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**An Investigation of Risk and Protective Factors Associated With
Criminal Activity in Children Under the Age of Twelve**

by

Tanya A. Rugge, B.A.

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of

Master of Arts

Department of Psychology

Carleton University
Ottawa, Ontario
May 11, 1998.
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An Investigation of Risk and Protective Factors Associated With
Criminal Activity in Children Under the Age of Twelve

submitted by Tanya A. Rugge, B.A.

in partial fulfillment of the requirements for

the degree of Master of Arts

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Date* May 14, 98.

*(to identify date of revisions)

Abstract

Given the widespread concern about juvenile crime, there is surprisingly little objective information about children under the age of twelve who commit crimes. The present study aimed to fill this gap by reviewing 108 files of at risk children. The Child Risk/Resilience Inventory (CRRI) was utilized to examine the risk and protective factors of children under the age of twelve who had engaged in delinquent acts. The sample included 49 boys and 59 girls who were in the care of the Children's Aid Society of Ottawa-Carleton. As hypothesized, the total risk scores were higher for the twelve children who engaged in criminal activity than for the children who did not. Furthermore, children who engaged in criminal activity also received significantly lower scores on the protective factors. Twelve children committed a total of 26 criminal acts. Sixty-two percent of these incidents involved violence. An examination of Conduct Disorder, Attention-Deficit Disorder with Hyperactivity, and Oppositional Defiant Disorder indicated that 26% of the total sample exhibited symptoms for the diagnoses of one or two of these disorders. The findings of this study indicate that the CRRI is a reliable and effective instrument to measure risk and protective factors in children between the ages of six and eleven. The theoretical and practical implications of this study are discussed.

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An Investigation of Risk and Protective Factors Associated With Criminal Activity in Children Under the Age of Twelve

Concerns regarding youth crime have existed for decades. Seldom does a day go by when the media does not report on youth crime. Ordinary citizens are becoming increasingly troubled and frustrated with the apparent lack of respect and regard demonstrated by young people towards the property of others and the law in general. Consequently, these concerns have triggered a barrage of questions and criticisms of the juvenile justice system.

A significant shift in attitude towards juvenile offenders in the early 1980's resulted in the enactment of the Young Offenders Act (YOA). The YOA was implemented on April 2, 1984 and was designed to make the handling of youth crime more like the handling of adult cases, therefore several significant changes were made (Hackler, 1987). It also utilized a more legalistic approach than the previous welfare-oriented Juvenile Delinquents Act.

One of the more controversial changes of the YOA has been to raise the age of criminal responsibility from seven to twelve years. The net result of this change is that no person under the age of twelve can be taken to court for the commission of a criminal act. This contentious change will be one of the underlying focuses of the present study. This new legislation has caused some of the focus to shift towards those children who are now immune to prosecution, children under the age of twelve.

Few studies have been published which examine criminal acts committed by children under the age of twelve. This is due, in part, to the difficulty of acquiring information on crimes which are committed by children. However, the number of people believing that children do not commit crimes or that these crimes are not serious enough to raise concern is slowly changing. Over the past few years, there have been a number of children who have committed crimes, ranging in severity from petty mischief to brutal attacks. An especially sensational case of a brutal attack occurred in England in 1993 when two year old James Bulger was beaten to death by two ten year old boys. However, it should be noted that these types of cases are few and do not reflect the typical criminal behaviour of the average young person. An effective and efficient system needs to be developed which can deal with a range of criminal acts committed by children under the age of twelve (Doob, Marinos, & Varma, 1995).

It has been established that children are not always well behaved, law abiding citizens and that they are capable of committing crimes. Once this fact has been acknowledged, a wealth of crucial information can be obtained by studying these children. This information may greatly benefit research aimed at understanding and treating young and adult criminals. It is important to study children under the age of twelve to determine what influences their behaviour, and whether or not they are aware of or can comprehend the consequences of their actions.

Children who are heavily involved in criminal activity at a young age are at a higher risk of continuing to commit crimes as an adolescent or an adult (Bala & Mahoney, 1994; Doob et al., 1995; Marron, 1992; Rutter, 1997; Yoshikawa, 1994).

Perhaps by examining these children and understanding their behaviour, we may reduce their likelihood of becoming adult criminals. Researchers investigating these children have found that some children exhibit a number of risk factors and are at risk of experiencing a range of negative outcomes, such as childhood psychopathology and criminal involvement (Doob et al., 1995; Yoshikawa, 1994). The more risk factors a child exhibits, the higher the likelihood that the child will engage in antisocial or criminal behaviour later in childhood and adolescence (Bala & Mahoney, 1994; Doob et al., 1995; Marron, 1992; Rutter, 1997; Yoshikawa, 1994). In order to understand more about children who engage in criminal activity, the present study will attempt to identify risk variables which are associated with a child under the age of twelve who engaged in this type of behaviour.

The first objective of this study was to examine the risk and protective factors exhibited by a group of at risk children. The second objective was to examine four types of negative outcomes among these at risk children. These negative outcomes included the amount of criminal activity which these children had engaged in, as well as three behavioural disorders: attention deficit disorder with hyperactivity (ADHD), conduct disorder (CD) and oppositional defiant disorder (ODD).

This research study was exploratory in nature in that it examined the characteristics of 108 children from at risk environments. A file review was conducted on 59 girls and 49 boys, aged six through ten, who were in the care of the Children's Aid Society of Ottawa-Carleton. Of the 108, twelve children committed acts, which would be considered criminal, if not for the age provisions outlined in the YOA.

Protection factors and risk factors were examined in an attempt to establish what factors place children at risk for experiencing a negative outcome, such as a behavioural disorder or engagement in criminal activity.

Literature Review

Crime Statistics for Children Under 12

There exists a debate about whether crimes committed by children are really on the rise. Although the media reports that there has been an increase in youth crime, and crimes committed by children, the statistics indicate that this is not the case. Statistics suggest that the amount of crime committed by young persons has been relatively stable over the past few years.

Despite this debate, it is important to outline the frequency and seriousness of these crimes when examining children under the age of twelve who commit crimes. However, examining the nature and extent of crimes committed by children under twelve is time-consuming (Doob et al., 1995). This is due to the difficulty in obtaining statistics on these crimes. Crime statistics are usually based on arrests or convictions, however, children under this age can experience neither. Therefore, until recently, no systematic database was kept on crimes committed by children in Canada.

To address the need for these statistics, the Canadian Center for Justice Statistics, in 1988, in cooperation with the Canadian Association of Chiefs of Police revised the Uniform Crime Reporting (UCR) survey to include detailed information on each criminal incident, the victim, and the accused, including the actual age of the offender. This revised UCR survey made it possible to examine the reported criminal

incidents committed by children under the age of twelve. However, it is important to note the difficulty in relying on these statistics. The crime statistics under estimate the actual number of crimes committed since not all offenders are caught and therefore, are not a good representation. As a result, caution must be taken when making generalizations based on the UCR survey.

Statistics Canada reported a total of 384,509 criminal incidents in 1995. Of these, 4,737 (1.2%) were committed by children under the age of twelve. Further examination revealed that children under 12 were responsible for 694 (0.8%) of violent incidents and for 3,906 (1.9%) of property incidents. The majority of these children were ten (25%) and eleven (41%) years of age. Some persons may not consider these numbers to be high, as children under twelve only accounts for 1.2% of the total criminal incidents which occurred in 1995. However, children were responsible for 694 violent acts.

These statistics are similar to those presented by Doob and his colleagues (1995). They found that ten and eleven year olds were responsible for only 1.4% of all crimes committed, using Statistics Canada 1993 data. Of the 1, 625 acts committed by children under the age of twelve, 3.4% of them involved violence. Further examination of all reported crimes committed by persons under the age of 17 indicated that 12% were committed by children between the ages of seven and eleven (Doob et al., 1995).

Although 1% may seem minor when looking at the total number of crimes committed in this country, it is still important to closely examine why this small percentage of children are engaging in such activity. Even though the percentage is

very small, we need to examine this activity in order to develop a prevention strategy which can be introduced to children at a very young age.

Theory

Past research has identified four major factors related to criminal activity in adults. These include an individual's antisocial attitudes, antisocial associates, antisocial personality, and their past antisocial behaviour or a criminal history (Andrews & Bonta, 1994). Antisocial attitudes and behaviour develop over time, although they may be formed early in childhood and on into adolescence. Antisocial associates or peers also become an important risk factor at this stage.

Research has shown that one of the most crucial times of development for a child is the period from infancy to preschool age (Shaw & Winslow, 1997). Consequently, there has been an increase in the amount of research examining the age of onset of antisocial or criminal behaviour in children. Developmental studies focusing on aggression in young boys have found aggressive behaviour to be highly stable in boys as young as age two (Cummings, Iannotti, & Zahn-Waxler, 1989). Other recent studies suggest that the earlier the age of onset of antisocial or criminal behaviour, the greater the persistence and the seriousness of this behaviour (Farrington, 1990; Loeber & Farrington, 1997; Rutter, 1997). Rutter (1997) suggests that an early onset of antisocial behaviour involves a strong genetic component explaining the strong tendency for this antisocial behaviour to persist into an individual's adulthood.

Many researchers have begun to closely examine psychopathology in children, as a result of recent findings suggesting that some of the underlying factors which

contribute to criminal activity start in early childhood. Many longitudinal studies have contributed a wealth of information towards understanding the risk and protective factors which influence the various development pathways a child can travel (Loeber & Farrington, 1997; Lahey & Loeber, 1997; Seifer et al., 1992; Tremblay, Vitaro, Bertrand, Le Blanc, Beauchense, Boileau & David, 1992; Werner, 1989).

Researchers in the field of developmental psychopathology have begun to integrate various theories in their quest to fully understand a child's development (Shaw & Winslow, 1997). Investigators have examined child development factors, parent characteristics, and the various socialization processes which have been proposed throughout the literature (Shaw & Winslow, 1997). An abundance of risk factors have been examined in an attempt to determine what factors contribute to negative outcomes. Negative outcomes include a wide range of outcomes, from emotional and social difficulties to childhood disorders to involvement in criminal activity.

Many theoretical models have been presented throughout the literature. Some of the more prominent models were illustrated by Seifer and his colleagues (1992), Rutter (1990), Radke-Yarrow & Sherman (1992) and Luthar (1991). One of the major difficulties in the development of a theory of negative outcomes is the incorporation of both risk and protective factors. The debate continues as to whether risk and protective factors should be universally defined or whether they should be linked to an individual's developmental level (Radke-Yarrow & Sherman, 1992).

Many risk factors are dynamic, and therefore, by definition, change over time. These dynamic risk factors change as a child progresses through the various stages of

development. In a recent representative example, Shaw and Winslow (1997) suggest that the transformations which a child experiences can be monitored through a pathway model. They use a transactional model to conceptualize problem behaviours in young boys. They incorporate four principal domains into their pathway model of a child's development of problem behaviours: child contributors, sex differences, parent contributors and external influences. Their model suggests that "antisocial behaviour develops as a result of transactions between children and their environment over time" (p. 155). This model incorporates the transformations which occur in both the child and the parents as the development progresses and as the child matures. The model includes the traditional main stages of early development: infancy, toddlerhood and preschool. An illustration of the infancy to toddlerhood model can be seen in Figure 1. At infancy, factors such as difficult temperament of the child and parental stress, support and adjustment are considered. Parental responsiveness and discipline practices influence the child's pathway. The child's behaviour and the parents' behaviour continue to be important factors in toddlerhood, although, as a child reaches the preschool age, peer rejection and other external factors are incorporated into the model. The toddlerhood to preschool model is illustrated in Figure 2. Shaw and Winslow contend that it is important to measure risk factors simultaneously in order to examine the transactions which occur between them.

Most theories addressing the causes of delinquency incorporate variables dealing with a child's family environment, a child's school experiences and a child's behavioural characteristics (Elliott, Huizinga & Ageton, 1985; Glueck & Glueck, 1950;

Figure 1. Developmental precursors of antisocial behaviour: Infancy to toddlerhood.¹

¹ From "Precursors and correlates of antisocial behavior from infancy to preschool," by D. S. Shaw, D. S., and E. B. Winslow, 1997. In D. M. Stoff, J. Breiling & J. D. Maser (Eds.), Handbook of antisocial behaviour p. 148. Copyright 1997 by John Wiley & Sons, Inc.

Hoge, Andrews & Leschied, 1995; Loeber & Stouthamer-Loeber, 1987; Rutter, 1997).

The consideration of several plausible theories, along with the incorporation of factors which focus on child characteristics, parent and family circumstances, as well as external factors such as school and peer relations, has resulted in an all encompassing integrative theory.

Reviews of the integrated theory have been conducted (Andrews, Hoge & Leschied, 1994; Campbell, 1994; Loeber & Stouthamer-Loeber, 1987) and empirical research supports this model. Many developmental process models also incorporate a similar logic as they include several different domains of risk factors. This is also evident in Shaw and Winslow's transactional pathway model. It is important to acknowledge the wide range of risk factors which exist and how they interact and change over time.

Reid and Eddy (1997) present a model for the development of antisocial behaviour. Their model depicts the course a person might take, from infancy to adolescence, which results in the development of antisocial behaviour. The model presents the various antecedents which are present during childhood and adolescence. This model is presented in Figure 3. Their model also recognizes that some risk factors are evident for a short amount of time, whereas others are active throughout childhood. The model incorporates several risk factors, which can vary in effect across the development stages.

This model also illustrates when the presence of the three behavioural disorders of interest are most prominent. Oppositional defiant disorder usually emerges just

Figure 3. Illustrative developmental model of child antisocial behaviour.³

³ From "The prevention of antisocial behavior: Some considerations in the search for effective interventions," by J. B. Reid, and J. M. Eddy, 1997. In D. M. Stoff, J. Breiling & J. D. Maser (Eds.), *Handbook of antisocial behaviour* p. 354. Copyright 1997 by John Wiley & Sons, Inc.

before a child's school years begin, whereas conduct disorder appears to emerge in a child's early adolescence. As the model depicts, attention deficit with hyperactivity disorder usually begins between a child's early childhood and early adolescence. In summary, the Reid and Eddy model is a very useful map or pathway to illustrate how the different risk factors influence a child's development and the development of antisocial behaviour.

Risk Factors

There exists a wide range of research which examines the various factors which increase the probability of placing a child at risk. Risk factors are those that are associated with a higher probability of a negative outcome. They may or may not be causally related to the negative outcome. Generally, negative outcomes include antisocial behaviour, emotional difficulties, social problems, alcohol problems, personality or mood disorders, and delinquency. While not exhaustive, this list provides examples of some of the more common negative outcomes which have been studied throughout the literature.

Although a range of negative outcomes exist, a child's engagement in criminal activity may be considered as one of the more serious. However, it should be noted that criminal activity does not occur in isolation of the other problems mentioned above (Doob et al., 1995). Many children who engage in criminal activity may exhibit signs of ADHD, ODD or CD, long before they become involved in criminal behaviour. As a result of the range of negative outcomes which exist, it is important to continue to examine the various risk factors which can lead to these outcomes.

However, it is important to recognize that, although many risk factors can be addressed, there exist many other more global risk factors which are present in our society today. Some families experience poverty and lack the support systems necessary to adequately care for their children. Although beyond the scope of this study, in order to address many of the underlying or root causes of negative outcomes, an examination of the social context which today's families operate in is required.

Parent and family. The most salient risk factors in the literature appear to relate to parent and family variables. Most research to date suggests that an early onset of criminal behaviour in children is associated with problems in the child's family environment (Campbell, 1994; Coon, Carey, Corley & Fulker, 1992; Doob et al., 1995; Glueck & Glueck, 1950; Hoge, Andrews & Leschied, 1996; Loeber, 1982; Pellegrini, 1990; Rutter, 1997; Seifer, Sameroff, Baldwin & Baldwin, 1992; Werner, 1989). The family environment, and the relationship which the child has with his or her parents is of extreme importance. Children who experience a negative, neglectful or violent atmosphere at home are at higher risk of engaging in criminal or acting-out behaviours than those who do not (Campbell, 1994; Giordano & Cernkovich, 1997; Coon et al., 1992; Doob et al., 1995; Glueck & Glueck, 1950; Hoge et al., 1996; Loeber, 1982; Pellegrini, 1990; Seifer et al., 1992; Werner, 1989).

Campbell (1994) conducted a review of recent literature examining behavioural problems in pre-school aged children. She concluded that high levels of stress in the family environment along with parental behaviours were the factors most frequently associated with behavioural problems in children. Negative parenting and a failure of

the parents to meet the child's needs increases the likelihood of both internal and external troublesome behaviours such as noncompliance, high levels of anxiety and aggression (Campbell, 1994).

Giordano & Cernkovich (1997) also reviewed family factors and cited many studies which found a strong link between a disruptive family environment and chronic juvenile delinquency. Items which also correlate with juvenile delinquency, and other negative outcomes include: parental rejection, hostile relationships, minimal involvement with the child, lack of warmth and affection, inconsistent or inappropriate discipline and lack of supervision (Campbell, 1994; Coon et al., 1992; Doob et al., 1995; Giordano & Cernkovich, 1997; Glueck & Glueck, 1950; Hoge et al., 1996; Loeber, 1982; Pellegrini, 1990; Rutter, 1997; Seifer et al., 1992; Werner, 1989).

Research examining the characteristics of the parents has shown that antisocial personality characteristics displayed by both fathers and mothers are associated with conduct disorder and antisocial behaviour in school-aged children (Shaw & Winslow, 1997). Parent characteristics such as depression, criminality and marital conflict have also been linked to problem behaviours in children (Giordano & Cernkovich, 1997; Keenan & Shaw, 1994; Shaw & Winslow, 1997).

Parental criminality has been found to be related to levels of aggression in two year old boys (Keenan & Shaw, 1994). Child behaviour problems have also been linked to parental illnesses, such as mood disorders and psychiatric disorders (Zahn-Waxler, Iannotti, Cummings & Denham, 1988). Zahn-Waxler et al. (1988) compared six year old children whose mother had been hospitalized, prior to the child's birth, to another

matched group of children. The children whose mother had been hospitalized displayed more psychiatric problems and evidenced symptoms of conduct disorder at the age of six.

Research has illustrated that several familial factors are linked with problem childhood behaviour. Logically, the more familial risk factors which are present in a child's life, the greater the likelihood that a child will display antisocial behaviour problems throughout their childhood and adolescence (Rutter, 1997; Shaw & Winslow, 1997).

Child characteristics. Although there exists an established link between family and parenting and a child's behaviour, the child's personality characteristics are equally important. Many studies indicate that a child's individual factors are even better predictors of antisocial behaviour, with parental factors following a close second (Loeber & Farrington, 1997).

The research area which focuses on child risk factors has examined such factors as temperament or disposition, aggressive behaviour, hyperactivity, sex differences, intelligence levels, behavioural and personality disorders, along with other biological factors (Doob et al., 1995; Giordano & Cernkovich, 1997; Loeber & Farrington, 1997; O'Donnell, Hawkins & Abbott, 1995; Robins, 1986; Tremblay, Pihl, Vitaro, & Dobkin, 1994). Many research studies have examined the link between hyperactivity and antisocial or disruptive behaviour in children. Results suggest that hyperactive children may be at risk for engaging in criminal activity (Doob et al., 1995; Tremblay et al., 1994). This is also true for those children who exhibit high levels of aggression

(O'Donnell et al., 1995). Tremblay et al. (1994) examined a large sample of preschool aged boys, and found that hyperactivity predicted self-reported delinquency in early adolescence. Shaw and Winslow (1997) also found moderate support for the continuation of aggression behaviour from infancy into toddlerhood, using their transformational model. Many of the children who experience difficulties in school, and display emotional and/or aggressive responses to frustration may also be at an increased risk for negative outcomes. However, many of these children may have a low cognitive ability (Doob et al., 1995), which should be identified and recognized, as this may be the underlying cause of their frustration.

Research examining the different effects of risk factors on boys and girls has also been conducted. The debate surrounding gender differences in risk factors of children is unresolved. To date, research on this matter is conflicting. However, Shaw and Winslow (1997) documented the literature and have found evidence which suggests that very few gender differences are evident in disruptive behaviour in children between the ages of one and three. However, this absence of differences begins to disappear around the age of four or five. Shaw and Winslow suggest that gender differences become more profound at a child's school age and into their adolescence and adulthood. They offer two possible explanations for their findings. The first is that girls and boys may experience differential socialization practices from their parents. Gender stereotypical behaviour may encourage girls to internalize their difficulties or behaviours, whereas it is acceptable for boys to externalize their behaviours. The second explanation which Shaw and Winslow offer is that girls possess more adaptive

skills, such as language and verbal abilities, which facilitates more prosocial behaviour rather than externalizing or disruptive behaviour.

Critics argue that research regarding gender differences needs to create new paradigms which break away from male-oriented theories (Giordano & Cernkovich, 1997). They also purport that many of the inconsistencies in the gender differences literature are due to methodological flaws in the research. Giordano & Cernkovich (1997) examine these methodological problems and cite that often the main problem is a sampling problem. Females make up such a small part of the offender population, and girls rarely display external aggressive behaviours in their childhood.

However, some important findings have been made. Robins (1986) examined a girls who had been diagnosed with CD in childhood and early adolescence and found that many of these children continue to exhibit problems in their adolescence and early adulthood. It has been suggested, by Robins (1986) and others (Lombroso & Ferrero, 1916) that antisocial behaviour is more rare among females, however, when it does occur, it is in a much more serious nature than when found in males.

Some researchers have found that the family and parenting characteristics have a stronger correlation with girls than with boys, however, this finding is not consistent (Giordano & Cernkovich, 1997). It has been argued that girls bond more strongly with the family and that broken homes have a more distressing effect on girls (Giordano & Cernkovich, Hirschi, 1969). Other research suggests that simply being of the male gender is a risk factor. It does appear that many more boys than girls are diagnosed with various childhood disorders. Research has shown that childhood conduct disorders tend

to lead impairment in later life (Lahey & Loeber, 1997; Shaw & Winslow, 1997; Zoccolillo, Pickles, Quinton, & Rutter, 1992).

A study conducted by Coon et al. (1992) attempted to identify children from an adoption project who were at risk for exhibiting troublesome behaviours by utilizing the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1987) (DSM-III-R) criteria for conduct disorder. They found that an unstable home environment was significantly associated with the presence of a CD in adolescent boys.

Lahey and Loeber (1997) highlight the fact that the major risk period for a child to display on the onset of CD is during adolescence. Children in their preschool years and early childhood are at a greater risk for the onset of ADHD or ODD (Lahey & Loeber, 1997).

Research has shown that there exists an important association between hyperactivity and inattention and antisocial behaviour, especially when the onset of the hyperactive behaviour and inattention is during a child's preschool years (Lahey & Loeber, 1997; Rutter, 1997). Children with ADHD are more likely to engage in antisocial behaviour throughout their adolescence and adulthood than children who do not have ADHD (Lahey & Loeber, 1997). A review of the ADHD literature, conducted by Lahey and Loeber (1997), found that the proportion of youth with ADHD, who also have evidence of CD, increase as older samples are examined. They also found that if both ADHD and CD are present during an individual's childhood, both disorders are more likely to persist than when a single disorder was present. In addition, boys who

were diagnosed with CD between the ages of two and six were found to be significantly younger when they met the criteria for CD than were boys who did not display ADHD (Loeber, Green, Keenan & Lahey, 1994).

However, Lahey and Loeber cite a paucity of research relating to the relationship of ADHD and ODD in preschool aged children. They also highlight some methodological flaws in this area of research. They argue that much of the research examining ADHD, CD and ODD lacks a theoretical base. There are also differences in the empirical findings related to diagnostic and operational definitions, as well as a lack of studies which examine girls. However, it is apparent from their review, along with other studies discussed, that it is important to continue to examine these disorders and their relationship with antisocial behaviour and other problem behaviour exhibited by children.

There are numerous behaviours or factors which a child may exhibit or experience which place s/he at an increased risk of engaging in criminal behaviours. However, not all children will experience all the various stressors and not all of the precursors need to be present for a child to be at risk. Furthermore, not all children who experience risk factors will experience a negative outcome, such as the engagement in criminal activity.

Rutter (1997) cites that the majority of boys commit sporadic acts, which are against the law, however, not all of these boys become adult criminals. Furthermore, there are also many children who experience stressful events or a negative family

environment, however, despite all the risk factors, they do not display an aggressive or criminal manner.

Research has recognized that in order to understand the precursors of such behaviour, one must examine the various risk factors in conjunction with variables which may protect the child (Hoge & Gal, 1997). Recent research has also examined several possible protective factors which may be operational.

Protective Factors

Protective factors are variables which protect the child, or negate the risk factors (Hoge & Gal, 1997). Throughout the literature, the term protective factor usually means a factor which reduces the risk of a child experiencing a negative outcome (Richters & Weintraub, 1995). The concept of protective factors usually refers to a high-risk child's personal and environmental characteristics which are associated with reduced rates of deviance on cognitive, emotional and social functioning measures (Richters & Weintraub, 1995). In essence, protective factors reduce the probability that a negative outcome will occur.

Literature examining resilient children has found that not all children are susceptible to negative outcomes and that some children may have different pre-existing personality characteristics (Richters & Weintraub, 1995). They also may experience unique relationships and have more resources available to them. Identifying factors which seem to reduce the likelihood of negative outcomes is of great practical importance.

Rutter (1990) examined protective factors and emphasized the interactive nature of risk factors with protective factors. He argued that the protective factors of most importance are those whose effects are most salient when the risk is highest, but have a lesser effect when the risks is minimal. Seifer and his colleagues (1992) suggest that the effect of protective mechanisms involve a process of functional adaptation. They emphasize that protection is an adaptation process rather than a single variable or factor. They argue that this view is consistent with the perspective of developmental psychopathology which views outcomes as a range of developmental paths. This can be illustrated using the model presented earlier. Both risk and protective factors play an important role in the development process. They interact and have varying effects across time. The operation of protective factors decreases the negative effect of risk factors throughout the development pathway. It is important to continue to closely examine the role of protective factors in order to reduce the likelihood of negative outcomes.

Resilience research has highlighted such factors as being female, having a cohesive and caring family environment, and supportive relationships with adults. Directing the focus more towards child characteristics, research has identified a child's resilient temperament, a high level of intelligence, advanced social skills, positive peer relations and positive or rewarding extracurricular activities as acting in the form of protective factors (Luthar, 1991; Pellegrini, 1990; Rae-Grant, Thomas, Offord & Boyle, 1989; Richter & Weintraub, 1995; Seifer et al., 1992; Werner, 1989). Although many

of the protective factors are the reverse of a risk factors, they play an important influence on a child's behaviour.

After conducting a longitudinal study of protective factors in high-risk children, Werner (1989) concluded that the "influence of protective factors that enhance resilience in high-risk children appears to operate both directly and indirectly as chain reactions over time" (p. 80). For example, children who exhibit exceptional social skills or who have an attractive disposition may have a decreased likelihood of acting aggressively or engaging in criminal activities (Luthar, 1991; Richter & Weintraub, 1995; Werner, 1989).

Research examining protective factors in children has found that social skills may act as a protective mechanism, making the child less likely to display emotional or aggressive responses (Luthar, 1991; Pellegrini, 1990; Seifer et al., 1992; Werner, 1989). Luther (1991) found that social expressiveness was a significant variable in protecting adolescents against stress, and was also associated with higher rates of popularity among peers.

Hoge and his colleagues (Hoge et al., 1996) examined risk and protective factors in a sample of 338 young offenders, aged 12 to 17. Utilizing the Youth version of the Level of Service Inventory, their study suggested that risk variables surrounding the family relationship, parenting problems and overall family structuring problems were associated with higher rates of recidivism. With regard to protective factors, four factors were associated with a positive outcome. These significant protective factors were positive peer relations, good school achievement, positive response to authority

and effective use of leisure time. The correlational analyses indicated that the presence of one of the protective factors was associated with lower rates of recidivism and a more positive overall adjustment (Hoge et al., 1996). Although Hoge et al. (1996) expected to find an interaction effect between risk factors and protective factors, they did not. Instead they found that operation of the protective factors were similar, regardless of the level of risk factors. This finding was consistent with the findings of Rae-Grant and her colleagues, who examined social and emotional adjustment (Rae-Grant et al., 1989).

Most theoretical models, along with current research, recognizes the importance of both risk and protective factors. However, the majority of research in this field deals primarily with adolescents. The research in this area focuses mainly on those youths who have been involved with the juvenile justice system and charged under the YOA. Much of this research has shown that many potential risk factors and potential protective factors are evident when the youth was in his or her preschool years (Hoge & Gal, 1997). This discovery has encouraged researchers to examine protective and risk factors among preschool aged children.

However, there continues to be a need to close the gap which presently exists in the literature examining risk and protective factors associated with criminal activity. As stated, the majority of the research focuses on adolescents, with some focus on preschoolers. Very little research has been conducted which examines the risk and protective factors of children who commit criminal activity, but who are not old enough to be charged. This group of children, aged six through eleven, is an extremely

important age group to examine in order to fully understand what factors are present immediately before or as a child first begins to become display this behaviour.

Once research has examined and confirmed the risk and protective factors for children of this age group, the next step is to design a new instrument, or adapt a currently used instrument, which can assess the presence of the various risk factors and possible protective factors which are associated with future involvement or avoidance of criminal activity. Accurate assessment instruments are a crucial element in designing effective means of addressing children under the age of twelve who are involved in offending behaviour. Furthermore, in order for a treatment or intervention program to be effective, the child's distinctive needs and abilities must be incorporated (Bala & Mahoney, 1994). Although many of the precursors and possible causes of delinquency have been identified, each child will be unique. Therefore, it is essential to possess an effective assessment tool which can identify these distinctive needs and abilities.

Assessment and Measurement Issues

In order to identify the risk and need factors in children, an effective measurement instrument must be utilized. Several instruments have been developed to measure risk factors. Some of the more prominent include the Revised Level of Service Inventory (Andrews & Bonta, 1995) and the Revised Psychopathy Checklist (Hare, 1991). However, there are very few instruments designed to measure risk factors in children.

One of the more recent instruments designed to assess risk and protective variables in children is the Preschool Risk/Resilience Inventory (Hoge & Gal, 1997).

This assessment instrument was designed to act as a screening, diagnostic, and research instrument. Modeled from a review paper written by Campbell (1994), this instrument was designed by Professor Hoge, at Carleton University. The items which form the Inventory were selected through a review of the current theoretical literature and empirical research which focused on the resilience process. The Inventory was designed to be fully encompassing, including items which reflect both characteristics of the child and of the child's family.

This instrument is one of only a few instruments designed to measure risk and protective factors in children. Due to the importance of measuring risk factors exhibited by children, research should focus on establishing an effective and efficient accurate measurement instrument. Such an instrument is crucial if interventions are to be successful. Risk, need and responsivity factors need to be measured and identified in order to determine what type of interventions are required.

Psychologists have not reached an agreement about what types of interventions are effective when dealing with children (Bala & Mahoney, 1994; Doob et al., 1995). However, there is a consensus that the primary focus should be placed on anticipating and identifying the difficulties which children experience (Bala & Mahoney, 1994; Doob et al., 1995). Early identification enables one to take early action in addressing these difficulties. The next step after identifying the needs of the child is to match those needs with an appropriate treatment program (Andrews & Bonta, 1994; Doob et al., 1995).

This risk and responsivity concept was explained by Andrews and Bonta (1994) where they discussed the four general principles which are required for effective correctional treatment programs. The four principles focused on risk, need, responsivity, and professional discretion. The first three principles will be discussed.

Andrews and Bonta's risk principle is based on the premise that criminal behaviour can be predicted. Their risk principle focuses on the importance of matching the child's level of risk to the type of treatment services available, in order for the intervention to be effective. For example, if a child commits a simple theft, he or she is a lower risk than a child who stabs another child. The risk principle would dictate that the first child would receive a low level of treatment and the second child would receive a higher, more intense level of treatment.

The need principle recognizes that each individual will have a different set of needs (Andrews & Bonta, 1994). Effective interventions should incorporate this assumption in order to effectively treat the individual. All interventions which deal with children should be especially sensitive to this principle. Children possess different cognitive and perceptual skills, along with a simpler language base. Each program should be specifically designed to match the unique needs of the children it's serving.

The need principle distinguishes between criminogenic needs and noncriminogenic needs (Andrews & Bonta, 1994). Criminogenic needs are described as dynamic factors which are changeable, and once altered will reduce the likelihood of recidivism. Criminogenic needs include items such as antisocial attitudes and antisocial associates (Andrews & Bonta, 1994). Noncriminogenic needs are also dynamic in

nature, but changes may not affect the likelihood of recidivism. Therefore, in order to decrease the likelihood of recidivism, it is important for treatment programs to focus on addressing the dynamic factors and the criminogenic needs of an individual.

The responsivity principle is concerned with the response of the individual to the treatment being offered. It is important to ensure that the intervention is designed towards the ability and learning style of the individual (Andrews & Bonta, 1994). This is especially true when focusing on interventions for children. If the individual is a young child, then the program needs to be delivered in a fashion that the child can understand. Some children may have problems with their verbal understanding, as well as, cognitive maturity. Therefore, when designing a treatment program for children it is important to incorporate the needs of the child, and the three main principles outlined by Andrews and Bonta (1994). However, in order to meet the needs of a child, one must first identify what needs the child possesses, along with other variables which place the child at risk for offending.

If the factors associated with later antisocial behaviour can be identified at an early age, children may be more responsive to treatment before some of these behaviours or factors stabilize. However, although it has been acknowledged that identifying the needs and risk factors of children is critical to early intervention (Bala & Mahoney, 1994; Doob et al., 1995; Shaw & Winslow, 1997), research in this area has only just begun.

In a report for the Department of Justice, Bala and Mahoney (1994) concluded that early identification and treatment of children at risk of future criminal

behaviour is probably one of the most effective means of ensuring the long term protection of society, and there is growing evidence that by the age of six or younger children can be identified who require intervention by suitably trained professionals (p. 45).

Although there now exists some research on the risk factors and the needs of children under twelve who engage in criminal activity, there is relatively little evidence regarding assessment instruments for identifying the precursors for individual children. By creating such instruments which can identify those children who are at risk, and by administering the appropriate interventions, one may be able to prevent a child from engaging in criminal activity. This approach could be a far more efficient option rather than to discover the criminal activity once the child is an adolescent and then recognizing the precursors, through hindsight. It is better to be prospective than retrospective when dealing with these children. This approach will not only benefit the children, but also much of society in general.

Purpose of Study

There were three main purposes of this study. The first was to explore the risk and need factors in at risk sample of children. The second was to explore the extent of negative outcomes experienced by these children, specifically the engagement in criminal activity. The third purpose was to examine the links between risk and protective factors and the various negative outcomes.

In order to explore the risk and need factors in at risk sample of children, aged six through eleven, we reviewed files of children in the care the of the Children's Aid

Society of Ottawa-Carleton (C.A.S.). In order to establish which factors were linked to negative outcomes, individual, family, and community variables were examined.

Hypotheses

Based on the research to date, regarding risk and protective factors, the general hypothesis of this study predicts a positive relation between total risk scores and negative outcomes. It is expected that a higher number of boys than girls will experience negative outcomes.

Since this study is exploratory in nature, many hypotheses will be generated from the data. If an adequate number of children who engaged in criminal activity are identified, hypotheses regarding the various subscales of the Child Risk/Resilience Inventory and the links to negative outcomes, specifically criminal activity, will be possible.

Method

Design and Overview

This study utilized a non-experimental design and was descriptive in nature. The primary goal was to characterize children who were under the age of twelve, who engaged in criminal activity and to examine the risk and need factors which they exhibited. Characteristics of the children were gathered from Children's Aid Society files. Files of this nature are kept on all the children while they are in the Children's Aid Society's care.

Participants

The subjects of this study were 49 boys and 59 girls, aged six through ten, who were in the care of the Children's Aid Society of Ottawa-Carleton (C.A.S.). An

eighteen month period was chosen for this study, from June 1996 to November 1997. The selection criteria dictated that all children included in this study were between the ages of six and eleven during the eighteen month period, and must have been in the C.A.S.'s care for a minimum of six months. Furthermore, only closed files were reviewed, which meant that the children were no longer in C.A.S. care.

Materials

All analyses conducted in this study are based on the information gathered from the C.A.S. files. All children were wards of the C.A.S. at the time the file data was gathered. This information was coded using the following instruments: (1) the Child Risk/Resilience Inventory, (2) a general information sheet, (3) a criminal activity coding form, (4) a form for recording the evidence of attention deficit disorder with hyperactivity, (5) a form for recording the evidence of conduct disorder, and (6) a form for recording the evidence of oppositional defiant disorder. All of the above disorders will be recorded using the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994) (DSM-IV) criteria.

The Child Risk/Resilience Inventory. The Child Risk/Resilience Inventory (CRRI) is an assessment instrument designed to assess risk and protective variables in children. It's purpose is to act as a screening, diagnostic, and research instrument (Hoge & Gal, 1997). This instrument was originally named the Preschool Risk/Resilience Inventory, and was first tested on preschool aged children. It initially consisted of 48 risk and six protective items in a checklist format. For each risk item, the evaluator was

asked whether the item was (a) not a problem; (b) a moderate problem; or (c) a serious problem.

The pilot version of the Preschool Risk/Resilience Inventory was administered to ten directors or supervisors of day cares and nursery schools. These directors were asked to review the 48 risk items and six protective items and their definitions for: (a) the item's clarity; (b) the likelihood that early childhood educators would have the information requested by the item; and (c) their perception of the relevance of the item for the future adjustment of the child. The directors felt that the majority of the items were clearly defined, relevant to the future adjustment of the child and that educators who were familiar with the child would be able to complete the items.

To obtain the initial descriptive and psychometric data on the Preschool Risk/Resilience Inventory, it was administered within 13 day care facilities and nursery schools in the Ottawa area. Six of these facilities served special needs children. The sample included 65 girls and 57 boys, ranging in age from 21 months to 71 months.

One of the goals was to examine how the various risk and protective factors were related to predictions of the child's future adjustment in four main areas. These areas focused on the child's academic performance, peer relations, the child's emotional adjustment and the child's behavioural adjustment. Five measures were employed in the preliminary study: (1) the Preschool Risk/resilience Inventory; (2) the Overall Risk Ratings; (3) the Service Availability; (4) the Eyberg Child Behaviour Inventory; and (5) the Parent Utilization of Services Inventory.

Initial testing showed the CRRI to have a high level of internal consistency, with a Coefficient Alpha score of .84. The Coefficient Alpha scores for the sub-sections, or sub-scales, ranged from .77 to .93. Validity analyses indicated that all of the risk items were positively correlated with future emotional adjustment, as well as future conduct and behavioural problems. The only subscale which was not significantly related to future academic readiness and future peer relations was the *Other Family Dynamics* subscale. The results of this study indicate that as the number of risk factors increase, the overall risk of the child developing problems in the future also increases. Furthermore, since both protective factor subscales were found to be negatively correlated with the risk dimensions, this indicates that as the number of protective factors increase, the overall risk of a child developing future problems decreases.

The results comparing the two groups of children, those from special needs programs with those from regular daycare's, indicated that children from special or headstart programs scored a significantly higher number of risk items, than children in regular daycare programs.

A difference was also found between the two groups on the *Parenting and Family Characteristics* protective items subscale. The special needs children scored significantly lower on these two items than did the children from the regular daycare setting. However, when examining the *Child Characteristics* protective items subscale, the results indicated that there were no significant differences on these items between the two groups of children.

In relation to the other measures utilized in this study, the total risk score of the Preschool Risk/Resilience Inventory was found to have a significant positive correlation with the total Eyburg score ($r = .52, p < .01$). There was also a significant positive correlation between the total Eyburg score and the *Behavioural and Personality Characteristics of the Child* subscale ($r = .34, p < .01$), as well as the with *Social Relations and Social Competence of the Child* subscale ($r = .27, p < .05$). These results also suggest that a higher risk score is associated with more behavioural problems.

Results of the pilot study indicate that the Preschool Risk/Resilience Inventory was a psychometrically sound instrument. Therefore, albeit with a few minor changes to adapt the Inventory to fit a slightly older age group, it was chosen as the appropriate instrument to measure the risk and protective factors of this high risk sample. This study will provide further validation of this scale with an additional older and more at risk sample of children.

As was previously mentioned, for the purposes of this study, a few minor alterations were done to the scale. As the focus sample was no longer preschool aged children, the Inventory was renamed the Child Risk/Resilience Inventory, and was altered slightly to represent factors which would more accurately reflect the age group of children aged six through eleven. Furthermore, since all the children in the sample were from high risk environments, some alterations were made to the parenting characteristics section.

The first subscale of the Preschool Risk/Resilience Inventory focused on the characteristics of the parent or guardian. Since the file information included, in most

cases, more than adequate information on the parents, it was decided to break the parenting characteristic items down into a mother and a father subscale, so each parent would be rated separately. In essence, each item was duplicated, thereby adding six more risk items. In addition, “the presence of a criminal history” of each parent was also added to this section, adding another two risk items. Originally, alcohol and drug abuse were included in the same item. This was changed to two individual items. This was also the case for physical, sexual and emotional abuse which were all one item. This was changed and each type of abuse was represented as individual items. In addition, one item, “a single parent family”, was deleted from the *Other Family Dynamics* subscale.

Two risk items were also added to the *Child's Personality and Behavioural Characteristics* subscale. Since all the children in the sample came from high risk environments, it was decided that although “physical aggression/fights” was already included, it may prove useful to include “harmful aggression towards self” as an additional risk item. Furthermore, “attitude towards authority” was also added to this subscale. In total, the risk items of the CRRI increased from 48 to 59 for the purposes of this study.

The protective factors section was also altered slightly. After reviewing the literature in this area, five protective items were added to the list. These items would not have been appropriate for preschoolers, and it was recognized that some of these items would still not be appropriate for the younger children of the sampled age group. In these cases, the no information available option would be chosen.

These additional protective items included: (1) exceptional school achievement; (2) supportive relationship with adult; (3) positive peers relations; (4) positive leisure activities or hobbies; and (5) recognition of a certain talent or skill. This brought the total number of protective items up to eleven.

One last change was made to the CRRI for the purposes of this study. Originally, a three point rating scale was developed for the risk items. An item was either (a) not a problem; (b) a moderate problem; or (c) a serious problem. As all the information required to complete the Inventory was to be gathered through file review, it was thought necessary to add a fourth option, (d) no information available. Furthermore, the original inventory provided a two point rating scale for the protective items, (a) present; or (b) not present. This was also altered to represent three rating options: (a) present; (b) sometimes present; and (c) not present, along with (d) no information available.

The risk items of the CRRI are divided into two main sections: (1) family and parenting characteristics, and (2) child characteristics. The family and parenting characteristics section consists of three subscales, which examine a) characteristics of the parent or guardian, b) parent and family relations with the child, and c) other family dynamics. The child characteristics section consists of five subscales, which examine a) the physical status of the child, b) cognitive and perceptual functioning, c) academic readiness, d) personality and behavioural characteristics, and e) social relations and social competence. The protective items also look at the family and parenting characteristics, and child characteristics.

A copy of the CRRI Inventory can be found in Appendix C.

General information sheet. The general information sheet was designed to record all the information collected concerning the general characteristics of the child. Each general information sheet included an identification number at the top, which is the C.A.S. file number. The use of the C.A.S. file identification number, as opposed to recording the child's name, ensured confidentiality, yet enabled the researcher to access the files if retrieval was required at a later date. The general information sheet also recorded the child's sex, the child's length of time in care, the age of the child at time of admission, the reason the child was admitted to C.A.S. care and the reason the child was released from C.A.S. care.

Placement information about the child was also gathered. The number of previous contacts the C.A.S. had had with the family, or if the child had been previously admitted to care was also recorded. Information regarding the child's siblings and whether other siblings were removed from the home, and into the same foster home or different foster home was also recorded. The general information coding sheet also provided for a summary of each placement which the child experiences. This included the child's overall adjustment to the foster home, the length of stay in the home, why the child was moved from the home and any pertinent comments. The total number of foster homes, and total number of moves was recorded, along with the final outcome placement information.

A copy of the General Information Sheet can be found in Appendix D.

Criminal activity coding form. If the child had engaged in what would be considered to be criminal activity, if not for their young age, the type of activity was documented on the criminal activity coding form. The criminal activity coding form was designed to record any type of event or activity which was noted in the file, which could have been considered to be criminal in nature had the child been above the age of twelve. Events serious enough in nature to be reported by the foster parents, biological parents, school or group home were recorded. The only information which could be recorded was information which the foster parents or school system regarded important enough to contact the C.A.S. about. This information and the contact notes were reflected in the files. It is understood that all contacts to the C.A.S. regarding the child or his or her behaviour were recorded in the file. However, it was recognized that events recorded would be an under-representation of the actual number of incidents which may have occurred.

The criminal activity coding form records the type of criminal activity, along with all the available details surrounding the event. The number of times this behaviour has occurred will be documented, along with a severity rating of whether the act was minor, moderate or serious in nature. The duration of the behaviour, along with an age of onset were recorded where available. The source of the information, along with the confidence level of the source will be indicated. Finally, if any specific interventions were taken with the child, this was noted. Each event was recorded separately. A copy of the Criminal Activity Coding Form can be found in Appendix E.

DSM-IV attention deficit disorder with hyperactivity criteria recording form.

The DSM-IV Attention Deficit Disorder with Hyperactivity Criteria Recording Form consists of a checklist of nine items which focus on inattention, six items focusing on hyperactivity and three items surrounding impulsivity. Six or more of the inattention symptoms, along with six or more of the hyperactivity and or impulsivity, along with other criteria, must be present for the child to be considered to be suffering from ADHD. A copy of the DSM-IV ADHD criteria can be found in Appendix F.

DSM-IV conduct disorder criteria recording form. The DSM-IV Conduct Disorder Criteria Recording Form lists the DSM-IV criteria for CD in a checklist format. If the item was evident in the child's behaviour, the item received a check mark. The DSM-IV criteria was utilized to determine whether or not the child was suffering from a CD. If a diagnosis of CD was mentioned in the file, this was recorded as well.

The criteria for DSM-IV's CD consists of fifteen behavioural items, for which the child has engaged in or has not. Three or more of the items must be present for the child to be diagnosed with a CD. A copy of the CD criteria can be found in Appendix G.

DSM-IV oppositional defiant disorder criteria recording form. The DSM-IV Oppositional Defiant Disorder Criteria Recording Form also lists the DSM-IV criteria for ODD in a checklist format. As with the other two disorders, if the item was evident in the child's behaviour, the item received a check mark. The DSM-IV criteria was

utilized to determine whether or not the child was suffering from ODD. If a diagnosis was mentioned in the child's file, this was also recorded.

The criteria for DSM-IV's ODD consists of four main criteria sections. Section A consists of eight behavioural items, of which at least four must be present, for Section A to be evident. Section B examines the degree of impairment caused by the behavioural items in section A. Sections C and D relate to evidence of any other disorders. A copy of the ODD criteria can be found in Appendix H.

Procedure

The first step of this study was to obtain permission from the Children's Aid Society of Ottawa-Carleton to review their files. The letter granting permission can be found in Appendix A.

The files reviewed for this study were files which the C.A.S. initiates for every child who is admitted into C.A.S. care. All the files utilized by this study are the sole property of the C.A.S. These files contain information about the child which was in their care. An assessment or summary of events occurs every 21 days while a child is in care. Every three months, a planning session occurs, where goals and planning strategies are reviewed and revised. Therefore, each file to be reviewed will have at least two entries of the planning session. Each file contains twelve sections. These include: (1) recordings, (2) plan of care, (3) social history, (4) medical and dental, (5) legal, (6) school, (7) psychological and assessments, (8) placements, (9) correspondence, (10) administration, (11) case notes, and (12) reviews.

As confidentiality was of extreme importance, no identifying information was extracted from any of the files. In addition, the C.A.S. requested that a copy of the C.A.S. Confidentiality Policy was signed by the principal researcher and reliability researcher. A copy of this policy is attached in Appendix B. Informed consent from the children, of whose files were reviewed, was not obtained as the children were under the age of twelve. All the children were wards of the C.A.S. at the time the data was gathered, and therefore, the children's legal guardian was the C.A.S. Consent to conduct a review of these files to support this study was provided by the Executive Director, Mr. Len Kennedy. Furthermore, the review of Psychological Assessments for research purposes was covered by the Mental Health Act.

The C.A.S. provided a list of all children who met the selection criteria. This list was given to the records department of the C.A.S. Each day approximately five to eight files were released to the researcher. The researcher then reviewed each file in detail, extracting information to complete the various measures and coding sheets. Detailed notes accompanied each package of coded information. Each package was identified using the C.A.S. file number, found on the front of each file. Approximately 120 files were reviewed by the researcher, and 108 were found to be appropriate. Twelve files were mistakenly identified and contained very little or no information about the child. Of the 108 files reviewed by the principle investigator, 15 of these files were reviewed by another graduate student for interrater reliability purposes. At the end of each day the files were returned to the records office. At no time did the files leave the C.A.S. premises or were left unattended.

Upon completion of this study, a final report was provided to the Children's Aid Society of Ottawa-Carleton Executive Director.

Results

Reliability Analyses

A Cronbach's Alpha was used to test the internal consistency of the CRRI and its various subscales. The alpha levels for the various subscales ranged from .48 to .91. The alpha level for total risk score was found to be .89, and .68 for the total protective score. All the alpha levels for the total scale, as well as for all the subscales, are presented in Table 1.

It should be noted that the subscale *Characteristics of the Parent (Father)* acquired a very low alpha. This is because in at least half of the cases, no information was available about the child's father. In addition, the Parent and Family Characteristics of the Protective Section also indicate an unusual alpha level, which is partly due to the fact that only two items encase the scale, however, it also suggested a negative correlation between the two items.

The intercorrelations among the nine risk subscales and two protective subscales, the means and standard deviations, along with the correlations between the subscales and the composite total score, are presented in Table 2. In an examination comparing the results of Table 2, to the results found by Hoge and Gal (1997) in the pilot study, it was evident that in regards to the protective factors, the family characteristics section correlations were lower in magnitude, but were in the same direction. The child characteristics protective subscale was also negatively correlated

Table 1

Reliability Analyses of the Subscales of the CRRI.

Subscale Title	# of Items	Alpha
Risk: Family and Parenting Circumstances		
1a. Characteristics of parent (Mother)	7	.79
1b. Characteristics of parent (Father)	7	.38
2. Parent/Family relations with target child	10	.74
3. Other family dynamics	5	.48
Risk: Child Characteristics		
4. Physical status	4	.81
5. Cognitive/perceptual functioning	7	.89
6. Academic readiness	4	.78
7. Personality/behavioural characteristics	11	.91
8. Social relations/social competence	4	.66
Total Risk Section	59	.89
Protective: Family and Parenting Circumstances	2	-.13
Protective: Child Characteristics	9	.68
Total Protective Section	10*	.68

*Note: Item 11 (certain skill or talent) was deleted as no information on this item was available for all subjects.

Table 2

Intercorrelations, Total Correlations, Means and Standard Deviations of the CRR I Subscales.

CRR I Subscales	A1	A2	B	C	D	E	F	G	H	I	J	K	L
<u>Risk Factors</u>													
A1. Mother characteristics													
A2. Father characteristics	.36***												
B. Relations with child	.28**	.23*											
C. Other family dynamics	.17	.14	.37***										
D. Physical status of child	-.06	-.06	.02	-.07									
E. Cognitive/perceptual	.06	.03	.09	-.01	.59***								
F. Academic readiness	.08	.08	.19	.11	.44***	.58***							
G. Personality/behavioural	-.04	.07	.39***	.27**	.31**	.42***	.63***						
H. Social competence		-.13	-.02	.20	.17	.30**	.42***	.42***	.52***				
<u>Protective Factors</u>													
I. Family Characteristics	.05	.19*	.05	-.13	-.12	-.19*	-.26**	-.28**	-.31**				
J. Child Characteristics	.19*	-.06	.04	.08	-.27**	-.26**	-.44***	-.47***	-.38***	.31**			
K. Total Risk Score	.38***	.28**	.62***	.40***	.39***	.58***	.68***	.80***	.51***	-.23*	-.38***		
L. Total Protective Score	-.01	.19	-.02	.02	-.29**	-.31**	-.49***	-.54***	-.44***	.49***	.98***	-.40***	
M	1.89	3.77	8.50	1.88	0.49	1.75	1.19	6.35	0.85	0.46	2.43	26.67	2.90
SD	2.78	2.34	3.91	1.84	1.24	2.78	1.67	5.57	1.29	0.55	2.47	13.20	2.68

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

with the risk factor subscales, which was also consistent to the Hoge and Gal (1997) findings. The child characteristic protective subscale correlations were closer in magnitude to those found in the pilot study. The magnitudes of the majority of correlations are in the modest range, between 0.2 and 0.5. The correlation between the total risk score and total protection score was negative and of a moderate magnitude ($r = -.40, p < .001$).

A percentage agreement analysis was conducted to examine interrater reliability. There was 87.9% agreement between the two researchers across all the categories of the CRRI. The only three subscales which rated lower than 83% were the *Other Family Dynamics*, *Academic Readiness of the Child*, and *Personality/Behavioural Characteristics of the Child*. In all three cases, the major discrepancies were whether the problem was a moderate problem as opposed to a serious problem. In instances pertaining to the child, it appeared quite often that the item may have been a serious problem when the child came into care, but decreased in severity or occurrence once the child had settled into their foster home, or a more settled and structured environment.

A Pearson correlation coefficient, also used to assess interrater reliability, found that a strong relationship between the two raters on the protective factors score ($r = .92, p < .001$). This was also the case for the two raters on the total risk factor score ($r = .87, p < .001$). Overall, it appears that the results are consistent across the two raters.

Descriptive Information

The analyses were conducted on file information gathered about 59 girls and 49 boys. As is illustrated in Table 3, the ages of the child at time of admission into C.A.S.

Table 3

Demographic and Placement Characteristics of the Sample.

Variable		N	Percentages
Sex of Child:	Boys	49	45%
	Girls	59	55%
Age of Child at Time of Admission:	Birth - 2	11	10.2%
	3 - 5	37	34.3%
	6 - 7	38	35.2%
	8 - 10	22	20.4%
Reasons for Admission:	Neglect/Abuse	62	57.4%
	Parent(s) Abusing Drugs/Alcohol	17	15.7%
	Child's Problem Behaviour/Special Needs	10	9.3%
	Parent Ill (No other caregiver available)	19	17.6%
Previous Number of Admissions:	0	85	78.7%
	1	21	19.4%
	2 or more	2	1.9%
Previous Contact with the C.A.S.:	Yes	75	69.4%
	No	33	30.6%
Number of Foster Homes:	1	79	73.1%
	2	20	18.5%
	3 or more	9	8.3%
Total Number of Moves Made:	1 - 2	69	63.9%
	3 - 4	19	17.6%
	5 or more	10	9.3%
Final Placement:	Child returned to parent(s)	58	53.7%
	Child placed with another family member	28	25.9%
	Child was adopted	22	20.4%

care ranged from two months to 10 years, with a mean age of 5.6 and a standard deviation of 2.5. The majority (57%) of children were taken into C.A.S. care because they were being neglected or abused and deemed to be “in need of protection” by the C.A.S. For 79 percent of the children, this was their first admission into care, although the C.A.S. had had previous contact with 69 percent of the children or with their families. Seventy-three percent of the children experienced only one foster home. The number of moves which a child experienced ranged from one to twelve. For over half the children, the final placement was to be returned to live with their parents.

Twenty-six percent of the sample was diagnosed as having either CD, ODD or ADHD. Table 4 outlines the percentage breakdown for the entire sample. The most commonly diagnosed disorder was ODD.

It was hypothesized that there would be a significant difference in disorder diagnoses between the genders. These comparisons are presented in Table 5. A continuity corrected chi-square analyses indicated that the only significant difference between boys and girls was for the diagnoses of CD ($\chi^2 = 7.06, p < .05$). There were no significant differences between the genders for ADHD or ODD.

Descriptive statistics of the CRRI revealed that the mean total risk score was 26.67 (SD = 13.20) and the mean total protective score was 2.90 (SD = 2.68). The total risk scores ranged from zero to 58. Only one child scored zero, and exhibited no risk factors. Subscale total scores were also calculated and are summarized in Table 6. A list of the frequencies and scores for each individual risk and protective item of the CRRI are presented in Appendix J.

Table 4

Diagnoses of Conduct Disorder, Oppositional Defiant Disorder and Attention-Deficit
Hyperactivity Disorder for Total Sample.

Disorder Type	Present		Not Present		No Info	
	N	%	N	%	N	%
Conduct Disorder	7	6%	96	89%	11	5%
Oppositional Defiant Disorder	18	17%	85	79%	5	5%
Attention-Deficit Hyperactivity Disorder	3	3%	94	87%	11	10%

Table 5

Diagnoses of Conduct Disorder, Oppositional Defiant Disorder and Attention-Deficit
Hyperactivity Disorder by Gender.

Disorder Type		Present		Not Present		No Info	
		N	%	N	%	N	%
Conduct Disorder	Girls	0	0%	57	53%	2	2%
	Boys	7	6%	39	36%	3	3%
Oppositional Defiant Disorder	Girls	8	7%	49	45%	2	2%
	Boys	10	9%	36	33%	3	3%
Attention-Deficit Hyperactivity Disorder	Girls	0	0%	55	51%	4	4%
	Boys	3	3%	39	36%	7	6%

Table 6

Mean CRRI Risk and Protective Subscale Scores for the Total Sample.

Subscale Score	Mean	Standard Deviation	Total Possible Score
<u>Risk</u>			
Family and Parenting Circumstances			
1a. Characteristics of parent (Mother)	1.89	2.78	13
1b. Characteristics of parent (Father)	3.77	2.34	13
2. Parent/Family relations with target child	8.50	3.91	20
3. Other family dynamics	1.88	1.84	10
Child Characteristics			
4. Physical status	0.49	1.24	8
5. Cognitive/perceptual functioning	1.75	2.78	14
6. Academic readiness	1.19	1.67	8
7. Personality/behavioural characteristics	6.35	5.57	22
8. Social relations/social competence	0.85	1.29	8
Total Risk Score	26.67	13.20	116
<u>Protection</u>			
Family and Parenting Circumstances	0.46	0.55	4
Child Characteristics	2.43	2.47	18
Total Protective Score	2.90	2.68	22

Note: Higher risk scores denote higher levels of risk factors while higher protective scores denote higher levels of protective factors.

The CRRI subscales were also broken down and analyzed by gender. The differences between males and females on the various subscales are presented in Table 7. A t-test analysis was utilized to compare the mean differences between boys and girls. As can be seen in Table 7, the only significant difference between the two genders on risk factors were that males scored significantly higher on the *Personality/Behavioural Characteristics* subscale than did the females. Examining the protective factor subscales, it can be seen that the only significant difference was that females scored significantly higher than males on the *Child Characteristics* subscale. There was also a significant difference between the genders on the overall protective score, as females scored significantly higher on the protective factors scale than did the males.

Relations Between Risk and Protective Factors and Criminal Acts

Only twelve of the 108 children engaged in acts which may be considered criminal in nature, had they been above the age of twelve. The demographic information, along with the information collected concerning the types of activities which these children engaged in are presented in Table 8. Eight boys and four girls engaged in criminal-like behaviours.

Of the few children who did engage in criminal-like behaviours, the majority (58%) of the children were about the age of 6 when they committed their first delinquent act. However, the majority (58%) of the children only committed one such act. Nevertheless, it is important to note, that of the 26 total incidents recorded, 16 of them were violent acts. This means that 62% of the criminal activities committed by

Table 7

Mean CRRI Risk and Protective Total and Subscale Scores by Gender.

Risk Subscale Score	Males		Females		t
	M	SD	M	SD	
Family and Parenting Circumstances					
1a. Characteristics of parent (Mother)	1.94	2.55	1.75	2.93	0.36
1b. Characteristics of parent (Father)	3.35	2.18	3.93	2.53	-1.27
2. Parent/Family relations with target child	8.20	4.50	8.32	3.78	-0.15
3. Other family dynamics	1.96	1.95	1.71	1.76	0.70
Child Characteristics					
4. Physical status	0.57	1.22	0.39	1.25	0.76
5. Cognitive/perceptual functioning	1.92	2.85	1.53	2.67	0.74
6. Academic readiness	1.47	1.86	0.90	1.41	1.81
7. Personality/behavioural characteristics	7.55	6.23	5.03	4.76	2.38*
8. Social relations/social competence	0.86	1.26	0.80	1.31	0.24
Total Risk Score	27.82	14.20	24.36	13.26	1.31
<hr/>					
Protective Subscale Score	Males		Females		t
	M	SD	M	SD	
Family and Parenting Circumstances	0.47	0.58	0.46	0.54	0.11
Child Characteristics	1.76	2.45	2.86	2.38	-2.38*
Total Protective Score	2.22	2.67	3.32	2.54	-2.15*

Note: * $p < .05$

Note: Higher risk scores denote higher levels of risk factors while higher protective scores denote higher levels of protective factors.

Table 8

Descriptive Characteristics of Children who Engaged in Criminal Activity and Incident Type and Frequencies.

Variable		Total	Criminal Activity	No Criminal Activity
Total Sample:		108	11% (n=12)	89% (n=96)
Sex of Child:	Boys	49	16% (n=8)	84% (n=41)
	Girls	59	7% (n=4)	93% (n=54)

Characteristics of the Children who Engaged in Criminal Activity (Total N =12)			
Age of Child at first offense:	3 - 4	17%	(n=2)
	5 - 6	58%	(n=7)
	7 - 8	25%	(n=3)
Number of Separate Incidents:	1	58%	(n=7)
	2 - 4	33%	(n=4)
	5 or more	8%	(n=1)

Types of Criminal Activity & Frequency of the Incidents (Total # of incidents = 26)	
Threats to cause bodily harm or death	3
Assault causing bodily harm	5
Assault causing bodily harm with a weapon	2
Sexual aggression	5
Property damage	5
Theft	4
Break and enter of an automobile	1
Cruelty to animals	1

these children involved violence. A detailed list of all the incidents which were committed by these children can be found in Appendix I.

Table 9 presents the breakdown of the disorders for those children who engaged in criminal behaviour and for those who did not. Relatively few of the twelve children who did commit criminal acts, would be diagnosed with ADHD or CD. Only one of the twelve children met the criteria for ADHD, and only four met the criteria for CD. However, almost half the sample of children who did commit criminal-like activities, five of the twelve, met the DSM-IV criteria for ODD. A t-test analysis, conducted on each of the three disorders, indicated that there were no significant differences between those children who engaged in criminal activities and those who did not.

A comparison of the CRR I scores of those children who engaged in criminal behaviours with those who did not was also conducted. To further explore the first hypothesis, a t-test analyses was utilized to determine whether there was significant difference between the means of the two groups. The means and standard deviations of the various sections and subscales of the CRR I, along with the t-values, are presented in Table 10.

Only the *Other Family Dynamics* subscale, for the Family and Parenting Circumstances section revealed a significant difference between the mean scores of the two groups. Examination of the Child Characteristics section found that four subscales revealed significant mean differences between the two groups: the *Physical Status* subscale, the *Academic Readiness* subscale, the *Personality/Behavioural*

Table 9

Frequencies of the ADHD, CD and ODD Across Criminal Activity.

Variable	Total (N=108)	Crime Group (n=12)	Non Crime Group (n=96)
Number of Boys	49 (45%)	8 (67%)	41 (43%)
Number of Girls	59 (55%)	4 (33%)	54 (56%)
ADHD	3 (3%)	1 (8%)	2 (2%)
CD	7 (6%)	4 (33%)	3 (3%)
ODD	18 (17%)	5 (42%)	1 (4%)

Table 10

Means and Standard Deviation of CRRRI Risk and Protective Total and Subscale Scores
Across the Criminal and Non Criminal Groups.

Risk Subscale Score	(n = 12)		(n = 96)		t
	Criminal Activity		No Criminal		
	M	SD	M	SD	
Family and Parenting Circumstances					
1a. Characteristics of parent (Mother)	2.17	2.79	1.85	2.79	-0.37
1b. Characteristics of parent (Father)	3.08	2.15	3.86	2.36	1.08
2. Parent/Family relations with target child	9.50	3.34	8.38	3.98	-0.94
3. Other family dynamics	3.58	2.07	1.66	1.70	-3.60***
Child Characteristics					
4. Physical status	0.08	0.29	0.54	1.32	2.84**
5. Cognitive/perceptual functioning	1.25	2.09	1.82	2.85	0.67
6. Academic readiness	2.17	1.75	1.06	1.61	-2.21*
7. Personality/behavioural characteristics	12.83	4.32	5.51	5.17	-4.69***
8. Social relations/social competence	1.67	1.15	0.74	1.28	-2.39*
Total Risk Score	36.33	10.43	25.42	13.04	-2.78**

Protective Subscale Score	Criminal Activity		No Criminal		t
	M	SD	M	SD	
Family and Parenting Circumstances	0.33	0.49	0.49	0.56	0.95
Child Characteristics	0.83	1.75	2.63	2.48	2.43*
Total Protective Score	1.17	1.90	3.13	2.70	2.44*

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Note: Higher risk scores denote higher levels of risk factors while higher protective scores denote higher levels of protective factors.

Characteristics subscale and the *Social Relations/Social Competence* subscale. In the protective factors section, the Child Characteristics subscale also indicated significant differences between the mean scores of the two groups. Overall, the analyses indicated significant differences between total risk scores and total protective scores between those children who did engage in criminal activities and those children who did not engage in such activities.

A correlational analyses examining the effect of the number of criminal activities committed by a child, indicated that the number of criminal incidents was not significantly related to a child's total risk or total protective score. However, the number of criminal incidents was significantly related to the child's score on the *Physical Status* subscale ($r = .88, p < .001$) and to the child's *Personality/Behavioural Characteristics* subscale score ($r = .71, p < .05$).

A correlational analyses was also conducted to examine the relationship between criminal activity, total risk score and total protective score with the subscales of the CRRI. The results of this analysis can be found in Table 11. As was indicated earlier, if the child did not engage in criminal activity they scored a zero, if they did engage in criminal activity, they scored a one.

As Table 11 indicates, there exists a positive relationship between the number of risk factors and a child's engagement in criminal activity. The findings suggest that the more risk factors a child exhibits, the more likely it is that the child will engage in criminal activity. The significant negative correlation between the risk and protective total scores indicates that the higher the risk score, the lower the protection score. This

Table 11

Correlations between Criminal Activity, CRRI Total Risk and CRRI Total ProtectiveScores with the CRRI Subscales.

	Engagement in Criminal Activity r	Total Protective Score r	Total Risk Score r
Risk Subscale Scores			
Family and Parenting Circumstances			
1a. Characteristics of parent (Mother)	0.04	0.01	0.39***
1b. Characteristics of parent (Father)	-0.09	0.22*	0.34***
2. Parent/Family relations with target child	0.11	0.05	0.67***
3. Other family dynamics	0.34***	0.05	0.43***
Child Characteristics			
4. Physical status	-0.11	-0.27**	0.39***
5. Cognitive/perceptual functioning	-0.06	-0.28**	0.58***
6. Academic readiness	0.22*	-0.46***	0.67***
7. Personality/behavioural characteristics	0.42***	-0.49***	0.80***
8. Social relations/social competence	0.23*	-0.41***	0.52***
Total Risk Score	0.27**	-0.31**	
Protective Subscale Scores			
	Engagement in Criminal Activity r	Total Protective Score r	Total Risk Score r
Family and Parenting Circumstances	-0.08	0.49***	-0.17
Child Characteristics	-0.22*	0.98***	-0.30**
Total Protective Score	-0.22*		-0.31**

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

relationship suggests that the less protection factors a child possesses, the higher the likelihood that the child will engage in criminal activity.

Relations Between Risk and Protective Factors and Conduct Disorder, Oppositional Defiant Disorder and Attention-Deficit Hyperactivity Disorder

Diagnoses of the ADHD, CD and ODD were compared in regards to their relationship with criminal activity. The percentages and comparisons are presented in Table 12. An examination of the CD diagnoses revealed a significant difference between children who engaged in criminal activity with those who did not ($\chi^2 = 10.73$, $p < .01$). The difference regarding ODD was approaching significance.

A comparison of the CRRI subscale scores of those children who were diagnosed with ADHD with those who were not was conducted using a t-test analysis. The means and standard deviations for the CRRI subscales, along with the t-values for the two groups are presented in Table 13. When interpreting these findings, it is important to remember that the group who was diagnosed with ADHD consisted of only three children and was compared to the 105 children who were not diagnosed with ADHD.

Significant differences between the two groups were found for all of the Child Characteristics subscales. There was also a significant difference between children who were diagnosed with ADHD and those who were not on the total risk score. Children who were diagnosed with ADHD exhibited a significantly higher number of risk factors than children who were not diagnosed with ADHD.

Table 12

Diagnoses of Conduct Disorder, Oppositional Defiant Disorder and Attention-Deficit
Hyperactivity Disorder Across Criminal and Non Criminal Groups.

Disorder Type		Present		Not Present		No Info	
		N	%	N	%	N	%
Conduct Disorder	Criminal	4	4%	8	7%	0	0%
	No Criminal	3	3%	88	81%	5	5%
Oppositional Defiant Disorder	Criminal	5	5%	7	6%	0	0%
	No Criminal	13	12%	78	72%	5	5%
Attention-Deficit Hyperactivity Disorder	Criminal	1	1%	10	9%	1	1%
	No Criminal	2	2%	84	78%	10	9%

Table 13

Mean CRRJ Risk and Protective Totals and Subscale Scores by Diagnoses of Attention Deficit Disorder with Hyperactivity.

	(n = 3) ADHD		(n = 105) No ADHD		
Risk Subscale Score	M	SD	M	SD	t
Family and Parenting Circumstances					
1a. Characteristics of parent (Mother)	1.00	1.73	2.05	2.88	0.63
1b. Characteristics of parent (Father)	2.33	3.21	3.88	2.30	1.14
2. Parent/Family relations with target child	6.33	2.89	8.90	3.60	1.22
3. Other family dynamics	1.67	2.89	2.01	1.83	0.32
Child Characteristics					
4. Physical status	3.00	2.00	0.40	1.18	-3.69***
5. Cognitive/perceptual functioning	8.00	5.29	1.66	2.56	-4.09***
6. Academic readiness	3.67	1.15	1.34	1.66	-2.62*
7. Personality/behavioural characteristics	13.33	5.03	6.27	5.50	-2.19*
8. Social relations/social competence	3.00	1.73	0.75	1.17	-3.24**
Total Risk Score	42.33	10.07	27.07	12.83	-2.04*
<hr/>					
	ADHD		No ADHD		
Protective Subscale Score	M	SD	M	SD	t
<hr/>					
Family and Parenting Circumstances	0.33	0.58	0.48	0.56	0.44
Child Characteristics	0.33	0.58	2.63	2.50	1.58
Total Protective Score	0.67	0.58	3.11	2.73	1.54

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Note: Higher risk scores denote higher levels of risk factors while higher protective scores denote higher levels of protective factors.

Table 14

Mean CRR Risk and Protective Totals and Subscale Scores by Diagnoses of Conduct Disorder.

Risk Subscale Score	(n = 7)		(n = 101)		t
	Conduct Disorder		No Conduct Disorder		
	M	SD	M	SD	
Family and Parenting Circumstances					
1a. Characteristics of parent (Mother)	2.14	2.91	1.91	2.80	-0.22
1b. Characteristics of parent (Father)	2.86	2.73	3.88	2.30	1.12
2. Parent/Family relations with target child	9.86	3.89	8.44	3.82	-9.48
3. Other family dynamics	1.71	1.98	1.93	1.84	0.29
Child Characteristics					
4. Physical status	1.29	1.98	0.42	1.18	-1.79
5. Cognitive/perceptual functioning	4.86	4.71	1.55	2.49	-1.84
6. Academic readiness	3.57	1.81	1.03	1.53	-4.19***
7. Personality/behavioural characteristics	14.14	4.26	5.84	5.26	-4.07***
8. Social relations/social competence	2.43	1.27	0.70	1.15	-3.81***
Total Risk Score	42.86	9.44	25.69	12.52	-3.55**
Protective Subscale Score	Conduct Disorder		No Conduct Disorder		t
	M	SD	M	SD	
Family and Parenting Circumstances	0.14	0.38	0.51	0.56	2.39*
Child Characteristics	0.14	0.38	2.65	2.47	8.64***
Total Protective Score	0.29	0.49	3.16	2.67	8.73***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Note: Higher risk scores denote higher levels of risk factors while higher protective scores denote higher levels of protective factors.

A t-test analyses was also utilized to compare the CRRI subscale scores of those children who were diagnosed with CD to those who were not. The means and standard deviations for the CRRI subscales, along with the t-values comparing those children who were diagnosed with CD with those who were not are presented in Table 14.

Results indicated that the children who were diagnosed with CD scored significantly higher on the *Academic Readiness* subscale, the *Child's Personality/behavioural Characteristics* subscale and the *Social Relations/Social Competence* subscale, as well as on total risk score. Children who were diagnosed with CD also exhibited a significantly lower number of protective factors, in both sections and overall, than children who were not diagnosed with CD.

The comparison of the CRRI subscale scores of those children who were diagnosed with ODD with those who were not revealed similar findings to the comparisons conducted on CD. The means and standard deviations for the CRRI subscales, along with the t-values comparing the two groups on ODD diagnoses are presented in Table 15.

As with CD, the significant differences between children who were diagnosed with ODD with those who were not, are evident in the Child Characteristics section of the CRRI. Significant differences between the two groups were found on the *Cognitive/Perceptual Functioning* subscale, the *Academic Readiness* subscale, the *Personality/Behavioural Characteristics* subscale and the *Social Relations/Social Competence* subscale. Significant differences were also found between the protective factors subscales and the total protective score, as well as the total risk score.

Table 15

**Mean CRRRI Risk and Protective Totals and Subscale Scores by Diagnoses of
Oppositional Defiant Disorder.**

	(n = 18) ODD		(n = 90) No ODD		
Risk Subscale Score	M	SD	M	SD	t
Family and Parenting Circumstances					
1a. Characteristics of parent (Mother)	1.56	2.75	2.00	2.81	0.61
1b. Characteristics of parent (Father)	3.78	1.99	3.81	2.41	0.06
2. Parent/Family relations with target child	9.61	3.63	8.31	3.84	-1.32
3. Other family dynamics	2.44	2.33	1.80	1.72	-1.11
Child Characteristics					
4. Physical status	1.11	1.71	0.34	1.08	-1.83
5. Cognitive/perceptual functioning	4.72	4.14	1.15	1.93	-3.58**
6. Academic readiness	3.17	1.58	0.79	1.37	-6.50***
7. Personality/behavioural characteristics	13.78	3.44	4.85	4.60	-7.72***
8. Social relations/social competence	2.06	1.47	0.55	1.01	-5.27***
Total Risk Score	42.22	8.53	23.60	11.42	-6.53***
	ODD		NO ODD		
Protective Subscale Score	M	SD	M	SD	t
Family and Parenting Circumstances	0.22	0.43	0.54	0.57	2.70*
Child Characteristics	0.56	1.04	2.88	2.49	6.37***
Total Protective Score	0.78	1.06	3.42	2.69	6.88***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Note: Higher risk scores denote higher levels of risk factors while higher protective scores denote higher levels of protective factors.

In an examination of the three behavioural disorders, it was found that three children met the DSM-IV criteria for all three disorders, ADHD, CD and ODD. Two children met the criteria for both CD and ODD.

Discussion

The overall purpose of this study was to examine risk and protective factors exhibited by an at risk sample of children, and to explore how these factors were linked to a four types of negative outcomes. This study also sought to examine the extent and nature of one particular negative outcome, criminal activity committed by these children.

All the children in the sample were wards of the C.A.S. They were admitted into care for a variety of reasons, however, the most prominent reason was that the child was being exposed to neglect or some form of abuse and was in need of protection. The average age upon which a child was admitted into care was age six. It is suspected that most children enter C.A.S. care at younger ages and therefore very few children of our sample were near the maximum age restriction of eleven. Even with a mean admission age of six, it was found that the C.A.S. had had previous contact with sixty-nine percent of the children or their families before they entered care. The majority of children only experienced one foster home placement, and the half of these children were returned to their parents care. One quarter of the children were placed with another family member, and the other quarter of children were adopted.

The CRRI was the main instrument used to measure risk and protective factors. The overall findings of this study are consistent with other literature. Using the CRRI,

it was found that higher total risk scores are associated with criminal activity and the three behavioural disorders examined, in children aged six through ten.

As expected, more risk factors than protective factors were evidenced by the children. It was hypothesized that there would be a significant relationship between children who engaged in criminal activity and their total risk scores, and this hypothesis was supported. Children who engaged in criminal activity exhibited a significantly higher number of risk factors than those children who did not engage in criminal activity.

Conversely, it was hypothesized that there would also be a significant relationship between children who engaged in criminal activity and their total protective scores. Analyses also indicated support for this hypothesis. It was found that children who engaged in criminal activity exhibited a significantly lower number of protective factors than those children who did not engage in criminal behaviour.

According to the review conducted by Shaw and Winslow (1997), there should be differences between boys and girls as our sample age ranged from six to ten year olds. They argued that differences between the genders start to emerge around the age of six and become more profound as the children become older. Furthermore, an abundance of literature suggested that boys engage in more antisocial and criminal acts than girls (Giordano & Cernkovich, 1997; Hirschi, 1969; Lombroso & Ferrero, 1916; Robins, 1986; Shaw & Winslow, 1997).

In accordance with this research, results of this study found that more boys engaged in criminal activities, and they also scored slightly higher on the number of risk

factors exhibited. Boys also scored significantly higher on personality and behavioural characteristics than girls. This is also consistent with the research which suggested that girls tend to internalize their problems whereas boys tend to externalize them (Giordano & Cernkovich, 1997; Shaw & Winslow, 1997). Girls displayed a significantly higher number of protective factors, which were related to child characteristics and external influences, than boys. There were no gender differences between protective factors relating to family and parenting circumstances. In accordance with the literature, girls exhibited a significantly higher number of protective factors on the overall protective factors section of the CRRI.

An at risk sample of children were examined to determine how many of these children engaged in criminal activities. Only twelve children, of the 108 who were examined, engaged in some form of criminal activity. However, it is important to note that because the information was gathered using a file review method, it is possible that not all incidents of this nature are recorded in the files, and it is recognized that not all criminal incidents are brought to the attention of the caregivers or the C.A.S. Furthermore, there is an extremely small base rate of children under twelve who commit crimes. As reported earlier, of all the crimes committed in 1995, only 1.2% of them were committed by children under the age of twelve (Statistics Canada, 1995). Due to such a small sample of criminal children, some analyses were limited, and the generalizing of the results should be cautioned.

Although only a small number of children engaged in criminal activity, this group was of special interest. Detailed analyses with such a small sample were difficult,

however, descriptive informative revealed some interesting findings. The average age at which these children committed their first discovered criminal act was at the age of six. However, at the time of review, most of these children had only committed one criminal act. A follow-up of these children would prove to be very interesting as some files have only been closed for six months.

A total of 26 criminal incidents were reported. These included a wide array of acts ranging from relatively minor property acts to acts of sexual and violent aggression. Over sixty percent of the incidents involved violence. This is definitely a higher number than was expected, however, recognizing that some of these children are from high risk environments, and may have been exposed to such violence on a daily basis, some of these incidents may be more understandable. Many of these children may simply be modeling the behaviour which they have endured or witnessed. However, since they were removed from such damaging environments, treatment, as well as a loving and supportive foster home, could address many of these outstanding issues. Through perusal of the files, it was definitely evident that many children's acting behaviour upon initial placement decreased substantially once they had settled into the new foster home, and realized that they were safe and no longer neglected or abused.

The high percentage of violent acts may also be due to the methodology of this study. Only acts deemed serious enough to the child educators or to the foster parents would be reported in the files. Therefore, it is very possible that many of the more minor criminal incidents would not be evident in the file notes.

The number of criminal incidents which the child committed was not significantly related to their overall risk score, however, it was related to a child's physical status and his or her behavioural characteristics.

Only a small number of children of the criminal sample were diagnosed with any diagnostic disorders. One child was diagnosed with ADHD, four with CD and five with ODD. It is suspected that this finding is due to the young ages of these children, as the mean age of this sample was six.

The literature suggested that the major risk period for a child to display on the onset of CD is throughout their adolescence (Lahey & Loeber, 1997). Furthermore, the preschool years and early childhood have been found to be a risk period for the onset of ADHD or ODD (Lahey & Loeber, 1997). It is possible that many of these children are developing the disorder, and have only begun to display the initial symptoms.

In regards to gender differences among the three disorders, the only significant difference between boys and girls was with the diagnoses of CD. This finding is consistent with the literature related to gender differences in antisocial activity (Giordano & Cernkovich, 1997; Robins, 1986; Shaw & Winslow, 1997; Zoccolillo et al., 1992). Furthermore, this is consistent with the significant difference which was found between genders in the personality/behaviour subscale of the CRRI.

It has been found throughout the literature that family factors are extremely important to a child's development (Campbell, 1994; Coon et al., 1992; Doob et al., 1995; Glueck & Glueck, 1950; Hoge et al., 1996; Loeber, 1982; Pellegrini, 1990; Rutter, 1997; Seifer et al., 1992; Werner, 1989). However, this study found that

children who engaged in criminal activity did not have a significantly higher number of risk factors related to parent and child relations. This unexpected finding is explained by the fact that children from both groups are from high risk environments, and that the majority of child who are admitted into the care of the C.A.S. experience negative relations with their parents, and would score high on this risk subscale.

In an attempt to distinguish between the risk factors of those children who engaged in criminal activity with those who do not, findings indicate that these two groups differ significantly on physical status, academic risk factors, social competence and personality and behavioural characteristics. This finding suggests that the children who engaged in criminal activities were having more problems in school, difficulties socializing with others and displayed more problematic behavioural problems.

In an examination of the results, it was observed that three of the risk factor subscales emerged having a significant relationship with each of the four negative outcomes. Children who experienced one of the four negative outcomes examined in this study were more likely to exhibit higher scores in the *Academic Readiness* subscale, the *Personality and Behavioural Characteristics* subscale and the *Social Relations and Social Competence* subscale. For example, children who displayed signs of one of the three behavioural disorders, or engaged in criminal activity, were more likely to experience problems regarding academic readiness, social competence and behavioural maladjustments.

The overall findings of this study are consistent with the empirical findings in this area. Results suggest that the CRRI is a psychometrically sound instrument which

measures the risk and protective factors of children. Results also concur with the literature about the various risk factors which exist for a child.

Although examination of criminal activity in this age group was exploratory, it provided some insight into the types of crimes which are committed by children from certain high risk environments. The most promising finding is that only eleven percent of this at risk sample engaged in criminal activity. Furthermore, the majority of these children could benefit greatly from therapy to deal with the violence they witnessed and the abuse they experienced. Removing them from their damaging environment and placing them in a home which consists of a loving and supportive family is the first step to assisting these children in becoming stable, social and law-abiding adolescents.

The C.A.S. intervened and took action with only two of the children who had committed crimes. These two children were referred to a Child Treatment Group Home in the Ottawa area. No formal interventions were taken with the other ten children. Most of these children were referred to therapy in order to learn how to effectively deal with the experiences or abuse to which they had been subjected. A change in behaviour was evident in many of the files, after the initial few weeks in placement, and after a few weeks in counseling.

The findings of this study support the argument that many risk factors are dynamic and change over time. This is certainly true for many of the children in this at risk sample, as the changes were evident in the files. The majority of the children would experience many transformations, which can be conceptualized through Shaw and Winslow's (1997) transactional model. Their model suggested that antisocial

behaviour develops over time, and is a result of transactions between a child and his or her environment. Upon admission to the C.A.S., many of the children would exhibit a high number of risk factors and would have experienced many negative transactions with their environment. Two of Shaw & Winslow's principal domains, parental contributors and external influences, change when a child is placed in a new home. The change in these two domains will, in turn, have somewhat of an effect on the third domain, child contributors. This transactional model is important as it emphasizes that risk factors can change, and as they do, the changes will direct the path which a child will take as s/he develop.

The transactional model can also integrate the role which treatment can have on the risk factors of the child. Identifying the risk factors, and then addressing the underlying causes of these risk factors can result in the child experiencing different, more positive transactions. Treatment of the more dynamic risk factors can alter the pathway which a child may travel as they develop into adolescence.

The CRRI is a useful instrument to measure the amount of risk factors and protective factors which can be found in a child's life. Once these factors are identified, appropriate interventions can be implemented to decrease the number of risk factors and increase the number of protective factors. However, it is important to recognize that this sample is unique. Children who are admitted to the C.A.S. are cared for by trained individuals and actions taken are under the premise to be in the best interest of the child. Not all children in our society are so fortunate, as not all risk factors can be addressed in the same manner as the C.A.S. addresses them.

It is important to note that this study had several limitations. One of the limitations of this study is that all the results are based on a group of at risk children. All of the children sampled were in C.A.S. care and are not representative of the normal population of children. The sample size is also an issue, as of the 120 files reviewed, only 108 files met the selection criteria. Furthermore, the sample size of children who engaged in criminal activity is extremely small, as only twelve children were identified. This, in turn, limited the analyses which could be conducted. As the criminal sample was so small, comparisons between the two groups were limited. Therefore, many of results regarding criminal children are limited in their generalizability. However, one of the goals of this study was to provide descriptive information about children under the age of twelve who commit crimes.

Another limitation of this study is that all the information is based solely on file review. No collateral information was gathered to collaborate the case files. Information which was missing from the files could not be obtained from other sources. Further examination of the progress of the children would have proved interesting.

There are also limitations regarding the instrument which was utilized to measure risk and protective factors. The CRRI was originally designed to measure risk and protective factors in preschool aged children. The instrument was adapted and altered to match a new age group.

However, despite the limitations, this study will have positive implications for both the researchers who study young children who engage in crime, as well as for the C.A.S.. This study attempted to expand the knowledge base about children who engage

in criminal activity, and the risk and need factors which they exhibit. Although only twelve children were identified, characteristics of these children were obtained. The types of crimes they commit were documented.

This study also provided further validation for the CRRI, and its ability to assess risk factors and protective factors in children aged six through ten. The data generated in this study, and future studies, will enable researchers to assess a range of hypotheses regarding the correlates and causes of criminal activity in young people. This study also provided additional support to the knowledge which presently exists regarding risk and protective factors of at risk children.

This study is also of benefit to the C.A.S. as it provides some systematic information about the children who were in care. This information can be used for future program planning and resource allocation. This information is not only of use to the C.A.S. but to many of the other agencies who deal with high risk children.

The results of this study are only the beginning. Further research needs to be conducted examining children under the age of twelve who engage in criminal behaviour. Future empirical studies need to engage a larger sample, and attempt to obtain collateral information. Other high risk samples need to be examined, or a means of gathering a large sample of children who commit criminal activity needs to be established. This is an extremely important area of research which needs to be further explored. The practical implications of being able to identify and address the risk factors of children are numerous. Preventive measures are much less costly in the long run.

Research has shown that preventive programs must begin to combine early family support and education shortly before childbirth (Yoshikawa, 1994). Post childbirth programs should involve both a child-focused and parent-focused educational and emotional support approach (Yoshikawa, 1994). Effective interventions need to recognize the social context which many of these families exist. Programs such as these may be the best step towards preventing the early onset of antisocial behaviour, chronic delinquency and other negative outcomes. If it is possible to effectively intervene when these risk factors are evident, it may be possible to prevent young children from becoming young offenders.

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Appendix A

Letter of Permission from the Children's Aid Society

The Children's
Aid Society of
Ottawa-Carleton

La Société de
l'aide à l'enfance
d'Ottawa-Carleton

1602 Telesat Court
Gloucester, Ontario
K1B 1B1
(613) 748-0670
Fax (613) 747-4456

December 23, 1997

Ms. Tanya Rugge
8556 Victoria Street
Metcalfé ON K0A 2P0

Dear Ms. Rugge:

This will confirm the Society's acceptance of your proposal to conduct file research to assist in the development of measures of criminal activity in children under the age of twelve. As discussed, the Society will provide you with a file list of approximately 150 to 160 subjects within the specifications provided. These will be closed files which will be obtained from our Records Department as needed. The Society will provide a suitable work space for you to review the files and enter non-identifying data into your analysis work-sheet. We have reviewed the confidentiality agreement provided by the Society which has been signed and returned to me today. A copy of the confidentiality statement has been left with you. This agreement requires that no identifying information be recorded in the data collection exercise or in any report or document that is published as a result of this research. Likewise the files which will be accessed will be reviewed within the Society office building and will not be removed from the premises. All files will be collected from the Records office and returned to the Records office at the end of each working day and not left in any unsecured location.

It is further the Society's understanding that a copy of the report will be provided to the Society upon the completion of the research and submission of the student's thesis.

I am pleased that the Society is able to assist the Department of Psychology in the conduct of research pertaining to correlates and causes of criminal activity in young people. We look forward to your report when it is available.

Yours truly,

P. L. Kennedy
Director of Professional Standards

PLK:mp

Providing services to
children and families
since 1893

Assurant des services aux
enfants et aux familles
depuis 1893

ACCREDITED

COUNCIL ON ACCREDITATION
OF CHILD WELFARE AGENCIES
AND YOUTH SERVICES

Appendix B

Children's Aid Society Confidentiality Policy

Children's Aid Society of Ottawa-Carleton
Société de l'aide à l'enfance d'Ottawa-Carleton

Policy & Procedure

Confidentiality

2.7

0. General

The Society's concept of confidentiality is based on every person's basic right to privacy. The necessity for confidentiality flows from the acceptance of that right.

1. Scope

The Society's obligation for confidentiality extends to all aspects of administration, to applications or inquiries, throughout the continuing casework relationship, and after the client has ceased to receive service.

The obligation for confidentiality is binding on all individual employees, the members of the Board of Directors, committee members, volunteers, students and foster parents, as well as the Society as a corporate entity.

All individuals involved in any capacity referred to above are expected to sign an undertaking to hold confidential all information acquired in the course of their work with the Society. Employees should consult with their superior when encountering the need to serve the client known to them personally.

2. Limitations

An individual's right to confidentiality is not absolute. It may be abrogated by the rights of others, particularly the rights of children in need of protection; and when maintaining confidentiality might cause serious harm to the client or to a third party.

.../2

Every effort is made to respect the client's right to confidentiality while sharing necessary information with appropriate personnel in case conferences, with other social workers, other professionals, foster parents, and others bound by the obligation to respect confidentiality. Pertinent information about a child placed in their home should be shared with foster parents prior to or no later than at the time of placement.

Communication between social workers and clients; social workers and foster parents; clients and foster parents are not privileged in court. Individuals and records may be subpoenaed by an adversary or by the client himself. No records must be made available to adversary parties or the court without formal subpoena. Where practicable, the client should be advised if a worker has been called to testify in his case or if a file has been subpoenaed. A worker's or foster parent's responsibility as a sworn witness overrides his responsibility with regard to confidentiality only while on the witness stand. Clients' files may be shared confidentially with counsel acting for the Society.

Clients should be advised of limitations of the Society's ability to maintain confidentiality.

3. Records

Records are available to staff members and foster parents only, who require them in their line of duty. Clients' records may be shared with outside organizations only upon receipt of a signed authorization from all clients involved. Records may be used for surveys and research purposes only on approval of the Executive Director. All records are open to inspection by authorized personnel under Section 2 (2) b of the Child Welfare Act.

While clients' records are not open to inspection by Board or committee members, pertinent material will be shared with Board or committee members who participate in hearings under one of the Society's appeal procedures.

Files on children are made available to the foster parents who are caring for them. Sharing of information should be initiated after a trial period during which the foster parents have attended a briefing session on confidentiality and received additional training to better enable them to understand and use the information appropriately.

4. Media

Every possible assistance should be given to the media towards better public understanding of the services of the Society. The Society will not make public the names of clients without their written consent, nor release photographs for publication without first obtaining the written consent of parents or guardians and of children over the age of ten years. Where a client discloses information about his/her relationship with the Society to the media, the Agency will consider itself released from the responsibility to maintain confidentiality to the extent necessary to establish, in context, the facts with regard to the information disclosed by clients.

5. Employees' Records

All records regarding employees including their evaluations are kept confidential and are available only to authorized personnel. The contents of reference letters sent to prospective employers are made known to the employee at his request.

6. Foster Parents' Record

The contents of evaluations of a foster home should be shared with the respective foster parents but held in confidence, as are all other records.

7. Court Orders

Court Orders are not provided to individuals or organizations who are not parties to the action.

Where an organization, a physician, or an individual is named in a Court Order, and is required to provide certain services under the terms of that order, they are normally provided with a letter from the Society's Legal Department, stating the Court's Expectations.

In response to a specific request, a copy of the Court Order is provided to individuals and organizations who are required to perform services under the Court Order.

Since Court Orders are part of the Public Record, anyone may apply to the Family Court for access to information on the contents of Court Orders.

Approved by the Board of Directors	November 25, 1980.
Reviewed	September 27, 1983.
Updated	June 15, 1984.

See: Public Relations 2.5; Access to Information 2.8; Personnel Relations and Review Procedures

Appendix C

Child Risk/Resilience Inventory

Identification Number/Code: _____

I. RISK FACTORS

Please indicate the extent to which each of the following factors represents a potential risk for the child. Definitions of items may be found in the Manual/Scoring Key which accompanies this Inventory.

A. FAMILY AND PARENTING CIRCUMSTANCES

1. CHARACTERISTICS OF PARENT OR GUARDIAN

	Not a Problem	Moderate Problem	Serious Problem	No Info
<u>Mother</u>				
1.1 Physical illness/disability	_____	_____	_____	_____
1.2 Mood Disorder	_____	_____	_____	_____
1.3 Other mental illness	_____	_____	_____	_____
1.4 Alcohol Use	_____	_____	_____	_____
1.5 Drug Use	_____	_____	_____	_____
1.6 Financial stresses	_____	_____	_____	_____
1.7 Criminal History/Involvement	No ☐	Yes ☐		

<u>Father</u>				
1.1 Physical illness/disability	_____	_____	_____	_____
1.2 Mood Disorder	_____	_____	_____	_____
1.3 Other mental illness	_____	_____	_____	_____
1.4 Alcohol Use	_____	_____	_____	_____
1.5 Drug Use	_____	_____	_____	_____
1.6 Financial stresses	_____	_____	_____	_____
1.7 Criminal History/Involvement	No ☐	Yes ☐		

2. PARENT/FAMILY RELATIONS WITH TARGET CHILD

2.1 Insufficient time for child	_____	_____	_____	_____
2.2 Neglect/indifference	_____	_____	_____	_____
2.3 Lack of knowledge of child rearing	_____	_____	_____	_____
2.4 Inappropriate/inconsistent discipline	_____	_____	_____	_____

	Not a Problem	Moderate Problem	Serious Problem	No Info
2.5 Unrealistic expectations	_____	_____	_____	_____
2.6 Physical abuse	_____	_____	_____	_____
2.7 Sexual abuse	_____	_____	_____	_____
2.8 Emotional abuse	_____	_____	_____	_____
2.9 Parental lack of confidence	_____	_____	_____	_____
2.10 Conflict among siblings	_____	_____	_____	_____

3. OTHER FAMILY DYNAMICS

3.1 Separation/divorce	_____	_____	_____	_____
3.2 Marital conflict	_____	_____	_____	_____
3.3 Other family conflict	_____	_____	_____	_____
3.4 Family cohesion	_____	_____	_____	_____
3.5 Ethnic/cultural conflicts	_____	_____	_____	_____

B. CHILD CHARACTERISTICS

4. PHYSICAL STATUS

4.1 Physical illness	_____	_____	_____	_____
4.2 Physical disability	_____	_____	_____	_____
4.3 Physical dexterity/fine motor skills	_____	_____	_____	_____
4.4 Physical dexterity/gross motor skills	_____	_____	_____	_____

5. COGNITIVE/PERCEPTUAL FUNCTIONING

5.1 Visual capacities	_____	_____	_____	_____
5.2 Auditory capacities	_____	_____	_____	_____
5.3 Language/speech articulation	_____	_____	_____	_____
5.4 Language/comprehension	_____	_____	_____	_____
5.5 Spatial reasoning	_____	_____	_____	_____
5.6 Number skills	_____	_____	_____	_____
5.7 Reasoning skills	_____	_____	_____	_____

	Not a Problem	Moderate Problem	Serious Problem	No Info
--	------------------	---------------------	--------------------	---------

6. ACADEMIC READINESS

6.1 Attention span/ concentration	_____	_____	_____	_____
6.2 Ability to follow instructions	_____	_____	_____	_____
6.3 Persistence	_____	_____	_____	_____
6.4 Enthusiasm for cognitive activity	_____	_____	_____	_____

7. PERSONALITY/BEHAVIOURAL CHARACTERISTICS

7.1 Physical aggression/fights	_____	_____	_____	_____
7.2 Harmful aggression towards self	_____	_____	_____	_____
7.3 Verbally aggressive	_____	_____	_____	_____
7.4 Destructive of property	_____	_____	_____	_____
7.5 Self control	_____	_____	_____	_____
7.6 Compliance with adult direction	_____	_____	_____	_____
7.7 Attitude towards authority	_____	_____	_____	_____
7.8 Activity level	_____	_____	_____	_____
7.9 Self confidence/ self esteem	_____	_____	_____	_____
7.10 Depressed/unhappy	_____	_____	_____	_____
7.11 Anxious/fearful	_____	_____	_____	_____

8. SOCIAL RELATIONS/SOCIAL COMPETENCE

8.1 Isolated from peers	_____	_____	_____	_____
8.2 Withdrawn from peers	_____	_____	_____	_____
8.3 Unpopular	_____	_____	_____	_____
8.4 Social skills	_____	_____	_____	_____

II. PROTECTION FACTORS

Please indicate whether these protective factors are present in the case of this child. Items are defined in the Manual/Scoring Key. You may omit the items in Part A if you choose.

A. FAMILY AND PARENTING CIRCUMSTANCES

		<u>Factor Present</u>		
	Yes	Sometimes	No	No Info
1. Cohesive family environment	_____	_____	_____	_____
2. Cohesive extended family	_____	_____	_____	_____

B. CHILD CHARACTERISTICS

		<u>Factor Present</u>		
	Yes	Sometimes	No	No Info
3. High level of cognitive maturity	_____	_____	_____	_____
4. Exceptional school achievement	_____	_____	_____	_____
5. High level of emotional maturity	_____	_____	_____	_____
6. Positive/attractive disposition	_____	_____	_____	_____
7. Exceptional social skills	_____	_____	_____	_____
8. Supportive relationship with adult who? _____	_____	_____	_____	_____
9. Positive peer relations	_____	_____	_____	_____
10. Positive leisure activities/hobbies	_____	_____	_____	_____
11. Recognition of certain skill/talent what? _____	_____	_____	_____	_____

Special Needs Child ☐

Diagnosed: Conduct Disorder ☐
(In file)

Oppositional Defiant Disorder ☐

Hyperactivity ☐

ADHD ☐

Appendix D

General Information Sheet

Identification Number: _____ Number of Previous Admissions: _____
(C.A.S. file identification number)

Sex: _____ Date of Admission: _____
(month & year only)

Age of Child at Admission: _____ Date of Closure: _____
(month & year only)

Date of Birth: _____ Reason for closure: _____
(month & year only)

Reason for Admission: _____

Other: _____

Placement Information:

(Include information on prior admissions and placements if available)

Number of biological siblings: _____ Number of half-siblings: _____

Number of siblings who lived at home with child _____ Number of siblings moved to same foster home _____

Number of siblings moved to different foster home _____ Number stayed in original home (not moved) _____

Adjustment in Foster home # 1: Poor ☐ Satisfactory ☐ Very Good ☐

From: _____ to: _____ Length of Stay: _____ (weeks)

Comments: _____

Moved because: _____

Adjustment in Foster home # 2: Poor ☐ Satisfactory ☐ Very Good ☐

From: _____ to: _____ Length of Stay: _____ (weeks)

Comments: _____

Moved because: _____

Adjustment in Foster home # 3: Poor ☐ Satisfactory ☐ Very Good ☐

From: _____ to: _____ Length of Stay: _____ (weeks)

Comments: _____

Moved because: _____

Appendix E

Criminal Activity Coding Form

Identification Number: _____

1. Type of Criminal Activity: _____ Type of Anti-Social Act

Circumstances: _____	Property	☐	=1
_____	Violence	☐	=2
_____	(towards others)		
_____	Violence	☐	=3
_____	(towards self)		
_____	Other	☐	=4

Severity Rating: Minor ☐ Moderate ☐ Serious ☐

Duration: _____ Age of Onset: _____ Times: _____

Confidence Issues (how sure?): _____

Other: _____

2. Type of Criminal Activity: _____ Type of Anti-Social Act

Circumstances: _____	Property	☐	=1
_____	Violence	☐	=2
_____	(towards others)		
_____	Violence	☐	=3
_____	(towards self)		
_____	Other	☐	=4

Severity Rating: Minor ☐ Moderate ☐ Serious ☐

Duration: _____ Age of Onset: _____ Times: _____

Confidence Issues (how sure?): _____

Other: _____

3. Type of Criminal Activity: _____

Type of Anti-Social Act

Circumstances: _____	Property	☐	=1
_____	Violence	☐	=2
_____	(towards others)		
_____	Violence	☐	=3
_____	(towards self)		
_____	Other	☐	=4

Severity Rating: Minor ☐ Moderate ☐ Serious ☐

Duration: _____ Age of Onset: _____ Times: _____

Confidence Issues (how sure?): _____

Other: _____

4. Type of Criminal Activity: _____

Type of Anti-Social Act

Circumstances: _____	Property	☐	=1
_____	Violence	☐	=2
_____	(towards others)		
_____	Violence	☐	=3
_____	(towards self)		
_____	Other	☐	=4

Severity Rating: Minor ☐ Moderate ☐ Serious ☐

Duration: _____ Age of Onset: _____ Times: _____

Confidence Issues (how sure?): _____

Other: _____

Appendix F

Diagnostic Statistical Manual IV Attention-Deficit/Hyperactivity Diagnosis Criteria

A. Either (1) or (2):

- (1) six (or more) of the following symptoms of **inattention** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities	_____
(b) often has difficulty sustaining attention in tasks or play activities	_____
(c) often does not seem to listen when spoken to directly	_____
(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions)	_____
(e) often has difficulty organizing tasks and activities	_____
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)	_____
(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books or tools)	_____
(h) is often easily distracted by extraneous stimuli	_____
(i) is often forgetful in daily activities	_____

- (2) six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat	_____
(b) often leaves seat in classroom or in other situations in which remaining seated is expected	_____
(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)	_____
(d) often has difficulty playing or engaging in leisure activities quietly	_____

(e) is often “on the go” or often acts as if “driven by a motor”

(f) often talks excessively

Impulsivity

(g) often blurts out answers before questions have been completed

(h) often has difficulty awaiting turn

(i) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school and at home).

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Is the presence of an Oppositional Defiant Disorder mentioned in the file:

Yes

No

Appendix G

Diagnostic Statistical Manual IV Conduct Disorder Diagnosis Criteria

- A. A repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated, as manifested by the presence of three (or more) of the following criteria in the past 12 months, with at least one criterion present in the past 6 months:

Aggression to people and animals

- (1) Often bullies, threatens or intimidates others _____
- (2) Often initiates physical fights _____
- (3) Has used a weapon that can cause serious
physical harm to others _____
- (4) Has been physically cruel to people _____
- (5) Has been physically cruel to animals _____
- (6) Has stolen while confronting a victim _____
- (7) Has forced someone into sexual activity _____

Destruction of property

- (8) Has deliberately engaged in fire setting with
intention to cause serious injury _____
- (9) Has deliberately destroyed other's property
(other than by fire) _____

Deceitfulness or theft

- (10) Has broken into someone else's house, car,
or building _____
- (11) Often lies to obtain goods, favours, or to
avoid obligations _____
- (12) Has stolen items of non-trivial value without
confronting the victim _____

Serious rule violations

- (13) Often stays out at night despite parental prohibitions, beginning before age 13 _____
- (14) Has run away from home overnight at least twice (parental or surrogate home) _____
- (15) Is often truant from school, before age 13 _____

MARK ALL THAT APPLY**(Each check-mark = 1)**

B. The disturbance in behaviour causes clinically significant impairment in social, academic, or occupational functioning. _____

C. If the individual is age 18 years or older, criteria are not met or Antisocial Personality Disorder. _____

Is the presence of a Conduct Disorder mentioned in the file:

Yes**No**

Appendix H

Diagnostic Statistical Manual IV Oppositional Defiant Disorder Diagnosis Criteria

A. A pattern of negativistic, hostile and defiant behaviour lasting at least six months, during which four (or more) are present:

1. Often loses temper	_____
2. Often argues with adults	_____
3. Often actively defies, refuses to comply with adult's requests or rules	_____
4. Often deliberately annoys people	_____
5. Often blames others for his or her mistakes	
6. or misbehaviour	_____
7. Is often touchy, or easily annoyed by others	_____
8. Is often angry and resentful	_____
9. Is often spiteful or vindictive	_____

(Note: Consider a criterion met only if the behaviour occurs more frequently than is typically observed in individuals of comparable age or developmental level)

Are four of the above present: Yes No _____

B. The disturbance in behaviour causes clinically significant impairment in social, academic or occupational functioning. _____

C. The behaviours do not occur exclusively during the course of a Psychotic or Mood Disorder. _____

D. Criteria are not met for Conduct Disorder, and if the individual is age 18 years or older, criteria are not met for the Antisocial Personality Disorder. _____

Is the presence of an Oppositional Defiant Disorder mentioned in the file: Yes No

Appendix I

Descriptive List of All Criminal Incidents Recorded

Threats to cause bodily harm or death

- Subject 1 - Child threatened to stab mother
- Subject 1 - Child threatened to kill a group home counselor
- Subject 11 - Child threatened to kill foster mother's daughter, consequently moved

Assault causing bodily harm

- Subject 1 - Hit a girl at school, which resulted her having to go to the hospital
- Subject 1 - Kicked a girl in the stomach several times, causing her to vomit
- Subject 3 - Fights at school, knocked another boys teeth out
- Subject 7 - Beat up another foster child badly, subsequently moved
- Subject 7 - Fights at school, caused three other children to bleed

Assault causing bodily harm with a weapon

- Subject 1 - Child stabbed mother hand with a knife
- Subject 3 - Hit another child repeatedly in the chest with a baseball bat, because he was not invited to the birthday party

Sexual aggression

- Subject 1 - Forcing kisses and touching girls, threatening to rape them
- Subject 3 - Repeated inappropriate sexual behaviour towards other children (touching, attempting to insert object in another boys anus), consequently moved to another foster home
- Subject 4 - Sexual acts at school (touching other children, and repeatedly exposing himself to girls)
- Subject 5 - Engaged in sexual acts with the family pet, consequently moved to another foster home
- Subject 8 - Sexual acting out behaviour towards sister, had to be separated

Property Damage

- Subject 1 - Causing property damage to a group home
- Subject 2 - Destroyed bedroom in foster home, broke all the furniture
- Subject 6 - Destroyed objects in foster home (broke and threw several objects in house, broke bed etc)
- Subject 7 - Engaged in property damage to neighbours home
- Subject 10 - Vandalism on walls, obscene graffiti on the furniture

Theft

- Subject 8 - Repeatedly steals money from foster mother's purse
- Subject 9 - Steals money from purse, also found missing objects hidden in bedroom
- Subject 12 - Steals items from foster home, money and objects
- Subject 12 - Steals items from teacher's desk, candies, and then a camera

Break and Enter of an Automobile

- Subject 1 - Broke into someone's automobile

Cruelty to Animals

- Subject 3 - Extreme aggressive towards animals, repeatedly kicked and beat the foster home's dog

Appendix J

Frequencies and Proportions of the CRRI Individual Items

Frequencies and Proportions of the Individual CRRI Items

Item	0	1	2	9	M	SD
RISK FACTORS						
1a. Characteristics of Parent or Guardian (Mother)						
1.1M Physical illness/disability	80%	6%	8%	6%	0.23	0.60
1.2M Mood Disorder	53%	26%	15%	7%	0.59	0.75
1.3M Other mental illness	64%	11%	17%	8%	0.50	0.80
1.4M Alcohol Use	43%	14%	39%	5%	0.96	0.93
1.5M Drug Use	54%	15%	27%	5%	0.72	0.88
1.6M Financial stresses	54%	26%	15%	6%	0.58	0.75
1.7M Criminal history/involvement	72%	23%	-	6%	0.24	0.43
1b. Characteristics of Parent or Guardian (Father)						
1.1F Physical illness/disability	91%	1%	2%	6%	0.05	0.29
1.2F Mood Disorder	89%	2%	2%	7%	0.06	0.31
1.3F Other mental illness	89%	1%	3%	7%	0.07	0.34
1.4F Alcohol use	66%	6%	24%	6%	0.56	0.87
1.5F Drug use	70%	3%	21%	6%	0.48	0.84
1.6F Financial stresses	71%	6%	16%	7%	0.40	0.76
1.7F Criminal history/involvement	63%	31%	-	6%	0.33	0.47
2. Parent/Family Relations with Target Child						
2.1 Insufficient time for child	16%	47%	30%	6%	1.15	0.69
2.2 Neglect/indifference	11%	26%	57%	6%	1.49	0.70
2.3 Lack of knowledge of child rearing	17%	35%	43%	6%	1.27	0.75
2.4 Inappropriate/inconsistent discipline	43%	28%	23%	6%	0.79	0.81
2.5 Unrealistic expectations	40%	30%	18%	12%	0.75	0.78
2.6 Physical abuse	37%	26%	31%	6%	0.93	0.85
2.7 Sexual abuse	76%	3%	15%	6%	0.34	0.74
2.8 Emotional abuse	29%	36%	30%	6%	1.01	0.79
2.9 Parental lack of confidence	45%	30%	19%	6%	0.73	0.78
2.10 Conflict among siblings	80%	7%	6%	7%	0.20	0.53

Item	0	1	2	9	M	SD
3. Other Family Dynamics						
3.1 Separation/divorce	70%	16%	6%	9%	0.29	0.57
3.2 Marital conflict	46%	23%	24%	8%	0.76	0.84
3.3 Other family conflict	65%	8%	17%	10%	0.47	0.80
3.4 Family cohesion	70%	16%	4%	11%	0.26	0.52
3.5 Ethnic/cultural conflicts	76%	10%	4%	10%	0.19	0.49
4. Physical Status of the Child						
4.1 Physical illness	89%	3%	3%	6%	0.08	0.37
4.2 Physical disability	90%	1%	4%	6%	0.08	0.40
4.3 Physical dexterity/fine motor skills	81%	12%	2%	6%	0.16	0.42
4.4 Physical dexterity/gross motor skills	81%	13%	1%	6%	0.15	0.39
5. Cognitive/Perceptual Functioning of the Child						
5.1 Visual capacities	90%	4%	1%	6%	0.06	0.27
5.2 Auditory capacities	88%	4%	3%	6%	0.09	0.38
5.3 Language/speech articulation	64%	23%	7%	6%	0.40	0.63
5.4 Language/comprehension	61%	26%	6%	6%	0.42	0.62
5.5 Spatial reasoning	74%	16%	5%	6%	0.26	0.54
5.6 Number skills	73%	17%	4%	6%	0.26	0.52
5.7 Reasoning skills	71%	18%	5%	6%	0.29	0.55
6. Academic Readiness of the Child						
6.1 Attention span/concentration	52%	27%	14%	7%	0.59	0.74
6.2 Ability to follow instructions	70%	20%	3%	7%	0.27	0.51
6.3 Persistence	73%	18%	2%	7%	0.24	0.47
6.4 Enthusiasm for cognitive activity	83%	8%	2%	7%	0.13	0.39
7. Personality/Behavioural Characteristics of the Child						
7.1 Physical aggression/fights	61%	18%	16%	5%	0.53	0.77
7.2 Harmful aggression towards self	74%	14%	8%	5%	0.31	0.63
7.3 Verbally aggressive	58%	21%	16%	5%	0.56	0.77
7.4 Destructive of property	81%	10%	5%	5%	0.20	0.51
7.5 Self control	50%	22%	24%	5%	0.72	0.84
7.6 Compliance with adult direction	61%	27%	7%	5%	0.44	0.63
7.7 Attitude towards authority	71%	18%	6%	5%	0.32	0.60
7.8 Activity level	56%	31%	9%	5%	0.51	0.67
7.9 Self confidence/self esteem	32%	38%	26%	5%	0.93	0.78
7.10 Depressed/unhappy	54%	26%	18%	2%	0.64	0.78
7.11 Anxious/fearful	22%	43%	34%	2%	1.12	0.75

Item	0	1	2	9	M	SD
8. Social Relations/Social Competence of the Child						
8.1 Isolated from peers	86%	8%	2%	5%	0.12	0.38
8.2 Withdrawn from peers	81%	12%	3%	5%	0.18	0.46
8.3 Unpopular	85%	10%	1%	5%	0.12	0.38
8.4 Social skills	61%	29%	6%	5%	0.42	0.60

PROTECTIVE FACTORS

A. Family and Parenting Circumstances

1. Cohesive family environment	56%	39%	1%	5%	0.43	0.52
2. Cohesive extended family	92%	3%	1%	5%	0.05	0.25

B. Child Characteristics

3. High level of cognitive maturity	78%	9%	8%	5%	0.27	0.61
4. Exceptional school achievement	75%	15%	6%	5%	0.29	0.58
5. High level of emotional maturity	91%	2%	6%	2%	0.13	0.48
6. Positive/attractive disposition	35%	17%	46%	2%	1.12	0.90
7. Exceptional social skills	82%	8%	8%	2%	0.25	0.60
8. Supportive relationship with adult	77%	16%	4%	4%	0.24	0.51
9. Positive peer relations	86%	5%	0%	9%	0.05	0.22
10. Positive leisure activities/hobbies	89%	3%	1%	7%	0.05	0.26
11. Recognition of certain skill/talent				100%	-	-

Note: For the risk factors subscales: 0 = not a problem, 1 = moderate problem,

2 = serious problem, 9 = no information available. For the protection factors subscales:

0 = not present, 1 = sometimes present, 2 = present, 9 = no information available.

IMAGE EVALUATION TEST TARGET (QA-3)

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