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Antisociality in a Developmental Perspective

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ABSTRACT

The general aim in this thesis is to study different factors that might affect antisocial and violent behaviour in incarcerated Russian juvenile delinquents, such as: psychopathic tendencies; personality traits; impulsiveness; antisocial attitudes; and, alcohol problems. The thesis consists of two studies, Study 1 and Study 2. The purpose of Study I was: a) to examine the discriminative power of the Antisocial Process Screening Device (APSD), aggressive traits, impulsiveness, antisocial attitudes and alcohol-related problems between subgroups of juvenile delinquents with low versus high levels of violent behaviour; and, b) to compare the predictive value of these variables in two subgroups defined by higher vs lower levels of psychopathic traits. The participants (n=175) were assessed with the APSD by trained staff, further they were self-assessed by the Antisocial Behavior Checklist (ABC), the Aggression Questionnaire (AQ), Barrat Impulsiveness Scale (BIS-11), Antisocial Attitudes Scale (AAS), the Adolescent Alcohol Involvement Scale (AAIS), and Rutgers Alcohol Problem Index (RAPI). There were also data on type of crime committed (violent/non-violent).

Results revealed that only the APSD score, traits of physical aggression, and alcohol-related problems were able to discriminate between groups with various levels of violence. Furthermore, the level of violence was the only variant factor when comparing levels of psychopathy, the psychopathic group being more violent. Different sets of predictors emerged for the group with higher versus lower psychopathy scores. The results suggest that psychopathic youth are more prone to become violent while using alcohol.

The objective of study II was to evaluate a new scale aimed at assessing antisocial attitudes, the Pro-Bullying Attitude Scale (PAS), on a group of male juvenile delinquents. The participants (n=171) were assessed with the Childhood Psychopathy Scale (CPS) by trained teachers and completed the PAS, the ABC, the Temperament and Character Inventory (TCI), the Youth Self-Report (YSR). As in Study I, there were also data on type of crime. Principal Components Analysis with Direct Oblimin Rotation gave a two-factor solution: Factor 1 denoted Callous/Dominance, and Factor 2 Manipulativeness/Impulsiveness. The subjects were divided into two extreme groups (first and fourth quartile) according to their sum scores on PAS and the two factor scores, respectively. The extreme groups of PAS and Factor 1 differed in both delinquent, aggressive, and violent behaviour, and psychopathic tendencies, those in the fourth quartile being more delinquent, aggressive, violent and psychopathic. The extreme groups of PAS and Factor 1 differed in the personality trait Harm Avoidance, the fourth quartile being scoring lower in Harm Avoidance. The fourth quartile in Factor 2 had more aggressive behavior and was low in the personality trait Self-Directedness. When PAS was used as a continuous variable, those who scored high in PAS and Factor 1 were more likely to have committed a violent crime. Pro-bullying attitudes were suggested as a link between certain personality traits and psychopathic tendencies on the one hand and between antisocial and violent behaviour on the other. The general discussion stressed the importance of psychopathy, antisocial attitudes and impulsivity in predicting antisocial and violent behavior. Treatment implications were also discussed, such as specific treatment for highly psychopathic individuals and using PAS as an instrument in identifying high risk individuals for bullying tendencies, prison misconduct and violent behaviour among incarcerated delinquents.

Key words: Pro-bullying attitudes, psychopathic tendencies, personality traits, violence, juvenile delinquents.

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LIST OF ABBREVIATIONS

AAIS	Adolescent Alcohol Involvement Scale
AAS	Antisocial Attitudes Scale
ABC	Antisocial Behavior Checklist
APSD	Antisocial Process Screening Device
AQ	Aggression Questionnaire
BIS-11	Barrat Impulsiveness Scale
CPS	Childhood Psychopathy Scale
PAS	Pro-bullying Attitude Scale
RAPI	Rutgers Alcohol Problem Index
TCI	Temperament and Character Inventory
YSR	Youth Self-Report

1. INTRODUCTION

This thesis is a study of different factors that might have an impact on adolescent antisocial and violent behaviour. Antisocial behaviour is common among young people, especially in teenage boys (Moffitt, 1993; Murray & Farrington, in press). In fact, it is occurring so frequently that teenage antisocial behaviour could be viewed as normative (Lynam, 1996; Eklund & af Klinteberg 2009). There is also evidence that 50% of those who are delinquent in adolescence continue with criminality into adulthood (Farrington, 2005). At the same time many youth delinquents desist from criminality. There is a challenge for researchers and clinicians to identify, early in childhood, those at risk of becoming chronic antisocial individuals. The factors related to antisocial involvement in this group need to be further investigated.

Recent studies have shown that the majority of crimes, especially violent crimes, are committed by a relatively small group of offenders (Baron, 1995). This subgroup of offenders has shown to have a relatively early onset, a fairly persistent pattern of antisocial behaviour (Moffitt, 1993; Nagin & Tremblay, 1999), and can be characterized by a callous and unemotional interpersonal style, frequently concurring with psychopathy (Frick, O'Brien, Wootton, & McBurnett, 1994; Forth & Burke, 1998).

1.1 THEORETICAL FRAMEWORK

The theoretical framework of this thesis is an interactional perspective, indicating that the individual's functioning depends on an interplay among biological, psychological and environmental factors (Bergman & Magnusson, 1997), and that there is a continuous interaction between the individual and the environment. However, in this thesis the main focus is on individual factors, closely related to biological (af Klinteberg, von Knorring, & Orelund, 2004) and environmental factors (Murray, & Farrington, in press). Thus, our research question is focused on identifying some possibly important factors contributing to antisocial and violent behaviour in adolescents. In the present work the following definitions are applied: 'Antisocial behaviour' refers to different kinds of norm breaking (for example lying, truancy, etc.) and criminal acts. 'Violence' is defined as behaviour that causes or threatens physical or mental harm to others. In specific it refers to explicit acts (for example hitting someone). 'Aggression' refers to acting-out verbal and physical acts that cause less harm than violence (shouting or screaming).

1.2 AGGRESSION AND VIOLENT BEHAVIOUR

According to earlier research there is a pattern of strong relationships among aggression, violence and antisocial behaviour, which seems to be enduring, from early childhood to adolescence and from adolescence to adulthood (Cairns, Cairns, Neckerman, Ferguson, & Gariépy 1989; Nagin & Tremblay, 2001; Brame, Nagin, & Tremblay, 2001). Aggressiveness has its peak in early childhood and then shows a decreasing pattern. Aggressiveness shows high rank-order stability across development, indicating that those who are more aggressive in early childhood tend to be more aggressive as adults (Tremblay & Nagin, 2005). The concept of proactive aggression in understanding more severe forms of aggression have shown to be important in numerous studies. According to Dodge's (1991) definition, proactive aggression includes unprovoked behaviours directed toward specific social goals, as well as behaviours directed toward position or object acquisition. For proactive aggressive children, aggression and its consequences are evaluated in relatively positive ways and they select instrumental social goals rather than relational goals. Proactive aggression can be seen as dysfunctional and as a result of distorted or deviant processing of social information, suggesting that the proactive aggressor has a tendency to view aggressive behaviour as positive and to use it as a way of achieving material rather than relational goals (Crick & Dodge, 1999). It has been shown that proactive aggression is a unique predictor of delinquency-related violence (Brendgen, Vitaro, Tremblay, & Lavoie, 2001). In a study of the stability of reactive and proactive aggression from childhood to adolescence, it has been found that continuity in proactive aggression was primarily genetically mediated (Tuvblad, Raine, Zheng, & Baker, 2009). In another study of proactive and reactive aggression in children from the fifth to the ninth grades, it has been shown that proactive aggression predicted an increase in delinquency over time (Fite, Colder, Lochman, & Wells, 2008).

1.3 PSYCHOPATHY

The concept of psychopathy, since its first classical definition by Cleckley (1941), has increasingly attracted attention due to its strong predictive value for antisocial behaviour (Hare, 2003; Harpur, Hare, & Hakstian, 1989), and particularly for its relationships with violent, impulsive, and aggressive behaviours in adults (Grann, Långström, Tengström, & Kullgren; 1999; Hare, Clark, Grann, & Thornton, 2000; af Klinteberg, Humble, & Schalling, 1992; Virkkunen & Linnoila, 1993).

Psychopathy represents a specific pattern of behaviour, developing during childhood and continuing throughout the life span. It is characterized by callous, unemotional, manipulative interpersonal interactions. Psychopathic subjects also tend to demonstrate violent behaviour more frequently than other subjects, which seems to be motivated by instrumental- (e.g. material gain, and revenge), rather than reactive reasons (e.g. state of high emotional arousal) (Cornell et al., 1996; Serin, 1991; Williamson, Hare, & Wong, 1987). In a sample of 152 male forensic patients, it has been shown that psychopathic traits demonstrated no relationship to reactive aggression, but were, as a unit, a robust predictor of instrumental aggression (Vittaco et al., 2009).

Psychopathic traits further predicted aggression and delinquency for both boys and girls in a sample of normal children (Marsee, Silverthorn, & Frick, 2005). In juvenile offenders, psychopathic traits were significantly related to violent behaviour and to the severity and instrumentality of prior violence (Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004). Different studies show that psychopathic traits are quite stable from childhood to adulthood (Frick, Kimonis, Dandeaux, & Farrel, 2003; Lynam, Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007). In a Swedish twin study it was shown that adolescent psychopathic personality predicted antisocial behaviour in adulthood (Forsman, Lichtenstein, Andershed, & Larsson, 2010). Another longitudinal study revealed hyperactive behaviour in delinquent males to be connected to adult psychopathy (Freidenfelt & af Klinteberg, 2007). The construct of psychopathy revealed two main factors, namely: Callous use of others and Antisocial Behavior (Harpur et al., 1989).

There are however some disagreements concerning the psychopathy concept, for example concerning the content of the concept and the factor structure (see Cooke & Michie, 2001; Patrick, Fowles, & Krueger, 2009). In a review-article concerning psychopathy in childhood and adolescence, it is concluded that there is ample evidence that indications of psychopathy in childhood, adolescence, and adulthood have many similarities: similar factor-structure; similar behaviour problems with antisocial and violent behaviour; and, a similar prevalence rate (around 20 %) in youth detention centres and adult prisons (Salekin, Rosenbaum, & Lee, 2008). Another study shows that psychopathic traits in adolescence predict adult

psychopathy (Lynam, et al., 2007), as well as adult offending (Lynam, Miller, Vachon, Loeber, & Stouthamer-Loeber, 2009).

Psychopaths may also impulsively engage in irresponsible behaviours, such as substance use, that indirectly increase their chances of becoming violent. Indeed, psychopathy has generally been associated with substance use in adult offenders (Crocker et al., 2005; Longato-Stadler, af Klinteberg, Garpenstrand, Oreland, & Hallman, 2002), thus giving some support for the latter mechanism. Recently, several studies have identified a particularly severe subgroup of children with many characteristics similar to those of adults with psychopathy, for example callousness, aggressiveness, and behaviour of frequent lying (see Frick, Barry, & Bodin, 1999; Salekin, et al., 2008). Furthermore, in a study of clinic-referred children (Christian, Frick, Hill, Tyler, & Frazer, 1997) the Pyschopathy Screening Device (now known as Antisocial Process Screening Device) was used and high scores on a subscale measuring callous and unemotional traits was able to identify children who had high levels of conduct problems, high rates of police contacts, and parental diagnoses of antisocial personality disorder.

1.4 ANTISOCIAL ATTITUDES

There is a line of research that demonstrates a link between antisocial beliefs and antisocial behaviour (Gendreau, 1996), and also between antisocial beliefs and prison misconduct (Gendreau, Goggin, & Law, 1997). Along with antisocial peers, antisocial attitudes as a concept is one of the strongest predictors of future delinquency (Simourd, Hoge, Andrews, & Leschied, 1994). Adolescent boys with a tolerant attitude to theft or violence were more deviant, for example displaying more frequent behaviour of physical aggression, lying, truancy, stealing etc., than those who had actually engaged in the behaviours of theft or violence (Zhang, Loeber, & Stouthamer-Loeber, 1997). As Simourd & Olver (2002, p. 429) note: “In spite of its theoretical and empirical relevance to criminal conduct, the criminal attitude construct has been largely overlooked in the mainstream assessment and treatment of offenders.” Different studies have shown that antisocial (criminal) attitudes are related to criminal behaviour and predict recidivism (Simourd & van de Ven, 1999) and have predictive validity for future general and violent recidivism (Mills, Kroner, & Hemmati, 2004).

2 AIMS

2.1 GENERAL AIMS

The general aim is to study different factors that might contribute to violent behaviour in juvenile delinquents, with a focus on personality and behaviour characteristics.

2.2 SPECIFIC AIMS

Specific aims in the present thesis were: (1) to examine the discriminative power of the Psychopathy Screening Device (PSD), aggressive traits, impulsiveness, antisocial attitudes and alcohol-related problems between subgroups of Russian juvenile delinquents (n=175) with low versus high levels of violent behaviour, and to compare the predictive value of these variables in two subgroups defined by higher vs lower levels of psychopathic traits (Study 1); and, (2) to evaluate a new scale aimed at assessing antisocial attitudes, the Pro-bullying Attitude Scale (PAS), on a group of voluntarily-recruited male juvenile delinquents (n=171) (Study 2).

3 MATERIALS AND METHODS

3.1 PARTICIPANTS

The delinquent subjects were recruited voluntarily from the only juvenile detention center for the Arkhangelsk region of northern Russia, a catchment area with a population of 1.5 million. The population of the region is very homogenous ethnically, i.e. 98% Caucasian. This juvenile detention center serves approximately 300 adolescents at any given time. All delinquents were referred to this institution by court decision. Reasons for correction were: repeated thefts (about 50%), fighting, robbery, and in some cases rape or murder. Generally, those institutionalized for theft had shown a repetitive pattern of this type of crime. In Study 1 the original number of participants were 250. Excluded from the study were those for whom data were missing on some measures, due to inadequate completion of instruments ($n=14$), or for those released before the study was finished ($n=32$). Furthermore, those youth who indicated that they have never used alcohol ($n=29$) were excluded from further analyses. Finally, the group under investigation consisted of 175 subjects. The assessments were performed through paper-pencil tests, in small group sessions (5-7 subjects), conducted by the third author. The participants were also assessed with the Antisocial Process Screening Device by trained members of the staff. The age of the participants ranged from 14 to 19 years ($M=16.4$, $SD=0.9$). The comparative analysis of all variables of interest was also conducted in two subgroups of delinquents subdivided according to the type of crime committed (violent versus non-violent, 69 versus 106 Ss). In the case of multiple convictions, which included both property and violent crimes, the case was considered as belonging to the violent subgroup.

Study 2: The self-reported data on personality traits (Temperament and Character Inventory) were obtained during January-March 1999 from the group of 315 participants. Approximately 2-2.5 months later, the same group completed the Youth Self-Report and the Probullying Attitude Scale, except for offenders for whom data were missing due to release before the study was finished (32 participants) or due to inadequate completion of instruments (23 participants). One participant were omitted from the study of unclear reasons. Finally, the group under investigation consisted of 259 participants. The total group was used for the factor analysis of the Pro-bullying Attitude Scale results. The other inventories applied were administered at different

sessions, which resulted in different numbers of participants for the inventories, respectively. Participants included in the present study were all those with complete data on PAS and teacher-rated Childhood Psychopathy Scale (n=171). In this group the age range was from 15 to 18 years (M=16.2, SD=0.8). Those additionally assessed on the other inventories were as follows: the Youth Self Report (n= 115), the violent item scale of the Antisocial Behavior Checklist (n=117), and the Temperament and Character Inventory (n=123). When performing calculations, we divided the participants into sum PAS, PAS Factor 1, and PAS Factor 2 extreme groups: the lowest- (the low group) and the highest (the high group) quartile, respectively. The number of subjects in these extreme groups thus varied. There were also official data concerning type of crime committed by the participants: violence-related (n=68) and property-related (n=101). In this case, PAS and the two PAS factor scores were used as continuous variables, where we investigated possible differences in pro-bullying attitudes between groups characterized by type of crime(s) committed.

3.2 MEASURES

3.2.1 Study 1

3.2.1.1 Antisocial Process Screening Device (APSD)

The APSD (Frick & Hare, 2001) is a 20-item behaviour rating scale, designed to be a childhood extension of the Psychopathy Checklist-Revised (PCL-R; Hare, 2003), which has been widely used to measure psychopathic traits in adults. Each item on the APSD is scored 0 (*not at all true*), 1 (*sometimes true*), or 2 (*definitely true*). In the original study comprising a sample of clinically referred children (Frick et al., 1994), two main factors were obtained. The Callous/Unemotional factor contained six items tapping interpersonal and affective dimensions of psychopathy such as lack of guilt, absence of empathy, and emotional constrictedness. The Impulsivity-Conduct Problems factor contained 10 items tapping overt behavioural dimensions of conduct problems and poor impulse control. For the purposes of the present study only the total APSD score was used, with Cronbach $\alpha=.79$.

3.2.1.2 Antisocial Behavior Checklist (ABC)

This is a 46-item self-report measure (Zucker & Noll, 1980; Ham, Zucker, & Fitzgerald, 1993) which asks respondents to report on the frequency of their participation in a variety of aggressive and antisocial activities both in childhood (e.g.

being suspended or expelled from school for fighting, lying to parents, running away from home for more than a day) and adulthood (e.g. lying to spouse, defaulting on a debt, being fired on absenteeism, resisting arrest). Subjects are instructed to answer each question on a 4-point scale (1=*Never*, 2=*Rarely (1-2 times in life)*, 3=*Sometimes (3-9 times in life)*, 4=*Often (more than 10 times in life)*). A series of reliability and validity studies with various samples including male and female college students, community samples of adults, and male and female jail inmates has shown good test-retest reliability (.91 over 4 weeks) and internal reliability (Cronbach α =.93). It also differentiates between individuals with long histories of antisocial behaviour (prisoners) versus individuals with minor offenses in district court versus university students (Zucker et al., 1994), and it strongly discriminates between individuals with antisocial personality disorder and those without.

In the present study of correlates of violent behaviour we selected from the ABC only those items which reflect violent actions. The items included 'Being suspended or expelled from school for fighting', 'Hit a teacher or principal', 'Taken part in a gang fight', "'Beaten up" another person,' 'Teased or killed an animal (like a dog or cat) just for the fun of it', 'Hit your parents', 'Taken part in a robbery', 'Taken part in a robbery involving physical force or a weapon', 'Been arrested for a felony', 'Resisted arrest', 'Hit a girlfriend during an argument'. Altogether 12 items were selected, which showed a good internal consistency as a scale (Cronbach α =.84).

3.2.1.3 Aggression Questionnaire (AQ)

The AQ is based on the well-known Buss-Durkee Hostility Inventory (BDHI) (Buss & Durkee, 1957) and designed by Buss and Perry (1992) to assess the expression of different forms of aggression and/or hostility. It consists of 29 items divided into four scales: Physical Aggression, Verbal Aggression, Anger, and Hostility and asks the respondent to rate each item on a Likert-type scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). It was used in the sample of adolescents (Buss & Perry, 1992) with satisfactory test-retest correlations within 9 weeks (Physical Aggression, .80; Verbal Aggression, .76; Anger, .72; and Hostility, .72 (total score=.80)). In our study acceptable Cronbach α 's were obtained for all four subscales (Physical Aggression .77, Verbal Aggression .72, Anger .77, and Hostility .75 (and for the total score=.92)).

3.2.1.4 *Barratt Impulsiveness Scale (BIS-11)*

The BIS-11, a self-report measure of impulsiveness, originally developed by Barratt (1959) and extensively revised later (Barratt, 1994; Patton, Stanford, & Barratt, 1995), consists of 30 items answered with a Likert-type four-point format, with item responses ranging from 1 (*never or rarely*) to 4 (*always*). In previous studies three main domains were identified within the impulsiveness construct (item examples in parentheses): 1) motor impulsivity (I act on the spur of the moment); 2) attentional impulsiveness, labeled “cognitive impulsiveness” in earlier versions of the BIS (I concentrate easily [scored in reversed order]); 3) non-planning impulsiveness (I am future oriented [scored in reverse order]). Cronbach α for the total scale in the present study was .72.

3.2.1.5 *Antisocial Attitudes Scale (AAS)*

Antisocial Attitudes Scale items included statements reflecting general attitudes towards law-breaking as well as the items reflecting the belief about a life-time perspective of criminal behaviour, to be answered on a five-point Likert-type scale ranging from 1 (*Strongly Agree*) to 5 (*Strongly Disagree*). Based on the results of the principal component factor analysis of a larger set of items, 9 items were derived. The chosen items were the following: ‘It’s all right for people my age to get into fights’; ‘It’s all right for people my age to take things that don’t belong to them’; ‘Committing crimes is a pretty permanent way of life’; ‘Once you’re into crime, it’s almost impossible to really stop’; ‘Given the chance, I would commit the offence again’; ‘The sentence I got will not help me stay out of trouble’; ‘My sentence was not fair’; ‘Doing time in prison is not as hard as people think’; and, ‘Judges are more guilty than those appearing before them’. Cronbach α for the scale was .82.

3.2.1.6 *The Adolescent Alcohol Involvement Scale (AAIS)*

The AAIS (Mayer & Filstead, 1979) is a 14-item screening device, designed to identify adolescents with drinking problems. This instrument assesses quantitative aspects of alcohol use and psychosocial consequences in three domains: psychological functioning, social relations, and family living. The AAIS categorizes respondents into one of four categories: abstainer or infrequent drinkers; non-problem drinkers; alcohol misusers; and “alcoholic-like” drinkers. Several studies have shown good reliability and validity of the AAIS (Mayer & Filstead, 1979; Moberg, 1983; Putnins, 1992). In

the present study an acceptable level of internal consistency for the scale was obtained (Cronbach α =.83).

3.2.1.7 Rutgers Alcohol Problem Index (RAPI)

The RAPI is a 23-item self-administered screening tool, developed by White & Labouvie (1989) in order to provide a unidimensional, relatively brief, and easily administered instrument to assess problem drinking in adolescents. The instrument asks adolescents to indicate how often certain problems associated with alcohol use occurred in the past. This self-report questionnaire takes approximately 10 minutes to complete and yields a total score by summing the reported frequency of items on adolescent problem drinking. Using a general population sample, the original study revealed high internal consistency (Cronbach α =.92) and a moderate range of correlations (.20 to .57) between RAPI scores and alcohol-use intensity. The advantage of this screening tool lies in its ease of administration and its standardization, which make it possible to compare problem drinking scores across groups. In the present study an adequate internal consistency for the instrument was obtained (Cronbach α = .88).

3.2.2 Study 2

3.2.2.1 Pro-bullying Attitude Scale (PAS)

This set of items was compiled by one of the authors (Ruchkin) based on the experience of clinical work, using the definition of bullying (Farrington, 1993), the concept of proactive aggression (Dodge and Coie, 1987), and the concept of psychopathy (Hare, 1970, 1991; Frick et al., 1994; Silverthorn & Frick, 1999), as theoretical background. Considering the core traits of psychopathic personality, such as deceitfulness, lying, manipulation, and lack of insight into own behaviour, it is difficult to obtain reliable responses to questions about psychopathic characteristics (Andershed, Kerr, Stattin, & Levander, 2003; Hare, 1996; Harpur et al., 1989). Instead the following factors, as pivotal for this measure, were used with the purpose of framing them as abilities: the manipulative use of direct and indirect aggression for achieving one's own purposes; lack of empathy and remorse; callousness; narcissistic feelings of self-appreciation; impulsiveness; and, criminal involvement. The self-report consists of 24 items to be answered on a five-point Likert-type scale ranging from 1 (*not at all true of me*) to 5 (*very true of me*). Examples of items include: "I like to take charge and I'll threaten and push people around if they don't listen"; "I

believe anyone who allows others to humiliate him deserves it”; “It is fun for me to set someone up”; and, “I deserve to get what I want”. In addition to the main 24 items, we also included a Social Desirability subscale consisting of five statements: “I am concerned about my schoolwork”; “I always keep my promises”; “If I did something wrong, I would feel guilty for a long time”; “I do not like to hurt other people’s feelings”; and, “I am concerned about my friends and care about them”.

3.2.2.2 Temperament and Character Inventory (TCI)

This inventory measures two domains of personality: Temperament and character. Dimensions of temperament are based on Cloninger's unified biosocial theory of personality (Cloninger, 1987), as well as character dimensions. According to this theory, Harm Avoidance (HA) is one of four independent, largely genetically determined temperament dimensions (Cloninger, 1994; Cloninger, Svrakic, & Przybeck., 1993). It reflects a heritable bias in the inhibition or cessation of behaviours. Individuals scoring high on HA are pessimistic, chronically worried, easily fatigued, shy with strangers, and tense in unfamiliar situations. The temperament dimension Novelty Seeking (NS) is viewed as a tendency toward exhilaration in response to novel stimuli or cues. A high score on NS refers to a high level of exploratory behaviour, impulsive decision-making, quick loss of temper, and active avoidance of frustration. The third dimension, Reward Dependence (RD), reflects the tendency to maintain or pursue ongoing behaviours with individuals scoring high on RD described as sentimental, socially attached, and dependent on the approval of others. Persistence (P), originally thought of as a component of RD, is the fourth temperament dimension and reflects the tendency to persist in behaviour, despite frustration and fatigue.

The second domain of personality is character, predominantly determined by socialization processes during the life span (Cloninger, Przybeck, Svrakic, & Wetzels, 1994). It is described in terms of response biases related to different concepts of the self. Changes in cognition and the self-concept during the development of personality are supposedly related to personal, social, moral and spiritual development. The character dimension Self-Directedness (SD) is related to the extent to which a person identifies the self as autonomous. An individual who is low on SD can be described as irresponsible, aimless, undisciplined in behaviour, and as having poor impulse control in general. The Cooperativeness (C) dimension is related to the extent to

which a person identifies him/herself as an integral part of society as a whole. Low Cooperativeness is associated with deficits in empathy; such individuals are characterized as hostile, aggressive, and as revengeful opportunists. The Self-Transcendence (ST) dimension reflects the tendency to identify with the unity of all things. Individuals low in ST show conventional and materialistically-oriented behaviour with little or no concern for absolute ideas such as goodness and universal harmony.

In the present study, we used the short version of the TCI with 125 items to be answered as true or false [Cloninger, Przybeck, Svrakic, & Wetzel, 1994]. Cronbach α 's for NS in our study was .51, for HA .67, for RD .25, for P .12, for SD .68, for C .55, and for ST .75. Due to the low level of Cronbach α 's for RD and P, they were not included in the present analysis.

3.2.2.3 *Youth Self-Report (YSR)*

This instrument was designed by Achenbach (1991) to obtain standardized self-reports on youth's views of competencies, feelings and behavioural/emotional problems in a variety of areas, including Internalizing (Withdrawn, Somatic Complaints, Anxious/Depressed scales) and Externalizing problems (Delinquent and Aggressive Behavior). Items are scored 0 if they are *not true* of the child, 1 if they *somewhat or sometimes true*, and 2 if they are *very true or often true*. The YSR contains 112 items that describe specific behavioural/emotional problems. A total problem score is computed, with higher scores indicating endorsement of higher levels of behavioural and emotional problems. In the present study acceptable Cronbach α 's were obtained for all the scales, ranging from .60 for Social Problems to .89 for Externalizing and Internalizing problems.

3.2.2.4 *Antisocial Behavior Checklist (ABC)*

To assess violent behaviour, we selected the same twelve items from the Antisocial Behavior Checklist (ABC), as were applied in Study 1 (for a description see 3.2.1.2.)

3.2.2.5 *Childhood Psychopathy Scale*

This instrument was developed by Lynam (1997) and its purpose is to measure psychopathic-like traits in children. The CPS is a downward extension of the PCL-R which was developed to assess psychopathy in adults. The original CPS consisted of 41 items, 25 from the Child Behavior Checklist (CBCL) and 16 from the Common

Language version of the California Child Q-set (CCQ). It captured 13 of the 20 constructs in the PCL-R. The revised version of CPS consists of 55 items. The new version also measures 13 constructs, but does not contain a scale assessing criminal versatility. Instead it uses a scale assessing boredom susceptibility. The revision was undertaken to simplify complex items and to increase the reliability and validity of several constructs which were not optimally operationalized in the original version (i.e. shallow affect and glibness). For each item, respondents indicated whether the item was (1=Yes) or was not characteristic (0=No) of the participant. Each CPS scale score is comprised of the average of the items contributing to it. All 13 scales combined to form a highly reliable composite, $\alpha=0.88$.

3.2.2.6 Criminality

Data on criminal behaviour were obtained from Police Records concerning registered crimes in terms of property-related crime(s) and violence-related crime(s). When subgrouping the individuals, in case of multiple convictions that included property and violent crimes, the case was considered as belonging to the violent subgroup.

3.3 DATA ANALYSES

3.3.1 Study 1

The data were analyzed using the Statistical Package for the Social Sciences (SPSS-12.0) (Chicago, SPSS). Multiple regression analyses were carried out separately for the groups with high versus lower levels of the APSD score, with violent behaviour score as a dependent variable, and with sociolegal beliefs, impulsivity, aggressive traits, and alcohol-related problems, as independent variables. Discriminant analysis was performed for the groups with higher versus lower level of violent behaviour, with the APSD subscales, antisocial attitudes, impulsivity, aggressive traits, and alcohol-related problems, as discriminating variables. We used analyses of variance (one-way ANOVA tests) to test for group mean differences. Collinearity diagnostics were conducted in order to assess multicollinearity in the data.

3.3.2 Study 2

The data were analysed using the IBM SPSS Statistics (PASW 18.0, 2010). To study the factor structure of the instrument, a Principal Component Analysis (PCA) with Direct Oblimin Rotation was performed to obtain an oblique factor solution. As the eigenvalue >1.0 criterion usually extracts too many factors and produces a distorted

factor solution (Comrey, 1978), this was limited by choosing the eigenvalue >1.5 . An oblique solution was considered appropriate because the items described related concepts (i.e. bullying and psychopathic tendencies), and thus were not regarded as completely independent of each other. The lower bound cut-off for a meaningful factor loading was set at 0.40, which represents a *high* loading (criteria for inclusion). The PAS scale scores and the two factor scores, respectively, were divided into a low (first quartile) and a high group (fourth quartile). Two-tailed independent *t*-tests were used to examine possible differences between the low and high sum PAS groups, and low and high PAS factor score groups, respectively, versus 1) YSR problem scores; 2) ABC violent behaviour scores; 3) personality (TCI) dimension scores; and 4) psychopathy (CPS) rating scores. Finally, PAS sum scores were used as a continuous variable in examining differences between groups characterized by registered crime offence(s).

3.4 ETHICAL PERMISSIONS

Ethical permissions were approved by the Board of Ethics at Karolinska Insitutet (GW, Dnr 03-785; Dnr 03-788).

4 RESULTS AND DISCUSSION

4.1 STUDY 1

Aims: The purpose of the present study was: a) to examine the discriminative power of the Antisocial Process Screening Device (APSD) aggressive traits, impulsiveness, sociolegal beliefs and alcohol-related problems between subgroups of Russian juvenile delinquents (n=175) with low versus high levels of violent behaviour; and, b) to compare the predictive value of these variables in two subgroups defined by higher vs lower levels of psychopathic traits.

Results: Results by one-way ANOVA tests showed that the high violent group was significantly more impulsive (BIS-11), reported more anger, showed more verbal and physical aggression (AQ), had more psychopathic traits (APSD), and had more problems related to alcohol use (RAPI). They further had higher scores in antisocial attitudes (AAS) compared to the low violent group. However, when using canonical discriminant analysis, results revealed that only high levels of psychopathic traits, physical aggression and alcohol-related problems were able to discriminate between the high and low violent groups, with the fraction of grouped cases correctly classified in total up to 74%. When the participants were dichotomized into two groups with higher versus lower levels of psychopathy one-way ANOVA analysis showed that the level of violence was the only variant factor. Finally, using multiple regression analysis, different sets of predictors for violent behaviour (ABC) emerged for the group with higher versus lower psychopathy scores. For the group high in psychopathic tendencies the only predictor for violent behaviour was alcohol problems as indicated by RAPI scores. For the group low in psychopathic tendencies, the predictors were RAPI scores, AQ physical aggression, and antisocial attitudes.

Discussion: The results are discussed in relation to specific features of psychopathy and environmental factors in general, and the use of alcohol in particular. The results suggest that psychopathic youth are more prone to becoming violent while using alcohol. A possible explanation is that psychopathic subjects have habitually aggressive tendencies and perceive aggressiveness as something normative; and alcohol further reduces the restraints against violent impulses. The finding that antisocial attitudes had a more important role in the prediction of violent behaviour in subjects low in psychopathic tendencies was surprising, because we expected it to be

the opposite. It could suggest that antisocial attitudes are more important for less psychopathic subjects in influencing antisocial and violent behaviour. The high psychopathic subjects are possibly more guided by traits such as narcissism, manipulation, impulsivity, and lack of empathy.

4.2 STUDY 2

Aims: The objective was to evaluate a new scale aimed at assessing antisocial attitudes, the Pro-Bullying Attitude Scale (PAS), on a group of 259 voluntarily-recruited male juvenile delinquents from the juvenile detention center in Arkhangelsk, northwestern Russia.

Results: Exploratory factor analysis gave a two-factor solution: Factor 1 denoted Callous/Dominance; and Factor 2 denoted Manipulativeness/Impulsiveness. The subjects were divided into two extreme groups (first and fourth quartile) according to their sum scores on PAS and the two factor scores, respectively. The extreme groups of sum PAS and PAS Factor 1 (Callous/Dominance) differed in both Delinquent and Aggressive behaviour as assessed by the Youth Self Report (YSR). They also differed in violent behaviour as assessed by the Antisocial Behavior Checklist (ABC), and in the personality trait Harm Avoidance as assessed by the Temperament and Character Inventory (TCI). The extreme groups of PAS Factor 1 (Callous/Dominance) further differed in Cooperativeness, the high groups scoring low in the trait and the extreme groups of PAS Factor 2 (Manipulativeness/Impulsiveness) differed in Self-Directedness (SD), the high group scoring low in the trait likewise assessed by the TCI. The extreme groups of sum PAS and PAS Factor 1 (Callous/Dominance), respectively, differed significantly on psychopathic tendencies as assessed by the Childhood Psychopathy Scale, scoring high on the scale. When PAS was used as a continuous variable, the high sum PAS and high PAS Factor 1 (Callous Dominance) groups scored significantly higher in violent crime.

Discussion: The results in Study 2 are in line with findings showing that antisocial attitudes are strong predictors of future delinquency and violent behaviour. The results also suggest that PAS Factor 1 (Callous/Dominance) seems to reflect a deficit in empathy while PAS Factor 2 seems to reflect a deficit in impulse-control. The findings that the low and high sum PAS and PAS Factor 1 (Callous/Dominance) score groups also were high in psychopathic tendencies are in line with at least one

study (Campbell, Doucette, & French, 2009) showing a positive association between psychopathic tendencies and antisocial attitudes. In conclusion, pro-bullying attitudes are suggested as a link between personality and psychopathy on the one hand, and antisocial and violent behaviour on the other. Thus, the possible usefulness of PAS in identifying high-risk individuals for violent behaviour among incarcerated delinquents is discussed.

5 GENERAL DISCUSSION

The general aim of this thesis was to study different factors that contribute to criminal and violent behaviour in juvenile delinquents, with a focus on personality and behavior characteristics.

5.1 PSYCHOPATHY AND VIOLENCE

The results indicate the importance of the concept of psychopathy in predicting antisocial and violent behaviour, and that the concept of psychopathy is useful in the study of adolescent juvenile delinquents. In this thesis we have shown that violent subjects were also more psychopathic (Study 1), and that participants high in antisocial attitudes as measured by the PAS also were high in psychopathic traits (Study 2). These findings show the important role of psychopathy in predicting adolescent antisocial and violent behaviour. Even though there is some critique concerning the applicability of the psychopathy concept to children and adolescents (Edens, Skeem, Cruise, & Cauffman, 2001), our findings are in line with research results from certain other groups (Loney et al., 2007; Lynam et al., 2007; Marsee et al., 2005).

5.2 ANTISOCIAL ATTITUDES AND VIOLENCE

This thesis has also shown the importance of antisocial attitudes in predicting antisocial and violent behaviour. In Study 1 the subjects in the high violent group were also high in antisocial attitudes as measured by the AAS. In Study 2 the subjects in the high extreme group in antisocial attitudes, as measured by PAS, were also high in violent behaviour. This is in line with other research showing the strong importance of antisocial attitudes in predicting antisocial- and violent behaviour (Mills et al., 2004).

The results in Studies 1 and 2 provide different pictures regarding the role of psychopathy and antisocial attitudes in influencing antisocial and violent behaviour. While Study 1 has indicated that antisocial attitudes (AAS) were not important in high psychopathic subjects in predicting violence, Study 2 has shown that subjects with high scores in antisocial attitudes (PAS) also had high scores in psychopathic tendencies. The results can possibly be attributable to the difference between the inventories. The AAS measures attitudes towards lawbreaking and an antisocial lifestyle, while the PAS measures egocentric, non-empathic traits (Factor 1:

Callous/Dominance) and manipulation, impulsive and antisocial behaviour (Factor 2: Manipulativeness/Impulsiveness). PAS thus seems to reflect a strong sense of being superior to others and also a strong sense of entitlement, to have the right to violate people's integrity in a more extreme way than is measured by AAS. This is an important aspect that might be crucial for violence and might be more optimally measured by the use of PAS.

5.3 IMPULSIVITY, ANTISOCIAL BEHAVIOUR AND VIOLENCE

Another factor that merits specific interest is impulsivity. Impulsivity, or impulsiveness, is known to be a strong predictor of antisocial and violent behaviour. Murray and Farrington (in press) describe impulsiveness as "the most crucial personality dimension that predicts antisocial behaviour". In Study 1 the subjects in the high violent group were also more impulsive. In Study 2 subjects high in PAS Factor 2: Manipulativeness/Impulsiveness were low in the character dimension Self-Directedness. This might reflect problems related to personality disturbances, for example impulsivity in terms of problems with impulse control. An individual low in self-directedness is described as irresponsible, aimless, and undisciplined in behaviour (Cloninger, 1994). Thus, our results support the findings of numerous studies showing that impulsivity is strongly associated with antisocial and violent behaviour (Jolliffe & Farrington, 2008; for a review, see Schalling, 1993).

5.4 ALCOHOL - A POSSIBLE MEDIATOR

Another finding is the important role of alcohol problems in influencing violent behaviour in subjects with high psychopathic tendencies. Alcohol is an important factor influencing both neuropsychological functioning and the environmental situation. The results in Study 1 have shown the strong effect of alcohol in predicting violent behaviour, not only in the psychopathic group but also in the non-psychopathic subjects. The effect of alcohol seem to be especially strong in psychopathic individuals that could be an effect of the lessening of restraints in already highly impulsive and aggressive individuals, which can result in antisocial and violent behaviour. Psychopathy has generally been associated with substance abuse in adult offenders (Crocker et al., 2005; Longato.Stadler et al., 2002).

5.5 LIMITATIONS AND STRENGTHS

Limitations of this thesis are the cross-sectional design in both studies, which makes it difficult to draw conclusions on causal relationships. Therefore, Study 1 and Study 2 should be regarded as explorative. In Study 1 another limitation was that APSD only has one item for each psychopathic trait (as defined by the PCL). To provide an adequate assessment, more questions per trait are needed. Also, the inter-rater reliability for the APSD was not assessed. Another drawback is the different number of participants who completed the self-reports in Study 2. As mentioned earlier, this was due to the fact that the different inventories applied were administered at different sessions. The findings should thus be cautiously interpreted and generalization to other groups is not possible. In Study 2 we also relied on self-reports for assessing negative personal characteristics (PAS). Other research indicates difficulties in assessing reliable responses to questions about, for example, psychopathic characteristics using self-report measures (Andershed et al., 2002). To overcome that obstacle we framed the negative characteristics as abilities. Possible strengths of the thesis are the relatively high number of participants and the data-making research possible in a non-western culture, offering the possibility to compare earlier findings from studies in European and North American countries.

5.6 GENERAL CONCLUSIONS

In this thesis we have studied the role of different factors (by others also described as risk factors) important in understanding antisocial and violent behaviour. One general conclusion is that the importance of different factors varies according to the subgroup studied. Another general conclusion is the generalizability of the concepts of antisocial attitudes and psychopathy in terms of their applicability to adolescent antisocial and violent behaviour among juvenile delinquents in a non-western culture.

One implication for treatment is the importance of successfully treating alcohol (and drug) abuse in male adolescent delinquents, as these substances possibly have a powerful impact on antisocial and violent behaviour. A second clinical implication is the need for different treatment methods for groups with low versus high psychopathic traits. Recommendations for treatment of psychopathic individuals are outlined by Wong & Hare (2005). A final clinical implication is the usefulness of PAS in identifying high risk individuals for bullying tendencies, prison misconduct, and violent

behaviour among incarcerated delinquents. PAS is easy to administrate, and could be helpful as a clinicial screening instrument, especially in a prison environment. However, further research needs to be done to better understand how the different factors studied here interact, and how they influence antisocial and violent behaviour.

6 SVENSK SAMMANFATTNING

Huvudsyftet med denna avhandling var att studera olika faktorer som kan bidra till antisocialt och våldsamt beteende hos fängslade ryska kriminella ungdomar. De faktorer vi studerade var psykopatiska tendenser, personlighetsdrag, impulsivitet, antisociala attityder samt alkoholproblem. Avhandlingen består av två studier, som benämns Study 1 respektive Study 2. Syftet med Study 1 var att undersöka den diskriminativa förmågan hos inventariet Antisocial Process Screening Device (APSD), aggressiva drag, impulsivitet, antisociala attityder samt alkoholrelaterade problem mellan grupper av låga respektive höga nivåer av våldsamt beteende och att jämföra den prediktiva förmågan hos dessa variabler i två subgrupper som kännetecknas av låga respektive höga nivåer av psykopatiska drag. Deltagarna (n=175) skattades av fängelsets personal avseende psykopatiska drag. Deltagarna fyllde i självskattningsformulären Antisocial Behavior Checklist (ABC), Aggression Questionnaire (AQ), Barratt Impulsiveness Scale (BIS-11), Antisocial Attitudes Scale (AAS), Adolescent Alcohol Involvement Scale (AAIS) samt Rutgers Alcohol Problem Index (RAPI). Det fanns även data om typ av begångna brott (våldsbrott eller icke våldsbrott). Resultaten visade att endast APSD-skattningarna, aggressiva drag, och alkoholrelaterade problem kunde skilja mellan den våldsamma och icke våldsamma gruppen. När man jämförde grupper som kännetecknades av höga respektive låga skattningar avseende psykopati, kunde endast grad av våld skilja mellan grupperna, den mer psykopatiska gruppen var mer våldsam. Olika prediktorer för våldsamt beteende framkom vid jämförelse mellan grupperna med låga respektive höga psykopatiskattningar. Gruppen med låga skattningar predicerades av alkoholproblem, fysisk aggressivitet och antisociala attityder. Gruppen med höga skattningar predicerades endast av alkoholproblem. Resultaten tyder på att psykopatiska ungdomar är mer benägna att använda våld i samband med alkoholförtäring.

Syftet med Study 2 var att utvärdera en ny skala för självskattning av antisociala attityder: Probullying Attitude Scale (PAS). Deltagarna (n=171) skattades med Childhood Psychopathy Scale av lärare på fängelset. Deltagarna skattade sedan sig själva med PAS, ABC, Temperament and Character Inventory (TCI) samt Youth Self-Report (YSR). På samma sätt som i Study I fanns det även uppgifter om typ av

begångna brott. Statistisk analys med Principal Components Analysis gav en två-faktorlösning: Faktor 1 benämndes Callous/Dominance och Faktor 2 Manipulerande/Impulsivitet. Deltagarna delades sedan upp i två extrema grupper (första och fjärde kvartilen) utifrån sina resultat på PAS samt de två faktorerna. De som hade höga värden i PAS och Faktor 1 hade också höga värden avseende antisocialt, aggressivt och våldsamt beteende samt psykopatiska tendenser. De med höga värden i Faktor 2 hade mer aggressivt beteende och låga resultat i personlighetsdraget Self-Directedness. När PAS användes som kontinuerlig variabel skilde tenderade de med höga värden PAS och Faktor 1 att i högre utsträckning ha begått våldsbrott. De antisociala attityder som PAS speglar föreslås som en länk mellan vissa personlighetsdrag och psykopatiska tendenser å ena sidan samt antisocialt och våldsamt beteende å den andra. Den allmänna diskussionen betonar betydelsen av psykopati, antisociala attityder och impulsivitet när det gäller att predicera antisocialt och våldsamt beteende. Resultatens betydelse för behandling diskuteras även såsom behov specifik behandling för individer med uttalade psykopatiska drag samt möjligheten att kunna använda PAS för att upptäcka riskindivider i fängelsemiljö, avseende mobbingstendenser, olika former av störande och våldsamt beteende.

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Looking back, I can see similarities between my teenage years and my research studies. The common factor is unhappy love. Honestly, I think I am unhappily in love with science. It is easy to be enthusiastic thinking of scientific discoveries, but the everyday hard scientific work is not so romantic. Scientific work requires, for example, vigilance, good organization and a strong sense for details. It is tiresome and it is easy to make a mistake, so you have to check and double-check and so on. I think that as a scientist, you have to be a mature person, being calm, thoughtful, but at the same time efficient. It is important to get things done. Science is the art of self-discipline. I admire those who engage their lives in scientific work.

Writing a thesis is a hard thing to do. Difficulties involved in the process include: financing, not having enough time because of one's clinical work, family business, and other social obligations. I started in 2003 and I am ready now with my thesis for the licentiate degree because of my supervisor Professor Britt af Klinteberg. She never sees an obstacle as insurmountable. I think it is the most important thing that I have learned during my research studies.

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8 REFERENCES

- Achenbach, T. M. (1991). *Manual for the Youth Self-Report and 1991 profile*. Burlington: University of Vermont Department of Psychiatry.
- Andershed, H., Kerr, M., Stattin, H., & Levander, S. (2002). Psychopathic traits in non-referred youths: A new assessment tool. In E. Blaauw, J. M. Philippa, K. C. M. P.Ferenschild, & B. van Lodensteijn (Eds.), *Psychopaths – Current international perspectives* (pp. 131-158). The Hague: Elsevier.
- Baron, S. W. (1995). Serious offenders. In Creechman, J. H. & Silverman, R. A. (Eds.), *Canadian Delinquency* (pp. 125-147). Scarborough (ON): Prentice Hall Canada.
- Barratt, E.S. (1959). Anxiety and impulsiveness related to psychomotor efficiency. *Perceptual and Motor Skills*, 9, 547-554.
- Barratt, E.S. (1994). Impulsiveness and aggression. In J. Monahan & H. S. Steadman (Eds.), *Violence and mental disorder: developments in risk assessments* (pp. 61-79). University of Chicago Press: Chicago.
- Bergman, L. R., & Magnusson, D. (1997). A person-oriented approach in research on developmental psychopathology. *Developmental Psychopathology*, 9(2), 2291-319.
- Brame, B., Nagin, D. S., & Tremblay, R. E., (2001). Developmental trajectories of physical aggression from school entry to late adolescence. *Journal of Child Psychology and Psychiatry*, Vol 42 (4), 503-512.
- Brendgen, M., Vitaro, F., Tremblay, R. E., & Lavoie, F. (2001). Reactive and proactive aggression: Predictions to physical violence in different contexts and moderating effects of parental monitoring and caregiving behaviour. *Journal of Abnormal Child Psychology*, 29, 293-304.
- Buss, A.H. & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology*, 21, 343-349.
- Buss AH, & Perry M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, 63, 452-459.
- Cairns, R. B., Cairns, B. D., Neckerman, H. J., Ferguson, L. L., & Gariépy, J-L. (1989). Growth and aggression: I. Childhood to early adolescence. *Developmental Psychology*, Vol 25 (2), 320-330.
- Campbell, M. A., Doucette, N. L., & French, S. (2009). Validity and stability of the Youth Psychopathic Traits Inventory in a nonforensic sample of young adults. *Journal of Personality Assessment*, Vol 91 (6), 584-592.
- Christian, R., Frick, P. J., Hill, N., Tyler, L.A., & Frazer, D. (1997). Psychopathy and conduct problems in children: II. Subtyping children with conduct problems based on their interpersonal and affective style. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 233-241.
- Cleckley, H. (1941). *The mask of sanity*. St Louis, MO: Mosby
- Cloninger, C. R. (1987). A systematic method for clinical description and classification of personality variants. *Archives of General Psychiatry*, 44, 573-588.
- Cloninger, C. R., Svrakic, D. M., & Przybeck T. R. (1993). A psychobiological model of temperament and character. *Archives of General Psychiatry*, 50, 975-990.
- Cloninger, C. R. (1994). Temperament and personality. *Current Opinion in Neurobiology*, 4, 266-273.
- Cloninger, C. R., Przybeck, T. R., Svrakic, D. M., & Wetzel, R. D. (1994). *The Temperament and Character Inventory (TCI): a guide to its development and use*. St Louis, Missouri: Washington University, Center for Psychobiology of Personality.
- Cooke, D. J., & Michie, C. (2001). Refining the construct of psychopathy: Towards a hierarchical model. *Psychological Assessment*, 13, 171-188.

- Cornell, D. G., Warren, J., Hawk, G., Stafford, E., Oram, G., & Pine, G. (1996). Psychopathy in instrumental and reactive violent offenders. *Journal of consulting and clinical psychology, 64*, 783-790.
- Crick, N. R., & Dodge, K. A. (1999). "Superiority" is in the eye of the beholder: A comment on Sutton, Smith and Swettenham. *Social Development, 8*, 128-131.
- Crocker, A. G., Mueser, K. T., Drake, R. E., Clark, R. E., McHugo, G. J., Ackerson, T. H., et al. (2005). Antisocial personality, psychopathy and violence in persons with dual disorders. A longitudinal analysis. *Criminal Justice and Behavior, 32(4)*, 452-476.
- Dodge, K. A., & Coie, J. D. (1987). Social-information-processing factors in reactive and proactive aggression in children's peer groups. *Journal of personality and social psychology, 53*, 1146-1158.
- Dodge, K. A. (1991). The structure and function of reactive and proactive aggression. In D. Pepler, K. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 201-218). Hillsdale, NJ: Lawrence Erlbaum.
- Edens, J. F., Skeem, J. L., Cruise, K. R., & Cauffman, E. C. (2001). Assessment of "juvenile psychopathy" and its association with violence: A critical review. *Behavioral Sciences and the Law, 19*, 53-80.
- Eklund, J., & af Klinteberg, B. (2009). Stability of and change in criminal behavior: A prospective study of young male lawbreakers and controls. *International Journal of Forensic Mental Health, 5*, 83-95.
- Farrington, D. P. (1993). Understanding and preventing bullying. In M. Tonry, (Ed.), *Crime and justice: An annual review of research, vol.17* (pp. 381-458). Chicago: The University of Chicago Press.
- Farrington, D. P. (2005). Childhood origins of antisocial behavior. *Clinical Psychology and Psychotherapy, 12*, 177-190.
- Fite, P. J., Colder, C. R., Lochman, J. E., & Wells, K. C. (2008). Developmental trajectories of proactive and reactive aggression from fifth to ninth grade. *Journal of Clinical Child and Adolescent Psychology, 37(2)*, 412-421.
- Forsman, M., Lichtenstein, P., Andershed, H., & Larsson, H. (2010). A longitudinal twin study of the direction of effects between psychopathic personality and antisocial behaviour. *Child Psychology and Psychiatry, 51:1*, 39-47.
- Forth, A. E., & Burke, H.C. (1998). Psychopathy in adolescence: Assessment, violence, and developmental precursors. In D. J. Cooke, A. E. Forth, & R. D. Hare (Eds.), *Psychopathy: Theory, research and implications for society* (pp. 205-229). Dordrecht-Boston-London: Kluwer Academic Publishers.
- Freidenfelt, J. & af Klinteberg, B. (2007). Exploring adult personality and psychopathy tendencies in former childhood hyperactive delinquent males. *Journal of Individual Differences, 28(1)*, 27-36.
- Frick, P. J., Barry, C. T., & Bodin, S. D. (1999). Applying the concept of psychopathy to children: Implications for the assessment of antisocial youth. In C. B. Gacono (Ed.), *The clinical and forensic assessment of psychopathy: A practitioners guide* (pp3-24). Hillsdale, NJ: Erlbaum.
- Frick, P. J., O'Brien, B. S., Wootton, J. M., & McBurnett, K. (1994). Psychopathy and conduct problems in children. *Journal of Abnormal Psychology, 103*, 700-707.
- Frick, P. J., & Hare, R. D. (2001). *The Antisocial Process Screening Device*. Toronto: Multi-Health Systems.
- Frick, P. J., Kimonis, E. R., Dandreaux, D. M., & Farrel, J. M. (2003). The four year stability of psychopathic traits in non-referred youth. *Behavioral Sciences and the Law, 21*, 713-736.

- Gendreau, P. (1996). Offender rehabilitation: What we know and what needs to be done. *Criminal Justice and Behavior*, Vol 23(1), 144-161.
- Gendreau, P., Goggin, C. E., & Law, M. A. (1997). Predicting prison misconducts. *Criminal Justice and Behavior*, Vol 24(4), 414-431.
- Grann, M., Tengström, A., & Kullgren (1999). Psychopathy (PCL-R) predicts violent recidivism among criminal offenders with personality disorders in Sweden. *Law and Human Behavior*, 23(2), 205-217.
- Ham, H. P., Zucker, R. A., & Fitzgerald, H. E. (1993). Assessing antisociality with the Antisocial Behavior Checklist: Reliability and validity studies. *Paper presented at the annual meetings of the American Psychological Society, Chicago, IL.*
- Hare, R. D. (1970). *Psychopathy: Theory and research*. New York: Wiley.
- Hare, R. D. (1991). *The Hare Psychopathy Checklist-Revised*. Toronto: Multi-Health Systems.
- Hare, R. D. (1996). Psychopathy: A construct whose time has come. *Criminal Justice and Behavior*, 23:25-54.
- Hare, R. D. (2003). *Manual for the Hare psychopathy checklist-revised*, 2nd ed. Toronto: Multi-Health Systems.
- Hare, R. D., Clark, D. Grann, M., & Thornton, D. (2000). Psychopathy and the predictive validity of the PCL-R: An international perspective. *Behavioral Sciences and the Law*, 18, 623-645.
- Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment*, 1, 6-17.
- Jolliffe, D., & Farrington, D. P. (2008) A systematic review of the relationship between childhood impulsiveness and later violence. In M. McMurrin, & R. C. Howard (Eds.), *Personality, personality disorder, and risk of violence* (pp. 41-61). London: Wiley.
- af Klinteberg, B. von Knorring, L., & Oreland, L. (2004). On the psychology of impulsivity. In R. Stelmack (Ed.), *On the psychobiology of personality: Essays in honor of Marvin Zuckerman* (pp. 429-451). New York: Elsevier Science.
- af Klinteberg, B., Humble, K., & Schalling, D. (1992). Personality and psychopathy of males with a history of early criminal behaviour. *European Journal of Personality*, 6, 245-266.
- Loney, B. R., Taylor, J., Butler, M. A., & Iacono, W. G. (2007). Adolescent psychopathy features: 6-year temporal stability and the prediction of externalizing symptoms during the transition to adulthood. *Aggressive Behavior*, 33, 244-252.
- Longato-Stadler, E., af Klinteberg, B., Garpenstrand, H., Oreland, L., & Hallman, J. (2002). Personality traits and platelet monamine oxidase activity in a Swedish male criminal population. *Neuropsychobiology*, 46(4), 202-208.
- Lynam, D. (1996). The early identification of chronic offenders: Who is the fledgling psychopath? *Psychological Bulletin*, 120, 209-234.
- Lynam, D. R. (1997). Pursuing the psychopath: Capturing the psychopath in a nomological net. *Journal of Abnormal Psychology*, 106, 425-438.
- Lynam, D.R., Caspi, A., Moffitt, T. E., Loeber, R., & Stouthamer-Loeber, M. (2007). Longitudinal evidence that psychopathy scores in early adolescence predict adult psychopathy. *Journal of Abnormal Psychology*, 116, 155-165.
- Lynam, D. R., Miller, D. J., Vachon, D., Loeber, R., & Stouthamer-Loeber, M. (2009). Psychopathy in adolescence predicts official reports of offending in adulthood. *Youth Violence and Juvenile Justice*, 7(3), 189-207.
- Marsee, M. A., Silverthorn P., & Frick P. J. (2005). The association of psychopathic traits with aggression and delinquency in non-referred boys and girls. *Behavioral Sciences and the Law*, 23: 803-817.

- Mayer, J. & Filstead, W.J. (1979). The Adolescent Alcohol Involvement Scale: An instrument for measuring adolescents' use and misuse of alcohol. *Journal of Studies on Alcohol*, 40, 291-300.
- Mills, J. F., Kroner, D. G., & Hemmati, T. (2004). The Measures of Criminal Attitudes and Associates (MCAA): The prediction of general and violent recidivism. *Criminal Justice and Behavior*. Vol 31(6), 717-733.
- Moberg, D.P. (1983). Identifying adolescents with alcohol problems: A field test of the Adolescent Alcohol Involvement Scale. *Journal of Studies on Alcohol*, 44, 701-721.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, Vol 100, No 4, 674-701.
- Murray, J., & Farrington, D. P. (in press). Risk factors for conduct disorder and delinquency: Key findings from Longitudinal Studies. *Canadian Journal of Psychiatry*.
- Murrie, D. C., Cornell, D. G., Kaplan, S., McConville, D., & Levy-Elkon, A. (2004). Psychopathy scores and violence among juvenile offenders: A multi-measure study. *Behavioral Sciences and the Law*, 22: 49-67.
- Nagin, D., & Tremblay, R. E. (1999). Trajectories of boys' physical aggression, opposition, and hyperactivity on the path to physically violent and non violent juvenile delinquency. *Child Development*, 70, 1181-1196.
- Nagin, D. S., & Tremblay, R. E. (2001). Parental and early childhood predictors of persistent physical aggression in boys from kindergarten to high school. *Archives of General Psychiatry*, Vol 58(4), 389-394.
- Patrick, C. J., Fowles, D. C., & Krueger, R. F. (2009). Triarchic conceptualization of psychopathy: Developmental origins of disinhibition, boldness, and meanness. *Development and Psychopathology*, 21, 913-928.
- Patton, J.H., Stanford, M.S., & Barratt, E.S. (1995). Factor structure of the Barratt Impulsiveness Scale. *Journal of Clinical Psychology*, 51, 768-774.
- Putnins, A. L. The Adolescent Alcohol Involvement Scale: Some findings with young offenders. *Drug and Alcohol Review*, 11, 253-258, 1992.
- Salekin, R. T., Rosenbaum, J., & Lee, Z. (2008). Child and adolescent psychopathy: Stability and change. *Psychiatry, Psychology and Law*, 15(2) 224-236.
- Schalling, D. (1993). Neurochemical correlates of personality, impulsivity and disinhibitory suicidality. In S. Hodgins (Ed.) *Mental disorder and crime* (pp. 208-226). Newbury Park, CA: Sage
- Serin, R. C. (1991). Psychopathy and violence in criminals. *Journal of Interpersonal Violence*, 6, 423-431.
- Silverthorn, P., & Frick, P. J. (1999). Developmental pathways to antisocial behavior: The delayed-onset pathway in girls. *Developmental Psychopathology*, 11, 101-126.
- Simourd, D. J., Hoge, R. D., Andrews, D. A., & Leschied, A. W. (1994). An empirically-based typology of male young offenders. *Canadian Journal of Criminology*. Vol 36(4), 447-461.
- Simourd, D. J., & van de Ven, J. (1999). Assessment of criminal attitudes: Criterion-related validity of the Criminal Sentiments Scale-Modified and Pride in Delinquency Scale. *Criminal Justice and Behavior*, Vol 26(1), 90-106.
- Simourd, D. J., & Olver, M. E. (2002). The future of criminal attitudes research and practice. *Criminal Justice and Behavior*, Vol 29(4), 427-446.
- Tremblay, R. E., & Nagin, D. S. (2005). The developmental origins of physical aggression in Humans. In R. E. Tremblay, W. W. Hartup, & J. Archer (Eds.), *Developmental origins of aggression* (pp. 83-106). New York: Guilford Press.
- Tuvblad, C., Raine, A., Zheng, M., & Baker, L. (2009). Genetic and environmental stability differs in reactive and proactive aggression. *Aggressive Behavior*, 35(6), 437-452.

- Virkkunen, M., & Linnoila, M. (1993). Serotonin in personality disorders with habitual violence and impulsivity. In S. Hodgins (Ed.), *Mental disorder and crime* (pp. 227-243). Newbury Park, CA: Sage.
- Vitacco, M. J., Van Rybroek, G. J., Rogstad, J. E., Yahr, L. E., Tomony, J. D., & Saewert, E. (2009). Predicting short-term institutional aggression in forensic patients: A multi-trait method for understanding subtypes of aggression. *Law and Human Behavior, 33*(4), 308-319.
- White, H. R., & Labouvie, E. W. (1989). Towards the assessment of adolescent problem drinking. *Journal of Studies on Alcohol, 50*, 30-37.
- Williamson, S. E., Hare, R. D., & Wong, S. (1987). Violence: Criminal psychopaths and their victims. *Canadian Journal of Behavioral Science, 19*, 454-462.
- Wong, S., & Hare, R. D. (2005). *Guidelines for Psychopathy Treatment Program*. Toronto, ON: Multi-Health Systems.
- Zhang, Q., Loeber, R., & Stouthamer-Loeber, M. (1997). Developmental trends of delinquent attitudes and behaviors: Replications and synthesis across domains, time, and samples. *Journal of Quantitative Criminology, Vol 13*(2), 181-215.
- Zucker, R. A., & Noll, R. B. (1980). *Assessment of antisocial behavior: Development of an instrument*. East Lansing: Michigan State University.