 0 do nothing
 - 1 call the store owner and ask him what his problem is
 - 2 call the store owner and call him an idiot
 - 3 call the store owner and swear, or tell him off
 - 4 get angry and punch the wall or throw whatever is closest
 - 5 take revenge such as going back to the store and damaging his merchandise or attempt to damage his reputation
 - 6 get angry, go to the store owner and push him
 - 7 get angry, go to the store owner and beat him up

2. You are traveling on a two-lane highway, and behind a car going less than the speed limit. When the way is clear, you pull into the left lane to pass. The other driver speeds up, now exceeding the speed limit. You return to your spot behind that driver. The road is hilly and the other driver's car is old. The driver and passengers are apparently teen-aged boys, a group that your experience makes suspect for such behavior. There is much laughter among the people from that car. There is a bumper sticker on the car that reads "As a matter of fact, I do own the road".
 - 0 drive behind the car and keep your distance
 - 1 motion to the driver, "What is your problem?"
 - 2 approach the car and call the driver names
 - 3 approach the car and swear at the driver
 - 4 in anger, blow your horn and hit your steering wheel
 - 5 quickly pass the car and then slow down several times
 - 6 follow the car and when the car comes to a stop, push the driver around
 - 7 follow the car and when the car comes to a stop, beat up the driver

3. You pull into a convenience store, with the intention of buying one item. You do not care for waiting in lines and this was the reason for choosing the convenience store over a lower priced grocery store down the street. However, a long line is forming due to a slow cashier and you have been waiting for minutes. As customers complain to the cashier, service seems to become slower. The cashier stops several times to talk on the phone. The cashier must split time between several tasks. The cashier seems new and not very familiar with the procedures.

- ☐ 0 do and say nothing; wait in line
- ☐ 1 ask "what is the hold up?"
- ☐ 2 in a loud voice call the cashier incompetent
- ☐ 3 start swearing at the cashier and tell him or her to hurry up
- ☐ 4 in anger throw the item that you intent to buy down the aisle
- ☐ 5 in anger tell the cashier to hurry up and when it is your turn, give the cashier a hard time about the job that the cashier is doing
- ☐ 6 go up and push the cashier
- ☐ 7 go up and hit the cashier

4. You have chosen to spend Saturday afternoon of the first warm weekend in spring washing, waxing and detailing the car. Your hard work results in a fine job and the car is shining. You lend the car to a friend, and it is returned mud-splattered. The person does not have a history of abusing your belongings. This person was known to be jealous of you having such a nice car. The person explains that an unexpected detour dirtied the car and there was not enough time to clean the car before you needed it back.

- ☐ 0 do and say nothing; take the car and wash it yourself
- ☐ 1 get upset that he would return the car in this manner and ask why he would do such a thing to you
- ☐ 2 get upset and call him an idiot for doing this; not have him as a friend anymore
- ☐ 3 start swearing at your friend and tell him off
- ☐ 4 get upset and throw the closest thing around you
- ☐ 5 get angry and damage an item that he values
- ☐ 6 get upset and push him
- ☐ 7 get upset and punch him / beat him up

5. You are at a party with friends, and strike up a conversation with a friend of the opposite sex. The friend is there with a long-time romantic interest, who you know as well. The friend's boyfriend sees the pair of you talking, and calls your friend away, thus ending the conversation. As your friend walks away, her boyfriend seems to give you a stern look. You overhear a conversation between them, and it includes several pointed remarks about you. You can see how some of your gestures toward your friend could have been interpreted as flirtatious. As the evening goes on, you sense the friend's boyfriend "keeping an eye" on you.

- ☐ 0 do and say nothing; enjoy the party and ignore the boyfriend
- ☐ 1 go up to your friend's boyfriend and ask what his problem is with you
- ☐ 2 go up to your friend's boyfriend and call him an idiot for his behavior
- ☐ 3 go up to your friend's boyfriend and tell him off; swear at him
- ☐ 4 go up to your friend's boyfriend and punch a wall or throw an object
- ☐ 5 get really angry and flirt with your friend in retaliation
- ☐ 6 go up to your friend's boyfriend and start shoving him
- ☐ 7 go up to your friend's boyfriend and punch him; beat him up near you

6. You are in a locker room, showering after exercising. There are twenty-four shower heads, four mounted on each of six free-standing posts. There is clearly no one else in the shower room. A second person comes in, and uses one of the showers on the same post as the one you are using. This changes the temperature of your shower, and brings you uncomfortably close to the other person. You are aware that you need more "personal space" than most people you know. The person tries to strike up a conversation with you. You make eye contact to indicate your discomfort, but the person does not move. When you mention that you need shampoo, the person offers you his.

- ☐ 0 do and say nothing; keep showering and leave; take the shampoo from this person
- ☐ 1 ask this person what his problem is
- ☐ 2 loudly tell this person to stay away and to go to another shower
- ☐ 3 swear at this person; tell him off in a loud voice
- ☐ 4 throw the shampoo when this person gives it to you
- ☐ 5 after the shower, take revenge by going up to his face and tell him if he does this again, he will face consequences
- ☐ 6 push this person away from you
- ☐ 7 punch this person

7. You are in a restaurant with a romantic interest. It is a special occasion, and the meal is expected to lead into a "night on the town". The intention is to create an intimate atmosphere. You are seated at the last available table. The waiter, who recognizes you, spills the full contents of your plate onto your lap. There are no burns, but clothing is ruined, plans for later must be canceled, and the mood of the evening is broken. On a previous trip to this restaurant, you complained about this waiter's service, and left no tip. There is a water spill on the floor, in which the waiter may have slipped. You find it curious that the spilled food went entirely on you, and no one else. The waiter had been courteous to you all evening.

- ☐ 0 do and say nothing; finish your meal and leave
- ☐ 1 ask the waiter what his problem is
- ☐ 2 call the waiter an idiot
- ☐ 3 swear at the waiter; tell the waiter off
- ☐ 4 throw the dishes at the table; punch the wall nearby
- ☐ 5 throw the dishes and food at the waiter and splash your drinks at him
- ☐ 6 get up and shove the waiter around
- ☐ 7 get up and hit the waiter

8. You are driving on the expressway at a reasonably high rate of speed, and approach an area where traffic merges into the high-speed lane from the left. Another car sits at the bottom of the ramp, waiting to merge into the highway. You see that there is room for that car to merge, but the driver hesitates. Then, after the distance is too close for a safe merge, the driver pulls into your lane, forcing you to swerve to miss the car. It is dusk, and your lights are not on. The driver proceeds to weave in and out of traffic. The driver is elderly, and apparently confused. The driver waves his hand, perhaps acknowledging his part in the incident.

- ☐ 0 do and say nothing; keep driving; keep your distance from this car
- ☐ 1 motion to the driver "what is your problem?"
- ☐ 2 motion to the driver that he is not all there mentally
- ☐ 3 swear at the driver; give the driver a finger; yell at the driver
- ☐ 4 honk your horn and hit your steering wheel
- ☐ 5 drive up to the car and try to cut him off to show how it feels
- ☐ 6 follow the car and shove the driver when he comes out of his car
- ☐ 7 follow the car and hit the driver when he comes out of his car

9. You are contemplating marriage, and about to meet the family of the potential spouse. You want to make a good impression, and are anxious about undergoing so close a scrutiny. The conversation turns to education, and you reluctantly acknowledge not finishing high school, with no intent to continue. One family member, who has a graduate degree, responds with surprise, saying "One year? Hmmm!". Your friend has warned you that this particular relative is good-hearted, but socially clumsy. Your friend has also warned you that the relative is an elitist concerning education. The relative has previously commented on how bright you seem. The tone of the relative's voice appears judgmental.

- ☐ 0 do and say nothing; ignore the comments by this relative and enjoy the rest of the day
- ☐ 1 ask this relative what his problem is with you
- ☐ 2 call this relative "ignorant" and challenge him
- ☐ 3 go up to this relative and tell him off; swear at him
- ☐ 4 get upset and punch the wall
- ☐ 5 get angry, go up to the relative and severely criticize relative in front
- ☐ 6 go up to this relative and push him
- ☐ 7 go up to this relative and hit him
of others

10. You are driving down the street. You have just had your car engine repaired by a mechanic, to correct a problem with overheating. You have never done business with this mechanic before. At a busy intersection, your car makes a "familiar" sound, overheats, and stalls. You can not get it started. The mechanic was recommended by a friend, who was satisfied with the service. The Better Business Bureau had no negative reports on this mechanic. The mechanic had recommended a more extensive repair than what you authorized. You have recently read a consumer's report, stating that car repair rip-offs are increasing.

- ☐ 0 do and say nothing; take the car somewhere else to get repaired
- ☐ 1 go back to the mechanic and ask why the problem was not repaired
- ☐ 2 go back to the mechanic and call him incompetent and that you will never go back to him for service
- ☐ 3 go back to the mechanic and tell him off; swear at him
- ☐ 4 go back to the mechanic, get upset and throw something at the shop
- ☐ 5 go back to the mechanic and damage his car
- ☐ 6 go back to the mechanic and shove him around
- ☐ 7 go back to the mechanic and beat him up

11. You have just returned home from a trip to the supermarket. You are unpacking your purchases, and you find that several items are damaged. The eggs are broken, and the bread and tomatoes are crushed. You notice that the bags were poorly packed at the market, with several heavy items on top. An emergency stop may have knocked the packages around on the way home. You had angry words for the bagger due to slow service. The bagger is familiar with and does not like a member of your family. The bagger spoke to you with an irritated tone of voice.

- ☐ 0 do and say nothing; just put away the undamaged grocery
- ☐ 1 go back to the store, and ask the bagger what his problem is with you
- ☐ 2 go back to the store, and call the bagger an idiot for his actions in a loud voice
- ☐ 3 go back to the store, and yell and swear at the bagger
- ☐ 4 go back to the store, and throw your grocery items in anger down the aisle
- ☐ 5 go back to the store, yell at the bagger and damage his car in retaliation
- ☐ 6 go back to the store, approach the bagger and shove him around
- ☐ 7 go back to the store and hit the bagger

12. You are walking down a city street on a chilly, rainy day. You look up to see a luxury car approaching on the wet street which has pot-holes on it. The driver swerves at the last minute, and goes through a puddle. You are sprayed by water, and stand there soaking wet. You know people who make a game of splashing pedestrians. Your dark clothing may have made it difficult to see you in the dusk. There is a large pothole at the place where the driver swerved. As the car proceeds down the deserted street, you see the driver swerve several more times.

- ☐ 0 do and say nothing; keep walking; go home and change your clothes
- ☐ 1 take down the license and report this driver to the police
- ☐ 2 call the driver an idiot
- ☐ 3 swear at the driver
- ☐ 4 try to throw something at the car
- ☐ 5 run after the driver and damage his car
- ☐ 6 run after the driver and when he comes out of the car, shove him around
- ☐ 7 run after the driver and when he comes out of the car, beat him up

13. You are in a doctor's office for a 9: appointment. You arrive on time, and notify the receptionist of your arrival. At 9:, not having been seen yet, you ask the receptionist about the delay. You are informed that the doctor booked several appointments for the same time, and is seeing one of those patients presently. You recall that you were late for a previous appointment, and the doctor was kept waiting. The receptionist is apologetic, and offers you coffee. You are told that multiple bookings are routine, but were not told of this policy before you made the appointment. You arrived before the other 9: patient that the doctor is seeing.

- ☐ 0 do and say nothing; keep waiting for the appointment
- ☐ 1 ask the receptionist what her problem is with you
- ☐ 2 call the receptionist an incompetent
- ☐ 3 swear at the receptionist
- ☐ 4 throw the magazines in the office in anger
- ☐ 5 mess up the papers on the receptionist's desk
- ☐ 6 push the receptionist in anger
- ☐ 7 hit the receptionist in anger

14. You are home, alone, in the late afternoon. You were awake most of the previous night and are very tired. You have come home early to get some rest. Minutes after going to sleep, you are awakened by the sound of the television set. The person with whom you live has come home and switched the TV on with the volume high, then walked out, leaving the TV on. The room in which you are sleeping is not visible from the TV room. You are not normally home at this time of day. Your roommate mentioned that you had kept him awake with noise last night. You mentioned to your roommate that your intention was to come home early and sleep.

- ☐ 0 do and say nothing; turn down the tv yourself and go back to sleep
- ☐ 1 approach your roommate and ask what his problem is
- ☐ 2 approach your roommate, tell him that he is inconsiderate and an idiot
- ☐ 3 approach your roommate and tell him off; swear at him
- ☐ 4 throw something at the tv in anger
- ☐ 5 approach your roommate and destroy the meal that he was preparing in the kitchen
- ☐ 6 approach your roommate and push him around
- ☐ 7 approach your roommate and punch him

15. You are standing in line to use a bank Automatic Teller Machine (ATM). There are two machines, and line that feeds them both. After a wait of several minutes, you are next in line for either machine. A person walks up as a machine is coming free, and proceeds to the machine, and inserts his card. You believe it was clear that the people standing there were waiting for the ATM. The irregular shape of the waiting line may not have made it clear that one line fed both machines. The person seems somewhat confused and "out of their element". You remember having made a similar mistake yourself in the past.

- ☐ 0 do and say nothing; just wait until he is finished to use the ATM
- ☐ 1 ask this person what his problem is
- ☐ 2 loudly call the person an idiot
- ☐ 3 tell this person off in a loud voice; swear at him
- ☐ 4 throw your bag that your were carrying against the wall near the line
- ☐ 5 take this person's card and throw it and then proceed to insert your own card into the ATM
- ☐ 6 approach this person and push him
- ☐ 7 approach this person and beat him up

16. You are shopping and return to your parked car to "feed the meter". As you approach, you can see a parking authority employee writing you a ticket. You call out, saying that you are only a few minutes late. You are told that once the officer has begun writing the ticket, there is no option but to finish it. Several other cars on the block were ticketed, not just yours. The ticket did not identify your car at the time you called out. When you ask why the ticket must be finished once begun, the officer ignores you. The officer is very respectful when speaking to you.

- ☐ 0 do and say nothing; take the ticket
- ☐ 1 ask the officer why he does not give you a break
- ☐ 2 call the officer an idiot
- ☐ 3 tell the officer off; swear at him
- ☐ 4 kick the car in anger
- ☐ 5 take the ticket book out of his hand and throw it; or damage his car
- ☐ 6 push the officer around
- ☐ 7 hit the officer

Task 2 for SAR-FC

The following are types of responses someone can choose in situations of provocation. Please rate the following eight possible responses from least (0) to most (7) aggressive.

- _0_ a response categorized as nonaggressive, involving no aggression
- _1_ a response consisting of a negative attitude or sarcasm toward the other male(e. g., What's your problem?)
- _2_ a response consisting of mild verbal aggression only (e. g., I wouldn't be his friend anymore; call him a name)
- _3_ a response consisting of severe verbal aggression only (e. g., swearing, cursing, I would tell him off)
- _4_ a response involving aggression toward an object without reference to the peer(e. g., punching a wall, throwing something)
- _5_ a response involving any type of revenge or retaliation toward the peer with reference to the prior actions of the peer(e. g., doing the same back to him)
- _6_ a response involving mild physical aggression toward the peer (e. g., pushing shoving him)
- _7_ a response involving severe physical aggression toward a person (e. g., hitting a person, beating the guy up)

Appendix I: Scenario Aggression Response - Forced Choice 2

Task 1 for SAR-FC2

For each of the 16 scenarios, there are 6 possible responses to the actions of the person in the scenario. For each scenario, rate the responses from 0 to 5, whereby 0 indicates the least aggressive response and 5 indicates the most aggressive response.

1. You have a billing problem with a local store. Through no fault of your own, your payments have not been credited to your account. You mail in copies of cancelled checks, and are assured that the problem is resolved. One month later, you receive your bill, again showing your account past due, with a notice that your credit rating has been damaged due to nonpayment. You had previously reported this store owner to the Better Business Bureau. The store's accounts have recently been computerized. On your payment checks, you have unintentionally written in the wrong account number. The credit manager who managed your account becomes demoted.

- 0 do nothing about the situation
- 1 call the store owner and ask him what his problem is with you
- 2 call the store owner and tell him that you will never do business there again
- 3 call the store owner and swear, or tell him off
- 4 go to the store owner and push him
- 5 go to the store owner and beat him up for messing with your credit rating

2. You are traveling on a two-lane highway, and behind a car going less than the speed limit. When the way is clear, you pull into the left lane to pass. The other driver speeds up, now exceeding the speed limit. You return to your spot behind that driver. The road is hilly and the other driver's car is old. The driver and passengers are apparently teen-aged boys, a group that your experience makes suspect for such behavior. There is much laughter among the people from that car. There is a bumper sticker on the car that reads "As a matter of fact, I do own the road".

- 0 drive behind the car and keep your distance from this car
- 1 motion to the driver, "What is your problem?"
- 2 approach the car and call the driver names
- 3 approach the car and swear at the driver
- 4 follow the car and when the car comes to a stop, shove the driver around
- 5 follow the car and when the car comes to a stop, beat up the driver

3. You pull into a convenience store, with the intention of buying one item. You do not care for waiting in lines and this was the reason for choosing the convenience store over a lower priced grocery store down the street. However, a long line is forming due to a slow cashier and you have been waiting for minutes. As customers complain to the cashier, service seems to become slower. The cashier stops several times to talk on the phone. The cashier must split time between several tasks. The cashier seems new and not very familiar with the procedures.

- ☐ 0 do and say nothing; wait in line
- ☐ 1 ask what is the hold up with service
- ☐ 2 call the cashier incompetent and walk out
- ☐ 3 swear at the cashier for the poor service
- ☐ 4 go up and push the cashier around to get better service
- ☐ 5 go up and hit the cashier

4. You have chosen to spend Saturday afternoon of the first warm weekend in spring washing, waxing and detailing the car. Your hard work results in a fine job and the car is shining. You lend the car to a friend, and it is returned mud-splattered. The person does not have a history of abusing your belongings. This person was known to be jealous of you having such a nice car. The person explains that an unexpected detour dirtied the car and there was not enough time to clean the car before you needed it back.

- ☐ 0 do and say nothing; take the car and wash it yourself
- ☐ 1 ask the person why he would do such a thing to you
- ☐ 2 tell him that his disrespectful actions has caused him to lose privilege of using your stuff again
- ☐ 3 start swearing and tell him off
- ☐ 4 push him around for being disrespectful
- ☐ 5 punch him / beat him up

5. You are at a party with friends, and strike up a conversation with a friend of the opposite sex. The friend is there with a long-time romantic interest, who you know as well. The friend's boyfriend sees the pair of you talking, and calls your friend away, thus ending the conversation. As your friend walks away, her boyfriend seems to give you a stern look. You overhear a conversation between them, and it includes several pointed remarks about you. You can see how some of your gestures toward your friend could have been interpreted as flirtatious. As the evening goes on, you sense the friend's boyfriend "keeping an eye" on you.

- ☐ 0 do and say nothing; enjoy the party and ignore the boyfriend
- ☐ 1 ask your friend's boyfriend what his problem is
- ☐ 2 go up to your friend's boyfriend and call him an idiot for his behavior
- ☐ 3 go up to your friend's boyfriend and tell him off; swear at him
- ☐ 4 go up to your friend's boyfriend and start shoving him around in order to stand up to him
- ☐ 5 go up to your friend's boyfriend and punch him; beat him up

6. You are in a locker room, showering after exercising. There are twenty-four shower heads, four mounted on each of six free-standing posts. There is clearly no one else in the shower room. A second person comes in, and uses one of the showers on the same post as the one you are using. This changes the temperature of your shower, and brings you uncomfortably close to the other person. You are aware that you need more "personal space" than most people you know. The person tries to strike up a conversation with you. You make eye contact to indicate your discomfort, but the person does not move. When you mention that you need shampoo, the person offers you his.

- ☐ 0 do and say nothing; keep showering and leave; take the shampoo from this person
- ☐ 1 ask this person what his problem is
- ☐ 2 loudly tell this person to stay away and to go to another shower
- ☐ 3 swear at this person; tell him off in a loud voice
- ☐ 4 push this person away from you
- ☐ 5 punch this person

7. You are in a restaurant with a romantic interest. It is a special occasion, and the meal is expected to lead into a "night on the town". The intention is to create an intimate atmosphere. You are seated at the last available table. The waiter, who recognizes you, spills the full contents of your plate onto your lap. There are no burns, but clothing is ruined, plans for later must be canceled, and the mood of the evening is broken. On a previous trip to this restaurant, you complained about this waiter's service, and left no tip. There is a water spill on the floor, in which the waiter may have slipped. You find it curious that the spilled food went entirely on you, and no one else. The waiter had been courteous to you all evening.

- ☐ 0 do and say nothing; finish your meal and leave
- ☐ 1 ask the waiter what his problem is with you
- ☐ 2 call the waiter an idiot and incompetent in his job
- ☐ 3 swear at the waiter; tell the waiter off
- ☐ 4 get up and shove the waiter around
- ☐ 5 get up and hit the waiter

8. You are driving on the expressway at a reasonably high rate of speed, and approach an area where traffic merges into the high-speed lane from the left. Another car sits at the bottom of the ramp, waiting to merge into the highway. You see that there is room for that car to merge, but the driver hesitates. Then, after the distance is too close for a safe merge, the driver pulls into your lane, forcing you to swerve to miss the car. It is dusk, and your lights are not on. The driver proceeds to weave in and out of traffic. The driver is elderly, and apparently confused. The driver waves his hand, perhaps acknowledging his part in the incident.

- ☐ 0 do and say nothing; keep driving; keep your distance from this car
- ☐ 1 motion to the driver "what is your problem?"
- ☐ 2 motion to the driver that he is not all there mentally
- ☐ 3 swear at the driver; give the driver a finger; yell at the driver
- ☐ 4 follow the car and push the driver when he comes out of his car
- ☐ 5 follow the car and hit the driver when he comes out of his car

9. You are contemplating marriage, and about to meet the family of the potential spouse. You want to make a good impression, and are anxious about undergoing so close a scrutiny. The conversation turns to education, and you reluctantly acknowledge not finishing high school, with no intent to continue. One family member, who has a graduate degree, responds with surprise, saying "One year? Hmmm!". Your friend has warned you that this particular relative is good-hearted, but socially clumsy. Your friend has also warned you that the relative is an elitist concerning education. The relative has previously commented on how bright you seem. The tone of the relative's voice appears judgmental.

- ☐ 0 do and say nothing; ignore the comments by this relative and enjoy the rest of the day
- ☐ 1 ask this relative what his problem is with you
- ☐ 2 tell this relative that he is "ignorant" and that you will have nothing to do with him
- ☐ 3 go up to this relative and tell him off; swear at him
- ☐ 4 go up to this relative and push him around to intimidate him
- ☐ 5 go up to this relative and hit him

10. You are driving down the street. You have just had your car engine repaired by a mechanic, to correct a problem with overheating. You have never done business with this mechanic before. At a busy intersection, your car makes a "familiar" sound, overheats, and stalls. You can not get it started. The mechanic was recommended by a friend, who was satisfied with the service. The Better Business Bureau had no negative reports on this mechanic. The mechanic had recommended a more extensive repair than what you authorized. You have recently read a consumer's report, stating that car repair rip-offs are increasing.

- ☐ 0 do and say nothing; take the car somewhere else to get repaired
- ☐ 1 go back to the mechanic and ask why the problem was not repaired
- ☐ 2 go back to the mechanic and call him incompetent and that you will never go back to him for service
- ☐ 3 go back to the mechanic and tell him off; swear at him
- ☐ 4 go back to the mechanic and shove him around
- ☐ 5 go back to the mechanic and beat him up

11. You have just returned home from a trip to the supermarket. You are unpacking your purchases, and you find that several items are damaged. The eggs are broken, and the bread and tomatoes are crushed. You notice that the bags were poorly packed at the market, with several heavy items on top. An emergency stop may have knocked the packages around on the way home. You had angry words for the bagger due to slow service. The bagger is familiar with and does not like a member of your family. The bagger spoke to you with an irritated tone of voice.

- ☐ 0 do and say nothing; just put away the undamaged grocery
- ☐ 1 go back to the store and ask the bagger what his problem is with you
- ☐ 2 go back to the store and call the bagger an idiot for his actions
- ☐ 3 go back to the store and yell and swear at the bagger
- ☐ 4 go back to the store and shove him around
- ☐ 5 go back to the store and hit the bagger

12. You are walking down a city street on a chilly, rainy day. You look up to see a luxury car approaching on the wet street which has pot-holes on it. The driver swerves at the last minute, and goes through a puddle. You are sprayed by water, and stand there soaking wet. You know people who make a game of splashing pedestrians. Your dark clothing may have made it difficult to see you in the dusk. There is a large pothole at the place where the driver swerved. As the car proceeds down the deserted street, you see the driver swerve several more times.

- ☐ 0 do and say nothing; keep walking; go home and change your clothes
- ☐ 1 take down the license and report this driver to the police
- ☐ 2 call the driver an idiot
- ☐ 3 swear at the driver
- ☐ 4 run after the driver and when he comes out of the car, shove him around
- ☐ 5 run after the driver and when he comes out of the car, beat him up

13. You are in a doctor's office for a 9: appointment. You arrive on time, and notify the receptionist of your arrival. At 9:, not having been seen yet, you ask the receptionist about the delay. You are informed that the doctor booked several appointments for the same time, and is seeing one of those patients presently. You recall that you were late for a previous appointment, and the doctor was kept waiting. The receptionist is apologetic, and offers you coffee. You are told that multiple bookings are routine, but were not told of this policy before you made the appointment. You arrived before the other 9: patient that the doctor is seeing.

- ☐ 0 do and say nothing; keep waiting to see the doctor
- ☐ 1 ask the receptionist what her problem is with you
- ☐ 2 call the receptionist incompetent
- ☐ 3 swear at the receptionist
- ☐ 4 go up to the receptionist and push her
- ☐ 5 go up to the receptionist and hit her

14. You are home, alone, in the late afternoon. You were awake most of the previous night and are very tired. You have come home early to get some rest. Minutes after going to sleep, you are awakened by the sound of the television set. The person with whom you live has come home and switched the TV on with the volume high, then walked out, leaving the TV on. The room in which you are sleeping is not visible from the TV room. You are not normally home at this time of day. Your roommate mentioned that you had kept him awake with noise last night. You mentioned to your roommate that your intention was to come home early and sleep.

- ☐ 0 do and say nothing; turn down the tv yourself and go back to sleep
- ☐ 1 approach your roommate and ask what his problem is
- ☐ 2 approach your roommate, tell him that he is inconsiderate and an idiot
- ☐ 3 approach your roommate and tell him off; swear at him
- ☐ 4 approach your roommate and push him around
- ☐ 5 approach your roommate and punch him

15. You are standing in line to use a bank Automatic Teller Machine (ATM). There are two machines, and a line that feeds them both. After a wait of several minutes, you are next in line for either machine. A person walks up as a machine is coming free, and proceeds to the machine, and inserts his card. You believe it was clear that the people standing there were waiting for the ATM. The irregular shape of the waiting line may not have made it clear that one line fed both machines. The person seems somewhat confused and "out of their element". You remember having made a similar mistake yourself in the past.

- ☐ 0 do and say nothing; just wait until he is finished to use the ATM
- ☐ 1 ask this person what his problem is
- ☐ 2 loudly call the person inconsiderate
- ☐ 3 tell this person off in a loud voice; swear at him
- ☐ 4 approach this person and push him
- ☐ 5 approach this person and beat him up

16. You are shopping and return to your parked car to "feed the meter". As you approach, you can see a parking authority employee writing you a ticket. You call out, saying that you are only a few minutes late. You are told that once the officer has begun writing the ticket, there is no option but to finish it. Several other cars on the block were ticketed, not just yours. The ticket did not identify your car at the time you called out. When you ask why the ticket must be finished once begun, the officer ignores you. The officer is very respectful when speaking to you.

- ☐ 0 do and say nothing; take the ticket
- ☐ 1 ask the officer why he does not give you a break
- ☐ 2 call the officer names
- ☐ 3 tell the officer off; swear at him
- ☐ 4 push the officer around to intimidate him
- ☐ 5 hit the officer

Task 2 for SAR-FC2

The following are types of responses someone can choose in situations of provocation. Please rate the following six possible responses from least (0) to most (5) aggressive.

- _0_ a response categorized as nonaggressive, involving no aggression
- _1_ a response consisting of a negative attitude or sarcasm toward the other male(e. g., What's your problem?)
- _2_ a response consisting of mild verbal aggression only (e. g., I wouldn't be his friend anymore; call him a name)
- _3_ a response consisting of severe verbal aggression only (e. g., swearing, cursing, I would tell him off)
- _4_ a response involving mild physical aggression toward the peer (e. g., pushing shoving him)
- _5_ a response involving severe physical aggression toward a person (e. g., hitting a person, beating the guy up)

Appendix J: My Perpetration of Violence Measure

My Perpetration of Violence

Now I want to ask you some questions about acts of violence that you have personally done in the past. I am interested in how often in your past you have done the following behaviors. Please include in your answers, both behaviors for which you have been convicted for and behaviors that you have not been convicted for. These questions are about things that have happened at any point in your life.

For each question, I will be asking the following:

- (1) Have you ever done this in your entire life
- (2) If you have ever done this, then,
 - (a) Exactly how many times did you do this in your lifetime?
 - (b) About how old were you the FIRST TIME you did this?
 - (c) About how old were you the LAST TIME you did this?
 - (d) How many times did you do this when you were under the age of 12?
 - (e) How many times did you do this when you were between 12 and 17?
 - (f) How many times did you do this when you were 18 and older?

My Perpetration of Violence

1. In your whole life, have you ever chased someone when you thought they could really get hurt?
 - (a) Exactly how many times did you do this in your lifetime?
 - (b) About how old were you the FIRST TIME you did this?
 - (c) About how old were you the LAST TIME you did this?
 - (d) How many times did you do this when you were under the age of 12?
 - (e) How many times did you do this when you were between 12 and 17?
 - (f) How many times did you do this when you were 18 and older?
2. In your whole life, have you ever hit, slapped, punched, or beaten up someone? This does not include when you were playing or fooling around.
3. In your whole life, have you ever attacked someone with a weapon, like a knife or a bat? This does not include shooting someone or shooting at someone.
4. In your whole life, have you ever shot someone? This does not include shooting someone shot with a BB gun or any type of toy gun, like a paint ball or air rifle.
5. In your whole life, have you ever shot AT someone, but not actually wound them?
6. In your whole life, have you ever seriously threatened to hurt someone?
7. In your whole life, have you ever killed someone as a result of violence, like shooting, stabbing, or beating someone to death?
8. In your whole life, have you ever sexually assaulted, molested or raped someone?

Appendix K: Institutional Infractions as recorded by
Correctional Service of Canada

Institutional Infractions as Recorded by Correctional Service Canada

- (A) disobey a order of staff member
- (B) is in an area prohibited to inmates
- (C) willfully damage property that is not the inmates
- (D) commits theft
- (E) is in possession of stolen property
- (F) disrespectful/abusive toward staff that could undermine a staff member's authority
- (G) disrespectful or abusive toward any person in a manner likely to provoke a person to be violent
- (H) fights with, assaults or threatens to assault another person
- (I) is in possession of or deals in contraband
- (J) without prior authorization, possesses or deals in an item not authorized by the commissioner's directives or written order of institutional head
- (K) takes an intoxicant into the inmate's body
- (L) fails or refuses to provide a urine sample when demanded
- (M) creates or takes part in disturbance of activity likely to jeopardize security of the institution
- (N) does anything for the purpose of escaping or assisting another inmate to escape
- (O) offers, gives or accepts a bribe or reward
- (P) without reasonable excuse, refuses to work or leaves work
- (Q) engages in gambling
- (R) willfully disobeys a written rule governing the conduct of inmates
- (S) attempts to do or assists another to do anything referred to from (A) to (R)

Appendix L: Psychopathy Checklist-Revised Items

Psychopathy Checklist-Revised Scoring Sheet

Item	Score			
1. Glibness/superficial charm	0	1	2	omit
2. Grandiose sense of self-worth	0	1	2	omit
3. Proneness to boredom/need for stimulation	0	1	2	omit
4. Pathological lying	0	1	2	omit
5. Conning/manipulative	0	1	2	omit
6. Lack of remorse	0	1	2	omit
7. Shallow affect	0	1	2	omit
8. Lack of empathy	0	1	2	omit
9. Parasitic lifestyle	0	1	2	omit
10. Poor behavioral controls	0	1	2	omit
11. Promiscuous sexual behavior	0	1	2	omit
12. Early behavior problems	0	1	2	omit
13. Lack of realistic long-term plans	0	1	2	omit
14. Impulsivity	0	1	2	omit
15. Irresponsibility	0	1	2	omit
16. Failure to accept responsibility for actions	0	1	2	omit
17. Many marital relationships	0	1	2	omit
18. Juvenile delinquency	0	1	2	omit
19. Poor risk for conditional release	0	1	2	omit
20. Criminal versatility	0	1	2	omit

Appendix M: Paulhus Deception Scale

Paulhus Deception Scale

Using the scale below as a guide, circle a number beside each statement to indicate how much you agree with it.

1	2	3	4	5	6	7
Not True			Somewhat True			Very True
1. My first impressions about people usually turn out to be right.	1	2	3	4	5	6 7
2. It would be hard for me to break any of my bad habits.	1	2	3	4	5	6 7
3. I don't care to know what other people really think of me.	1	2	3	4	5	6 7
4. I have not always been honest with myself.	1	2	3	4	5	6 7
5. I always know why I like things.	1	2	3	4	5	6 7
6. When my emotions are aroused, it biases my thinking.	1	2	3	4	5	6 7
7. Once I've made up my mind, other people can seldom change my opinion.	1	2	3	4	5	6 7
8. I am not a safe driver when I exceed the speed limit.	1	2	3	4	5	6 7
9. I am fully in control of my own fate.	1	2	3	4	5	6 7
10. It's hard for me to shut off a disturbing thought.	1	2	3	4	5	6 7
11. I never regret my decisions.	1	2	3	4	5	6 7
12. I sometimes lose out on things because I can't make up my mind soon enough.	1	2	3	4	5	6 7
13. The reason I vote is because my vote can make a difference.	1	2	3	4	5	6 7
14. My parents were not always fair when they punished me.	1	2	3	4	5	6 7
15. I am a completely rational person.	1	2	3	4	5	6 7
16. I rarely appreciate criticism.	1	2	3	4	5	6 7
17. I am very confident of my judgments.	1	2	3	4	5	6 7
18. I have sometimes doubted my ability as a lover.	1	2	3	4	5	6 7
19. It's all right with me if some people happen to dislike me.	1	2	3	4	5	6 7
20. I don't always know the reasons why I do the things I do.	1	2	3	4	5	6 7

	1	2	3	4	5	6	7
	Not True			Somewhat True			Very True
21. I sometimes tell lies if I have to.							1 2 3 4 5 6 7
22. I never cover up my mistakes.							1 2 3 4 5 6 7
23. There have been occasions when I have taken advantage of someone.							1 2 3 4 5 6 7
24. I never swear.							1 2 3 4 5 6 7
25. I sometimes try to get even rather than forgive and forget.							1 2 3 4 5 6 7
26. I always obey laws, even if I'm unlikely to get caught.							1 2 3 4 5 6 7
27. I have said something bad about a friend behind his or her back.							1 2 3 4 5 6 7
28. When I hear people talking privately, I avoid listening.							1 2 3 4 5 6 7
29. I have received too much change from a salesperson without telling him or her.							1 2 3 4 5 6 7
30. I always declare everything at customs.							1 2 3 4 5 6 7
31. When I was young I sometimes stole things.							1 2 3 4 5 6 7
32. I have never dropped litter on the street.							1 2 3 4 5 6 7
33. I sometimes drive faster than the speed limit.							1 2 3 4 5 6 7
34. I never read sexy books or magazines.							1 2 3 4 5 6 7
35. I have done things that I don't tell other people about.							1 2 3 4 5 6 7
36. I never take things that don't belong to me.							1 2 3 4 5 6 7
37. I have taken sick-leave from work or school even though I wasn't really sick.							1 2 3 4 5 6 7
38. I have never damaged a library book or store merchandise without reporting it.							1 2 3 4 5 6 7
39. I have some pretty awful habits.							1 2 3 4 5 6 7
40. I don't gossip about other people's business.							1 2 3 4 5 6 7

Appendix N: Recruitment Script for Participants for Study 2

Recruitment Script for Study 2

My name is Gurmeet Dhaliwal. I am a student at Carleton University doing my doctorate in Psychology. I am trying to recruit participants from this institution to take part in my thesis study on offenders' perceptions on violence. I have your name based on selecting offenders who are currently serving time in this institution and who have never been convicted of any sexually related offences. Based on this you meet this criteria.

All information that you provide will be confidential. Any information that you provide will not affect your case. That is, any information you provide will not be shared with any staff in this institution or in corrections, will not be placed in any of your case files and will not be used to any decision-making related to your case. As well, National Parole Board will not be given this information. Finally, your name or your answers will not be identified in any report.

If you agree to participate in my study, you may decide to stop at any time during this study, with no cost to you. Your part in this study consists of the following:

- A. an interview about your background history and offences, for about one hour
- B. an interview of presenting you with different situations that people may experience and your response to these situations, for about one half hour
- C. a session of self-report questionnaires in which you will be asked to fill to provide information about yourself, for about 15 to 20 minutes
- D. finally, I will conduct a file review of yourself to complete the information that you provide to me

Appendix O: Informed Consent Form for Study 2

Informed Consent Form

The purpose of this Informed Consent Form is to make sure you understand the purpose of this study and what your specific participation will be. The informed consent is to provide sufficient information such that you have an opportunity to decide whether you wish to participate in the study.

Researchers: The primary researcher in this study is Gurmeet Dhaliwal who is completing this study as one part of the requirements for the Doctorate program in Psychology at Carleton University. Her thesis advisors are Dr. Steve Wormith (University of Saskatchewan and Carleton University) and Dr. Adelle Forth (Carleton University).

Purpose: The purpose of this study is to gain a better understanding of offenders' perceptions of violence. We are interested specific factors which may be related to aggressive behaviors. Factors that we will be examining are offenders' background information and cognitive processes involved in choosing aggressive behaviors.

Tasks Required: You will be asked to partake in an interview with the main researcher, Gurmeet Dhaliwal in which she will:

Your participation in this study will be for about 2 hours and consists of:

- A. an interview with the researcher of this study, Gurmeet Dhaliwal, about your background history and offences, and questions regarding your response to different situations that people may experience; and
- B. the completion of self-report questionnaires about yourself.

Duration: The interview will take approximately 1 hour to complete.

Confidentiality: All information that you provide in this study will be confidential. That is, none of the information you provide will not be shared with any staff employed in Correctional Service of Canada or National Parole Board. As well, information that you provide will not affect the decisions regarding the management of your case. Two exceptions to this is if you provide information that you are likely to harm yourself or others, or that you abused a minor (under age 18) which has not been reported.

Continued....

Right to Refuse/Withdraw: If you wish to refuse or withdraw from the study at any time, you may do so with no consequence to you or your case management.

My signature below indicates that I have read the above, and that I agree to take part in this study.

Participant's Name

Date

Participant's Signature

Date

Researcher's Name

Date

If you have any questions or concerns please feel free to contact the main researcher, Gurmeet Dhaliwal, through a request to the Psychology Department of your institution; or her thesis supervisor, Dr. Stephen Wormith (Research Department, Regional Prairies Center, Saskatoon).

Should you have any ethical concerns about this study then please contact Dr. M. Senechal (Chair, Dept. of Psychology Ethics Committee, 613-520-2600 ext. 1155). Should you have other concerns about this study then please contact Dr. K. Matheson (Chair, Dept. of Psychology, 613-520-2600, ext. 2648). As well, concerns may be directed to Dr. Terry Nicholaichuk (Chair, Prairies Regional Research Committee, 306-975-4334).

Appendix P: Debriefing Form for Study 2

Debriefing Form

Thank you for participating in this study. The main objective of this study was to investigate attributions of hostile intent among offenders. Hostile attribution is a belief that another person will intentionally harm you.

The study is an investigation of how attribution of hostile intent are related to factors such as aggressive behavior, emotions such as anger and extent of exposure and witness to violence in the institution. The result of this study is to better understand factors relating to future aggressive behaviors and how to better predict violent offending behavior among offenders.

There may be other inmates in this institution who will be asked to participate in this study. Therefore, we ask that you not talk to other inmates about this study. If you have any questions or concerns after participating in this study, please feel free to contact the main researcher, Gurmeet Dhaliwal (Saskatchewan Penitentiary) through a request to the psychology department of your institution, or her thesis supervisor, Dr. Stephen Wormith (Research Department of the RPC in Saskatoon).

However, results from this study will not be known for a number of months. Therefore, if you wish to know the general findings from this study, you may contact the main researcher, Gurmeet Dhaliwal (Saskatchewan Penitentiary) at a later time. However, individual results from this study will not be provided to any participants because all results in this study are based on group analysis.

If you have any concerns regarding the ethics of this research study, you may contact:

- (1) Chair, Department of Psychology, Carleton University
Dr. Kim Matheson, 613-520-2600, ext. 7513
- (2) Chair of the Ethics Committee, Department of Psychology,
Carleton University
Dr. Mary Gick, 613-520-2664

To note we understand that some of the topics that we discussed in this study may be upsetting for some individuals. If you believe that you need help to deal with difficulties you are experiencing, please feel free to contact me to discuss how help can be provided to you, through your parole officer or the Psychology Department. Another option is that you may put in a referral to either the Health Care Center or the Psychology Department here at the institution.