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Assessment of Constructs Related to Childhood Aggression

Susan B. McLaughlin

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ASSESSMENT OF CONSTRUCTS RELATED TO CHILDHOOD AGGRESSION

by

Susan B. McLaughlin

Submitted in partial fulfillment of the requirements for the degree

Doctor of Education

Interdisciplinary Doctoral Program for Educational Leaders

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Copyright

by

Susan B. McLaughlin

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Abstract

This study provides empirical support for the comprehensive theoretical model of aggression proposed by Meloy (2001) by examining characteristics of children who have a longstanding history of aggression across home and educational settings. The theoretical model first proposed by Meloy (2001) found attachment, anxiety, and attention difficulties in adults who evidenced severe aggression problems. The current study clarified how the adult model applies to children. That is, this study examined how attachment, anxiety, and attention are related to the overall functioning of children requiring treatment for aggression. Results are discussed in terms of child development issues, treatment selection, and intervention considerations.

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CHAPTER 1

INTRODUCTION

Our nation is witnessing increased rates of violence in younger and younger children. This is evidenced by a recent report entitled, School Health Guidelines to Prevent Unintentional Injuries and Violence by the U.S. Department of Health and Human Services and Centers for Disease Control and Prevention (2001). According to this fact-finding mission, homicide is rated the fourth leading cause of death in children ages five to nine years. Suicide and homicide are rated second and third in the ten to fourteen age group, as well as the fifteen to nineteen age range. When comparing our homicide rate to those of other nations, we rate five times higher than twenty-one other industrialized countries (Centers for Disease Control and Prevention, 2001). These facts bear witness to the significant problems of aggression that afflict many youths in our country.

Leadership is needed to synthesize the current literature in an effort to understand why many children are aggressive. Additionally, effective treatment measures need to be instituted. One way to begin to tackle this issue is to closely examine the current levels of functioning of children who are already identified as aggressive. This study seeks empirical support for the comprehensive theoretical model of aggression proposed by Meloy (2001) by examining characteristics of children who have a longstanding history of aggression across home and educational settings.

Statement of the Problem

The theoretical model first proposed by Meloy (2001) finds attachment, anxiety, and attention difficulties in adults who evidence severe aggression problems. He hypothesized that these difficulties would be evident in childhood due to the developmental trajectory of severe aggression in children (Loeber & Hay, 1997; Frick, 1998). The current study clarifies how the adult model applies to children by empirically measuring attachment, attention, and anxiety in children receiving treatment for aggression. Additionally, this study has assessed the contribution of these constructs in effecting overall functioning in aggressive children.

Three guiding principles will assist in the organization and presentation of the details of this study. Shirk and Russell (1996) and Brazelton and Greenspan (2000) identify three categorical processes which are important for normal development: emotion, socialization, and cognition. If these categories and the stages therein are not attained within normal developmental timelines, aggressive tendencies often ensue (Englander, 2003). A description of how attachment, attention, and anxiety (organized by their guiding principles) are related to childhood aggression is described as follows.

Emotion

The development of appropriate emotional expression is governed by the process of identification, expression, and regulation of emotions. The process of emotional development begins with attachment and forms through these emotional functions. Although the precise timing varies, it is during the first eight months of life when emotional attachment occurs (Brazelton & Greenspan, 2000; Shirk & Russell, 1996). The mother figure achieves nurturance by mirroring the child's needs and anticipating her

child's mood. Children begin to initiate interactions and differentiate their own emotions. A differentiation between caregivers gradually takes place during this first stage. The start of positive self-esteem growth and a foundation for positive emotional development occur as a result of this nurturing relationship with a mother figure. As development progresses, children begin to integrate more than one emotion and realize that emotions can occur simultaneously. For example, a toddler can be angry because his mother will not let him have another cookie, yet still feel unwavering love for her. The final phase of this emotional stage occurs when the child gradually learns to soothe himself and regulate the expression of his emotions.

Attachment

In normative development, attachment between mother and infant begins as a biologically oriented process and slowly, through a developmental procedure, becomes a relationship with love as its foundation. Attachment starts as a way to bring an infant closer to his or her primary caregiver for the purpose of satisfying biological needs, such as attractions to warmth and touch (Meloy, 2002). Interestingly, biology also plays a part in creating a mother's need for attachment through her production of the hormone oxytocin. During the "preattachment phase" (Ainsworth, 1978), the infant is seeking to create a comfort level outside of the mother's womb (Brazelton & Greenspan, 2000; Meloy, 2002). At this point the infant is not able to discern one person from another and seeks primarily to have biological needs met. This new relationship, in healthy children, soon evolves into a familiarity and eventually love bond between infant and primary caregiver. An early successful attachment experience leads to a child's ability to form multiple attachments, and ultimately healthy socialization practices. The healthy

development of that first bond between infant and caregiver is directly responsible for the formation of trust, empathy, and compassion (Brazelton & Greenspan, 2000). Additionally, Brazelton and Greenspan (2000) note that healthy attachment capabilities assist in the development of the central nervous system, aid in the formation of brain development, and assist in an infant's ability to attain language.

Children with emotional and/ or behavioral problems may have experienced a delay or severe disruption in the developmental sequence. The earliest and long standing problems related to refractory aggressive behavior are thought to occur during the attachment phase (Englander, 2003). This early disruption impacts all categories discussed in this paper of typical development including emotional, social, and cognitive. For example, if a mother consistently ignores her infant's cries, that child is likely to have significant difficulty learning to soothe himself, regulate emotions, build relationships, trust others, and will not be able to read or anticipate emotional, social, and cognitive cues from the environment. This sequence of failures may result in a lack of problem solving capability, distorted social relations, and cognitive errors. This sequence may result in a child who acts without regard for consequences (Shirk & Russell, 1996).

In summary, for many children who experience a breakdown in the attachment process during the crucial first few years of life, a dysfunction in the early relationship with his or her maternal figure is likely to blame (Ainsworth, 1971; Bender, 1947; Bowlby, 1958). When this occurs, behaviors often manifest in aggressive actions, which tend to go hand in hand with attachment dysfunction (Meloy, 2001). Failures of early attachments have been linked to later juvenile delinquency and even psychopathic trends,

also know as predatory aggression (Bowlby, 1946; Englander, 2003; Horner, 1984; Meloy, 1988; Robins, 1966; Rutter, 1981; Spitz, 1950).

In addition, healthy attachment capacity makes it possible for children to develop a moral sense of right and wrong. The ability to understand the emotions of others and to care how another person feels can only come about as a result of experiencing a nurturing experience oneself (Brazelton and Greenspan, 2000).

Socialization

The second process identified by Shirk and Russell (1996) and Brazelton and Greenspan (2000) refers to social development and is governed by the internal monitoring of social practices. Relationship building occurs at this time, as well as the ability to understand the difference between self-emotions and the emotions of others. The basis for trust flourishes during this stage of development. Support from others becomes a buffer against stress and children are then free to form problem-solving strategies including dealing with negative emotions. Through consistent social interactions, the child can then organize, predict, and manipulate the environment. Positive socialization practices are thought to result in the establishment and maintenance of healthy relationships (Shirk & Russell, 1996). A healthy level of anxiety should develop as part of this stage of development.

Anxiety

Psychoanalytic theory postulates that appropriate anxiety development aids in the formation of an internal value structure, as well as a sense of right and wrong (Cloninger, 1987; Meloy, 2001). Adequate levels of anxiety assist governing behavior through processes of internal reflection and behavioral inhibition (Meloy, 2001; Walker, 1991).

Children who have not successfully developed and/or regulated appropriate anxiety can act in an aggressive manner (Meloy, 2001). Furthermore, youth who do not possess behavior-regulating anxiety and fear subsequently lack an internal monitoring system to control their actions, including aggressive actions (Meloy, 2001). Without the capacity to benefit from anxiety or an internal monitoring system, behavior problems are likely to occur.

Low levels of trait anxiety resulting in aggressive behavior patterns has been reported in the literature (Cleckley, 1982; Cloninger, 1987; Gray, 1982; Lykken, 1982). Loeber's Pittsburgh Youth Study, which is an ongoing longitudinal study of male offenders, revealed that the most important child predictor for later delinquency is lack of guilt (Loeber et al., 2002). Guilt, in this context, is resulting from inadequately developed anxiety. Additional findings of this study demonstrate that lack of guilt feelings is also the strongest predictor of physical aggression, covert behavior problems, and ADHD (Loeber et al., 2002). The relationship between lack of guilt (anxiety) and ADHD is important and provides a link between cognitive attention difficulties and aggression.

Cognition

Cognitive development is the last stage of development. During this phase, children reveal a newfound ability to anticipate their own emotional reactions to events. Cognitive structures, processes, and products are developed to build and enhance problem-solving skills. Working memory and social problem solving skills are enhanced at this time (Shirk & Russell, 1996). Attentional capacity is a function of cognition and is related to aggression in children.

Attention

Attention difficulties play an important role in the problems of aggressive youth. Lynam (1995) suggests that children who exhibit problems of hyperactivity, impulsivity, and attention are at significant risk for a more profound form of Conduct Disorder and consequently chronic patterns of offending. Attention difficulties are thought to be a cause of early onset conduct disorder, and often serious criminality (Meloy, 2001).

Attention plays a key role in the findings of Loeber's comprehensive Pittsburgh Youth Study. Specifically, impulsivity appears to be an important component of psychopathy and other severe disruptive behavior disorders. Findings indicate that boys who were diagnosed with ADHD were more likely than non-ADHD boys to have co-occurring disruptive disorders. The Pittsburgh Youth Study concludes that there is a strong connection between attention and aggression (Loeber et al., 2002).

The Developmental Trends Study, another large scale longitudinal study, found evidence to confirm the fact that comorbid Conduct Disorder is strongly associated with the persistence of ADHD. In other words, ADHD children who demonstrate higher levels of aggression and conduct problems will likely experience ongoing ADHD symptoms. ADHD is considered to be the most common comorbid condition for youth with Conduct Disorder (Loeber et al., 2000). It is also known as one of the first comorbid conditions to surface in the development of aggressive children. This may be due to the fact that attention problems are one of the earliest appearing disorders in childhood (Loeber & Keenan, 1994).

Perhaps most important to consider in the link between attention problems and aggression in children is the impact these behaviors have on overall functioning. One of

the many reasons for decreased overall functioning, is that children suffering from attention problems also have self-regulating difficulties that affect information processing, arousal, alertness, metacognition, and various executive functioning capabilities (Semrud-Clikeman, 1999). It can be hypothesized that overall functioning is affected by these negative attributes in two ways. First, the probability of initial success is unlikely. Second, if some success is evident, there is a decreased chance for sustainability. For these salient points, attention serves as the third and final construct in this study.

Summary

In general, the literature supports the proposition that poor attachment and emotional development, poor relationships, and poor cognition are directly related to aggression. Further, Waters (1993) has specified five key points in order to explain the relationship between emotion, socialization, cognition, and the behavioral expression of aggression. This explanation serves as an organizing framework for the relationship to aggression, in particular. First, children who have dysfunctional attachments often lack the ability to appropriately regulate their emotions, and therefore experience frustration, which frequently leads to aggressive responses. Their inability to anticipate emotional responses in others can eventually lead to difficulties trusting others, an inability to demonstrate affection, and difficulty with general relationship management. Additionally, aggressive children more frequently interpret ambiguous social situations as entailing hostile intent (Dodge & Frame, 1982). Second, is the manner in which these children interpret social cues. When social perception is skewed, children become overly vigilant and tend to misread actions or words given by their peers. A misinterpretation of social

cues results. These behaviors make it difficult for children to fit in with their peers and act appropriately in social settings. Third, children who experience poor supervisory relationships with their parent(s) often demonstrate attachment problems and manifest aggressive behaviors. The supervisory relationship between parent and child has most likely not transpired in an effective manner, therefore all future supervisory relationships are affected. A general lack of respect for authority figures often results. Fourth, the absence of support systems contributes in a significant manner to the development of attachment and aggression patterns. It is probable that adequate support systems have not been in place for most of the life span of these children and they have not experienced appropriate modeling of socialization practices due to the attachment breakdown. Lastly, the lack of a positive social role model has an influence on the development of attachment and aggression issues (Waters, 1993). A likely result of this dysfunction is the development of anger and resentment in the child. As such, the literature supports the developmental relationship between a lack of attachment and subsequent problems with the domains of emotion, socialization, and cognition where patterns of aggression can result.

Purpose of Study

The need for this study is identified by Bickman (1997), who notes a strong need for applied or field-based studies. While there has been support for the proposed three-construct model in the adult literature, to date there is a lack of research that has comprehensively assessed attachment, anxiety, and attention in aggressive children.

Specifically, single construct studies have been conducted. Gray (1976, 1982) has examined anxiety, Ainsworth (1971, 1974, 1978) has studied attachment, and Lynam has

conducted research on ADHD (1996); however a comprehensive study involving all three constructs has not been conducted with children. Groundwork exists to suggest that adult findings in this area are evident in childhood. For example, Meloy (2001) postulates that inadequate attachment, underarousal, and inadequate anxiety establish the basis for psychopathic patterns of behavior in adulthood. As previously discussed, Waters (1993) provides a theoretical model of explanation for their relationship to aggression. Bender (1947) notes, and the literature supports, that the three proposed constructs either develop or do not during early childhood. However, these topics have not been comprehensively studied in children who are aggressive. In depth knowledge can be attained by examining the connections between childhood problems of attachment, attention, anxiety, and later problems in life. Aggression does not just appear in adulthood; its beginnings were formed during childhood (Englander, 2003).

Research on the sequence of development indicates that attachment, anxiety, and attention are considered stable over time (Bender, 1947). In other words, children either attain the capacity for attachment, adequate levels of anxiety, and developed attentional skills within specific sensitive developmental time spans, or they do not. Specifically, Friedlander (1949) notes that the development of attachment occurs within the first three years of life. Brazelton and Greenspan (2000) continue to support this position in their research concluding that attachment is the basis for emotional growth, occurs first in a child's life, and is the foundation for all development. Specifically, sensitive and nurturing care by a consistent caregiver is required in order to build the foundations for trust, love, and security (Brazelton & Greenspan, 2000). Similarly, according to the DSM-IV, Attention Deficit Hyperactivity Disorder symptoms should be present before

the age of seven (American Psychiatric Association, 2000). Although medication and environmental structures help many children control symptoms of ADHD, the disorder itself remains present (Barkely, 1990). Finally, Frick (1998) has developed a timeline which identifies six years of age as the start of a developmental period where the roots for adequate anxiety development should have been planted. Six years of age is seen as the beginning of this critical period, meaning that developmental signs of behavior regulating anxiety should be, at least, surfacing at that point. Subjects participating in this study fall within age ranges that are past these sensitive developmental periods. Further, since all three constructs manifest early in life, are considered stable, and the current sample of children continue to present with aggression, any treatment the children have received is presumed to have been ineffective in significantly or clinically altering fundamental attachment, anxiety, and attention difficulties.

The purpose of the current study is to explain patterns of attachment, anxiety, and attention in aggressive youth. Results are discussed in terms of overall functioning of aggressive children.

Hypothesis

As such, based upon literature the hypothesis is:

1. Subjects being treated for aggression who demonstrate poor attachment capabilities, inadequate regulatory anxiety, and difficulties in attentional processes will evidence poor global functioning.

CHAPTER 2

LITERATURE REVIEW

Historical Importance and Current Context

Despite persistent media headlines about extreme cases of childhood aggression and violence among youth, the public remains largely uninformed about the status and importance of children being treated for aggression. So much so that many would be shocked to know that acts of aggression cost the United States \$425 billion in direct and indirect costs each year (Illinois Center for Violence Prevention, 1998). The breakdown in those costs includes \$90 billion for the criminal justice system, \$65 billion for security, \$5 billion for the treatment of victims, and \$170 billion for lost productivity and quality of life issues. Although the breakdown of these costs also includes adult cases, the severity of the problem in children is adequately demonstrated by recent headlines, and the need for understanding the factors influencing aggressive children becomes clear.

Childhood aggression has been acknowledged as a problematic issue in our country since the early 1980s. During the period of 1988 through 1994, juvenile violent crime arrests increased substantially, only to level off and decrease since that time as evidenced by arrest records, victimization data, and hospital emergency room data (Elliot, 1998). However, the decrease is somewhat misleading and certainly does not point to a resolution of the issue of youth violence. The decline may, in fact, be due to some legislative and tally changes made by state officials throughout our country. Specifically, stricter gun control laws, the establishment of boot camps, deterrent programs, and children becoming part of the adult criminal courts have accounted for much of this decline in youth violence tallies (Gallup, 1999). Interestingly, 15.9% of all

violent crime in the United States in the year 2000 was committed by individuals 18 years or younger (U. S. Department of Justice, 2001). This alarmingly high rate of youth offending poses a serious threat to our society.

Aggressive Behavior Disorders: Clarification of Terminology

The major types of aggressive behavior disorders will be discussed in order to clarify the varying diagnoses the children in this study are likely to have. It is important to note that all children being treated for aggression will carry an aggression-related diagnosis and diagnoses were not used as a contingency item when choosing the subjects for this study.

Aggressive behavior disorders in children are typically sorted into one of the two diagnostic categories of Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD). Oppositional Defiant Disorder (ODD) is considered less severe and incorporates less antisocial tendencies. It includes behavior such as noncompliance, temper tantrums, argumentativeness, and disobedience that persists for at least six months. Conduct Disorder (CD) is described as, “a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated” (American Psychiatric Association, 2000; p.93). Fighting, disorganization, truancy, stealing, lying, and fire setting are some example behaviors. It is helpful to know that aggressive children under the age of six rarely qualify for a diagnosis of Conduct Disorder. Many youth diagnosed with Conduct Disorder began with the early and less severe diagnosis of Oppositional Defiant Disorder. Research suggests that early onset aggression may lead to more severe behavior later in life (Loeber, 1990; Loeber & Farrington, 2001).

The terms antisocial, violent, delinquent, and aggressive will, at times, be used interchangeably throughout this paper. Antisocial Personality Disorder usually has its origins in adolescence and is linked with criminal behavior later in life (Farrington & West, 1990; Pulkkinen, 1982; Magnusson, 1988). Persons with antisocial personality disorder have a pattern of disregard for others rights (American Psychiatric Association, 2000). This is the disorder most closely linked to adult criminal behavior. A person must be 18 years or older to receive this diagnosis. Poor impulse control and aggressiveness as a child are important predictors of antisocial personality disorder later in life (Loeber et al., 2002). The typical developmental sequence could be described as follows: children with behavior problems of this nature are known as impulsive in the elementary school years, are considered a behavior problem, and are often given a diagnosis of Oppositional Defiant Disorder. Children with Oppositional Defiant Disorder may argue frequently with adults, lose their temper, and experience angry feelings. They quickly develop a pattern of blaming others for their own mistakes and harbor resentment. As they approach adolescence, the term delinquent is often utilized and a concurrent diagnosis of Conduct Disorder is given. Conduct Disorder is considered a more severe pattern and involves the repeated disregard for the basic rights of others. Aggression is paramount in this disorder and cruelty to animals and other people often occur. Finally, in early adulthood, the same child would be diagnosed as antisocial and a criminal history would most likely be present.

Due to the discussed differences in terminology, it is easy to see how one may become confused when reading and/or discussing various behavior problems. Several fields of study (i.e. psychology, criminology, education, social work, medicine) subscribe

to their own specific terms when, in fact, they all may be talking about the same types of children or subtypes of these diagnoses. Other terms in the literature include children who are delinquent, aggressive, psychopaths, offenders, violent offenders, and behavior-disordered. This may cause professionals to attempt to solve the same problem from different orientations. Due to the fact that terms and definitions are an issue to contend with when familiarizing oneself with research related to this study, it is important to first acknowledge the difficulties when sifting through the literature and to state directly that this study uses aggression in a general way. "Children being treated for aggression" is used as a general term in order to include as many aggressive youth as possible whose diagnosis or descriptive labels may have been influenced by the field who services them (juvenile justice versus school versus mental health) rather than true differences in their behaviors. Aggression is at the root of juvenile violence and crime, therefore it becomes paramount to understand how aggression occurs in children. A review of the literature shows several models of aggression. Models of aggression will be discussed and considered in context.

Models of Aggression

Developmental

The developmental model of aggression seeks to clarify our understanding of aggression and violence by longitudinally tracking the developmental sequence of aggressive children. Development is considered within the context of family, school, peers, and community influences. There are several large-scale studies that follow the developmental trajectory of aggression, in children.

One example of this model is illustrated through The Rochester Youth Study which included the sample of high-risk adolescent boys from urban areas from the time period of 1986 to 1999. The study was longitudinal in nature and followed boys from their early teen years to their early adult years. Researchers made three important conclusions. First, children who participated in the study that were securely attached and experienced parent involvement were less likely to engage in aggressive behavior. Second, stressful life events and family economic difficulties were precursors to violence and/or delinquency. Third, children who associated with delinquent peers and subscribed to delinquent beliefs were more likely to act in a delinquent fashion (Thornberry et al., 1998).

A second large-scale study is The Denver Youth Survey. This study included 1,527 high-risk boys and girls from several Denver neighborhoods. Children's ages ranged from seven to fifteen. The study was conducted during the years of 1986 through 1999. Data from the National Youth Survey, conducted from 1976-1993, and this study were used to track changes in delinquency and drug use in children. Social conditions, individual characteristics, and developmental patterns were examined. Researchers made four important conclusions. First, little change occurred in the prevalence rates of delinquency from 1979 to 1987. Second, a significant increase in the severity of injuries from violent offences has taken place since 1987. Third, children who have a history of arrests were not discouraged from offending subsequent times. The last pertinent finding is the realization that there are many different types of offenders and multiple etiological pathways lead them toward delinquent behavior (Huizinga et al., 1998).

Finally, the Pittsburgh Youth Study is a longitudinal study that has followed boys in first, fourth, and seventh grades within inner city Pittsburgh for the past fourteen years. This study began in 1986 and data was collected through 1999. This study is unique in that the researchers examined mental health problems, as well as delinquency issues. Results demonstrate a progressive development of delinquency with milder acts leading towards serious events. Three pathways to aggressive behavior were named: authority, conflict, covert, and overt. The authority conflict pathway involves a general disrespect for authority figures. Youth choose this pathway at an early age (prior to 12 years), thus defining it as the first pathway. This pathway has progressive stages starting with stubborn behavior, then defiance, and finally authority avoidance. The second pathway to delinquency is the covert pathway (occurring prior to age 15). Lying, vandalism, and theft are considered the first stage and represent minor covert acts. Property damage is the second stage of this pathway. Eventually, moderate to serious delinquency occurs. The overt pathway is considered the third pathway of delinquency. This pathway is marked by aggression. Minor aggression comprises stage one, physical fighting is the second stage, and more severe violence makes up the final stage of this pathway. Boys who entered any pathway at the first stage were more likely to continue delinquent tendencies. Entrance into a pathway at the second or third stage usually indicates that a child is experimenting with delinquency and may not continue to have problems of this nature (Loeber et al., 1993).

The pathway model provides a methodology for identifying at risk youth and demonstrates a need for initiating early interventions before it becomes too late. The pathway model advocates for early identification and intervention. Researchers of this

study note that early behavior problems should not be downplayed or ignored (Loeber et al., 1993).

While some researchers examine large cohorts and interactive characteristics, others focus on clinical samples and specific traits. Large-scale studies tell us about an entire range of children who are aggressive. Clinical sample studies, like this one, are biased towards the populations requiring treatment. Specific traits, or causal factors, linked to their specific theoretical orientations are often used in clinical sample studies to understand acts of aggression.

Cognitive

Shirk and Russell (1996) emphasize cognitive deficits as causal factors in childhood disorders of aggression. They note that these deficits occur within cognitive structures, processes, and products. Cognitive structures refer to the ability to encode new experiences and working memory. Cognitive processes are problem-solving skills within social constructs. Cognitive products are considered biased attributions. Aggressive youth with cognitive deficits tend to misread social cues and respond in hypervigilant mannerisms when interacting with their peers (Samenow, 2001; Shirk & Russell, 1996). Conclusions can be drawn indicating that cognitive deficits may increase the likelihood that a child will demonstrate aggressive tendencies.

Many researchers refer to a unique cognitive make-up among violent offenders. Samenow (2001) notes that a criminal mentality begins forming in the preschool years. Signs to look for include lying, imposing one's will onto others, and presenting the image of toughness while experiencing overly sensitive feelings. The belief is that by

recognizing these signs, interventions can take place prior to the onset of serious aggression.

Psychodynamic

Psychodynamic theorists believe that a person's behavior, whether normal or abnormal, is determined to a large extent by underlying psychological forces of which the person is not consciously aware. These dynamic forces interact with one another and their interaction shapes an individual's behavior, thoughts, and emotions. Abnormal behaviors are considered the consequences of conflicts between these forces.

Anna Freud's models of child psychopathology are considered notable in this area. The Internal Conflict Model's premise is that emotional disturbance cannot be understood by simply examining symptoms. Freud notes that diagnostic criteria must include these emotional conflicts in order to fully understand a child's array of needs (1971). Conflicts in a child's personality structure are often the source when emotional or behavioral problems occur (Shirk & Russell, 1996). For example, conflicts often occur between what a child needs (i.e. to go to bed) and what he or she wishes (to stay up late watching television).

The id, ego, and superego theoretical personality structure borrowed from her father, Sigmund Freud, are known as the three central forces that shape the personality and will be utilized to establish a framework for understanding conflict in children. The id is made up of instinctual needs, drives, and impulses. Sexual and aggressive impulses are housed here and are largely governed by the pleasure principle, which is always seeking gratification. The ego represents rational thinking and strives to balance the id (instincts). Cognitive development, memory, and perceptual processes act together to

coordinate drives and the demands of external reality. Control is established when the ego is functioning in a normal capacity and is, therefore, permitted to establish balance. Conflict often occurs when the id and the ego clash or are unbalanced. Childhood represents a time where the ego is struggling to gain control over the impulses of the id. The superego is defined by moral standards and an identification with society or internalizing values of society. Initially, this identification occurs between an infant and his or her parents. The superego has two components, the conscience and the ego ideal. The conscience keeps us aware of good and bad, right and wrong. The ego ideal is an image of the kind of person we believe we should strive to become. This image is formed during our childhood and comes directly from watching our parents or caregivers. Other influences later in life can also add to our image of our ideal morally sound person. Guilt can occur when we judge ourselves on inherited moral standards and do not measure up to that standard (Freud, 1971).

The ego deficit model explains Freud's model of child psychopathology and aggression. Freud discovered that many children, who demonstrate problem behaviors, do not appear to be suffering from internal conflict, rather developmental deficits are identified as the trigger for a weakened ego state. These developmental deficits do not permit balance and control to occur properly. A weakened ego state leads to acting out of id impulses or aggression. Poor family environment is thought to contribute to these developmental deficits. That is, problem behaviors result from failures of the social environment to meet the child's developmental needs (Brazelton & Greenspan, 2001; Freud, 1968). Shirk and Russell (1996) note that examples of deficits that can occur from

a weakened ego state include decreased frustration tolerance, poor impulse control, poor reality testing, and inadequate emotional regulation.

Biological

Biological theorists believe that mental disorders are usually linked to problems in brain functioning. The problems are characterized as either anatomical or biochemical. Anatomical problems refer to structural problems in the size or shape of certain portions of the brain. Biochemical problems refer to the chemicals such as neurotransmitters, enzymes, and hormones, that enable the brain cells to function appropriately. Both structural and biochemical abnormalities can be caused by life events such as physical injury or genetic endowment.

The frontal lobe of the brain is where executive functioning such as planning and sequencing is controlled. Executive functioning controls the manner in which behavior is expressed (Lezak, 1995). When a deficit in executive functioning occurs, individuals have difficulty controlling their own behavior. This leads to inattentiveness, difficulty maintaining impulses, and difficulty regulating emotions (Lezak, 1995). Youth of this nature are more likely to engage in highly impulsive, emotionally driven acts of aggression.

Physiological arousal is characterized as a physical response or physical attention. When functioning properly, physiological arousal allows human beings to respond to punishment or aversive consequences (Meloy, 2001). Inadequate physiological arousal in children is thought to be connected to aggression. Raine's (1995) research indicates that males who have low physiological arousal are more likely to become criminals by the age of 29. In the early 1970's Hare and his colleagues demonstrated arousal deficits exist

among antisocial and criminal populations. Specifically, low resting heart rate, poor skin conductance, and slow EEG activity correlated with aggression and criminal behavior later in life. Interestingly, in severe cases of attention problems, or chronic cortical underarousal (Raine, 1997), the child's home environment appears to play a limited role in the development of attention difficulties. Attention difficulties have been linked to an abnormality of the central nervous system arousal mechanisms. An underarousal of the reticular activating system and a lack of cortical inhibition are implicated for both inattention and overactivity in children. Excessive motor output and a difficulty focusing attention are symptomatic of the problem (Gorenstein et al., 1989).

Pregnancy problems, including birth complications, have also been linked to aggression. Kandel and Mednick's (1991) research found that 80 percent of violent offenders reported delivery complications. This statistic was compared to only 30 percent for property offenders and 47 percent for non-offenders. Additional studies reveal that birth trauma, maternal rejection, and violence are linked. When birth trauma and subsequent maternal rejection occur, the child's predisposition to violence prior to the age of 18 increases (Raine et al., 1994). These findings provide a starting point for future research in the area of pregnancy and birth complications and their relationship with aggression.

Some children who are exposed to violent psychosocial environments develop violent tendencies and others do not (Kandel et al., 1988; Spatz Widom, 1989; Werner & Smith, 1982). This leads researchers to believe that some children are vulnerable to violent situations and others are able to overcome it. One possible reason why some children emulate their environment and others do not is the contribution of their biology.

Personality

Many theorists believe that at the heart of aggression and violent behavior are specific types of personality traits. Dishion (1995) notes that a child's personality plays a part in whether or not aggression and antisocial tendencies will surface. Temperament, maturation, and emotional development are known as several of the risk factors for antisocial behavior, under the personal attributes heading (Dishion, 1995).

John (1994), and colleagues, suggest that most personality traits fall within five broad domains, called the "Big Five". Their research has been adapted from the original work of Eysenck (1947). Neuroticism, Extraversion, Conscientiousness, Agreeableness, and Openness to Experience comprise the content domains. Data from The Pittsburgh Youth Study was examined and findings indicated that boys with externalizing behavior disorders were less agreeable, less conscientious, and more extraverted. Results also showed that boys with internalizing behavior disorders were more neurotic and less conscientious. Additional Pittsburgh study analyses followed and three types of adolescent personality structures were uncovered: Resilients, Overcontrollers, and Undercontrollers. Resilients were found to be the most healthy adolescents, Overcontrollers were found to have internalizing problems, and Undercontrollers were most likely to have externalizing problems, including aggression. The authors of this research are quick to point out that these three categories should not be considered all inclusive, however these constructs can provide a starting point for further personality research. Overall conclusions indicate that personality traits can be helpful to consider in the diagnosis and treatment of childhood aggression.

Psychosocial

The psychosocial model considers contextual influences in the development of aggression and delinquency. This includes family influences, peer groups, poverty, and social disadvantage (Rutter et al., 1998). Bronfenbrenner's (1979; 1986; 1989) research indicates that antisocial behavior can be related to relationships children have, the behavior settings in which these relationships exist, and/or the community where the individuals interact. Media influences, social class, education, and race will also be discussed as they pertain to social influences of aggression.

Bandura's (1977) social-learning theory is paramount in explaining the influence social agents have on the development of humans. He contends that children learn their personalities from their experiences and interactions with family, friends, and community and/or culture. Modeling is emphasized as a critical tool in the social development of children. Violence is thought of as a conditional response resulting in negative experiences (Bandura, 1977). Bandura's theory of modeling and violence is substantiated in recent research where a link between exposure to violence in the home and violent behavior patterns in children has been established (Paschall, 1996).

One of the most recently researched social influences in the development of violence is the media. Modeling theory is applied here where watching what others do on television, video games, or movies impacts how people act in real life scenarios (Lance & Ross, 2000; Lanier & Elliott, 1998; Sutherland, 1947). On average our nation's children are spending five to six hours a day watching television or working on the computer including video games or internet searches (Kaiser Foundation, 2000). As such, children are not spending time socializing with other people and they are exposed to large doses of

violent images and actions. It is quite telling to know that before the average U.S. child reaches high school, he or she has witnessed approximately 100,000 acts of violence on television (Radecki, 1989; Reel Violence, 1994). A gradual desensitization to violence occurs due to the witnessing of these acts of violence (Davis & Mares, 1998; Linz et al., 1989; Payne, 1997; Potter & Smith, 2000). Conclusions, based on current research, suggest that television violence may be related to violent behavior, and appears to provoke more aggressive behavior (Englander, 2003). It is important to note, however, that violence does not occur due to one causal factor. It is a combination of several circumstances that cause aggression (Comer, 1998). In at-risk individuals, media influences can play a very important role in the development of aggression.

Poverty can be considered a causal factor in the development of aggression due primarily to health care opportunities. Americans with lower income levels have less health care opportunities, especially preventative medical care (Englander, 2003). Furthermore, prenatal health care and medical care during childhood are influenced by personal income. Many studies have been conducted on the relationship between poverty and juvenile offending, however key factors (i.e. academic achievement, family dynamics, and genetic factors) have not been successfully controlled for (Englander, 2003). A multitude of theorists believe that this link exists and is causal in nature, however successful research that proves a relationship exists is still to come.

Social class and its relationship to aggression is examined in a recent national longitudinal study of over 4,500 children conducted by Triplett and Jarjoura (1997). Psychological and behavioral development were analyzed. Findings indicate that the lower the social class and household income, the more likely that the children living in

that environment would commit a violent offense. This finding was true for both male and female children. It is interesting to note that parental educational expectations played a significant role in this study. Low-income parents who expected high academic achievement tended to have children who were less likely to commit violent crimes (Triplett & Jarjoura, 1997). This fact supports the postulate that a positive family environment can overcome other environmental influences. Lower social class is thought to present a risk due to the espoused social beliefs and attitudes it exposes children to, rather than a lack of money or material deprivation (Englander, 2003). A child's health, education, neighborhood, and family are all considered part of social class. It soon becomes clear the extent of the influence social class has on a child's developmental process.

Educational attainment is often thought of as an indicator of social status. Englander (2003), conducted a study of violent men (men who engage in family violence, street violence, and men who fall into both categories) and the number of years they completed in school. Findings indicate that the number of years a child completes in school may help determine whether or not that child will act aggressively. It is important to note that this is less true for white men than for non-white men. Perhaps the most important caveat under the heading of education is that it is more important to consider educational achievement, or success in school, rather than simply the number of years spent in school (Englander, 2003).

Race has been perceived as a strong indicator of violence for quite some time. Specifically, African Americans have been known to be involved in more criminal activity than other racial groups (Block, 1977; Hewitt, 1988; Humphrey & Palmer, 1987;

Wolfgang, 1958). Some degree of this perception may be misleading due to the lack of differentiation in the categories of offending. The 1970 National Youth Survey found no difference between races when low frequency, minor offending was examined. At least some degree of the link between African Americans and violence has been perpetuated by media influences and racial stereotyping. Research shows that African American and Hispanic individuals are more likely to be convicted and sentenced when suspected of a crime (Elliot & Ageton, 1980; Freeh, 1995). Additionally, a Caucasian person is more likely to be given probation as a consequence when convicted of a crime than other racial groups (Jackson, 1977). Although prejudice does not account for all crime convictions, evidence indicates that our judicial system contains some level of racism. When considering serious violent crimes, it is important to note that African Americans commit more than half of all homicides in the United States, although they comprise only 12% of the U.S. population (Conklin, 1986; Freeh, 1995; Greenfeld, 1992).

Dishion (1995) notes that a disruptive family environment, aggressive temperament, and deviant peer group appear to be the key factors to consider in the development of aggression. Several patterns typically appear in a troubled child's family environment including weak discipline style, poor parental monitoring of child behavior, low levels of parent involvement, lack of positive reinforcement, little or no evidence of the teaching of problem solving strategies, and a general negative relationship between child and parent(s) (Dishion, 1995). Rutter, Giller, and Hagell (1998) additionally note that teenage parents, large family size, broken homes, abuse and neglect, coercion, hostility, and ineffective parenting and supervision are strong contributing factors when considering family influences on aggression.

A child's peer environment exerts a strong force on the development of antisocial behavior (Dishion, 1995). Both neighborhood and school settings should be considered when examining the peer network of any adolescent child. Peer influence is a strong contributor to the development of future behavior problems due to the pressure to make poor choices, negative experiences, and adaptive behavior styles. Gangs and the reasoning behind their formation should also be considered when thinking about the formation of aggressive tendencies.

Diathesis Stress Model

While several risk factors have emerged from the longitudinal and clinical sample studies, one model seeks to integrate these theoretical frameworks. The diathesis stress model states that in order for a person to develop aggressive tendencies, they must first have a biological, psychological, or sociocultural predisposition to aggression and must also be subject to some type of life stressor (Comer, 1998). This model espouses that no one factor can completely explain violence (Englander, 2003). There is typically a predisposing factor, precipitating factor, and a maintaining factor that play into this model of aggression (Comer, 1998). Englander (2003) describes the causal factors of an aggressive person as a house of cards. The problems must be stacked up in a particular order, with both complexity and simplicity in order to come to fruition (Englander, 2003).

Recent research confirms that an individual's genetic makeup can influence his or her level of environmental sensitivity. In other words, genetic predispositions to certain forms of psychopathology exist and when combined with a dysfunctional environment, can manifest (Plomin & Hershberger, 1991). The Diathesis Stress model emphasizes the interaction between genes and environment. A child's biology (nature) may influence

parent-child interactions, however it is important to note that parenting styles and general environment can be adjusted to compensate or nurture the relationship (Brazelton & Greenspan, 2000).

In a recent study Caspi et al. (2002) examined the genetic makeup of aggressive men in New Zealand. They investigated the role of monoamine oxidase A (MAOa), a protein in the brain that is involved in neurotransmitter metabolism. MAOa is thought to play a part in the process of breaking down chemicals in the brain that have been associated with aggressive tendencies. Findings indicate that individuals with low levels of MAOa along with a dysfunctional home life were more likely to act in violent ways (Caspi et al., 2002).

In summary, there is general agreement in the literature that causal factors for aggression are multifaceted and complex in their relationship (Hughes, 2001). An organizing schema describing the contribution of the causal variables is still developing. For the purposes of this study, an examination into how aggressive children's capacity for attachment, levels of anxiety, and attention are related to overall functioning was conducted. These three constructs were selected due to their important contribution found in adult studies of the most violent, aggressive offenders. The belief is that, based upon Meloy's (1988; 1994; 1995; 2001; 2002) adult studies, these three constructs contribute most to understanding clinical samples. Since all causal variables of aggression fall into the general categories of emotion, socialization, and cognitive development, and these categories are considered guiding principles that are crucial in the process of normal development (Shirk & Russell, 1996), a construct from each broad category has been selected for examination. Each of the three constructs will be highlighted and a

justification will be given for their significant status within this field of research. In this model several theoretical orientations are included and integrated.

Emotion

Healthy emotional development begins with attachment and includes learning the tasks of identifying, expressing, and regulating emotions (Shirk & Russell, 1996).

Attachment

Attachment was first introduced into the field of research in the early 1900s by scholars such as John Bowlby (1946; 1958; 1969) and Mary Ainsworth (1971; 1974; 1978). Attachment is emotionally driven and crucial to later personality development (Lieberman & Zeanah, 1995). Meloy describes attachment as, “a biologically rooted, species-specific behavioral system that maintains close proximity between child and caretaker” (2001, p. 3). The bond that occurs between a healthy mother-infant relationship occurs through repeated interaction over time (Coleman & Watson, 2000). The mother’s availability and responsiveness allow the infant to securely play and interact with his or her environment while frequently returning to her as a secure base and consequently feeling safe (Bowlby, 1958). Bowlby (1958) additionally notes that attachment itself acts as a biological function in protecting the child from harm and thus setting the mother up as a safe haven for stressful times. In healthy situations, children bond effectively with their mother based on love, nurturance, and security.

Bowlby divided the attachment cycle into four distinct phases (1969). Phase one is marked by biologically rooted actions. Meloy (2001) notes that infants as early as days old exhibit an inherent desire to attach by sucking and crying. These behaviors seek to provide protection from predators, nourishment, warmth, and touch for the newly created

human (Bowlby, 1958). Signaling behaviors are utilized during this phase (i.e. crying, rooting, sucking, and grasping). Behaviors that occur during the biological phase are aimed at survival goals and are not yet person-specific. It should be noted that to be dependent on someone and to be attached to someone are not, necessarily synonymous. This phase is more survival driven than emotionally driven. Attachment becomes more emotional an interaction as children grow, and ties most readily with a maternal figure.

Phase two is marked by discrimination between persons and a preference in caregivers is formed. The signaling behaviors become directed towards one caregiver (Bowlby, 1969). Phase three is where emotional attachment truly occurs (Ainsworth et al., 1978). Goal-directed behaviors surface during this stage and an active pursuit of one caregiver occurs. Active behaviors, rather than the passive signaling, begin to develop (i.e. running after the caregiver). Healthy children begin to anticipate their caregivers actions and gain security from positive feedback regarding this new skill (Bowlby, 1969).

The fourth phase is characterized by a partnership between child and caregiver. A more sophisticated form of attachment begins to develop. The child also begins to understand the caregiver's motives and feelings at this point (Bowlby, 1969). Ideally, the appropriate development of these four phases allow children to attain an internal working model that reflects consistency and trust. The consistency of the caregiver will encourage the maintenance of future social relationships by the child (Ainsworth et al., 1978).

Ainsworth et al. (1978) were the pioneers in testing the ideas developed by Bowlby through the Strange Situation study. This laboratory procedure defined attachment patterns in terms of the child's reaction to reunion with the caregiver after two brief separations. These patterns of attachment behaviors emerged as a result of this

study: insecure/avoidant, secure, and insecure/resistant. Insecure/avoidant children avoided the caregiver during the reunions. Avoidance responses and/or casual greetings were the typical responses from this group of children. Additionally, this subset of children showed no preference between the caregiver and stranger conducting the study. The securely attached children resisted separation attempts and demonstrated signaling behaviors at the time of reunions (reaching, crawling towards, crying). The caregiver is typically treated as a secure base for these children. The insecure/resistant children demonstrated noticeable resistance to the caregiver upon his or her return. Anger was apparent with many of these children (Ainsworth et al., 1978).

In abnormal development, the infant experiences feelings of vulnerability characterized by painful and neglectful experiences. As a result of poor attachment, the child learns that all experiences may be painful, lacks trust in others, and lacks empathy for others. A polarizing of emotions, which refers to the child perceiving things as completely good or bad rather than degrees of each, often ensues in these attachment-disordered youth (Shirk & Russell, 1996). This causes them to have difficulty classifying emotions, learning from environmental cues, and properly regulating emotions (Shirk & Russell, 1996). Furthermore, violent offenders tend to make a bond with aggression instead of attaching to a mother-figure (Meloy, 1995). In addition to this inappropriate bond with aggression, these types of youth may begin to impulsively seek gratification, which leads to harming others, violating social norms, and engaging in general aggressive acts (Meloy, 2001).

When instability occurs during infancy (abuse, neglect, frequent change in caregiver) many areas of development have the potential to suffer. Social interaction,

speech, overall intelligence, and self-help behaviors are identified as most likely to be affected (Richters et al., 1994). It is important to note that language development and cognitive skills can be improved with targeted intervention strategies, however behavioral problems and social capabilities usually remain underdeveloped. Mukaddes, Bilge, Alyanak, and Kora (2000) note that social and emotional restrictions, delays in language development, and behavioral problems can occur when this area of development is neglected and/or damaged. Evidence now suggests that the length of early deprivation directly relates to the severity of the attachment problems (Robinson, 2002).

Women who have been exposed to childhood trauma are at a high risk for establishing disorganized attachment relationships with their own children (Lyons-Ruth, 1996). In order to possess maternal empathy, a mother must be in touch with her own feelings and be able to communicate those to her child. Problems occur when that maternal relationship becomes damaged and another consistent caretaker does not step in to take over. Chronic incidences of rejection, detachment, or indifference within the first three years of life will plant the seeds for attachment problems (Bender, 1947).

As such, the continuity in a certain level of affectionate care by a limited number of people is required to properly develop a child's capacity for attachment. The development of a sense of self-confidence, trust in others, social and emotional communication, security, and a general capacity to form social bonds come about as a result of the development of attachment capabilities at a young age. The attachment relationship forms the foundation for many skills such that early attachment relationships have the potential to strongly impact future relationships (Ainsworth, 1974). Sadly,

insecurely attached children are vulnerable to emotional and behavioral problems because they begin to see themselves as unworthy of love and affection.

Much of the basis for the intense aggression exhibited by children who have not learned to develop attachment can be traced back to the first three years of life (Friedlander, 1949; Karr-Morse & Wiley, 1997). Friedlander (1949, p.80) notes that during this time, “a process of education takes place which is more far-reaching than any other educational effort later on.” Many times the education process that should take place during the first few years of life fails for reasons of neglect, abuse and/or inconsistency in care. Youngsters then begin to take on the attributes of an angry and aggressive child. As previously mentioned, problems can manifest in family relationships, academic functioning, socialization with peers, respect for authority, language skills, and general cognitive functioning.

Attachment capability is known as one of the risk factors for antisocial behavior. Children who are diagnosed with attachment problems are considered high risk for antisocial tendencies (Dishion, 1995).

Recent causal factors for attachment problems are identified by Brazelton and Greenspan (2000). They refer to institutional settings that can cause attachment problems. Orphanages in Romania are described and the fact that nurturing, appropriate social interactions, and intellectual experiences are not provided indicates that these children are destined to develop severe physical, intellectual, and social problems (Brazelton & Greenspan, 2000).

A new kind of institutional care has emerged as a causal factor in attachment problems, day care. Brazelton and Greenspan (2000) note that approximately 50% of

young children spend significant parts of their day in some form of day care setting. Keeping in mind how important the first three years of life are in attachment development (Friedlander, 1949; Karr-Morse & Wiley, 1997) the fact that many children spend 35 or more hours per week being cared for by a variety of people in day care settings is alarming (Brazelton & Greenspan, 2000). Many would stress that the high quality of some day care centers, the small ratio of children to caregivers, the sensitivity of care to the child's needs, and parental care at home will foster positive attachment. However, over 85% of day care centers in our nation are not considered high quality for preschool children and over 90% are not considered high quality for infants and toddlers (Brazelton & Greenspan, 2000). As such, in order to form healthy attachment capacity, children require one or two primary caregivers who are ever-present for their first three years of life (Brazelton & Greenspan, 2000).

Socialization

The socialization process begins during toddlerhood. The critical rules and values of society are taught during this phase of development (Sears, 1961). The hope is that the beliefs and values being taught are appropriate and that the children will begin to internalize them. This process of internalizing leads to a respect for the law and the attainment of peaceful behavior (Grusec & Goodnow, 1994). An adequate level of anxiety occurs in healthy children when the internalized rules and beliefs are briefly forgotten, or abandoned.

Anxiety

Anxiety, in a healthy individual, can be described as an effective state that is characterized by unpleasant feelings of fear. Anxiety helps humans avoid danger and

plan for the future (Schwartz, 2000). When experiencing anxiety, healthy people undergo increased blood pressure, decreased gastrointestinal activity, increased production of saliva, increased respiration, decreased clotting capability, increased heart rate, increased erection (hair on the backs of arms and neck stand up), increased production of adrenaline, and an increase in perspiration. As previously discussed, appropriate anxiety development aids in the formation of an internal value structure, as well as a sense of right and wrong (Cloninger, 1987; Meloy, 2001). Anxiety assists in the development of an internal monitoring system, which controls behavior (Meloy, 2001). Children who have not developed and/or regulated appropriate anxiety tend to act in an aggressive manner (Meloy, 2001). Theory postulates that low levels of trait anxiety often result in aggressive behavior patterns (Cleckley, 1982; Cloninger, 1987; Gray, 1982; Lykken, 1982). Guilt does not occur when anxiety is inadequately developed. Lack of guilt feelings is known as a strong predictor of physical aggression (Loeber et al., 2002).

It is important to note that a comorbid condition for aggression is anxiety (Loeber et al., 1994; Angold et al., 1999). Two kinds of anxiety problems exist, an overabundance of anxiety and not enough anxiety. The proposed study seeks to clarify the role of inadequate anxiety in aggressive children.

According to Meloy (2001), minimal or absent levels of anxiety coincide with antisocial behavior and psychopathy. Furthermore, a denial of guilt and lack of remorse develop when inadequate levels of anxiety are present (Richters & Volkmar, 1994). Recent research indicates that appropriate levels of anxiety can mitigate aggressive tendencies and provide children with a source of internal monitoring. Furthermore, delinquents with higher levels of anxiety demonstrate lower rates of recidivism (Quay &

Love, 1977). Thus, appropriate levels of anxiety appear to minimize and/or protect against conduct problems.

The connection between inadequate anxiety in children and aggression is shown in a study by Meloy and Gacono (1994). They found that a sample of youth with Conduct Disorder had low self-esteem, emotional detachment, and minimal levels of anxiety, when compared to normal children. An additional study concluded that youth with Conduct Disorder who exhibited significant symptoms of too much anxiety engaged in less serious behavior problems than youth without (Walker, 1991). Thus, inadequate anxiety correlated with more pronounced incidence of aggression. Similarly, high anxiety and low aggressive patterns were illustrated by Lynam (1995). He found that children with conduct problems and high levels of anxiety were considerably less deviant than children with just conduct problems.

As previously stated, anxiety development aids in the formation of values and consequently a sense of right and wrong (Brazelton & Greenspan, 2000; Meloy, 2001). Additionally, we know that youth who do not possess behavior-regulating anxiety and fear have great difficulty developing an internal monitoring system to control their actions, specifically aggressive actions (Meloy, 2001).

One explanation for inadequate levels of anxiety in children is proposed by Warren, et al. (1997). They postulate that a child who becomes accustomed to an unavailable caregiver deactivates his or her attachment feelings, along with the direct expression of anxiety, as a defense mechanism. Unfortunately, they are then unable to reactivate these abilities and their chance for any kind of present or future interpersonal connectedness suffers.

Psychopaths, defined as severely aggressive, are known to suffer from inadequate anxiety (Meloy, 2001). They are often studied in order to learn more about causal factors and characteristic traits of inadequate anxiety. A recent study by Patrick, Cuthbert, & Lang (1994) compared 54 psychopathic prisoners to those who were not considered psychopathic. Their skin, cardiac, and facial responses were measured when they were presented with fearful sentences. It is important to note that involuntary changes in skin and heart rates typically occur in humans when presented with fearful or anxiety inducing situations. In essence, physiological arousal was being measured in this study. To review, physiological arousal is characterized as a physical response or physical attention. When functioning properly, physiological arousal, usually in the form of anxiety, allows human beings to respond to punishment or aversive consequences (Meloy, 2001). Findings demonstrated a lower rate of involuntary changes, or physiological arousal in the psychopaths. They verbally communicated feelings of fear, yet their physical data did not indicate that they were feeling fear (Patrick, 1994; Patrick, Cuthbert & Lang, 1994). Raine (1997) further demonstrated this phenomenon in children and discovered that low resting heart rates at age 3 could predict aggression at age 11.

Cognition

Cognitive distortions are often prevalent in aggressive children (Dodge et al., 1990). An inappropriate perception of hostility exists with aggressive children. Their perception of the environment is skewed; they often perceive hostility where most would not (Dodge et al., 1990). This type of hypervigilance makes it difficult to cultivate peer relationships and fit into society. Aggressive children expect that others will respond to them in a malevolent manner. As cognition develops, normal children should begin to be

able to anticipate their own emotional reactions to events; aggressive children apply this skill, yet do not interpret the social situation accurately. Problem-solving skills are quite difficult for children suffering from aggression. Cognitive distortions are often caused by a particular function of cognition, namely attention.

Attention

As previously stated, attentional processing is a function of cognition and is related to aggression in children. Attention is characterized by sustained mental concentration, observation, and often, physical erectness or readiness. Research shows that attention problems play an important role in the problems of aggressive youth. The most well known attention diagnosis, Attention Deficit Hyperactivity Disorder (ADHD) is known to place children at higher risk for criminal activity (Farrington, 1990; Moffitt, 1990). The Diagnostic and Statistical Manual of Mental Disorders (2000) describes three categories of ADHD: inattention, impulsivity, and hyperactivity. Englander (2003) adds that aggression should be matched with impulsivity and distractibility as the three primary features of ADHD. Many researchers have established similar links between attention problems and aggression. These three features have been linked to adolescent and adult crime and violence (Taylor et al., 1996). Lynam (1996) suggests that children who demonstrate behaviors of hyperactivity, impulsivity, and inattention are at significant risk for a more profound form of Conduct Disorder and consequently chronic patterns of offending.

It is thought that children with attention problems begin with difficulties incorporating feedback from their environment and soon begin to exhibit signs of non-compliant behavior. Perhaps most importantly, they have difficulty considering the

future impact of their actions (Barkely, 1990). Research has shown that these behaviors are likely to worsen over time, often replicating forms of Conduct Disorder such as lying, bullying, fighting, and stealing. Additionally, difficulties with close intimate relationships often appear when children approach and enter into adulthood (Ainsworth, 1971, 1974, 1978; Bowlby, 1946, 1958; Brazelton & Greenspan, 2000; Dishion, 1995; Englander, 2003; Richters et al., 1994).

Additionally, attention problems are often named as causal factors in the development of antisocial behavior. It is known that children who are diagnosed with ADHD are considered high risk for antisocial tendencies (Dishion, 1995). In fact, the comorbidity between ADHD and antisocial behavior disorders is considered high (Dishion, 1995). In other words, attention problems and antisocial tendencies often co-occur. Stewart and colleagues (1979) found that approximately 60% of conduct-disordered children seen in a clinic setting had a dual diagnosis of hyperactivity. Additionally, a New Zealand based study found that 35% of conduct disordered and oppositional defiant youth also had a diagnosis of ADHD (Campbell et al., 1986). Based upon much of this research, the close connection between attention and aggression can be made (Campbell et al., 1986; Dishion, 1995; Englander, 2003; Stewart et al., 1979), and thus necessitates the inclusion of attention as a construct in the current study.

Applicable Theoretical Framework

Research shows that the most severe violent offenders account for the largest proportion of aggressive acts (Meloy, 2001), that is only a few severe offenders commit the most aggression and violence. Approximately 272,111 offenders discharged from prisons in 1994 accumulated nearly 4,877,000 arrest charges over their recorded careers

(U.S. Department of Justice, 2002). Most importantly this severe group began their aggression in childhood (Olweus, 1979; Loeber, 1983, 1990; Moffitt, 1993).

Meloy (2001) postulates that children who have poor attachment, inadequate anxiety, and attention problems are those most likely to develop into this small group of worst offenders likely to become severely aggressive. These characteristics can manifest behaviorally as a fearless and sensations-seeking individual who is uninhibited by anxiety or worry about consequences of behavior, the constraints of affectionate bonds, or compassion for others.

In summary, this author has chosen the model proposed by Meloy as a theoretical framework because it is applicable for the most pathological or severe aggressive adults. His model helps us understand the worst offenders and present an integrated approach to thinking about aggression. Additionally, Meloy's (2001) model incorporates many theoretical positions consistent with the Diathesis Stress Model.

CHAPTER 3

METHODOLOGY

Participants

Participants are children ages eleven years zero months to eighteen years eleven months who are receiving treatment for aggressive behavior. Aggression, for the purposes of this study, has been defined as documented violent behavior directed towards oneself, others, property, and/or a positive criminal history. Children participating have been identified as aggressive by home school districts and/or agencies independently of this author. Participants have been chosen from a variety of settings in order to maximize the generalizability of findings to this population of children requiring interventions in specialized restrictive settings.

As a basic criterion for admission to most treatment and juvenile justice facilities, clients have histories of poor response to treatment in less restrictive environments (e.g. school-based interventions) and have not been able to function adequately in community settings without treatment for aggressive behavior. Most children and adolescents placed in these alternative settings are admitted with a mental health diagnosis, a special education diagnosis, and/or adjudicated for a crime.

Sites

Children included in this study have been removed from their home and/or school setting and placed in treatment facilities of various restriction. Subjects from approved private schools, residential treatment facilities, and jail settings have been included in the current study. From least to most restrictive the facilities are described as follows.

Approved private school sites include students who have been removed from their regular school settings due to severe behavior problems and sent to specialized schools during the day time hours. These students return home or to community care at night. These settings are characterized as approved private schools and in most cases the child's home school district acts as the referral agent.

Residential treatment facilities are characterized as milieu treatment with twenty-four hour custodial and therapeutic care. These settings focus upon educational, social, emotional, behavioral, and medical care for each child. Home school districts or parents are the primary referral agents.

Participants who are in locked facilities and jail settings are sentenced by a court of law. Therapy in these settings is typically considered adjunctive rather than primary.

Staff members at many of the sites have developed a treatment plan for each child. Routine treatment plans include many of the following services: individual therapy, group therapy, family therapy, recreational therapy, medical/nursing support, substance abuse education, psychiatric evaluation, and biopsychosocial assessment. Children receiving these types of services often have support from a case worker, child psychiatrist, child development specialist, certified special education teacher, nurse, recreational therapist, and/or parents. Students who have treatment plans addressing aggressive behaviors in these various facilities were given the opportunity to be included in this study.

Procedure

Participants in this study were identified and contacted by each home agency. Parent, teacher, and student consents were obtained for each participant. Family

therapists and other front line staff personnel at each site mailed and/or personally delivered parent consent forms. Confidentiality was explained to each parent and student participant in a language understandable to their age and education level. After consents and assents were obtained the test battery was administered to each subject by trained graduate level students, or a certified school psychologist. The assessment period was typically 2-2 ½ hours. Some subjects required two sessions to complete the assessments. In addition to the test battery, a developmental history clinical, educational, and collateral information was collected for each participant. Also, questions about health history, family background, educational attainment, and areas of strength and weakness were asked of each participant.

Assessment Characteristics

Attachment, anxiety, and attention have known measurement and assessment procedures. The current study utilized reliable and well-validated standardized assessments for measuring each construct. Both narrow band (assessment of one construct) and broadband (assessment of multiple constructs in one instrument) measures were utilized.

Reliability

A test provides a reliable score if it produces relatively consistent results when administered across settings and test administrators. The closer a reliability coefficient is to 1.0 the stronger the reliability. A test with a reliability of .70 or higher is considered acceptable for research purposes (Kuder & Richardson, 1937). A reliability score of .70 means that the test provides 70% true score variance and 30% error variance. It is important to note that because repeated measures never exactly equal one another,

unreliability is always present to some degree. The more consistent the results given by repeated measurements, the higher the reliability of the measurement. Similarly, the less consistent the results, the lower the reliability.

There are several measures of reliability including test-retest, inter-rater, and internal consistency. Test-retest is the administration of the same test to the same subjects at two different time periods. Results from the two administrations are compared mathematically. If one obtains the same results on the two administrations, then the test-retest reliability coefficient approaches 1.0. The closer a reliability coefficient is to 1.0 the stronger the reliability. Inter-rater reliability refers to assessing the effect of individual rater differences in the completion of assessments. It should be noted that this study does not involve comparing raters. Measures of internal consistency included in this study are split-half and Cronbach's alpha. The split-half method refers to the correlation between half of a scale's items and the other half of its items. The most popular method of calculating internal consistency is by using Cronbach's alpha. Cronbach's alpha is a generalization of a coefficient introduced by Kuder and Richardson (1937) to estimate the reliability of scales composed of dichotomously scored items. Dichotomous items are scored one or zero depending on whether the respondent does or does not possess the particular characteristic under investigation.

Validity

A test is said to be valid if test items actually measure the construct tested, and scores accurately predict inferences drawn from test scores. Validity can further be defined as the crucial relationship between a criterion and a predictor. It is important to note that validity is a matter of degree, not an all or nothing property. Assessment

descriptions will contain indicators of validity that include: content, criterion, and construct. Content validity refers to how well an instrument's content reflects the breadth and depth of the universe of content. Criterion validity refers to the degree of association between a particular measure and an external criterion for characteristics that the scale is intended to assess. There are two kinds of criterion-related validity, concurrent and predictive. Concurrent validity is associated with a criterion that exists in the present time and is assessed by correlating a measure and the criterion at the same point in time. Predictive validity concerns a future criterion and it is correlated with the relevant measure. Construct validity refers to how well an instrument is associated with other instruments and to theory. It could also be said that construct validity is the extent to which a measure reflects the concept it is intended to measure. Validity is always restrained by reliability thus the two are usually considered together.

Independent Variables

There are three major independent variables in the current study. The constructs and how they are being measured are presented below. The measurement of each including reliability and validity are presented.

Attachment

A person's current attachment was measured with the Rorschach Inkblot test. The Rorschach Psychodiagnostic test (Rorschach, 1921) is a projective personality measure that uses ten standardized stimulus cards to elicit open-ended responses. The nature of that test permits a broad range of responses (Gacono & Meloy, 1991). Exner's Comprehensive System is used for standardized scoring procedures and quantitative comparisons. Findings of the Rorschach, when utilizing this comprehensive scoring

system, describe psychological processes that generate symptoms and/or behavior (Exner, 2003). Further, the Rorschach helps to explain the complex interaction between psychological, biological, environmental, and behavioral domains (Viglione & Perry, 1991). Scores are aggregated into cluster domains that describe affect, capacity for control and stress tolerance, information processing, cognitive mediation, ideation, interpersonal perception and behavior, self-perception, and situation-related stress. Meloy (2001) notes that the Rorschach is one of a few diagnostic tools that do not readily convey what it is measuring to the subject. This aspect of the assessment can be particularly useful when dealing with this population of aggressive youth who may wish to minimize or distort difficulties (Gacono et al., 2002). Because participants cannot predict what meaning is coming from their answers, an unbiased picture of thoughts, feelings, and relationships can be attained and measured. Bihlar and Carlsson (2000) note that the Rorschach may provide information about certain attributes of a patient's psychological functioning which the patient is unable to communicate on his or her own.

The Rorschach and Exner's Comprehensive System is an empirically-based normative test with a sample of 1,390 non-patient children and adolescents stratified for age, gender, race, socioeconomic status, and geographic representation. Exner's Comprehensive System is known to have excellent reliability for its variables (Viglione et al., 2001). Good inter-rater reliability, as well as test retest reliability are noted. Reliabilities of .75 to .80 are reported (Meyer, 1997).

To demonstrate validity, the Rorschach was compared with the Minnesota Multiphasic Personality Inventory (MMPI) due to the general acceptability and psychometric properties of the MMPI. Validity data was found to be comparable to that

of the MMPI. The Rorschach indices were found to have an unweighted mean effect size of .29 compared to the MMPI .30. Both Rorschach and MMPI scores are considered respectable for personality assessments. Both can be used to describe personality variables at about the same sensitivity level. Overall reliability and validity are considered acceptable for the Rorschach. The Rorschach has been chosen to assess attachment capacity in aggressive youth due to its research support for use in this population (Gacono & Meloy, 1991).

The Rorschach variable that has been chosen to measure attachment is reflection responses (Fr+rF). Part of the interpersonal perception and behavior cluster, reflections are related to interpersonal relatedness, emotional attachment, narcissism, and positive identification with others (Gacono & Meloy, 1994). The reflections variable (Fr+rF) specifically pertains to narcissistic behavior; an unusual preoccupation with the self. Selfish and self-centered attitudes, as well as an externalization of blame are illustrated by high numbers of reflection responses. It should be noted that most healthy children over the age of five do not produce reflection responses on the Rorschach. They have begun to move out of the narcissistic infant/toddler years (Gacono & Meloy, 1994). Higher frequencies of reflection responses indicate an egocentric viewpoint and consequently difficulty relating to and even acknowledging others; thus attachment difficulties.

Inadequate Anxiety

Inadequate behavior regulating anxiety was measured by a composite of scores taken from items on the Youth Self-Report (Achenbach & Rescorla, 2001). The YSR was chosen for measurement due to its good reliability and validity (O'Brien & Bahadur,

1998). Further, the YSR and related instruments (CBCL and TRF) are routinely used for capturing specific constructs. For example, Achenbach, Dumenci, and Rescorla (2002) made their own construct while studying an overabundance of anxiety in youth by utilizing their test (Achenbach et al., 2002). The composite was developed by identifying traits consistent with the callous/unemotional factor of Hare's Psychopathy Checklist-Revised (PCL-R; Hare, 1991). Psychopathy, measured by Hare, is comprised of two factors. Factor one measures callous/unemotional traits, which are directly linked to inadequate anxiety (Frick et al., 1999). Factor two measures antisocial behavior. The YSR composite questions are consistent with the Factor one inadequate anxiety construct of the PCL-R.

The Achenbach's Youth Self-Report was administered to all subjects. The YSR is a paper and pencil force choice Likert scale test. It consists of 112 problem behaviors in children. Many of the YSR's items have been shown to have high convergence with diagnostic criteria from the Diagnostic and Statistic Manual of Mental Disorders (*DSM-IV*; American Psychiatric Association). Additionally, the YSR is known to be the most researched measure of its kind (O'Brien & Bahadur, 1998). The YSR is comprised of empirically-based subtests that include: anxious/ depressed, withdrawn/ depressed, somatic complaints, social problems, thought problems, attention problems (inattention and hyperactivity-impulsivity), rule-breaking behavior, aggressive behavior (internalizing, externalizing, and total problems). Internal consistency results for the empirically-based problem scales reported alphas that ranged from .71 to .95. Test-retest reliability results reported rs that were between .87 and .89 (Achenbach & Rescorla, 2001).

Validity for the YSR is considered to be strong. An examination of construct validity indicates respectable correlations between the Achenbach scales (including the Child Behavior Checklist-CBCL, Teacher's Report Form- TRF and Youth Self-Report-YSR), BASC, and Conners. The Achenbach scales and BASC comparison yielded correlations between .38 and .89. The Achenbach scales and Conners comparison yielded reliability coefficients between .71 and .85. This information tells us that the corresponding scales on these instruments are likely to produce similar results for most children. When considering content validity it is important to note that scores were significantly higher for referred than for non-referred children ($p < .01$) on all components of the Achenbach scales (Achenbach & Rescorla, 2001). As a result of this information it is permissible to deduce that this assessment does a good job of measuring what it is intended to measure, therefore indicating good construct validity. Both reliability and validity are considered acceptable for this measure.

Attention

Attention was assessed by the Connor's Continuous Performance Test-second edition (CPT-II; Conners, 2002) and the Controlled Oral Word Association Test (COWA; Spreen & Strauss, 1991).

The CPT-II is a computer-generated test that asks children to hit a button when a predetermined stimulus is presented. Research has supported the use of the CPT-II for research and clinical purposes. One-hundred four cases of ADD and ADHD, 134 cases of ADHD comorbid with another diagnosis, and 246 individuals with other psychiatric disorders were tested in the original standardization sample. Split-half reliability was measured by utilizing 520 cases. Comparisons were made between sub-blocks such as:

hit reaction time, commissions, omissions, standard error, variability, d' prime, and beta. Scores ranged from .66 to .95 indicating good reliability. Test-Retest reliability information was obtained by examining 23 subjects with a three-month interval gap. Test-retest correlation coefficients are considered highly satisfactory for most of the measures. Scores ranged from .05 to .92. It should be noted that 8 out of the 14 measures were found to be above .60. The omissions subtest, which is the chosen measure for this study, is reported as .84 (Conners, 2002).

Validity results showed significant differences between the ADHD groups and the groups with other diagnoses (Conners, 2002). In other words, the CPT-II results can be used to differentiate between clinical and non-clinical groups. Both reliability and validity are considered acceptable for this measure.

The omissions score of the Connor's Continuous Performance Test- second edition (CPT-II), which measures sustained visual attention, was used as one measure of attention difficulties. Omissions are the number of targets to which a child does not respond. High omission error rates are a good indication that a child is having difficulty orientating and responding to the stimuli presented in the test.

The Controlled Oral Word Association (COWA; Spreen & Strauss, 1991) is a test that requires students to give verbal answers in a one-minute time period. The COWA examines sustained verbal attention. Test-retest reliability after 19-42 days was reported as .88. Test-retest reliability after 8 months was reported as .65, and after one-year retest reliability was reported as .70 (Lezak, 1995).

Concurrent validity was established in several studies indicating better validity for letters than for specific categories (Lezak, 1995). Correlation of letter association fluency

with age was .19 and with education was reported as .32. To further establish validity, the COWA was compared with the Wechsler Adult Intelligence Scale Verbal and Performance intelligence quotients. Correlation with the Verbal IQ was reported as .14 and Performance IQ was .29. Both reliability and validity are considered acceptable for this measure (Lezak, 1995).

Dependent Variable

Overall Functioning

The Global Assessment of Functioning Scale (GAF; American Psychiatric Association, 2000) was chosen to determine the overall functioning of subjects and is the dependent variable in this study. Global functioning describes an individual's psychological, social, and occupational functioning (American Psychiatric Association, 2000). The scale ranges from 1-100. Two components are considered when computing scores. First, the clinician must consider symptom severity, and second the individual's functioning. The clinician chooses a single value that best reflects the subject's overall level of functioning for each symptom area. The higher GAF score achieved, the higher the level of overall functioning. Transient symptoms that manifest as a slight impairment in global functioning are noted between 71 and 80. Symptoms that are mildly impairing are scored from 70 to 61. Symptoms that are moderately impairing are scored between 60 and 51. Serious impairment that is considered persistently debilitating is scored at 50 or below.

Design

This study is a correlational study of a clinical sample using multiple correlation statistics to explain the influence of attachment, anxiety, and attention on overall functioning for aggressive children.

Data Analysis

Power analysis was conducted to determine the estimated number of participants needed to conduct the statistical analysis. Power analysis and sample size estimation are important elements of research design, because without these calculations, sample size may be too high or too low. A sample size that is too small may lack the power to detect the contribution of variance from the independent variables. A sample size that is too large wastes resources and may take away from external validity (Cohen, 1988). As reported in the literature, a medium effect size was expected (Cohen, 1988). The power analysis indicated, with a medium effect size, that a sample of approximately 70 was appropriate to find differences at the .05 level of significance. Thus, 67 subjects were gathered for assessment. However, 40 were used in the final analysis due to various instances of random missing data.

This is an explanatory model where the association between attachment, anxiety, attention, and overall functioning was studied for aggressive children. A hierarchical regression was the primary analytic technique. Prior to the final analysis, reliability was established for the composite scale and frequency descriptive statistics (means, standard deviations, etc.) were computed. A check for normality, multicollinearity, and multivariate outliers, as well as other assumptions were conducted prior to data analysis. Finally, the hierarchical regression analysis examined the contribution of variance for

each independent variable on the dependent variable. Control variables (age, grade, gender, and facility) were examined to determine if any variance was explained by those factors.

There are three major analytic strategies in a regression analysis: standard multiple regression, statistical regression and hierarchical regression. In standard multiple regression, all independent variables enter into the analysis simultaneously. Each independent variable is assessed as if it had entered the regression after all other independent variables had entered. Each independent variable is evaluated in terms of what it adds to prediction of the dependent variable that is different from the predictability afforded by all the other independent variables (Tabachnick & Fidell, 1989). Since the study was to examine the effects of all three independent variables simultaneously, a standard multiple regression analysis was not selected.

Statistical multiple regression is a rather controversial procedure, in which the order of entry of variables is based solely on statistical criteria. The meaning or interpretation of the variables is not considered in selection. Decisions about which variables are included and which omitted from the equation are based solely on statistics computed from the particular sample drawn; minor differences in these statistics can have profound effect on the apparent importance of an independent variable (Tabachnick & Fidell, 1989).

There are three variations of statistical regression that include forward selection, backward deletion, and stepwise regression. In forward selection, the equation starts out empty and independent variables are added one at a time provided they meet the statistical criteria for entry. Once in the equation, an independent variable stays in. In

backward deletion, the equation starts out with all independent variables entered and they are deleted one at a time if they do not contribute significantly to regression. Stepwise regression is a compromise between the two other procedures in which the equation starts out empty and independent variables are added one at a time if they meet statistical criteria, but they may also be deleted at any step where they no longer contribute significantly to regression. Of the three procedures, stepwise is considered the most accurate (Tabachnick & Fidell, 1989). Since the hypothesis was to examine the effects of all three independent variables, statistical multiple regression was not selected.

For this study, a hierarchical regression analysis (sometimes referred to as a sequential multiple regression) was conducted that assessed the relationship between overall functioning and attachment, anxiety, and attention. A hierarchical regression analysis involves entering the independent variables into the equation in an order specified by the researcher. Each independent variable is assessed in terms of what it adds to the equation at its own point of entry. The researcher typically assigns order of entry to variables according to logical or theoretical considerations. Using this strategy, independent variables can be entered in one at a time or in blocks (Tabachnick & Fidell, 1989). This type of regression analysis was chosen because it allows simultaneous consideration of the independent variables and is an explanatory model.

Thus, the current hypothesis is: Subjects being treated for aggression who demonstrate poor attachment capabilities, inadequate regulatory anxiety, and difficulties in attentional processes will evidence poor global functioning.

CHAPTER 4

RESULTS

The current study examines the influence of attachment, anxiety, and attention on the overall functioning of children being treated for aggression. Final analysis uses a hierarchical regression model. Initial power analysis calculated with a medium effect size indicated that a sample of approximately 70 was appropriate to find differences at the .05 level of significance. Thus, 67 subjects were gathered for assessment. However, due to various instances of random missing data, 40 were used in the final analyses. Summary demographic data for the sample are presented in Tables 1 through 4.

Demographic Data

Table 1

Frequency Distribution- age

| Age | N | Percent of Sample |
|-------|----|-------------------|
| 11 | 1 | 2.50 |
| 12 | 4 | 10.00 |
| 13 | 3 | 7.50 |
| 14 | 4 | 10.00 |
| 15 | 5 | 12.50 |
| 16 | 2 | 5.00 |
| 17 | 14 | 35.00 |
| 18 | 7 | 17.50 |
| Total | 40 | 100.00 |

Table 2

Frequency Distribution- gender

| Sex | N | Percent of Sample |
|--------|----|-------------------|
| Male | 31 | 77.50 |
| Female | 9 | 22.50 |
| Total | 40 | 100.00 |

Table 3

Frequency Distribution- grade

| Grade | N | Percent of Sample |
|-------|----|-------------------|
| 5 | 1 | 2.50 |
| 6 | 3 | 7.50 |
| 7 | 3 | 7.50 |
| 8 | 6 | 15.00 |
| 9 | 3 | 7.50 |
| 10 | 5 | 12.50 |
| 11 | 7 | 17.50 |
| 12 | 12 | 30.00 |
| Total | 40 | 100.00 |

Table 4

Frequency Distribution- site

| Site Descriptor | N | Percent of Sample |
|------------------------------|----|-------------------|
| Day Treatment | 10 | 25.00 |
| Court-order Juvenile Justice | 22 | 55.00 |
| Residential Treatment | 8 | 20.00 |
| Total | 40 | 100.00 |

The current study includes 40 subjects; 78% males and 22% females (Table 2), ranging in age from 11 to 18 years old (Table 1). Subjects were in grades 5 to 12 (Table 3). The average subject age was 15 years 6 months. Data was collected from five facilities. One-day treatment setting, two court ordered juvenile justice facilities, and two residential settings comprise the site categories (Table 4). Age and gender are typical of those represented in treatment and juvenile justice facilities (Cervi, 1991; Federal Bureau of Investigation, 1989; Olweus, 1979). Thus, results may be generalized to these treatment facility populations.

Reliability Analysis

All tests administered in this battery were designed for the population examined. Thus, reliabilities reported in their respective manuals are presented in chapter 3. Because the inadequate anxiety construct was compiled of specific items from the Youth Self Report (YSR; Achenbach & Rescorla, 2001), a reliability coefficient was calculated. Results are presented in Table 5.

Table 5

Reliability Coefficient of Inadequate Anxiety from YSR

| Cronbach's Alpha | Chronbach's Alpha based on Standardized Terms | N |
|------------------|---|---|
| 0.64 | 0.64 | 9 |

A reliability coefficient was examined to determine the amount of true score and error variance. A Cronbach's Alpha of .64 (Table 5) indicates 64% true score variance, thus 36% of error variance for this measure. This is an acceptable reliability for research purposes (Kuder & Richardson, 1937). Thus, the YSR composite was used to measure inadequate anxiety.

Frequency Distribution

A frequency distribution is an organized tabulation of the number of individuals in each score on the scale of measurement. A frequency distribution allows the researcher to have a visual representation of the entire set of scores. Additionally, it presents a picture of how the individual scores are distributed on the measurement scale.

Frequencies are reported for the independent variables: Rorschach reflection raw score responses (attachment), YSR inadequate anxiety raw score composite (inadequate anxiety), CPT-II t-score (sustained visual attention), COWA z-score (sustained verbal

attention), and the dependent variable. Frequency distribution results are presented in Tables 6-9.

Attachment

The Rorschach reflection response raw score was chosen to measure current levels of attachment through the interpersonal perception score. This score is related to interpersonal relatedness, emotional attachment, narcissism, and identification with others (Gacono & Meloy, 1994). Non clinical samples typically score zero reflection responses. However, because the response format is open-ended, there is no limit to the possible number of reflection responses. Even one reflection score indicates problems with interpersonal relatedness and attachment (Gacono & Meloy, 1994).

Table 6

Frequency Distribution- Rorschach Reflection Raw Score Responses

| Raw Score | N | Percent of Sample |
|-----------|----|-------------------|
| 0 | 34 | 85.00 |
| 1 | 3 | 7.50 |
| 2 | 3 | 7.50 |
| Total | 40 | 100.00 |

Results from the Rorschach reflection responses in this study indicate a range of scores from 0 to 2 (Table 6). Poor attachment was evidenced by 15% of this sample.

Inadequate Anxiety

Nine items from the YSR were chosen to measure the inadequate anxiety composite. The range of possible sum of raw score is from 0 to 18.

Table 7

Frequency Distribution- YSR Inadequate Anxiety Composite Raw Score Responses

| Sum of Raw Scores | N | Percent of Sample |
|-------------------|----|-------------------|
| 0 | 1 | 2.50 |
| 1 | 3 | 7.50 |
| 3 | 2 | 5.00 |
| 4 | 6 | 15.00 |
| 5 | 7 | 17.50 |
| 6 | 3 | 7.50 |
| 7 | 5 | 12.50 |
| 8 | 5 | 12.50 |
| 9 | 2 | 5.00 |
| 11 | 4 | 10.00 |
| 14 | 2 | 5.00 |
| Total | 40 | 100.00 |

Results indicate a range of raw scores from participants of this study of 0 to 14. The mean inadequate anxiety raw score for subjects participating in this study falls at 6.28.

Attention

Attention is a complex task where tests indirectly measure attentional processes. Visual and verbal attention processes were measured. The number of omissions overall t-score from the CPT-II was used to measure sustained visual attention. The COWA z-score was used to measure sustained verbal attention.

Table 8

Frequency Distribution- CPT-II t-score Responses

| t-score | N | Percent of Sample |
|---------|----|-------------------|
| 40.83 | 1 | 2.50 |
| 40.86 | 1 | 2.50 |
| 41.43 | 1 | 2.50 |
| 41.55 | 1 | 2.50 |
| 42.25 | 1 | 2.50 |
| 43.25 | 1 | 2.50 |
| 43.80 | 1 | 2.50 |
| 43.87 | 3 | 7.50 |
| 44.26 | 2 | 5.00 |
| 44.87 | 1 | 2.50 |
| 45.26 | 1 | 2.50 |
| 45.72 | 1 | 2.50 |
| 46.68 | 1 | 2.50 |
| 46.77 | 1 | 2.50 |
| 46.94 | 1 | 2.50 |
| 47.65 | 1 | 2.50 |
| 48.26 | 1 | 2.50 |
| 50.26 | 1 | 2.50 |
| 50.63 | 1 | 2.50 |
| 51.30 | 1 | 2.50 |
| 53.70 | 1 | 2.50 |
| 56.12 | 1 | 2.50 |
| 56.36 | 2 | 5.00 |
| 61.36 | 1 | 2.50 |
| 62.99 | 1 | 2.50 |
| 65.38 | 2 | 5.00 |
| 67.80 | 1 | 2.50 |
| 70.86 | 1 | 2.50 |
| 72.40 | 1 | 2.50 |
| 75.44 | 1 | 2.50 |
| 79.46 | 1 | 2.50 |
| 85.10 | 1 | 2.50 |
| 85.49 | 1 | 2.50 |
| 90.52 | 1 | 2.50 |
| 107.13 | 1 | 2.50 |
| Total | 40 | 100.00 |

As seen in Table 8, results from the CPT-II overall t-score indicate a range of scores from 40.83 to 107.13. T-scores are a standardized scale where the mean is 50 and the standard deviation is +/- 10. The mean CPT-II score for subjects participating in this study falls at 56.26. A t-score on this assessment above 65 indicates a markedly atypical profile. Scores from 60-64 indicate a moderately atypical performance. Scores from 55-59 are considered mildly atypical and scores from 45-54 fall within the average range. Any t-score on the CPT-II that falls below 45 indicates good to very good performance (Conners, 2002).

Table 9

Frequency Distribution-COWA z-score Responses

| z-score | N | Percent of Sample |
|---------|----|-------------------|
| -2.67 | 2 | 5.00 |
| -2.48 | 1 | 2.50 |
| -2.40 | 1 | 2.50 |
| -2.38 | 1 | 2.50 |
| -2.20 | 1 | 2.50 |
| -2.12 | 1 | 2.50 |
| -2.01 | 1 | 2.50 |
| -1.92 | 2 | 5.00 |
| -1.63 | 1 | 2.50 |
| -1.54 | 1 | 2.50 |
| -1.45 | 1 | 2.50 |
| -1.35 | 1 | 2.50 |
| -1.26 | 1 | 2.50 |
| -1.23 | 1 | 2.50 |
| -1.17 | 1 | 2.50 |
| -1.07 | 1 | 2.50 |
| -1.04 | 1 | 2.50 |
| -0.99 | 1 | 2.50 |
| -0.89 | 2 | 5.00 |
| -0.79 | 1 | 2.50 |
| -0.62 | 1 | 2.50 |
| -0.61 | 1 | 2.50 |
| -0.42 | 2 | 5.00 |
| -0.36 | 1 | 2.50 |
| -0.09 | 1 | 2.50 |
| -0.05 | 3 | 7.50 |
| 0.05 | 1 | 2.50 |
| 0.08 | 1 | 2.50 |
| 0.23 | 1 | 2.50 |
| 0.62 | 1 | 2.50 |
| 0.89 | 1 | 2.50 |
| 0.92 | 1 | 2.50 |
| 0.98 | 1 | 2.50 |
| 1.04 | 1 | 2.50 |
| Total | 40 | 100.00 |

Results from the COWA z-scores indicate a range from -2.67 to 1.04 . Z-scores are a standardized scale where the mean is 0 and the standard deviation is ± 1 . The

mean COWA z-core for subjects participating in this study falls at -.90. A z-score of -.90 falls almost one standard deviation below the mean of this assessment.

Overall Functioning

As previously noted, the Global Assessment of Functioning (GAF) of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000) is routinely administered by clinicians to describe overall functioning. This is the dependent variable in the current study. Possible scores on this scale range from 0 to 100.

Table 10

Frequency Distribution- GAF Raw Score Responses

| Raw Score | N | Percent of Sample |
|-----------|----|-------------------|
| 35 | 1 | 2.5 |
| 38 | 1 | 2.5 |
| 45 | 6 | 15 |
| 47 | 1 | 2.5 |
| 50 | 8 | 20 |
| 51 | 1 | 2.5 |
| 52 | 1 | 2.5 |
| 54 | 1 | 2.5 |
| 55 | 4 | 10 |
| 60 | 4 | 10 |
| 63 | 1 | 2.5 |
| 65 | 4 | 10 |
| 67 | 1 | 2.5 |
| 68 | 1 | 2.5 |
| 70 | 3 | 7.5 |
| 75 | 1 | 2.5 |
| 80 | 1 | 2.5 |
| Total | 40 | 100 |

As indicated in Table 10, the range of Global Assessment of Functioning (GAF) raw scores for this study was between 35 and 80. The mean GAF raw score for subjects

participating in this study falls at 55.75. As reported in chapter 3, the higher GAF score achieved, the higher the level of overall functioning. Transient symptoms that manifest as a slight impairment in global functioning are noted between 71 and 80. Symptoms that are mildly impairing are scored from 70 to 61. Symptoms that are moderately impairing are scored between 60 and 51. Serious impairment that is considered persistently debilitating is scored at 50 or below.

Table 11

Summary Distribution of Mean, Standard Deviation, and Range Statistic for Independent and Dependent Variables

| Variable | <u>M</u> | <u>SD</u> | Minimum Statistic | Maximum Statistic |
|--|----------|-----------|----------------------|----------------------|
| CPT-II Number of Omissions Overall <u>t</u> -score | 56.26 | 1.07 | 40.83 | 107.13 |
| COWA <u>z</u> -score | -0.90 | 1.01 | -2.67 | 1.04 |
| Rorschach Reflection Responses | 0.23 | 0.58 | 0.00 | 2.00 |
| Inadequate Anxiety Composite | 6.28 | 3.31 | 0.00 | 4.00 |
| GAF | 55.75 | 10.30 | 35.00 | 80.00 |
| Age | 15.63 | 2.11 | 11.00 | 18.00 |
| Grade | 9.75 | 2.15 | 5.00 | 12.00 |

Note. N=40.

Table 11 summarizes the mean and standard deviation of each independent variable, the dependent variable, and control variables for participants.

Correlation Matrix

The correlation matrix is a measure of the direction and significance of two variables (Tabachnick & Fidell, 1989). The correlation matrix was examined to determine the relationship between each of the measurements. Results are presented in Tables 12 and 13.

Table 12

Correlation Matrix- Pearson Correlation

| | GAF | CPT-II Number of Omissions Overall t score | COWA z score | Rorschach Reflection Responses | Inadequate Anxiety Composite | Sex | Age | Grade | Facility |
|--|-------|--|-----------------|--------------------------------------|------------------------------------|-------|------|-------|----------|
| GAF | 1.00 | | | | | | | | |
| CPT-II Number of Omissions Overall t score | -0.30 | 1.00 | | | | | | | |
| COWA z score | 0.38 | -0.24 | 1.00 | | | | | | |
| Rorschach Reflection Responses | 0.39 | -0.22 | 0.15 | 1.00 | | | | | |
| Inadequate Anxiety Composite | 0.16 | 0.28 | -0.10 | -0.13 | 1.00 | | | | |
| Sex | -0.13 | -0.12 | -0.36 | 0.09 | 0.23 | 1.00 | | | |
| Age | 0.11 | 0.07 | -0.03 | -0.02 | 0.10 | -0.13 | 1.00 | | |
| Grade | 0.06 | -0.07 | -0.09 | -0.14 | 0.04 | -0.13 | 0.85 | 1.00 | |
| Facility | -0.03 | -0.05 | -0.09 | -0.11 | 0.18 | -0.06 | 0.61 | 0.54 | 1.00 |

Table 13

Correlation Matrix - Significance

| | GAF | CPT-II Number of Omissions Overall t score | COWA z score | Rorschach Reflection Responses | Inadequate Anxiety Composite | Sex | Age | Grade | Facility |
|--|---------|--|-----------------|--------------------------------------|------------------------------------|------|------|-------|----------|
| GAF | 1.00 | | | | | | | | |
| CPT-II Number of Omissions Overall t score | 0.03** | 1.00 | | | | | | | |
| COWA z score | 0.01*** | 0.07* | 1.00 | | | | | | |
| Rorschach Reflection Responses | 0.01*** | 0.08* | 0.18 | 1.00 | | | | | |
| Inadequate Anxiety Composite | 0.17 | 0.04** | 0.27 | 0.21 | 1.00 | | | | |
| Sex | 0.22 | 0.24 | 0.01*** | 0.28 | 0.08* | 1.00 | | | |
| Age | 0.25 | 0.34 | 0.42 | 0.44 | 0.26 | 0.21 | 1.00 | | |
| Grade | 0.37 | 0.33 | 0.29 | 0.19 | 0.40 | 0.20 | -- | 1.00 | |
| Facility | 0.43 | 0.38 | 0.29 | 0.25 | 0.14 | 0.35 | -- | -- | 1.00 |

Note. *p<.1. **p<.05. ***p<.01. ****p<.001.

Results indicate that the CPT-II t-score is significantly ($p<.05$) negatively ($r_{xy} = -.30$) correlated with the GAF. Also significantly correlating with the GAF, but the $p<.01$ is the COWA z-score ($r_{xy} = .38$) and the Rorschach reflection responses ($r_{xy} = .39$). The inadequate anxiety composite and the CPT-II t-score positively ($r_{xy} = .28$) significantly

($p < .05$) correlate.

Assumptions

Before running any regression analysis a test of assumptions examines concepts of normalcy, linearity, homoscedasticity, and the independence of residuals. In hierarchical regression, assumptions must be verified and can be done so by examining a scatter plot of the residuals plotted against the predicted scores (Tabachnick & Fidell, 1989). Residuals are a measure of the difference between the obtained and predicted values on the dependent variable. Predicted scores refer to the anticipated dependent variable scores (Tabachnick & Fidell, 1989). The regression line expresses the best prediction of the dependent variable, given the independent variables. However, nature is rarely if ever perfectly predictable, and usually there is substantial variation of the observed points around the fitted regression line. The deviation of a particular point from the regression line (its predicted value) is called the residual value (Tabachnick & Fidell, 1989).

An examination of the scatter plot (see Appendix A) confirms that the following assumptions were not violated:

- (1) The relationship between the independent variables and the dependent variable are linear (linearity).
- (2) Errors associated with any single observation on the dependent variable are independent of errors associated with any other observation on the dependent variable (linearity).
- (3) The errors are not correlated with the independent variables (linearity).
- (4) The variance of the residuals across all values of the independent variables is constant

(homoscedasticity).

(5) The errors are normally distributed (normalcy).

Thus, it was appropriate to run the regression analysis.

A final assumption, Cook's distance, was calculated to check for outliers. This is a measure of the change in regression coefficients produced by leaving out cases with scores larger than 1.11, which are suspected of being outliers. The minimum Cook's Distance for this study is reported as .00 and the maximum is .385, which is well below the 1.11 cut off. No outliers were detected, thus indicating that one score is not accounting for all of the variance in this model (Tabachnick & Fidell, 1989). Taken altogether, tests of significance can be considered valid and interpretable.

Hierarchical Regression

A hierarchical regression was conducted in order to examine the relationship between the dependent variable and independent variables. All three independent variables were block entered and, thus, considered simultaneously for the overall model. Results are presented in Table 14.

Table 14

Hierarchical Regression Analysis Examining the Association Among Attachment,

Inadequate Anxiety, Attention, and Overall Functioning

| Model | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|-----------------------------|----------------|---------------------------|-------|--------------|
| | B | Standard Error | B | t | Significance |
| Constant | 59.67 | 5.51 | -- | 10.82 | -- |
| Rorschach Reflection Responses | 5.82 | 2.50 | 0.33 | 2.32 | 0.03 |
| Inadequate Anxiety Composite | 0.91 | 0.44 | 0.29 | 2.07 | 0.05 |
| CPT-II \Number of Omissions Overall t score | -0.15 | 0.09 | -0.23 | -1.59 | 0.10 |
| COWA z score | 2.94 | 1.35 | 0.31 | 2.18 | 0.04 |

Note. $R^2 = .36$

Overall results demonstrate that the model accounts for 36% of the variance of global functioning by the combination of the independent variables. The hierarchical regression statistic is significant at .003 ($p < .003$).

Each control variable was examined to determine if site placement, age, gender, or grade accounted for overall functioning. The control variable did not contribute variance, therefore were not included in the equation.

The contribution of variance from the independent variables to explain changes in the dependent variable are presented. Rorschach reflection responses are significant at the .03 level of significance, thus indicating that attachment is a significant contribution to GAF scores. Holding all other variables constant, for every point increase on the GAF, the Rorschach reflection responses went up 5.82 points. The inadequate anxiety composite is significant at the .05 level of significance; thus indicating that inadequate anxiety is contributing to the overall model. Holding all other variables constant, for every GAF point increase the YSR went up .91 point. CPT-II omissions overall t-score trends toward significance, but does not meet the $p < .05$ cut off. The COWA z-score is significant at the .04 level of significance, thus indicating that sustained verbal attention contributes to the overall model. Holding all other variables constant, for every GAF point increase the COWA went up 2.94 points.

CHAPTER 5

DISCUSSION

Introduction

The constructs of attachment, anxiety, and attention were measured using the Rorschach Psychodiagnostic Test (Rorschach, 1994), the Youth Self Report (Achenbach & Rescorla, 2001), the Connor's Continuous Performance Test- Second Edition (CPT-II; Conners, 2002), and the Controlled Oral Word Association Test (COWA; Spreen & Strauss, 1991). Results support the use of these assessment tools to explain overall functioning in children who are being treated for aggression.

The sample was comprised of children functioning within the mild to severe range of global functioning. These findings are consistent with the adult model and show preliminary support for the developmental stability of this model (Meloy, 2001). Results indicate that attachment, anxiety, and attention each contribute unique variance in explaining poor functioning in aggressive kids.

Theoretical Model

Meloy's (2001) theoretical model finds attachment, anxiety, and attention difficulties in adults who evidence severe aggression problems. These characteristics not only describe internal or psychological functioning, but are related to how they behave. These individuals show fearless and sensation-seeking behavior patterns. Friends and family may describe them as impulsive, deceitful, lacking empathy, and self-serving. They are uninhibited by anxiety and evidence little worry about the consequences of their actions. For example, they are not constrained by affectionate bonds or compassion for others. Meloy (2001) hypothesized that these difficulties would be evident in childhood

due to the developmental trajectory of severely aggressive children (Loeber & Hay, 1997; Frick, 1998). Specifically, children who have poor attachment, inadequate anxiety, and attention problems are those most likely to develop into adult offenders who are severely aggressive (Meloy, 2001).

The reason that Meloy's adult model of psychopathy may also explain aggressive children is the characteristics of adults are formed in early childhood through attachment experiences and the development and regulation of emotions and socialization practices. So much of childhood is spent learning and that learning is sequential through development. When the prerequisites are skipped over, inappropriate or pathological, all future learning is impacted. Further, not only are these primary characteristics negatively impacted, but so also are the developmental products these successes would have led to in typical development. Thus, this group is likely to experience many learning problems putting them at risk educationally, socially, and emotionally.

Attachment

Using the Rorschach reflection responses as a measure of attachment, attachment was found to be significantly related to the GAF in the overall model. Therefore, for aggressive children, the state of a child's current attachment is a meaningful contributing factor to his or her behavior.

Since healthy attachment occurs when a mother-infant relationship develops through repeated interaction over time (Coleman & Watson, 2000), and the attachment bond is an emotionally driven process crucial to later personality development (Lieberman & Zeanah, 1995), when this attachment is interrupted there are significant negative consequences (Brazelton & Greenspan, 2000). If positive attachments do not

occur within the first three years of life, all future socialization and interpersonal relatedness will be negatively impacted (Bender, 1947; Karr-Morse & Wiley, 1997). When the attachment process is affected by instability (abuse, neglect, frequent change in caregiver) many areas of development suffer.

Attachment problems typically occur through one of two scenarios. Either they have experienced damaged attachments since infancy, or a traumatic life event has occurred that disrupted their initial adequate attachment relationship with a primary caregiver. Either way, it is likely that attachment problems may continue to influence aggressive children's functioning. Thus, as a result poor attachment, the child learns that experiences are often painful, begins to lack trust in others, lacks empathy for and experiences feelings of vulnerability. Of this group who develop aggression, they tend to make a bond with aggression instead of attaching to a mother-figure (Meloy, 1995). In addition to this inappropriate bond with aggression, these types of youth may begin to impulsively seek gratification, which leads to harming others, violating social norms, and engaging in general aggressive acts (Meloy, 2001).

The type of attachment measured by the Rorschach reflection responses specifically pertains to narcissistic behavior. Narcissism is an extremely ego centric world view where others are not valued (Meloy, 2001). Early attachment problems result in a narcissistic viewpoint. The self-centeredness, leads to ongoing relationship problems. An ego centric viewpoint and difficulty relating to and even acknowledging others makes it difficult for these children to develop positive attachments. Analysis of reflections provides information about internalized object relations, the defensive use of

withdrawal and grandiosity, the self-focusing process, and the nature of the libidinal drive (Gacono & Meloy, 1994).

Fifteen percent of the subjects in this study gave reflection responses that point towards significant attachment problems. Results of other Rorschach reflection responses with similarly aggressive populations (Gacono & Meloy, 1994) are consistent with the current findings. These children will likely experience similar difficulties as adults. Eighty-five percent of the children in this study may still have attachment problems, however they are not considered markedly severe. The prognosis for this group is likely underestimated.

In summary, attachment is a precursor for many developmental stages in children. Attachment problems lead to other behavioral problems (Brazelton & Greenspan, 2000; Meloy, 2001) including overall functioning of the aggressive children in this study.

This problem in attachment is also consistent with difficulties in the development of appropriate levels of anxiety (Brazelton & Greenspan, 2000; Meloy, 2001). Many theorists believe that attachment problems are at the root of inadequate anxiety development. Poor attachment experiences cause some children to deactivate their feelings and anxiety as a defense strategy (Warren, et al., 1997). In fact, narcissism and psychopathy are theoretically linked by character traits (Gacono & Meloy, 1994).

Inadequate Anxiety

The YSR inadequate anxiety composite was found significant in the overall model. Results indicate that inadequate anxiety is a significant contributing factor to overall functioning in children who are aggressive.

In light of these findings it is necessary to review the anxiety process. Anxiety, in a healthy individual, can be described as an affective (emotional) state that is characterized by unpleasant feelings of fear. Anxiety helps humans avoid danger and plan for the future (Schwartz, 2000) and as well as a sense of right and wrong (Cloninger, 1987; Meloy, 2001). In short, an adequate amount of anxiety helps to govern behavior.

Even in aggressive children appropriate levels of anxiety can mitigate aggressive tendencies and provide children with a source of internal monitoring. Juvenile delinquents with higher levels of anxiety demonstrate lower rates of recidivism (Quay & Love, 1977). Thus, appropriate levels of anxiety appear to minimize and/or protect against conduct problems.

Children who have not developed appropriate anxiety tend to act in an aggressive manner (Meloy, 2001). Low levels of trait anxiety often result in aggressive behavior patterns (Cleckley, 1982; Cloninger, 1987; Gray, 1982; Lykken, 1982). Guilt does not occur when anxiety is inadequately developed (Richters & Volkmar, 1994). Research ties a lack of guilt to a predisposition for physical aggression (Loeber et al., 2002).

Clearly, many other processes are affected by inadequate anxiety development. The lack of a sense of right and wrong and absent internal monitoring system affects behavior in every sense. Accepting guidance from authority figures, maintaining relationships, and staying out of crime are difficult for these children.

As detailed in chapter 3, inadequate anxiety was measured by forming a composite from items on the Youth Self-Report (Achenbach & Rescorla, 2001). The composite was developed by identifying traits consistent with the callous/unemotional

factor of Hare's Psychopathy Checklist-Revised (PCL-R; Hare, 1991), which are directly linked to inadequate anxiety (Frick et al., 1999).

Specific results demonstrate that many of the children in this study evidenced inadequate behavior regulating anxiety. The callous/unemotional traits presented to them in the YSR appear to fit most of their responses.

Attention

Attention results were more complex to interpret. Two types of attention were measured, visual and verbal. Sustained verbal attention was found to be significant and sustained visual attention trended toward significance.

In normal instances, attentional processing is a function of cognition which is characterized by sustained mental concentration, observation, and often, physical erectness or readiness.

Attention problems play an important role in the problems of aggressive youth. The most well known attention diagnosis, Attention Deficit Hyperactivity Disorder (ADHD) is known to place children at higher risk for criminal activity (Farrington, 1990; Moffitt, 1990). Children with attention problems begin with difficulties incorporating feedback from their environment and soon begin to exhibit signs of non-compliant behavior. Perhaps most importantly, they have difficulty considering the future impact of their actions (Barkley, 1990).

To review, two measures were chosen to assess attention. The omissions score of the Connor's Continuous Performance Test- Second Edition (CPT-II), was used to measure sustained visual attention. The Controlled Oral Word Association (COWA; Spreen & Strauss, 1991) was used to measure sustained verbal attention.

Examination of the hierarchical regression analysis indicated that the CPT-II t-score (sustained visual attention) did not contribute to the variance of the dependent variable (overall functioning). However, the score was trending toward significance, thus, it is possible that with more subjects, thus more power to detect the contribution of omissions, this would become a significant factor in explaining these children. It may also be that we are looking at two groups of children with differing attention problems, yet all with aggression problems. Another possible explanation is that these children are more alike in visual attention than verbal attention.

Subjects did evidence significant problems with sustained verbal attention. The COWA measures how subjects organize their thinking and have command of verbal attention skills. Female participants performed better on the COWA than males. This finding is consistent with literature which shows that girls typically have stronger verbal skills than boys (Applebone, 1997; Mekarski, et al., 1996) which may also be evident in this population.

Implications

If poor attachment, inadequate anxiety, and attention problems are associated with lower overall functioning in aggressive children, as found in this study, it is certainly true that specific implications must be considered.

Implications for Policymakers

Current legislation, such as “No Child Left Behind” requires this type of data from a clinical sample. The overall purpose of this law is to ensure that each child in America is able to meet the high learning standards of the state where he or she lives. Information about special populations, such as aggressive children placed in settings of

restriction, is required in order to plan for and maintain quality educational objectives. Policymakers should be aware of special populations, such as this one, and recognize that in order to meet the objectives that this law states, extra resources will need to be allocated to provide for the unique needs of these children.

Policies need to be put into place to help facilitate the parent/child relationship. Parents or primary caregivers need to have better options to stay home with their children. Through appealing tax advantages, job sharing opportunities, quality resources for stay at home parents, and the opportunity to leave a professional situation knowing that returning at the same level is an option, parents may more seriously consider the option to stay at home with their children. Alternatively, policies that enable working parents to take time off from work to participate in their child's life, without penalties, is crucial. Minimally, parents should be able to take a maternity or paternity leave for the first year of their baby's life (Brazelton & Greenspan, 2000).

The funding of early intervention programs for children must continue. Programs should be initiated due to research-based decisions regarding the needs of our nation's young children. It is paramount to consider the previously discussed critical periods of development for attachment, anxiety, and attention. Intervention programs that start prior to birth that concentrate on parenting skills (e.g. parent-child bonding, establishing rules and discipline, basic child care, and early learning objectives) are important. Additionally, resources should be introduced to all expecting parents that focus on education, preventative care, and crisis management.

Implications for Practitioners

Information provided by this study has the potential to have long-term impact on day treatment schools, residential treatment facilities, and jail settings. A comparison can now be made between aggressive children with attachment, anxiety, and attention problems on overall functioning to those aggressive children who do not evidence this pattern. This distinction can influence the treatment selection process and influence the expected level of success in treatment. Practitioners may consider tailoring interventions to meet the needs of children with the aforementioned profile. Predictions regarding treatment success should be done in an informed manner.

The debate continues between many practitioners who are eternally optimistic and believe that children with attachment, anxiety, and attention problems can improve at any given time through treatment and/or life changes and others who subscribe to the critical period theory and believe that the prognosis for most of these children is less optimistic. Studies like this one can begin to clarify the contribution of these problems to overall functioning. This study is a starting point to discriminate between these groups and then evaluate treatment gains. It is also important to consider that children who receive treatment in a milieu environment have a distinct advantage over those whose treatment is adjunctive in nature (Rinsley, 1994). Severely aggressive children have great difficulty improving their behavior when therapy is adjunctive (Rinsley, 1994). Additionally, jails may not provide consistent therapeutic interventions that these children require.

Differential diagnoses should be considered. Aggression, for the purposes of this study, was defined as documented violent behavior directed towards oneself, property, and/or a positive criminal history. Children currently being treated for aggression were

eligible for participation in this study. This clarification became necessary in order to define the population needed for this study. Aggressive children have many different diagnoses and many have dual diagnoses, all of which are aggression related. It becomes difficult to predict one diagnosis that will be given for aggressive children due to the nature of their problems and the multitude of psychiatrists diagnosing them.

Implications for the Public

As a society, we should all be connected about the welfare of our children. They represent our nation's future. According to a recent study published by The National Council on Disability (2002), more than one million children come in contact with the juvenile justice system and more than 100,000 are removed from their homes and sent to some type of alternative placement each year. Many of these children suffer from aggression-related problems and have projected their frustration onto their communities via crime.

As a public, we need to elect officials who can advocate for change and recognize the need for preventative steps in our children's lives. By electing policymakers who will concentrate on current legislation for children, working and stay at home parents rights, and the funding of early intervention programs for children, we can begin to improve the state of the American home.

Implications for Researchers

This is a clinical population, as such conclusions may be generalized to children being treated for aggression in day treatment schools, residential treatment facilities, and jail settings.

Strengths

The uniqueness of this study is best exemplified by its subjects and theoretical model. As previously discussed, the model of attachment problems, inadequate anxiety, and attention problems significantly impacting overall functioning in aggressive individuals had not yet been comprehensively studied. The participants in this study represent aggressive children in our country. This model is consistent with developmental influences experienced by children.

Access to this population has historically been difficult due to issues of parent consent, behavioral concerns, facility resources, and strict child protection codes. The fact that five sites willingly participated and are anxious to attend a presentation of the results is quite an accomplishment.

Significant results were found with the small sample size utilized in this study. This demonstrates the strength of the effects of the variables and indicates that the measures that were selected were appropriate.

Anxiety was a difficult construct to assess due to the fact that there is a lack of assessment tools that are designed to measure inadequate anxiety. Therefore, specific items on the YSR were chosen to assess inadequate anxiety. As detailed in chapter 3, this was done by identifying traits consistent with the callous/unemotional factor of Hare's Psychopathy Checklist- Revised (PCL-R; Hare, 1991). Psychopathy, according by Hare, measures callous/unemotional traits, which are directly linked to inadequate anxiety (Frick et al., 1999). The calculated reliability demonstrated that this composite was acceptable for research. This study has resulted in the creation of a new and reliable tool to measure inadequate anxiety.

Limitations

Although many statistical results were evidenced from the data, this study should be viewed as the first step of many in the research process. A proper power analysis was conducted and the data set met with statistical criteria for a study of this nature, however a larger sample size may be explored in the future.

The nature of this population made it difficult to gain complete data due to attention span, behavior, and general availability (e.g. a student was at the site during the first day of testing and suddenly gone for the second). Although participants gave assent for participation, some could not finish the testing due to behavioral issues. For example, slamming the laptop computer on the desk when feeling frustrated and overwhelmed and simply getting up and leaving the testing session occurred.

Another limitation is that parent information was not utilized in the study. This study was not meant to be developmental in nature, therefore no historical background or continuous developmental information was collected. In most cases, parent information was not available due to the nature of the relationship between parent and child and/or parental incarceration. The subjects included in this study were evaluated at one point in time. Due to the lack of developmental history, information such as the attachment background was not considered. For example, attachment between a parent and child could have been dysfunctional from the start or may have been adequate with disruption due to a later life trauma.

A fourth limitation is that there were only twelve girls included in the study. Sites participating in this study had few, if any, girls. The number of girls placed in restrictive settings for aggression-related problems in general is smaller than that of boys (Cervi,

1991; Federal Bureau of Investigation, 1989; Olweus, 1979). However, gender is a complex variable and should be clarified in future studies.

Lastly, the sampling of this dissertation had to include children who were able to attain consent from a parent, primary caregiver, or custodial agent. Access to the study was denied to many children who consent could not be obtained because of parental incarceration, caregiver unavailability, or a lack of response.

Future Research Opportunities

This exploratory study describes the significant association between poor attachment, inadequate anxiety, attention problems, and low overall functioning in aggressive children. It requires replication with a larger sample size and further support on how to differentiate groups of aggressive children.

Parent information was difficult to attain in this study. Future researchers who study populations of this kind may consider developing a more comprehensive system of making contact and gaining information from parents or caregivers. The use of front line staff members in contacting parents or caregivers should be considered. Additionally, asking parents to sign consent forms while they are on site visiting or meeting with staff would be helpful.

More research is needed to better understand aggressive girls. A follow-up study that concentrates on a female perspective would greatly add to the research base of this population. Due to the fact that the sites in this study were populated by many more boys than girls, consideration should be made in seeking out sites that focus on girls only.

A confirmatory factor analysis of the YSR inadequate anxiety construct should be conducted with a different population of children. This can provide additional evidence to further justify the use of this composite for measuring inadequate anxiety.

Lastly, a detailed study of the treatment implications in regard to the findings of this study is needed. Does lower overall functioning predict poor treatment success? What are the short and long term implications of treatment on these children?

Conclusion

The opportunity to positively impact the lifelong stability and emotional health of our children exists by concentrating on fundamental areas in a conscious manner. There are a number of researched variables that impact the psychological health of our children. Through this research it has been shown that attachment, anxiety, and attention significantly impact the overall functioning of aggressive children. Thus demonstrating the value of these constructs in child rearing.

This study has uncovered new information that contributes to the field and furthers current knowledge. An opportunity exists to expand upon this research by investigating the needs of all children in order to prevent aggressive behavior.

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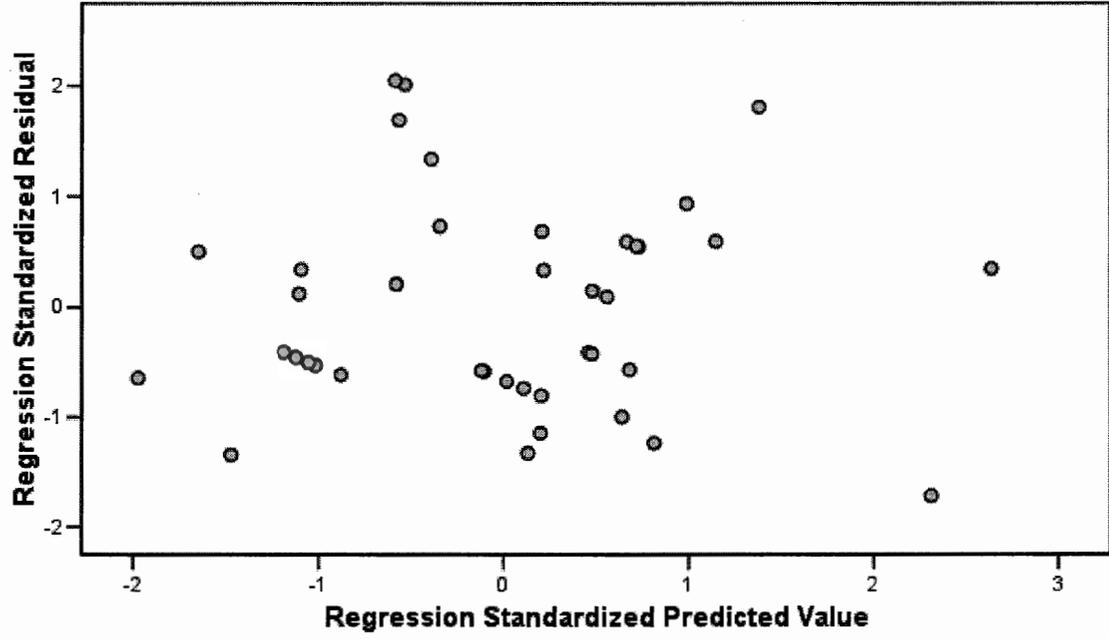
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APPENDIX A

Assumptions- Scatter Plot

Scatterplot

Dependent Variable: GAF Code



APPENDIX B

Letter to Parents of Children



SCHOOL OF EDUCATION
DEPARTMENT OF COUNSELING,
PSYCHOLOGY AND SPECIAL EDUCATION
TELEPHONE (412) 396-5567
FAX (412) 396-5585

Dear Parent or Guardian,

During this school year, assistant professor Dr. Tammy Hughes at Duquesne University will be offering school-aged students from ages 6 years 0 months to 17 years 11 months an opportunity to participate in an assessment evaluating risk factors associated with childhood aggression. The assessment battery will include gathering demographic information, developmental and family history, and nationally standardized reliable and well-validated tests. The list of tests and purpose are attached.

The researcher is interested in students who are being treated for aggressive behavior for this testing.

Your child _____ has been identified as a possible candidate for this testing. Enclosed is a form that asks you to give your consent for your child to participate. S/he has not been selected yet and will not be considered until you give your permission. Participation is voluntary, and your child may withdraw at any time.

If you choose to have your child tested, results from testing will be used in a research study to help better understand aggression in school aged children. Your child will not be personally identified as a participant if s/he is included in a research study.

Please read the Parent/Guardian Consent form thoroughly and return it by _____. If you have any questions, concerns or comments, please contact Dr. Tammy Hughes at the number listed below.

Thank you very much for considering this opportunity for your child.

Sincerely,

Tammy Hughes, Ph.D.
Assistant Professor of School Psychology
Duquesne University
HughesT@duq.edu
412-396-5191

APPENDIX C

Letter to School District/ Treatment Facility



DUQUESNE UNIVERSITY

CANEVIN HALL • PITTSBURGH, PA • 15282

SCHOOL OF EDUCATION
DEPARTMENT OF COUNSELING,
PSYCHOLOGY AND SPECIAL EDUCATION
TELEPHONE (412) 396-5567
FAX (412) 396-5585

Dear School District/ Treatment Facility,

During the 2002-2003 school year, Dr. Tammy Hughes, assistant professor at Duquesne University, will be evaluating risk factors associated with aggression in school-age children. This evaluation is for students ages 6 years 0 months to 17 years 11 months who 1) have already been identified and are being treated for aggression and 2) children who are not referred for aggression. The assessment battery will include demographic information, developmental and family history, and the following nationally standardized reliable and well-validated tests:

Rorschach Psychodiagnostic Test
Randolph Attachment Disorder Questionnaire (RADQ)
Behavior and Emotional Rating Scale (BERS).
Childhood Behavior Checklist (CBCL)
Connor's Continuous Performance Test- second edition (CCPT-II)
Trail Making Test A and B
Controlled Oral Word Association (COWA)
Child and Adolescent Functional Assessment Scale (CAFAS)
Global Assessment of Functioning Scale (GAF)

The Rorschach is a projective personality measure that uses ten stimulus cards where subjects give unstructured answers. The RADQ and BERS are paper and pencil forced choice Likert scale tests where parent/caregiver-report answers are collected. The CBCL is a paper and pencil forced choice Likert scale test where teacher/staff, child and parent answers are collected. The CCPT-II is a computer-generated test that asks children to hit a button when a predetermined stimulus is presented. Trail making A and B measures visual attention, motor integration and mental flexibility. The Trail Making Test requires subjects to connect sequenced dots first by numbers and then switching between numbers and letters. The Controlled Oral Word Association (COWA) is a test of verbal fluency and attention requiring students to give verbal answer in a one minute time period.

Treatment gains will be assessed using Child and Adolescent Functional Assessment Scale (CAFAS) and Global Assessment of Functioning Scale (GAF) scores. The CAFAS and GAF are rubric type instruments that use verbal descriptors associated with a numbers to represent a child's current functioning. On the GAF a higher score means a higher functioning individual. On the CAFAS a lower score indicate a child is evidencing fewer problems. High GAF and low CAFAS scores indicate more desirable behaviors.

Enclosed is a consent form and sample letter that will be provided to parents regarding my role with your school district/ treatment facility. The sample letter may be modified to meet the requirements of your school/facility.

Thank you for your consideration.

Sincerely,

Tammy Hughes, Ph.D.
Assistant Professor of School Psychology
HughesT@duq.edu
412-396-5191

APPENDIX D

Consent Forms

PARENT CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: Measuring constructs related to childhood aggression

INVESTIGATOR: Tammy L. Hughes, Ph.D.
Duquesne University
102 C Canevin Hall
412-396-5191

PURPOSE: You and your child are being asked to participate in a research project that seeks to investigate how attachment (bonding with people), interpersonal feelings such as anxiety and attention are related to childhood aggressive behaviors.

Parents/Guardians

You will be asked to fill out some paper work including demographic information (age, gender, child's developmental and family history) and a questionnaire regarding interpersonal functioning of your child.

Schools, Treatment facilities and files

Teachers will be asked to fill out a similar questionnaire describing their view of your child's interpersonal functioning.

If your child is currently receiving treatment for aggression, numerical scores assigned to document treatment progress and will be collected for study. The treatment staff may be ask to rate their perception of the therapeutic alliance between themselves and your child.

Children

Your child will be asked to 1) answer questions on paper and pencil tests about interpersonal feelings about attachment, anxiety, depression and her/his ability to concentrate and attend, 2) answer questions about cards with ambiguous pictures on them, 3) respond to a computer-generated figure by hitting a computer key board and 4) give oral and written responses to questions requiring attention skills.

Initials: _____

Date: _____

These are the only requests that will be made of you and your child.

RISKS AND BENEFITS:

The tests used are nationally standardized, reliable and well-validated tests. The benefit of assessment is clarifying the underlying constructs that contribute to childhood aggression.

When answering questions about personal feelings, mental health topics and performing attentional tasks, risks to participants may include:

- Discomfort
- Discussion of controversial information
- Invasion of privacy

To address any potential problems:

- 1) Children who are assessed at treatment facilities will be identified to the supervising staff, so that sensitive issues can be further discussed as needed with a counselor at the facility. Further, it is typical for facilities to have a procedure for unexpected reactions secondary to testing; that procedure will be reviewed with each child.
- 2) Children who are assessed at local area school districts will be identified to school personnel as well as to parents on the day of testing to ensure any reactions secondary to testing can be addressed at either school or home as needed.
- 3) In addition, as a certified school psychologist with an expertise in the area of childhood aggression, I offer free consultation to all facility/local school district staff if they are called upon to treat unexpected secondary reactions to testing and feel a need to consult someone.

COMPENSATION:

There is no compensation for participation in this study. However, participation in the project will require no monetary cost to you. An envelope is provided for return of your response to the investigator.

CONFIDENTIALITY:

Neither your name or your child's name will appear on any survey or research instruments. No identity will be made in

Initials: _____
Date: _____

the data analysis. All written materials and consent/assent forms will be stored in a locked file in the researcher's office. Your response(s) will only appear in statistical data summaries. All materials will be destroyed at the completion of the research.

RIGHT TO WITHDRAW:

You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time.

SUMMARY OF RESULTS:

A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT:

I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board (412-396-6326).

Participant's Signature

Date

Researcher's Signature

Date

Initials: _____
Date: _____

TEACHER/STAFF CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: Measuring constructs related to childhood aggression

INVESTIGATOR: Tammy L. Hughes, Ph.D.
Duquesne University
102 C Canevin Hall
412-396-5191

PURPOSE: You are being asked to participate in a research project that seeks to investigate how attachment (bonding with people), interpersonal feelings such as anxiety and attention are related to childhood aggressive behaviors.

Schools, Treatment facilities and files

You will be asked to fill out some questionnaires regarding interpersonal functioning of a student you work with.

If the child is currently receiving treatment for aggression, numerical scores assigned to document treatment progress and will be collected for study. You may be asked to rate your perception of the therapeutic alliance between yourself and the child.

These are the only requests that will be made of you.

Parents/Guardians

Parents/Guardians will be asked to fill out a similar questionnaire describing their view of the child's interpersonal functioning.

Children

The child will be asked to 1) answer questions on paper and pencil tests about interpersonal feelings about attachment, anxiety, depression and her/his ability to concentrate and attend, 2) answer questions about cards with ambiguous pictures on them, 3) respond to a computer-generated figure by hitting a computer key board and 4) give oral and written responses to questions requiring attention skills.

Initials: _____
Date: _____

RISKS AND BENEFITS:

The tests used are nationally standardized, reliable and well-validated tests. The benefit of assessment is clarifying the underlying constructs that contribute to childhood aggression.

When answering questions about personal feelings, mental health topics and performing attentional tasks, risks to participants may include:

- Discomfort
- Discussion of controversial information
- Invasion of privacy

To address any potential problems:

- 1) Children who are assessed at treatment facilities will be identified to the supervising staff, so that sensitive issues can be further discussed as needed with a counselor at the facility. Further, it is typical for facilities to have a procedure for unexpected reactions secondary to testing; that procedure will be reviewed with each child.
- 2) Children who are assessed at local area school districts will be identified to school personnel as well as to parents on the day of testing to ensure any reactions secondary to testing can be addressed at either school or home as needed.
- 3) In addition, as a certified school psychologist with an expertise in the area of childhood aggression, I offer free consultation to all facility/local school district staff if they are called upon to treat unexpected secondary reactions to testing and feel a need to consult someone.

COMPENSATION:

There is no compensation for participation in this study. However, participation in the project will require no monetary cost to you. An envelope is provided for return of your response to the investigator.

CONFIDENTIALITY:

Neither your name or the child's name will appear on any survey or research instruments. No identity will be made in the data analysis. All written materials and consent/assent forms will be stored in a locked file in the researcher's office. Your response(s) will only appear in statistical data

Initials: _____
Date: _____

summaries. All materials will be destroyed at the completion of the research.

RIGHT TO WITHDRAW:

You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time.

SUMMARY OF RESULTS:

A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT:

I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board (412-396-6326).

Participant's Signature

Date

Researcher's Signature

Date

Initials: _____
Date: _____

APPENDIX E

Assent Forms

ASSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: Measuring constructs related to childhood aggression

INVESTIGATOR: Tammy L. Hughes, Ph.D.
Duquesne University
102 C Canevin Hall
412-396-5191

PURPOSE: You are being asked to take part in a study that wants to find out how bonding with people, personal feelings and paying attention are related to childhood aggression.

You will be asked to:

- 1) Take tests that ask questions about your feelings. You will read a question and mark your answer on a piece of paper
- 2) Answer questions about cards that have ambiguous pictures on them
- 3) Hit a key on a computer key board when the computer-generates different letters of the alphabet
- 4) Give oral and written responses to questions requiring attention skills.

These are the only things that will be asked of you.

We will ask your parents/guardians, teachers and therapists (if you have one) about how they see your behaviors and feelings.

RISKS AND BENEFITS: The benefits of the tests are to help people better understand why some kids are aggressive.

When answering questions about personal thoughts and feelings, and performing attention tasks, sometimes people feel uncomfortable or embarrassed. In fact, some things we ask you may be sensitive topics. Let the tester know if you are worried, embarrassed or are feeling an invasion of your privacy.

Initials: _____
Date: _____

Your parents/guardians, treatment staff or school personnel will know you are being tested and can help you with any thoughts or feelings you have regarding the tests given today.

COMPENSATION:

You don't get any money for doing the tests, but it won't cost you anything to do them either.

CONFIDENTIALITY:

Your name will never appear on anything. Nobody will know you did these tests or be able to find out that you did them. Nobody (except the research team) will see your answers, not your parents/guardian, teachers, or treatment staff, so you can be honest. Anything written down, like the tests you write on and this form, will be stored in a locked file in the researcher's office. Your answer(s) will be put into a summary sheet with everyone else's. Once we are done with the study, we will destroy all the materials.

RIGHT TO WITHDRAW:

You do not have to participate in this study. You are free to stop at any time. If you stop it will not affect your grades, treatment, or placement (circle all that apply).

SUMMARY OF RESULTS:

A summary of the results of this research will be supplied to you, at no cost, if you ask.

VOLUNTARY ASSENT:

When you sign this paper it means that you understand what is being asked of you. For example, you know that you have decided to give answers to us (nobody made you give them—your answers are given voluntarily) and that you are free to stop at any time, for any reason. Also, you understand that your parent/guardian agrees that you can participate in the study.

I agree that I am willing to participate in this research project.

Child's Signature

Date

Researcher's Signature

Date

Initials: _____

Date: _____

APPENDIX F

Human Subjects Review Approval



DUQUESNE UNIVERSITY

Office of Research

403 ADMINISTRATION BUILDING ♦ PITTSBURGH, PA 15282-0202

Dr. Paul Richer
Chair, IRB-Human Subjects
Office of Research
Phone (412) 396-6326 Fax (412) 396-5176
e-mail: richer@duq.edu

November 17, 2003

Ms. Susan McLaughlin
154 Woodshire Drive
Pittsburgh, PA 15215

**Re: "Assessment of constructs related to childhood aggression"
Protocol # 03-83**

Dear Ms. McLaughlin:

Thank you for submitting your research proposal for IRB review.

Based on the review of Dr. Sarah Petersen, IRB Representative, and my own review, your study is approved as **Exempt** based on 45-Code of Federal Regulations-46.101.b.4, regarding data without identifiers extracted from already existing records.

This exempt status requires that your extracted data have no identifiers, and, further, that your data cannot be connected with the records that do hold identifiers. This is particularly important since, as I understand it, you write that you will store the two sets of data in the same place. If you do, you must be sure that there is no possibility whatsoever for cross-referencing the two sets of data.

Once your study is complete, please provide our office with a short summary (one page) of your results for our records.

Good luck and thank you for contributing to Duquesne's research endeavors.

Sincerely yours,

Paul Richer, Ph.D.
Chair, IRB – Human Subjects

C: Dr. Tammy Hughes
Dr. Sarah Petersen
IRB Records