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Psychopathic traits and social-cognitive processes in aggressive youth

Colleen Morris

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PSYCHOPATHIC TRAITS AND SOCIAL-COGNITIVE PROCESSES IN
AGGRESSIVE YOUTH

by

Colleen Marie Morris, M.S.Ed.

Submitted in partial fulfillment of
the requirements for the degree
Doctor of Philosophy

School Psychology Doctoral Program
Department of Counseling, Psychology, and Special Education
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PSYCHOPATHIC TRAITS AND SOCIAL-COGNITIVE PROCESSES IN
AGGRESSIVE YOUTH

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Abstract

Psychopathy is associated with severe and violent aggressive behaviors, poor treatment outcomes and high rates of recidivism. In youth, conduct problems and callous/unemotional characteristics are associated with characteristics of adulthood psychopathy. Downward extending adult criteria to youth is problematic. However, there is substantial evidence that adults with psychopathy traits began that developmental trajectory in childhood. This study adds to the developing literature clarifying the construct of psychopathy in youth, including the nature of callous/unemotional traits and the relationship to social-cognitive processes. Results indicate the callous/unemotional trait significantly predicted empathic concern, perspective taking, cognitive dysregulation, and outcome values in obtaining a tangible reward and getting in trouble or being punished.

TABLE OF CONTENTS

<i>Heading</i>	<i>Page</i>
Chapter 1: Introduction	1
Chapter 2: Literature Review	15
General Aggression	15
Psychopathy	37
Psychopathy in Children	75
Social-Cognitive Processes	95
Purpose of the Current Study	110
Chapter 3: Method	116
General Purpose	116
Method	117
Chapter 4: Results	158
Chapter 5: Discussion	234
References	252

LIST OF TABLES

<i>Table</i>	<i>Page</i>
Table 1. Cleckley's Psychopathy Characteristics	38
Table 2. Hare's Psychopathy Traits	39
Table 3. A priori Statistical Analysis	141
Table 4. Descriptive Statistics	142
Table 5. Clarification of Variables	148
Table 6. Descriptive Statistics for Predictor Variables	160
Table 7. Descriptive Statistics for Dependent Variables	162
Table 8. Gender Differences on Continuous Demographic Variables	170
Table 9. Gender Differences on Non-Continuous Demographic Variables	172
Table 10. Gender Differences on Predictor Variables	174
Table 11. Correlation Matrix of Demographics and Predictor Variables	176
Table 12. ANOVA Results for Demographics and Predictor Variables	178
Table 13. Correlations among the Predictor Variables	179

LIST OF TABLES (cont.)

<i>Table</i>		<i>Page</i>
Table 14.	Correlation Matrix and Descriptive Statistics: Three Predictors and Dependent Variables (Empathic Concern, Personal Distress, Perspective Taking)	184
Table 15.	Stepwise Regression Analysis Summary for Independent Variables Predicting Empathic Concern	186
Table 16.	Multiple Regression Analysis Summary for Independent Variables Predicting Personal Distress	188
Table 17.	Stepwise Regression Analysis Summary for Independent Variables Predicting Perspective Taking	189
Table 18.	Correlation Matrix and Descriptive Statistics: Three Predictors and Dependent Variables (Behavioral Dysregulation, Emotional Dysregulation, and Cognitive Dysregulation)	196
Table 19.	Multiple Regression Analysis Summary for Independent Variables Predicting Behavioral Dysregulation	197

LIST OF TABLES (cont.)

<i>Table</i>		<i>Page</i>
Table 20.	Multiple Regression Analysis Summary for Independent Variables Predicting Emotional Dysregulation	199
Table 21.	Stepwise Regression Analysis Summary for Independent Variables Predicting Cognitive Dysregulation	200
Table 22.	Correlation Matrix and Descriptive Statistics: Three Predictors and Dependent Variable (Fear/Behavioral Inhibition)	205
Table 23.	Stepwise Regression Analysis Summary for Independent Variables Predicting Fear (Behavioral Inhibition)	206
Table 24.	Correlation Matrix and Descriptive Statistics: Three Predictors and Outcome Expectancy Dependent Variables (Tangible, Reduce Aversive Treatment, Trouble/Punished, Boss/In Charge)	212
Table 25.	Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Obtaining a Tangible Reward	213

LIST OF TABLES (cont.)

<i>Table</i>	<i>Page</i>
Table 26. Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Reducing Aversive Treatment	215
Table 27. Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Getting in Trouble or Punished	216
Table 28. Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Showing who is the Boss or who's in charge	218
Table 29. Correlation Matrix and Descriptive Statistics: Three Predictors and Outcome Values Dependent Variables (Tangible, Reduce Aversive Treatment, Trouble/Punished, Boss/In Charge)	225
Table 30. Stepwise Regression Analysis Summary for Independent Variables Predicting Outcome Values: Obtaining a Tangible Reward	226
Table 31. Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Values: Reducing Aversive Treatment	228

LIST OF TABLES (cont.)

<i>Table</i>	<i>Page</i>
Table 32. Stepwise Regression Analysis Summary for Independent Variables Predicting Outcome Values: Getting in Trouble/Being Punished	230
Table 33. Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Values: Showing who's the boss or who's in Charge	232

CHAPTER 1

INTRODUCTION

Aggression affects multiple facets of public life including crime rates and the social and financial functioning of families and communities (Connor, 2002). Although juvenile violence has seen an overall decrease since the mid 1990's, it remains at historically high levels (Connor, 2002). Public concern continues to rise due to recent high profile youth crime witnessed in the community such as school shootings (Connor, 2002). Regardless of the overall crime decrease, the focus on childhood aggression is warranted as researchers have shown that adult antisocial behavior begins in childhood (Broidy et al., 2003). Further, for those youth demonstrating extreme antisocial behaviors, these behaviors are likely to continue into adulthood (Loeber, 1982).

The extreme antisocial behaviors that account for the most severe group of adult offenders are called psychopathic traits (Hare, 1993). Psychopathy is associated with severe and violent aggressive behaviors, poor treatment outcomes and high rates of recidivism (Gacono & Hughes, 2004; Hemphill, Hare, & Wong, 1998). The classic definition of psychopathy, proposed by Cleckley in 1941, includes a constellation of deviant personality traits such

as lack of remorse or shame, absence of nervousness/psychoneurosis, inadequately motivated antisocial behavior, general poverty in major affective reactions, and a failure to follow any life plan (Cleckley, 1941) among sixteen characteristics. In 1993, Hare and colleagues updated this definition by separating Cleckley's psychopathic traits into two factors, 1) personality traits and 2) antisocial behaviors. Personality traits or Factor 1, include the characteristics of pathological lying, callousness/lack of empathy, lack of remorse or guilt, and shallow affect (Hare, 1993) among others. Socially deviant behaviors, also known as Factor 2, include poor behavioral controls, early behavioral problems, irresponsibility, need for stimulation/proneness to boredom, and impulsivity (Hare, 1993).

Psychopaths comprise 15-30% of criminals in the adult offender population (Hare, 1993; Salekin et al., 2004). Researchers show that psychopathic offenders commit more violent and nonviolent crimes than nonpsychopath offenders (Porter, Birt, & Boer, 2001). On average this group begins offending in late adolescence with the rate of offending remaining at high levels into their late 40s (Porter et al., 2001). Because of the reported age of onset, much of the research attempting to understand psychopathic traits

in children began with retrospective investigations conducted with adults categorized by psychopathic traits. In a review of retrospective studies concerning psychopathy and recidivism, researchers found psychopathic traits evidenced in childhood to predict severe and violent antisocial behavior in adults (Hemphill et al., 1998). These findings suggest psychopathy may be a developmental disorder in which specific personality traits can be assessed in children (Viding, 2004).

Substantial attention has been given to understanding psychopathy in children including how the definition applies to children, assessment practices, and examining the developmental trajectory of risk factors associated with violence, aggression and psychopathy (Frick, 1998; Lynam, 1997; Salekin, Rogers, & Machin, 2001; Seagrave & Grisso, 2002). Simply, downward extending adult criteria to youth is problematic. Thus, using a factor analysis Frick and colleagues (1994) identified characteristics of psychopathy in youth. Two factors emerged in children that were related to characteristics found in adults with psychopathy including impulsivity/conduct problems and callous/unemotional traits (Frick, O'Brien, Wootton, & McBurnett, 1994). The impulsivity/conduct problems factor consisted of behaviors such as impulsivity, poor impulse

control, and delinquent behaviors (Frick et al., 1994) similar to Factor 2 reported in adults by Hare (1991). The callous/unemotional factor was characterized by lack of guilt, lack of empathy, and superficial charm (Frick et al., 1994) similar to Factor 1 reported in adults by Hare (1991). In a community sample of adolescents, three factors emerged including an impulsivity/conduct problems factor, a callous/unemotional factor, and a narcissism factor (Frick, Bodin, & Barry, 2000). Although the narcissism factor has appeared in these samples, researchers conceptualize it as a condition for a subtype of psychopathy and not necessarily a main factor (Poythress & Skeem, 2006). With adults, narcissistic personality disorder typically loads on the first factor of psychopathy (Harpur, Hare, & Hakstian, 1989). Narcissistic characteristics that are found on the first factor include such traits as a grandiose sense of self-importance, arrogant self-appraisal, lack of empathy, an unwillingness to recognize or identify with feelings or needs of others, and interpersonal exploitation (Widiger, 2006). Narcissism's relationship to psychopathy remains unclear requiring further investigation.

The prevalence of psychopathy in the young offender population has been estimated at 21.5%, similar to the 15-

30% estimate for adults (Salekin et al., 2004). Early identification of these youth could influence the safety of communities and aid in the understanding of the etiology, development, and treatment regimens of psychopaths (Gacono & Hughes, 2004; Lynam, 1997; Salekin et al., 2004).

In an attempt to further understand the nature of individuals with psychopathy, social cognitive processes have been examined. Social cognitive processes are defined as the mechanisms that lead to social behaviors that are the basis of social adjustment evaluations made by others (Crick & Dodge, 1994). The Center for Disease Control (2005) identified social cognitive deficits as a risk factor for increasing the probability of violence during adolescence and young adulthood. Researchers argue that examining social cognitions of children will help explain the construct of psychopathy in youth. That is, impaired social cognition offers a possible explanation for the evidence of persistent conduct problems of children with significant psychopathic, or in terms consistent with Frick and colleagues' (1994) work, callous/unemotional (CU) traits. Pardini et al., (2003) demonstrated children high on CU traits had significant difficulty in modifying their social cognitions for goal-driven behavior when punished. Specifically, they concluded this group of children may

have trouble considering the probability of various outcomes, particularly when outcomes are negative, of their antisocial behavior (Pardini, Lochman, & Frick, 2003). Further, some research shows individuals with significant psychopathic traits demonstrate adequate intellect (e.g., cognitive abilities) (Loney, Frick, Ellis, and McCoy, 1998; Newman & Wallace, 1993), are free from symptoms of a thought disorder yet frequently fail to utilize good judgment in decision-making (Newman & Wallace, 1993). These results highlighted the need to clarify the connection between psychopathic traits and social cognition. Second, errors made in social-information processing are a consistent finding in the development and maintenance of delinquent behavior in antisocial children who are not evidencing psychopathy (Dodge, Lochman, Harnish, Bates, & Pettit, 1997). Thus, a more complete understanding of how psychopathic traits in youth (also termed callous/unemotional & impulsivity and conduct problems) are related to social-information processing is needed.

Most of the research samples examining psychopathy utilize individuals who are incarcerated, likely because of the availability of these offenders (Kirkman, 2002). However, not all psychopaths are recidivist criminals in incarcerated settings (Cleckley, 1976; Hare, 1993). Some

psychopaths have no criminal record at all but are members of our communities and neighborhoods (Hare, 1993). It is necessary to study those individuals who demonstrate psychopathic traits and who are capable of avoiding the prisons and jails in order to fully understand the psychopathic personality (Hare, 1993; Kirkman, 2002). In regard to children, researchers examining clinic-referred and forensic samples generate mixed results in terms of whether the callous/unemotional traits found in incarcerated samples are characteristic of all antisocial youth (Frick, Cornell, Bodin, Dane, Barry, & Loney, 2003). Studying psychopathy in a community sample of aggressive youth offers the prospect of expanding the knowledge concerning the definition of psychopathy but also this study assists in gaining more information concerning various types of social cognition in children (Kirkman, 2002). If children with psychopathic traits can be correctly identified, then the social environment of a school would be an excellent place to study the functioning of the psychopaths who are, according to Lynam (1997), the "truly successful or noninstitutionalized people". It is also possible that by studying individuals who display psychopathic traits but do not demonstrate a level of behavior requiring incarceration, researchers can start to

distinguish the traits that are specific to psychopathy from those primarily related to criminality (Kirkman, 2002; Lynam, 1997). That is, differentiating traits related to a personality structure (e.g., Factor 1) from those that are mostly behavioral (e.g., Factor 2; Gacono & Hughes, 2004).

The purpose of the current study was to expand previous research conducted by Pardini and colleagues in 2003. Pardini and colleagues (2003) examined the definition of psychopathy in a sample of adjudicated youth as well as its relationship to social-cognitive processes. The current study sought to clarify how the findings from an incarcerated sample of youth who exhibited various levels of psychopathy are comparable to youth who require treatment for aggression outside of the scope of services typically provided by a student's home school district but who do not require incarceration. The current study examined psychopathy, via callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits as they related to social-cognitive processes (e.g., values and outcome expectations) on a range of social interactions/events in a community sample of children with behavioral and emotional difficulties. The narcissism factor was included in this study as a preliminary investigation of the psychopathy factor structure in the

current community sample due to the investigation which identified narcissism as a distinct factor in a community sample of 1,136 elementary school-age children (Frick, Bodin, & Barry, 2000).

The current study contributed to the literature base in a number of ways. Specifically, the current study further clarified the definition of psychopathy in a subset of youth who require treatment for aggression in an alternative education center. Lack of empathy is often referred to as a key developmental component in the development of the callous/unemotional trait (Frick et al., 1994; Hare, 1991, 1993; Cleckley, 1941). Thus, examining empathy as it related to callous/unemotional factor helped to clarify and distinguish the callous/unemotional factor from the impulsivity/conduct problems and narcissism factors.

Dysregulated behaviors also referred to as behavioral and cognitive impulsivity (Loeber et al., 2001) or behavioral, emotional, and cognitive dysregulation (Mezzich, et al., 1997), characterize children with conduct problems (Loeber, 1982; Frick et al., 1994); however, dysregulated behaviors alone do not distinguish groups of antisocials (Frick et al., 2003). Also, children presenting with both callous/unemotional traits and dysregulated

behaviors are those who present as similar to the profile of an adult psychopath (Frick et al., 2003). Thus, examining dysregulation was an important part of clarifying the construct of child psychopathy.

Finally, behavioral inhibition, also referred to as fearfulness (Pardini et al., 2003), is associated with increased levels of the impulsivity/conduct problems factor of psychopathy (Frick, Lilienfeld, Ellis, Loney, & Silverhorn, 1999; Pardini et al., 2003). Similarly, fearfulness is related to decreased levels of the callous/unemotional factor (Pardini et al., 2003). Thus, examining behavioral inhibition assisted in further clarifying childhood psychopathy and helped distinguish the impulsivity/conduct problems, callous/unemotional traits, and narcissism factors. In summary, by examining the contribution of the callous/unemotional factor, impulsivity/conduct problems and narcissistic traits as they related to important developmental tasks such as empathy, behavior regulation and adequate management of behavioral inhibition (fear) contributed to the literature defining psychopathy.

The examination of the role of the psychopathic traits and social-cognitive processes also contributed to the current literature. Specifically, the use of the

callous/unemotional trait, impulsivity/conduct problems factor, and narcissism factor in explaining variance in outcome expectations and values when engaging in aggressive behaviors to obtain tangible rewards, reduce aversive treatment, avoid punishment, and portray dominance helped to expand and clarify earlier findings.

Four research questions were investigated in the current study. Generally, the current study hypothesized that the community sample would demonstrate similar, yet less severe patterns of psychopathy and callous/unemotional symptoms while evidencing similar impulsivity/conduct problems as the incarcerated sample of youth found in the Pardini and colleagues' 2003 study. Due to conflicting research, it was unclear how the narcissism factor would project in this study (Frick et al., 2000; Harpur et al., 1989).

Specifically, the first research question investigated how much variance the callous/unemotional factor explained in both emotional (personal distress and empathic concern) and cognitive (perspective taking) empathy and likewise, how much variance the impulsivity/conduct problems factor explained in both emotional (personal distress and empathic concern) and cognitive (perspective taking) empathy and how much variance the narcissism factor explained in both

emotional (personal distress and empathic concern) and cognitive (perspective taking) empathy? The current study hypothesized that the callous/unemotional trait would predict emotional and cognitive empathy; however, the impulsivity/conduct problems factor would not. Because the narcissism factor has been found to load on Factor 1 of Hare's two factor model (1993) as does the callous/unemotional factor (Harpur et al., 1989), it was hypothesized that the narcissistic factor may share variance with the callous/unemotional trait in predicting emotional and cognitive empathy. However, in the one study where the narcissism factor emerged in the community sample, the narcissism traits were more closely related to measures of impulsivity/conduct problems (Frick et al., 2000). Therefore, it was also possible that the narcissism factor, similar to the hypothesis concerning the impulsivity/conduct problems factor, would not predict cognitive or emotional empathy.

The second research question examined whether the impulsivity/conduct problems factor predicted dysregulated behaviors (behavioral, cognitive, and emotional), the callous/unemotional factor predicted dysregulated behaviors (behavioral, cognitive, and emotional), and the narcissism factor predicted dysregulated behaviors (behavioral,

cognitive, and emotional)? It was hypothesized that impulsivity/conduct problems would explain variance in the dysregulated behaviors variables including behavioral, emotional, and cognitive dysregulation; however, the callous/unemotional factor would not. Again, previous findings were unclear concerning the narcissistic factor; therefore, it was unclear whether the narcissism factor would explain variance in dysregulated behaviors, as hypothesized with the impulsivity/conduct problems factor, or would not, as hypothesized with the callous/unemotional factor.

The third research question investigated how much variance in behavioral inhibition or fearfulness was uniquely explained by the callous/unemotional, impulsivity/conduct problems factors, and narcissism factor? It was hypothesized that the callous/unemotional trait would not explain variance within the behavioral inhibition or fearfulness variable and in fact would demonstrate a negative relationship; whereas, the impulsivity/conduct problems factor would predict behavioral inhibition/fearfulness. Again, previous findings were unclear concerning the narcissistic factor; therefore, it was unclear whether the narcissism factor would explain variance in behavioral inhibition, as hypothesized with the

impulsivity/conduct problems factor, or would not, as hypothesized with the callous/unemotional factor.

Finally, did callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits independently predict social-cognitive processes in community youth displaying aggressive behaviors? It was hypothesized that the callous/unemotional factor, but not the impulsivity/conduct problems factor would predict a higher value placed on aggressive acts and a disregard for the negative consequences of aggressive behavior. More specifically, the callous/unemotional factor would predict increased expectations and values associated with the positive outcomes of aggressive behavior and decreased expectations and values associated with the negative consequences for aggressive behavior. It was expected that the impulsivity/conduct problems factor would not be related to the outcome expectations or values. Again, previous findings were unclear concerning the narcissism factor; therefore, it was unclear whether the narcissism factor would explain variance in social cognition, as hypothesized with the callous/unemotional factor, or would not, as hypothesized with the impulsivity/conduct problems factor.

CHAPTER 2

LITERATURE REVIEW

General Aggression

Aggression research is essential because of its negative effects on an individual's development, family cohesion, the social and financial cost to local, state, and federal agencies and the overall quality of life indicators such as crime rates, community safety(Connor, 2002). Recently the focus on understanding aggression in children and adolescents has increased from public concern over school shootings, to community delinquency such as gang activity and anecdotal cases highlighted in the media of families, to unrecognized and untreated mental illness and violence in youth (Connor, 2002). The study of aggression is complicated as various terms apply to the same construct or one term has divergent definitions depending on the field of study. Terms that are often used to describe aggression include violence, delinquency, oppositionality, criminality, conduct-disorder, antisocial behavior, psychopathic or sociopathic behavior (Connor, 2002). Webster's College Dictionary (2002) defines aggression as a forceful action or procedure, especially an unprovoked attack; hostile, injurious, or destructive behavior or outlook especially when caused by frustration.

The criminal justice field defines aggression or antisocial behaviors as an act that violates the rules and laws of society; an act that is illegal, no matter what the age of the perpetrator (Steiner & Cauffman, 1998). Clinical definitions often refer to childhood aggression as synonymous with the DSM's diagnosis conduct disorder (APA, 1994). Psychometric based definitions may refer to externalizing behaviors as aggressive as compared to internalizing behaviors (Achenbach & Edelbrock, 1978; Naglieri, LeBuffe, & Pfeiffer, 1994). Psychometrically, aggression is a type of externalizing behavior characterized by impulsive, hyperactive, delinquent and aggressive behaviors (Achenbach & Edelbrock, 1978; Naglieri et al, 1994). Personality and Social Psychology definitions categorize extreme aggression as antisocial personality disorder and/or sociopathic/psychopathic personality (APA, 1994). Obviously, aggression is an enormously heterogeneous and broad category of behavior that is defined in several ways. In addition to definitional differences, there are multiple ways aggressive behaviors can be subdivided into meaningful categories

First it is important to distinguish adaptive and maladaptive aggression. Not all aggression serves the same purpose (Connor, 2002). Adaptive aggression occurs in the

service of ensuring the integrity or survival of the individual (Connor, 2002). It is a behavioral expression of intact internal mechanisms (e.g., biological, psychological, cognitive, and emotional) utilized across environments to compete for resources or defend oneself to ensure survival (Wakefield, 1992). Although adaptive aggression is recognized as a natural human process, and is described in the research, maladaptive aggression is the central focus of psychological research and concern in society (Connor, 2002). Maladaptive aggression does not occur in the service of an individual or group and is an expression of a disordered internal mechanism, usually the central nervous system, across a range of environments (Wakefield, 1992). Maladaptive aggression transpires independently of typical social contexts, occurs in the absence of antecedent social cues, and is disproportionately intense, frequent, severe and long lasting without appropriate termination (Connor, 2002).

Classifications of Maladaptive Aggression

Maladaptive aggression is routinely described by one of six categories. Although each has a different name, many of the categories are quite similar. The differences between category labels are related to preference of the author/field or theoretical perspective than the actual

aggressive behaviors described. One dichotomy is offensive vs. defensive aggression found in neurobiological research on animals (Blanchard & Blanchard, 1984). Offensive aggression is defined as an unprovoked attack on another and arises out of a challenge over obtaining a scant resource (Blanchard & Blanchard, 1984)). Defensive aggression, is provoked and in response to a threatening situation (Blanchard & Blanchard, 1984). The applicability of these aggression styles to human behavior is largely theoretical (Connor, 2002). Pulkkinen (1987) conducted one of the only empirically based tests of offensive-defensive aggression with 196 boys and 173 girls, average age 8 years 3 months. The study defined offensive aggression as unprovoked verbal or physical attack on another child and defensive aggression as an angry reaction to an irritation (Pulkkinen, 1987). Peer nominations and teacher rating scales were utilized in order to define/categorize aggressive behavior shown in the classroom (Pulkkinen, 1987). The study assumed that aggressive and nonaggressive behaviors could be categorized into the dimensions, Social-Activity (offensive)-Social Passivity (defensive) (defensive) or Strong Control of Behavior (offensive)-Weak Control of Behavior (defensive). The findings of the study did not support the defensive vs. offensive aggression

dichotomy; all aggressive behaviors fell within the quadrant, Social Activity and Weak Control of Behavior (Pulkkinen, 1987).

A second category is relational aggression. Relational aggression is defined as angrily excluding a peer from the group, purposely ending a friendship to reject a peer, spreading rumors, indirectly retaliating toward a peer by having other friends exclude or reject someone and tattling (Crick & Grotpeter, 1995; Crick & Werner, 1998; Hood, 1996). Typically, when children use relational aggression they focus on ways to undermine the goals valued by respective peers (Crick & Grotpeter, 1995; Crick & Werner, 1998; Hood, 1996). Higher rates of relational aggression are reported in females when compared to males (Bjorkqvist, Osterman, & Kaukiainen, 1992). Researchers hypothesize that girls tend to focus on relational issues in their social interactions; thus their aggression will reflect these themes (Bjorkqvist et al., 1992; Crick & Grotpeter, 1995).

A third classification of aggression is overt vs. covert aggression. Overt aggression is an openly confrontational act of physical aggression (Achenbach, Conners, Quay, Verhulst, & Howell, 1989; Loeber & Schmalting, 1985; Waschbusch, 2002). Examples include physical fighting, bullying, using weapons, open defiance

of rules (Achenbach et al., 1989; Loeber & Schmalting, 1985), annoying others, temper tantrums, arguing with others, being stubborn, and being easily touchy or annoyed (Waschbusch, 2002). Covert aggression is any hidden, furtive, and clandestine act of aggression (Achenbach et al., 1989; Loeber & Schmalting, 1985). Covert aggression is non-confrontational and those engaging in this type of aggression tend to be more socially withdrawn, anxious, and have internalizing problems (Waschbusch, 2002). Examples include stealing, fire setting, truancy, and running away (Achenbach et al., 1989; Loeber & Schmalting, 1985; Waschbusch, 2002). Oppositional defiant behaviors often lie at the midpoint between overt and covert aggression (Connor, 2002).

Reactive vs. proactive aggression is another aggression category. The theoretical roots for these constructs lie in social-psychological research on aggression in humans (Connor, 2002). Reactive aggression occurs when a frustrating or threatening event triggers an aggressive act and induces anger (Blair, Mitchell, & Blair, 2005). Here aggression is an angry, defensive response to threat, frustration, or provocation (Crick & Dodge, 1996) sometimes termed "hot blooded" aggression (Waschbusch, 2002). The goal of reactive aggression is solely to defend

oneself against a perceived threat or to inflict harm on a source of frustration (Dollard, Doob, Miller, Mowrer, & Sears, 1939). Children who are categorized as reactive in their aggression report early experiences of physical abuse, and ongoing hostile attributions, which is the tendency to view the world as negative, out to get you and dangerous (Waschbusch, 2002). Physiologically and behaviorally, reactive aggression is characterized by intense central nervous system automatic arousal, irritability, fear or anger, and frenzied, unplanned attacks on the object of frustration (Dodge, 1991). The Basic Threat Circuitry is the neural circuitry implicated in the expression of reactive aggression and is used for response to basic (real or perceived) threats in the environment (Greg & Siegal, 2001; Panksepp, 1998). Stimulated at low levels from a distant threat the Basic Threat Circuitry initializes a freezing response (Blair, Mitchell, & Blair, 2005; Blanchard, Blanchard, & Takahashi, 1977). At higher levels of stimulation from a more proximal threat, the system initializes escape-related behaviors and at even higher levels of stimulation when escape is impossible, the basic threat circuitry initiates reactive aggression (Blair et al., 2005; Blanchard et al., 1977).

Proactive aggression is non-impulsive, planned "cold blooded" aggression (Waschbusch, 2002). It is associated with a learning history where aggressive behavior is found to be a viable means to obtain a goal (Waschbusch, 2002). Those engaging in proactive aggression report overly positive evaluations of the outcomes of their aggressive acts (Waschbusch, 2002). Proactive aggression highly resembles instrumental aggression discussed in detail below.

Instrumental vs. hostile aggression encompasses another subdivision of the aggression construct. Hostile aggression occurs with the intention to inflict injury or pain upon a victim, with little advantage to the aggressor (Connor, 2002). Instrumental aggression is purposeful and goal directed (Dodge, 1991). The goal is not usually the pain of the victim but rather the victim's possessions or to increase one's status within a hierarchy (Blair et al., 2005). This type of aggression is highly organized, patterned, and directed toward the promise of a reward (Dodge, 1991). Physiologically and behaviorally, there is little central nervous system arousal, irritability, anger, or fear (Connor, 2002). According to Bandura (1973), instrumental aggression is learned through reinforced social role modeling and positive outcomes for aggressive

behaviors in social settings. Most antisocial behavior is goal directed (Blair et al., 2005).

The research shows mixed support for the instrumental vs. hostile aggression dichotomy (Hartup & de Wit, 1974; Rule, 1974; Willis & Foster, 1990). First there is overlap between the behavioral reactions of instrumental and hostile acts with both instrumental and hostile reactions demonstrated in many aggressive incidents (Hartup & de Wit, 1974). Second, in studies examining children's social perceptions, children perceive episodes of instrumental and hostile aggression similarly and evaluate both as equally problematic and negative (Rule, 1974; Willis & Foster, 1990). Other studies report that a child's behavior can differentiate the two constructs (Hartup, 1974).

Examining aggression in preschoolers and elementary school children Hartup (1974) found that hostile aggression increased with age while instrumental aggression decreased. Also, boys demonstrated more hostile reactions as compared to girls (Hartup, 1974). Moreover, clinically referred children evidence this distinction (Atkins & Stoff, 1993; Atkins, Stoff, Osborne, & Brown, 1993). On two studies with adolescent boys referred for disruptive behavior disorders, researchers found an association between impulsivity and hostile aggression but not instrumental aggression,

offering more support for the distinction (Atkins & Stoff, 1993; Atkins et al., 1993). Generally, it appears that a distinction between hostile and instrumental aggression is supported in terms of children's behavior but may not be evident in social peer perception.

A distinction that mirrors the differentiation between instrumental/proactive and reactive aggression is that of predatory vs. affective aggression. The theoretical roots of this distinction lie in neurobiological research on aggression in animals (Connor, 2002). Predatory aggression, similar to instrumental and proactive aggression, is defined as a motivated, goal-oriented behavior executed with planning by the animal with good motor control and low autonomic nervous system arousal (Eichelman, 1987; Moyer, 1976). Affective aggression on the other hand is similar to the description of reactive aggression. Simply, it is a reaction to a threat. This threat may be directed toward the animal itself, its young, or its territory (Eichelman, 1987; Moyer, 1976). The goal of affective aggression as in reactive aggression is defensive and includes an unplanned attack, poor motor control, and high autonomic nervous system arousal (Connor, 2002).

Aggression in the Current Study

It is apparent from this review that differences in aggression terminology simply lie in the population examined, wording, or theoretical perspective. Most types of aggression depicted can be divided into reactive (hostile and affective) and instrumental (predatory and proactive) aggression. A unitary model with dichotomous terminology is helpful when discussing aggression simply for conceptualization; however, Loeber and Stouthamer-Loeber (1998) argue that "a unitary model of externalizing problems does not adequately account for types of delinquent offenders (e.g., overt, violent offenders vs. covert, minor delinquents) or differences in terms of time of onset and differential life-course trajectories among offender subtypes" (p.243).

Subsequently, not all aggressive individuals will fall nicely into one category or the other. The current study focuses on aggression found at the extreme end of the distribution of antisocial individuals, specifically those exhibiting psychopathic personality traits, and proposes a type of aggression that combines instrumental and reactive aggression, with the instrumental aggression remaining the dominant means of negative interactions.

Research has offered support for two major categories of aggressive individuals, those engaging in solely reactive aggression and those demonstrating high frequency of both instrumental and reactive aggression (Barratt et al., 1999; Connor, 2002; Crick & Dodge, 1996; Linnoila et al., 1983). Those individuals who engage in primarily reactive aggression demonstrate an indifference to conventional rules (Blair et al., 2005). The description of reactive, hostile, and affective aggression previously discussed also applies to these individuals. Individuals evidencing both reactive and instrumental aggression are indifferent to moral transgressions and demonstrate little guilt or empathy with their victims (Blair et al., 2005). In addition to demonstrating the reactive, hostile, and affective aggression defined earlier, these individuals more predominantly exhibit instrumental, proactive, and predatory characteristics of aggression.

Consistent with the second category of aggressive individuals, those individuals who demonstrate psychopathic personality present with elevated levels of instrumental aggression (Woodworth & Porter, 2002). The behavior of the psychopath is often motivated by distinct goals rather than emotional reactions. This coincides with the lack of emotional reactivity often associated with the classic

psychopath (Cleckley, 1976). Woodworth and Porter (2002) investigated whether psychopaths engage in more instrumental or reactive aggression. They found that psychopaths were more likely to engage in instrumental violence than nonpsychopaths with almost all of the psychopaths committing instrumental homicidal violence rather than impulsive homicidal violence. Other researchers found similar results with psychopathic offenders being motivated more by material gain and not by heightened emotional arousal as well as exhibiting a higher likelihood to engage in instrumental violence than reactive violence (Cornell, Warren, Hawk, Stafford, Oram, & Pine, 1996). However, other researchers argue individuals with psychopathy demonstrate high levels of both reactive and instrumental aggression (Cornell et al., 1996; Williamson et al., 1987) and speculate because psychopathy is associated with high impulsivity this suggests psychopaths may engage in reactive aggression if subjected to provocation (Woodworth & Porter, 2002).

Prevalence of Aggression

Aggression is not a recent concern in terms of children and adolescents (Connor, 2002). Over the past 50 years, rates of maladaptive aggression and antisocial behaviors increased in frequency and severity among

children and adolescents in the United States (Connor, 2002). Juvenile violence peaked in the 1980's and early 1990's (Loeber & Hay, 1997; Waschbusch, 2002). Although it has been decreasing since the middle 1990's, juvenile violence continues to remain at historically high levels (Connor, 2002). Estimates suggest that a small proportion of adolescents (6-8%) are responsible for a large proportion (60-85%) of serious criminal acts (Cruise, Colwell, Lyons, & Baker, 2003). Between 1993 and 2003, juveniles were involved, as victims or offenders, in 38% of all violent crimes in which the victim could estimate the age of the offender (OJJDP, 2005). According to the National Crime Victimization Survey (NCVS) and the Supplementary Homicide Reports from the FBI, four out of five violent victimizations of younger teens aged 12-14 involved offenders perceived to be juveniles (OJJDP, 2005). Homicide is the second leading cause of death in 15-19 year olds (CDC, 2005; Loeber & Hay, 1997) and the leading cause of death in African Americans between the ages of 15 and 19 (CDC, 2005). It is evident from these statistics that although juvenile violence appears to be decreasing, it continues to be a serious problem for society. It should also be noted that the statistics recorded do not encompass all episodes of aggression that occur everyday in schools

and communities. Aggression does not always result in a statistic but does have largely negative effects on children, families, schools, and communities.

Stability of Aggression

For the past 80 years, an abundance of research has addressed the early-onset of aggressive/antisocial behaviors (Connor, 2002). Research demonstrates that adult antisocial behavior is evidenced in childhood (Broidy et al., 2003; Loeber, 1982; Waschbusch, 2002). In a study examining developmental trajectories of childhood delinquency, Broidy et al. (2003) found that physical aggression in male children is a distinct predictor of later violent delinquency and is the most consistent predictor of both violent and nonviolent offending in adolescence. Youth demonstrating extreme antisocial behavior have the greatest likelihood of continuing antisocial behavior (Loeber, 1982). The earlier the antisocial behaviors/conduct problems are established the more stable they will be with estimates of 50% of those individuals with early behavior/conduct problems remaining antisocial into adolescence and adulthood (Waschbusch, 2002). As adults, these children engage in more murder, robbery, rape, and arson, are more likely to exhibit multiple offences, and be incarcerated compared to those

who develop late onset conduct problems (Waschbusch, 2002). For later onset of conduct problems, the stability seems to be less predictable and has been shown to decrease and end in young adulthood (Waschbusch, 2002).

Furthermore, those children demonstrating chronic delinquency displayed antisocial behavior in more than one setting, demonstrated a higher variety of antisocial behaviors, and showed an earlier onset of these behaviors (Loeber, 1982). Loeber (1982) also found that the patterns of antisocial behavior tend to change during preadolescence and adolescence with the number of youth engaging in overt antisocial acts declining between the ages of 6 and 16; whereas, the number of youths engaging in covert antisocial acts increases.

Risk Factors for Aggression

Many factors influence aggression including environmental, emotional, and cognitive factors. Environmental aspects include such issues as divorce, job loss, birth of siblings, stress, SES, a history of aggression, parental psychopathology, exposure to violence, and ineffective parenting (CDC, 2005; Connor, 2002). Emotional precursors include difficult temperament, poor attachment, and poor emotional regulation (Connor, 2002; Loeber & Hay, 1997). Cognitive antecedents include low

intelligence, reading problems, attention problems, social cognitive deficits, mental scripts, favorable attitudes toward aggression, rejection sensitivity, and inflated self-esteem (CDC, 2005; Loeber & Hay, 2005). A complete discussion of each of these risk factors is beyond the scope of this paper. What is evident from the listing is that multiple risk factors exist, there is not a single pattern or combination that predicts aggression or violence, and the presence of protective factors may influence the development of later aggression (Connor, 2002).

Psychopathology of Aggression

The development of aggression and similar behaviors is one of the most common reasons children and adolescents are psychiatrically referred to mental health settings (Connor, 2002). Aggression, disruptive behaviors, and antisocial behaviors viewed as severely maladaptive may be considered for mental health diagnoses. Disorders are classified by two predominant methods. The American Psychiatric Association (APA) utilizes criteria presented in the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV; APA, 1994) and the World Health Organization (WHO) classifies psychiatric illness according to the International Classification of Diseases, which is in its

10th revision (ICD-10; WHO, 1992). The current paper utilizes the DSM-IV's descriptions of disruptive behavior disorders.

The DSM-IV (APA, 1994) describes a number of disruptive behavior disorders including oppositional defiant disorder, conduct disorder, and antisocial personality disorder (DSM-IV; APA, 1994). These disorders comprise the diagnoses most commonly associated with the development of aggression in children, adolescents, and adults. Each is described briefly below.

Oppositional Defiant Disorder (ODD) is depicted in the DSM-IV (APA, 1994) as a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figures that persists for at least 6 months, is characterized by frequent arguments with adults, defying or refusing to comply with adults, deliberately annoying others, being easily annoyed, being angry or resentful, and being spiteful or vindictive. A diagnosis of ODD requires that the behaviors occur more often than typically seen in individuals of a similar age and developmental level (APA, 1994). The behaviors must also lead to significant impairment in social, academic, or occupational functioning (APA, 1994). The diagnosis of ODD is not made if the behaviors occur exclusively during the course of a

Psychotic or Mood disorder or if the behaviors meet the criteria for a diagnosis of Conduct Disorder or Antisocial Personality Disorder (APA, 1994). An individual is usually identified as a child with ODD before the age of 8 and typically no later than early adolescence (APA, 1994). ODD is often a developmental antecedent to a diagnosis of conduct disorder; however, although it is a precursor to Conduct Disorder, not all children with ODD will develop Conduct Disorder (APA, 1994; Greene et al., 2002).

Conduct Disorder (CD) is defined 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 and in which antisocial behaviors are exhibited to the extreme given the individuals' developmental level (APA, 1994; Salekin et al., 2002). At least 3 of the following behaviors must be evident in the past 12 months with at least one present for at least 6 months: aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of rules (APA, 1994). The disturbance in behavior must cause clinically significant impairment in social, academic, or occupational functioning and if the individual is 18 or older, the symptoms do not meet the criteria for Antisocial Personality Disorder (APA, 1994).

CD is subtyped by the age of onset into Childhood-Onset Type and Adolescent-Onset Type (APA, 1994). Childhood-Onset Type is defined by the onset of at least one criterion before the age of 10 years old (APA, 1994). These children are usually male, exhibit frequent physical aggression toward others, have disturbed peer relationships, may have previously been diagnosed with ODD, and typically demonstrate symptoms meeting full criteria CD before puberty (APA, 1994). Individuals with Childhood-Onset Type are more likely to have persistent CD and to develop adult Antisocial Personality Disorder than those with Adolescent-Onset Type (APA, 1994). Adolescent-Onset Type is defined by the onset of at least one criterion after the age of 10 years (APA, 1994). These children are less likely than those with Childhood-Onset Type to display aggressive behaviors and are more likely to have more normative peer relationships (APA, 1994). These individuals are less likely to have persistent CD or to develop adult Antisocial Personality Disorder (APA, 1994).

Antisocial Personality Disorder (ASPD) is characterized by four criteria. First, at least three of the following must be present since the age of 15 for the diagnosis of ASPD: failure to conform to social norms, deceitfulness/lies, impulsivity, irritability and

aggressiveness/fights and assaults, reckless disregard for safety of self or others, irresponsibility, and lack of remorse (APA, 1994). Second and third, the individual's current age must be at least 18 and he/she has previously held a diagnosis of Conduct Disorder with onset before age 15 (APA, 1994). Finally, the antisocial behavior must not occur exclusively during schizophrenia or manic episodes (APA, 1994). This pattern of behavior has also been referred to as dissocial personality disorder, sociopathy, and psychopathy (APA, 1994). Of specific concern in this paper is the inclusion of psychopathic personality disorder under the diagnosis of antisocial personality disorder.

The diagnosis of Antisocial Personality Disorder is based largely on a pervasive pattern of antisocial behaviors. This fails to take into account the personality dimension argued to be an essential element in describing psychopaths (Gacono & Hughes, 2004). A purely behavioral definition of psychopathy identifies the disorder through a history of chronic antisocial behaviors without examining these behaviors for antisocial personality dimensions (Viding, 2004). Examining both affective and interpersonal traits and not simply antisocial behaviors, facilitates a more thorough understanding of psychopathic and nonpsychopathic criminals (Gacono, Loving, & Bodholdt,

2001). It has been argued that the exclusive behavioral definition allows for the overdiagnosis of psychopathy in criminals and an underdiagnosis in non-criminals (Viding, 2004).

Conceptualizing psychopathy as consisting of two-factors, personality traits and behaviors, results in conflicting base rates for psychopathy and ASPD (Gacono et al., 2001). Rates of ASPD in the community are estimated at 5.8% for men and 1.2% for women; however, in forensic populations, 50-80% of the individuals meet the criteria for an ASPD diagnosis (Gacono et al., 2001). Interestingly, only 15-25% of the same forensic population will classify as psychopaths (Gacono et al., 2001). Gacono et al. (2001) argued that ASPD and psychopathy are not equivalent and that when compared, ASPD is more heterogeneous. The ASPD diagnosis could be arrived at by an unlimited combination of the criteria and some have estimated a possible 27 trillion combinations (Rogers and Dion, 1991). This leads to extremely different individuals being included together under a single diagnosis (Gacono et al., 2001). Gacono and Hughes (2004) explained that most psychopaths meet ASPD criteria but most individuals with an ASPD diagnosis are not psychopaths. Contrary to ASPD, psychopathy is a homogenous diagnosis and continues to hold important

implications for research and clinical usage (Gacono et al., 2001). Further, psychopathy holds a higher risk for both offending and violence than ASPD (Gacono & Hughes, 2004). For these reasons, it is vitally important that the characteristics of psychopaths are examined and understood in order to gain a complete awareness of how the psychopath is unique and what implications this may have for diagnosis and treatment.

Psychopathy

The smallest, most severe group of offenders in the adult population is that of the psychopath (Hare, 1993). The word *psychopathy* literally means "mental illness" derived from *psyche* or mind and *pathos* or disease (Hare, 1993). Philippe Pinel, a nineteenth century French psychiatrist, was one of the first to write about psychopaths (Hare, 1993). Pinel attempted to describe a pattern of behavior that appeared to be void of remorse with a total lack of restraint using the term *insanity without delirium* (Hare, 1993; Millon, Simonsen, & Birket-Smith, 1998). Since the nineteenth century, the term psychopathy has been taken through many conceptions. The classic definition of psychopathy, as it is referred to today, was first proposed by Cleckley in his book *The Mask of Sanity*, first published in 1941. He described

psychopathy as a constellation of deviant personality traits with sixteen specific characteristics including:

Table 1

Cleckley's Psychopathy Characteristics

Characteristics

superficial charm/good intelligence
no delusions/irrational thinking insight
absence of nervousness/psychoneurosis
untruthfulness and insincerity with/without drink
lack of remorse or shame
inadequately motivated antisocial behavior
poor judgment/failure to learn
pathologic egocentric/incapacity for love
general poverty in major affective reactions
unreliability
unresponsiveness in general interpersonal relations
Fantastic and uninviting behavior with/without drink
Suicide rarely carried out
Sex life impersonal, trivial, and poorly integrated
Failure to follow any life plan

Hare et al. (1993) later identified twenty characteristics to describe psychopathy characterized as either personality traits or antisocial behaviors.

Table 2

Hare's Psychopathy Traits

Factor 1	Factor 2
Personality Traits	Socially Deviant Behaviors
pathological lying	need for stimulation/
callous/lack of empathy	proneness to boredom
glibness/superficial charm	irresponsibility
lack of remorse or guilt	parasitic lifestyle
shallow affect	early behavioral problems
conning/manipulative	juvenile delinquency
failure to accept responsibility	poor behavioral controls
	revocation of conditional release
	promiscuous sexual behavior
	impulsivity
	criminal versatility
	lack of realistic long-term goals
	many short-term marital relationships

Definitions of psychopathy continue to be modified as more information and research is collected and as various perspectives are adopted on this construct. Cook and colleagues (Cook & Michie, 2001; Cooke, Michie, Hart, & Clark, 2004) described psychopathy with three dimensions.

The first consists of an arrogant, deceitful interpersonal style (ADI) which includes glibness or superficial charm, self-centeredness or a grandiose sense of self-worth, lying, conning, manipulation, and deceitfulness (Cook & Michie, 2001; Cooke et al., 2004). The second dimension is the deficient affective experience (DAE) comprised of low remorse, low guilt, weak conscience, callousness, low empathy, shallow affect, and a failure to accept responsibility for one's actions (Cook & Michie, 2001; Cooke et al., 2004). The final aspect is the impulsive or irresponsible behavioral style (IIB) which includes boredom, excitement-seeking, a lack of long-term goals, impulsiveness, failing to think before acting, and a parasitic lifestyle (Cook & Michie, 2001; Cooke et al., 2004). Close review of this description of psychopathy reveals that the three dimensions appear to simply consist of rewording of the original personality and behavior dimensions originally identified by Cleckley and then Hare.

The current study utilizes Hare's two factor model of psychopathy as the basis for the definition of psychopathy. Paul Frick, in conjunction with other professionals, has completed considerable research in understanding severe antisocial behavior in youth, working to extend Hare's two-

factor model of psychopathy to younger populations (Frick & Hare, 2001; Hare, 1991).

General Psychopathy Definition in Children

Psychopathy in children has been receiving increased attention in terms of definition, assessment, and trajectory (Frick, 1998; Lynam, 1997; Salekin et al., 2001; Seagrave & Grisso, 2002). Psychopathic characteristics in children are often equated with or subsumed under the diagnoses of Conduct Disorder and Oppositional Defiant Disorder (Salekin et al., 2001). Similar to Antisocial Personality Disorder, CD and ODD do not include personality dimensions in their definitions. Because these personality dimensions are integral to the understanding of psychopathy, there is a need for further understanding of traits unique to psychopathy.

Research attempting to understand psychopathic traits in children has relied on research conducted with adults with psychopathy. Research has demonstrated that adults with psychopathy began exhibiting antisocial behaviors and psychopathic characteristics in childhood (Forth, Hart & Hare, 1990; Loeber, 1982). A factor analysis conducted by Frick and colleagues (1994) demonstrated two predominant factors that identified children with psychopathic characteristics: impulsivity/conduct problems (I/CP) and

callous/unemotional characteristics (CU). Frick and colleagues (1994) proposed that the callous/unemotional traits correspond with Factor 1 and that the impulsivity/conduct problems correspond to Factor 2 of Hare's two-factor model. The impulsivity/conduct problems factor comprised behaviors including impulsivity, poor impulse control, and delinquent behaviors (Frick et al., 1994). The callous/unemotional factor was characterized by lack of guilt, lack of empathy, and superficial charm (Frick et al., 1994). Frick and colleagues' downward extension of psychopathic traits in children encompasses the constructual definitions utilized in this study, which will be discussed in more detail further on in this document.

Though it is useful to extend adult criteria downward to children, it must be noted that many researchers have argued that this downward extension is problematic (Lynam, 1997; Salekin et al., 2001). Frick and colleagues (1994) found that the characteristics grandiose sense of self-worth, failure to accept responsibility for own actions, and boredom susceptibility were related to the I/CP factor in children whereas in adults these behaviors were associated with more psychopathic behaviors. The researchers suggest that the differences could suggest

developmental differences in the manifestation of psychopathy in youth (Frick et al., 1994). Lynam (1997) examined childhood psychopathy in 430 boys ages 12 and 13 in order to assess whether childhood psychopathy resembled adult psychopathy. He found that children with psychopathic personalities were serious and stable offenders, impulsive, and more prone to externalizing than internalizing disorder (Lynam, 1997). These findings are consistent with findings concerning adult psychopathy and again suggest that psychopathy may manifest in youth. However, although an important reference, the downward extension of adult criteria should be utilized with caution due to the varying factor structures identified in youth. Further clarification of psychopathy in youth is warranted.

Prevalence of Psychopathy

Psychopaths comprise 15-25% of criminals in the adult federal offender population (Hare, 1993) and are five times more likely than nonpsychopaths to engage in violent recidivism within 5 years of release (Serin & Amos, 1995). Psychopaths commit 50% more crimes than nonpsychopaths and are not only more likely to commit a violent offense but also to commit a wide variety of offences (Hare, 1993).

The prevalence of psychopathy in the young offender population has been estimated at 21.5%, similar to the 15-30% estimate for adults (Salekin et al., 2004).

Stability of Psychopathy

Personality is stable (Lynam, 1997). The stability appears greater between the ages of 18 and 32 ($r=.55$) than between the ages of 10 and 18 ($r=.38$) but there exists significant stability during adolescent years. According to Farrington, there is no dramatic change in personality or behavior at age 18; rather there exists a continuity from childhood to adulthood (Farrington, 1991). One specific example was found in a study conducted by Caspi (2000) where under-controlled children at age 3 significantly reported that they were reckless and careless, and enjoyed dangerous and exciting activities at age 18.

According to Cleckley (1976), Hare (1993), Cook and colleagues (2001), Frick (1994) and others, the definition of psychopathy includes personality. Since personality is stable and children exhibit personality traits similar to those displayed in adults, it follows that the child who most closely resembles the psychopath in childhood will closely resemble the psychopath in adulthood (Lynam, 1997). Research demonstrates that adult antisocial behavior and psychopathy are evidenced in childhood (Loeber, 1982;

Lynam, 1997). Porter and colleagues (2001) found that psychopathic offenders commit more violent and nonviolent crimes than nonpsychopaths from late adolescence to their late 40s. Psychopathic traits in children have been found to predict severe and violent antisocial behavior in adults (Salekin, Neumann, Leistico, DiCicco & Duros, 2004). Viding (2004) argues that this finding suggests that psychopathy may be a developmental disorder in which specific personality traits can be assessed in children. Early identification of these youth would have important safety implications for the community as well as assisting our understanding of the etiology, development, and treatment regimens of psychopaths (Gacono & Hughes, 2004; Lynam, 1997; Salekin et al., 2004).

Theories of Psychopathy

Does psychopathy develop through nature, brain anatomy and biology, or through nurture, environment and parenting? The general consensus is that individuals with psychopathy are a homogeneous group and that not one theory can explain the process by which these individuals develop psychopathic characteristics (Blackburn, 2006). Theoretical perspectives that have considered antisocial behavior and psychopathy include evolutionary, genetics, developmental, social-

learning, psychoanalytic, personality, neurobiological, and cognitive.

Evolutionary theory. Evolutionary theory suggests that the basis of human nature includes adaptations taking the form of evolved psychological mechanisms for solving specific problems of survival or reproduction (Buss, 1999). Precise motives, goals, and strivings developed from these adaptations with the most universal being for status in the competition for resources (Buss, 1999). This competition entails impeding others' likelihood of acquiring resources which can include stealing, cheating, attacking, humiliating, or guaranteeing compliance of others (Buss, 1999). It is proposed that psychopathy represents an evolutionary process based on a cheating strategy that would have supported reproductive success in ancestral environments (Beck & Freeman, 1990). Basically, individuals who engaged in the cheating strategy would survive through frequency-dependent selection (Buss, 1999), maintaining themselves as a small frequency in a predominantly cooperative population (Blackburn, 2006).

Genetic theory. Genetic research has investigated twin and adoption studies in order to learn more about the etiology of antisocial and psychopathic behaviors. A meta-analysis of 51 twin adoption and sibling designs found that

on average 41% of the variance in antisocial behavior is due to genetic factors, 16% is due to shared environmental factors, and 43% is due to non-shared environmental factor (Rhee & Waldman, 2002). Antisocial behavior, according to this meta-analysis, is moderately heritable (Rhee & Waldman, 2002). The Twins Early Development Study (TEDS) consisted of teacher ratings of more than 7000 seven year-old twins. This study found that antisocial behavior in children with elevated levels of the callous/unemotional traits were under an extremely high genetic influence (.81) and no influence of the shared environment. Conversely, those children demonstrating antisocial behavior without evidencing callous/unemotional traits showed moderate genetic influence (.30) and substantial environmental influence (shared environment = .34; non-shared environment = .26) (Viding et al., 2005). These results indicate that the family-wide environmental influences that are not acting on the child's genotype are important for the development of antisocial behavior when callous/unemotional traits are not present (Viding et al., 2005). Because environmental influences act in tandem with the genotype, as well as the environmental influences unique to the child (essentially, shared and nonshared environmental influences), it appears that the combination is more

important for the development of antisocial behaviors in children with elevated levels of callous/unemotional traits than children with antisocial behaviors absent of high levels of callous/unemotional traits where environment alone plays a more important role(Viding et al., 2005).

Attachment theory. Attachment theory emphasizes the quality of infant-caregiver relationships during the first year of life as a predictor of cognitive and social development (Bowlby, 1969). Attachment research demonstrates that cold rejecting parents or disrupted families tend to produce cold, callous children who are unable to develop warm relationships, have low empathy, and are likely to offend (Farrington, 2005). These children are naturally hedonistic and selfish (Farrington, 2005). They seek pleasure and avoid pain (Farrington, 2005). It is well recognized that empathy-producing, positive parenting practices lead to less antisocial behavior than punishment-based, negative parenting practices (Blair, 2003). This relationship has been demonstrated in healthy individuals as well as those displaying conduct disorders without evidence of the emotional dysfunction of psychopaths (Blair, 2003). Conversely, children with conduct disorder who do demonstrate emotional dysfunction of psychopaths do not show the connection between parenting behaviors and

level of antisocial behavior (Wootton, Frick, & Shelton, 1997). The emotional impairment found in individuals with psychopathy interferes with the natural socialization so that the individual does not learn to avoid antisocial behavior (Blair, 2003).

Role-taking theory. Gough's role-taking theory attempts to explain psychopathy through the argument that individuals with psychopathy demonstrate impairment in role-taking abilities (Blackburn, 1984). Gough's (1948) role-taking theory states that the self-concept and the capacity to examine oneself as an object emerge as a result of social interaction and communication. During the role-taking process, the person develops a conception of the "generalized other" which advances through the integration of different conceptions of "me" (Blackburn, 2006). Role-taking abilities are central to an individual's ability to be sensitive to the reactions of others and are necessary for self-criticism and self-control (Blackburn, 2006). The argument is that the characteristics of the psychopath including ignoring the rights of others, impulsivity, emotional poverty, and the inability to form lasting interpersonal attachments could be accounted for by a pathological deficiency in role-taking ability (Blackburn, 2006).

Psychoanalytic theory. Psychoanalytic theory has attempted to explain the development of the psychopath (Blackburn, 2006). The depiction of the psychopath as an egocentric, impulsive, guiltless, and unempathic individual has its roots in psychodynamic thinking (Blackburn, 2006). Freud discussed the process of socialization in early childhood with the development of the superego and argued that impaired socialization occurs when parents fail to meet the child's emotional needs by way of rejection, neglect, or inconsistency (Blackburn, 2006). More recent psychodynamic theories stress the importance of object relations which is "the enduring patterns of interpersonal relationships derived from internal cognitive and affective representations" (Blackburn, 2006, p.36). In this view, the psychopath has a biologically predisposed excessive aggressive drive, which becomes the dominant interaction style in response to early traumatic experiences or distortions in attachment resulting from abuse and abandonment (Kernberg, 1996). The individual adopts rage and envy as primary affects and defends against a dangerous world by using grandiosity and devaluation (Kernberg, 1996). The superego system uses primitive, punitive prohibitions with a reliance on immediate external cues and

basic self-interest for the regulation of interpersonal behavior (Kernberg, 1996).

Personality theory. Personality theories offer multiple explanations for the psychopathic personality including but not limited to Eysenck's theory, the Big 5 Personality Theory, and the Interpersonal Circumplex. Each will be discussed briefly. Eysenck's (1977; 1996) theory focuses on three independent dimensions of personality including Neuroticism-Stability (N), Psychoticism-Superego (P), and Extraversion-Introversion (E). N, E, and P all have biological basis concerned with activity in the limbic and autonomic systems as well as cortical arousal (Eysenck, 1996). Importantly, extraverts, compared to introverts, demonstrate low arousal, form conditioned responses less readily, and require more extreme stimulation to maintain a "hedonic tone" (Eysenck, 1996). Basically, the theory argues that individuals with psychopathy, similar to typical criminals, exhibit lower arousal and weaker conditionability and will demonstrate higher mean scores on all three dimensions, N, E, and P (Eysenck, 1996). Blackburn (2006) explains that supportive research for this theory is lacking in that support is unsubstantial for the central theoretical links between extraversion, its physiological substrate, and the process of socialization.

Antisocial behavior and psychopathic personality has been related to the Big 5 Personality Theory or Five Factor Model (FFM). The 5 personality factors included in this theory include extraversion, agreeableness, conscientiousness, neuroticism, and openness (Farrington, 2005). Extraversion is "a trait characterized by a keen interest in other people and external events, and venturing forth with confidence into the unknown" (Ewen, 1998, p. 289). Agreeableness is defined as straightforwardness, altruism, modesty, and tendermindedness on the positive end and deceitfulness, exploitiveness, arrogance, and callousness on the negative end (Farrington, 2005). Conscientiousness is defined as dutifulness, achievement striving, self-discipline, and deliberation on the positive end with poor dependability, aimlessness, hedonism, and carelessness at the negative end (Farrington, 2005). Neuroticism is defined as impulsiveness and angry hostility which includes self-consciousness with glibness and shamelessness on the negative end and vulnerability with fearlessness at the opposite end (Farrington, 2005). Openness refers to how willing people are to make adjustments in notions and activities in accordance with new ideas or situations (Ewen, 1998). Three of these factors were found to be connected with psychopathy in

children and adolescents including agreeableness, conscientiousness, and neuroticism. Agreeableness is related to Factor 1 in Hare's definition. Conscientiousness is more related to Factor 2 and neuroticism is related to both Factor 1 and Factor 2, but more particularly Factor 2 (Lynam et al., 2005). Psychopathy is negatively correlated with conscientiousness and agreeableness (Lynam et al., 2005).

Another personality theory relating to psychopathy is the Interpersonal Circumplex (Lynam et al., 2005). The Interpersonal Circumplex describes personality with seven characteristics including assured-dominant, arrogant-calculating, cold-hearted, aloof-introverted, unassured-submitting, warm-agreeable, and gregarious-extraverted (Lynam et al., 2005). According to this theory, psychopaths tend to be cold-hearted and arrogant-calculating (Lynam et al., 2005).

Neurobiological theory. Neurobiological theories also describe the development of antisocial behavior and psychopathic personality. Specific theories concerning psychopathy include the Left Hemisphere Activation Hypothesis (LHA), the Frontal Lobe Dysfunction Hypothesis, and the Somatic Marker Hypothesis. Each will be discussed briefly. The Left Hemisphere Activation Hypothesis (LHA)

states that individuals with psychopathy have deficits in cognitive processing that are state-specific and occur only under circumstances that selectively and differentially activate the left hemisphere resources (Kosson, 1998). In general, information processing will be disrupted in psychopaths when the left hemisphere is substantially activated by processing demands (Kosson, 1998). The foundation of this hypothesis comes from the work of Hare and Jutai (1988, p. 329) who speculated that individuals with psychopathy may demonstrate "weak or unusual lateralization of language function, and that psychopaths may have fewer left hemisphere resources for processing language than do normal individuals". Studies examining language function prompted Hare and Jutai's speculation. For example, in one study, individuals were presented with word stimuli to both the left and right visual fields and were expected to state whether the word matched a previously presented word, a semantic category, or an abstract category (Hare & Jutai, 1988). The study found that individuals with psychopathy demonstrated difficulty in the area of abstract category discrimination if the word was presented to the right visual field (Hare & Jutai, 1988). However, these same individuals demonstrated superior performance when the stimuli were presented to the

left visual field (Hare & Jutai, 1988). Dichotic listening tasks also demonstrated an unusual lateralization in individuals with psychopathy (Hare & McPherson, 1984). These tasks required individuals to report what they heard when words were played to the right or left ear (Hare & McPherson, 1984). Individuals with psychopathy demonstrated impairment when reporting words that were played to the right ear but not the left (Hare & McPherson, 1984). These findings were replicated in adolescents demonstrating psychopathic traits (Raine et al., 1990). While these studies appear to demonstrate support for the Left Activation Hypothesis, Blair and colleagues (2005) argue that the hypothesis lacks specificity in that it does not fully explain why the left hemisphere should disrupt cortical functioning, which systems in the left hemisphere disrupt cortical functioning when it is over-activated, and how greater left hemisphere activation should be quantified.

The second hypothesis is the Frontal Lobe Dysfunction Hypothesis. The frontal lobe and executive dysfunction have long been related to antisocial behavior (Barratt, 1994; Elliot, 1978; Gorenstein, 1982; Moffitt, 1993). This conclusion has been made from three types of data. The first examined patients with acquired lesions of the

frontal cortex that evidenced emotion and personality changes such as euphoria, irresponsibility, lack of affect, lack of concern for the present and/or future, and increased aggression (Hecaen & Albert, 1978). These individuals demonstrated increased levels of reactive but not instrumental aggression, which contradicts the psychopathic personality who demonstrates predominantly instrumental aggression (Blair et al., 2005). Studies with these patients have found that the orbital and medial cortices, but not the dorsolateral cortex were involved in regulating reactive aggression (Blair et al., 2005). Gorenstein (1982) found psychopaths' performance relative to a control group to be comparable to patients with lesions in the frontal lobe on the Wisconsin Card Sorting Task and the Necker Cube Reversals but not the Sequential Matching Memory Task (Gorenstein, 1982). Blair et al. (2005) point out that these studies demonstrate key differences between individuals with lesions in the orbitofrontal cortex and those with psychopathy.

The second type of patient examined in developing the Frontal Lobe Dysfunction Hypothesis are those individuals with antisocial behavior who show deficits in executive functions (Blair et al., 2005). However, making causal inferences from this research is difficult because many of

the studies failed to distinguish among specific areas of the brain (Blair et al., 2005). Specifically, much of the literature concentrates on tasks examining the functions of the executive functions commonly linked to orbitofrontal and medial frontal cortex and not the dorsolateral prefrontal cortex that are involved in regulation of reactive aggression (Damasio, 1994; Grafman et al., 1996; Volavka, 1995). Research has found that psychopaths do not show executive dysfunction on measures that specifically examine the dorsolateral prefrontal cortex; however, they do show executive dysfunction on tasks linked to the orbital frontal cortex (Kandal & Freed, 1989). Meaning, psychopaths do not demonstrate deficits in functioning related to the regulation of reactive aggression (dorsolateral prefrontal cortex) but do demonstrate deficits in tasks assessing orbital frontal cortex dysfunction such as response reversal and response control.

The third type of study examined violent individuals who demonstrated significantly reduced levels of cerebral blood flow (CBF) in the medial and frontal cortex (Blair et al., 2005). Lower levels of normalized CBF in the orbital frontal cortex (BA 47) correlates with a history of aggression (Dolan et al., 2002). Negative correlations have been found between the callous-unemotional (Factor 1)

dimensions and frontal and temporal perfusion (Soderstrom et al., 2002), which means the higher the callous-unemotional characteristics, the less blood flow observed in the frontal and temporal regions. This research demonstrates support that Frontal Lobe Dysfunction is evident in individuals with psychopathy.

A third hypothesis is the Somatic Marker Hypothesis. The Ventromedial Frontal Cortex is involved in linkages between factual knowledge and bio-regulatory states (Bechara, Damasio, & Damasio, 2000). When emotionally significant decisions are made either involving reward or punishment, bodily states provide affective coloring that automatically biases an individual toward or away from the available response options (Blair et al., 2005). The bodily feedback or somatic marker provides an automatic way of labeling an option as good or bad and influencing the likelihood that that response is made (Blair et al., 2005). Patients with lesions to the ventromedial frontal cortex fail to show autonomic responses to visually presented social stimuli under passive viewing conditions (Damasio et al., 1990). Patients with ventromedial damage show deficits on the four pack card task, continuing to choose from the disadvantaged package and failing to show skin conductance before the choices of packs (Damasio et al., 1990).

Children and adults with psychopathy show deficits on the card task; however, they do not show deficits on the autonomic responses to social stimuli and therefore, they appear to generate somatic markers (Blair, 1999). Therefore, the evidence for the Somatic Marker Hypothesis remains divided.

Multiple areas of the brain are implicated in the development of antisocial behavior including the ventro-lateral section, the orbital frontal cortex, and the amygdala (Blair et al., 2005). The ventro-lateral section of the brain is related to response control which is defined as a resolution of response competition in tasks where there is no clear expectation of reward or punishment (Blair et al., 2005). Tasks that focus on response control includes go/no go and the stop task and allow for a direct test of whether a non-emotion based difficulty exists in the control of motor responses (Blair et al., 2005). Two out of three studies that have examined response control in psychopathic individuals have shown that these individuals have difficulty with the go/no go task (LaPierre et al., 1995; Roussy & Touplin, 2000). One study using the stop task showed that psychopaths demonstrate more impairment on withholding their responses following the stop signal than controls (Roussy & Touplin, 2000). This demonstrates a lack

of response control in individuals with psychopathic traits.

The orbital frontal cortex is involved in response reversal (Blair et al., 2005). Response reversal is defined as changing a response to a stimulus as a function of a change in a contingency (Rolls, 1997). The individual learns to withhold a response that, although previously rewarded, is now punished (Rolls, 1997). This task is distinct from passive avoidance tasks in that response reversal requires a change or reversal in the response, whereas, passive avoidance demands learning to respond to one stimulus and withhold a response to another stimuli but never reverse the responses (Newman & Kosson, 1986). The orbital frontal cortex is critical to this reversal (Blair et al., 2005). Response reversal is a function of the degree to which there is a mismatch between the expectation of reinforcement and the presence of a reinforcer (Cools, Clark, Owen & Robbins, 2002). Blair et al. (2005) argue that clear evidence does not exist that individuals with psychopathy demonstrate a weakness in this skill. Research demonstrates adult psychopaths display significant impairment in response reversal tasks in which they must reverse their responding to the object that had previously elicited rewards but now elicits punishment (Mitchell,

Colledge, Leonard, & Blair, 2002); however, children with psychopathic traits do not demonstrate a deficit in response reversal (Blair, Colledge, & Mitchell, 2001).

It is suggested that one of the principal neural systems implicated in the psychopathic pathology is amygdala dysfunction (Patrick, 1994). In contrast to studies measuring orbital frontal cortex performance, performance on measures thought to require the amygdala has been found to be significantly impaired in both adults and children displaying psychopathy. The amygdala consists of two parts including the basolateral (BLA) and the central nuclei (CeN) (Johnston, 1923). The amygdala is one of the most vital areas of the brain for emotional processing (LeDoux, 1998). The integrated emotion systems (IES) model explains how the amygdala interacts with other portions of the brain to affect emotion processing (Blair, Mitchell, & Blair, 2005). There are three major connection systems involving the amygdala (Price, 2003). First, a predominantly forebrain system including the olfactory cortex, ascending taste/visceral pathways, posterior thalamus, and sensory association cortical areas provide sensory input to both parts of the amygdala (Price, 2003). The amygdala most likely modulates sensory processing due to the reciprocal nature of many of the connections of the

sensory input structures and the amygdala (Price, 2003). Second, a system of projections to the brainstem exists in which changes, mostly extending from the CeN, of the visceral function relating to emotional stimuli are made (Blair et al., 2005). Finally, a system of reciprocal connections to the forebrain including the ventromedial frontal, rostral insular, rostral temporal cortex, medial thalamus, and the ventromedial basal ganglia allow the amygdala, mostly the BLA, to influence goal-directed behavior (Blair et al., 2005).

It is necessary to first understand the learning functions of the amygdala, which will be used to explain amygdala dysfunction found in individuals with psychopathy. The amygdala permits three conditioned stimulus associations to be formed (Everitt et al., 2003). These associations include conditioned stimulus (CS) - unconditioned response (UR) associations, conditioned stimulus (CS) - affect representation associations (i.e. fear or the expectation of reward), and conditioned stimulus (CS) - valenced sensory properties of the unconditioned stimulus (US) associations (Everitt et al., 2003). The amygdala is necessary for the formation of the CS-UR and CS-reinforcement associations, but not the CS-CR associations (Blair et al., 2005). Evidence suggests that

individuals with psychopathy demonstrate impairment in the formation of the CS-UR and CS-reinforcement associations, as they are the configurations in which the amygdala is essential (Blair et al., 2005).

The amygdala is involved in many processes that when impaired yield the functional impairments demonstrated in individuals with psychopathy (Blair, 2003). The first process is the expression of basic emotional reactions for which there are three types of evidence for amygdala dysfunction in individuals with psychopathy (Blair et al., 2005). First, amygdala dysfunction has been evidenced through impaired aversive conditioning tasks in individuals with psychopathy (Flor et al., 2002; Hare, 1970). Individuals with psychopathy when compared to controls fail to exhibit a conditioned skin conductance response to typically aversive stimuli (Flor et al., 2002). Blair and colleagues (2005) argue that although it is not yet understood if this is evidence of an impaired CS-UR or CS-affect representation association, either implicates amygdala dysfunction. Blair and colleagues (2005) cite that recent neuro-imaging completed by Veit and colleagues (2002) demonstrates reduced amygdala activity during aversive conditioning tasks in individuals with psychopathy.

Second, data suggests that the amygdala is involved in modulating startle responses by conditioned stimuli (CS) (Angrilli et al., 1996; Davis, 2000). Startle responses have been related to anxiety levels in both animals and humans (Davis, 2000). Everitt and colleagues (2003) suggest that a visual prime CS can increase the brainstem neuron activity which would intercede in the startle reflex through the CeN by means of the BLA as a result of a CS-affect representation. Research argues that dysfunction in either the BLA or CeN would induce a reduced escalation of the startle reflex by visual primes seen by those with psychopathy (Leventon et al., 2000; Pastor et al., 2003; Patrick et al., 1993).

Third, the amygdala is involved in the activation of autonomic responding (Blair et al., 2005). Individuals with psychopathy demonstrate appropriate skin conductance responses to visual threats; however, display reduced skin conductance responses to facial expressions of sadness (Blair, 1999; Blair et al., 1997), imagined threat scenes (Patrick et al., 1994), anticipated threat (Hare 1982), and emotionally evocative sounds (Verona et al., 2004). Blair and colleagues (2005) argue that individuals with psychopathy must demonstrate impairment in skin conductance responses when they are related to the amygdala due to the

fact that visual threats have been shown to be more disrupted in individuals with orbital frontal cortex lesions than the amygdala (Tranel and Damasio, 1994).

The second process the amygdala is related to is stimulus selection or attention (Blair et al., 2005). Attention is the consequence of competition for neural representation between multiple stimuli (Desimone & Duncan, 1995; Duncan, 1998). Attention is given to the stimuli that win the competition through both top-down influences such as directed attention and bottom-up sensory processes including stimulus salience (Desimone & Duncan, 1995; Duncan, 1998). Research demonstrates that the amygdala augments attention to emotional information as compared to neutral information (Anderson & Phelps, 2001). Basically, reciprocal connections from affect representation and CS representations should bring about improved performance if the CS is the target stimulus for goal-directed behavior and impaired performance if the CS distracts from goal-directed behavior (Blair et al., 2005). This process is found in healthy individuals on tasks requiring identification of emotional words; however, individuals with psychopathy demonstrate reduced reaction times to emotional words as well as evoked related potential differences between neutral and emotional words (Day &

Wong, 1996; Lorenz & Newman, 2002; Williamson et al., 1991).

The amygdala, specifically the BLA, is involved in instrumental learning which occurs in individuals learning to perform an action to a stimulus if the action results in reward and to withhold performing an action to a stimulus if the action results in punishment (Blair, 2006; Blair et al., 2005). Some instrumental learning tasks involve the formation of CS-affect representation and CS-valenced sensory properties of stimulus associations such as passive avoidance learning tasks (Blair et al., 2005). Passive avoidance tasks require participants to learn to respond to good stimuli and avoid responding to bad stimuli (Blair, 2006; Blair et al., 2005). When individuals form positive CS-affect associations they will respond to the stimulus; conversely, negative CS-affect associations result in the participant avoiding the stimulus (Blair et al., 2005). Individuals with psychopathy demonstrate impaired performance on these tasks, displaying difficulty in forming negative CS-affect associations (Blair et al., 2004; Newman & Kosson, 1986; Newman & Schmitt, 1998). Other instrumental learning tasks involve stimulus-response associations, which are not linked to the amygdala, including object discrimination and conditional learning

tasks (Blair et al., 2005). Individuals with psychopathy do not demonstrate impaired performance on these tasks, which is expected due to the fact that they are not related to amygdala functioning (Blair et al., 2005).

Finally, the amygdala is implicated in the development of moral socialization (Blair et al., 2005). Socialization occurs through a process in which caregivers and others reinforce behaviors that are desired and punish behaviors that should be discouraged (Blair et al., 2005). This process occurs through aversive conditioning and instrumental learning, notably two tasks for which individuals with psychopathy demonstrate impairment (Blair et al., 2005). The US or punisher most often present when antisocial behavior occurs, especially during childhood, is the distress of the victim (Blair et al., 2005). Therefore, sadness and fearfulness of a victim acts as a US which elicits aversive conditioning and instrumental learning (Blair et al., 2005). Negative actions then must be associated with an aversive unconditioned stimulus such as the distress of the victim in order to learn not to commit the negative actions (Blair et al., 2005). Additionally, learning avoidance of engaging in moral transgressions entails either personally committing or witnessing another commit a moral transgression and subsequently be punished

by the aversive response, namely the victim's distress (Blair et al., 2005). Individuals with psychopathy demonstrate significant impairment in processing sad and fearful expressions, exhibiting reduced autonomic responses to these expressions (Aniskiewicz, 1979; Blair et al., 1997). Children with psychopathic traits, in particular, demonstrate an impaired ability to recognize sad and fearful expressions (Blair et al., 2001).

Appropriate moral socialization, evidenced through an understanding of the distinction between moral (victim-based) and conventional (social disorder-based) transgressions, can be demonstrated in children as early as 3.5 years old (Smetana, 1993; Turiel et al., 1987). Typically developing children are best able to distinguish between moral and conventional transgressions when they are to imagine situations in which no rules prohibit the offenses (Blair et al., 2005). Both adults with psychopathy and children demonstrating psychopathic traits are least likely to exhibit the ability to discriminate under the no rules condition (Blair, 1995; Blair et al., 1997). Adults with psychopathy also show less understanding of situations that are likely to generate guilt; although, they do demonstrate comprehension of emotions such as happiness, sadness, and embarrassment (Blair, 1995). The amygdala

responds to fear and sadness of victims, permitting the formation of moral transgression-victims' distress associations (Blair et al., 2005). Individuals who demonstrate decreased fearfulness due to amygdala dysfunction, such as individuals with psychopathy, would not find the distress of others aversive and thus will have decreased ability to socialize (Wootton et al., 1997). The above research concerning various brain regions, especially the amygdala, and hypotheses demonstrate that there is much support for the neurologically based theory when examining individuals with psychopathy.

Cognitive theory. Another perspective to consider when examining the psychopathic personality is cognitive theories. Cognitive theories focus on the concept of an independent self, decision making and thinking, the stored repertoires that have been learned during early development, and the extent to which children are influenced by immediate gratification as opposed to long-term consequences (Farrington, 2005).

Kegan (1986) used the work of Piaget and Kohlberg to explain how psychopathy reflects a failure of cognitive development. Prior to adolescence, a child possesses a concept of an independent self and is capable of recognizing others' needs and take their role but are

unable to coordinate his/her own needs and feelings with those of another (Kegan, 1986). Right actions meet one's own needs and the child fails to experience guilt as internal self-punishment (Kegan, 1986). Kegan (1986) suggests within this preadolescent stage, which corresponds with Piaget's concrete operational stage and Kohlberg's preconventional stage, individuals with psychopathy have a developmental delay. During this stage, moral and self-serving values are not differentiated (Kegan, 1986). The disturbance in typical developmental growth, according to Kegan (1986), results from a lack of familial and peer group support for development beyond this stage. This theory appears to limit its explanation of psychopathy in that it is uncertain whether lower moral development could be completely responsible for the prominent psychopathic characteristics (Blackburn, 2006).

Beck's (1976) theory views psychopathy as cognitive distortion which closely relates to Lazarus's (1991) more recent theory that suggests cognitive appraisal of the situation determines both the arousal and experience of emotion. During a rapid, preconscious appraisal process, evaluation of the situation for meaning occurs, defined by the relation of the situation to the individual's personal beliefs or expectations and goals (Lazarus, 1991). Beck

(1976) argues for specific emotions as the consequence of definite cognitive appraisal about the influence of events on one's personal domain or schema. Specifically, the psychopath, views the self as a strong, autonomous loner, who possesses core beliefs to look out for oneself, avoid victimization by being the aggressor, and break social rules because they are entitled to while others are viewed as exploitative and deserve exploitation in return or as weak and vulnerable to be preyed upon (Beck, 1976). These attributes are mediated by dysfunctional schemas concerning the self, the world, and the future that continue to be maintained through selective, confirmatory experiences (Beck, 1976).

Newman and colleagues' (Gorenstein, 1991; Gorenstein & Newman, 1980; Newman, 1998; Patterson & Newman, 1993) response modulation theory focuses on the impulsivity and lack of restraint characteristics of the psychopath and argues that cognitive processing deficits impair individuals with psychopathy from accommodating the meaning of contextual cues when involved in goal-directed behaviors. Response set modulation consists of a system that uses automatic attentional processes to initiate self-regulation (Vitale et al., 2005) or a relatively automatic shift of attention from the execution of a dominant

response to relevant secondary and/or contextual cues that might be used to modify ongoing response (Newman, 1998). Failure in response set modulation results in disinhibited behaviors, including passive avoidance tasks (Vitale et al., 2005). Individuals with psychopathy demonstrate difficulty in response set modulation in terms of passive avoidance tasks (Farrington, 2005). In particular, individuals with psychopathy display impairment in their abilities to avoid tasks for which they are punished for (Farrington, 2005).

The Dysfunctional Fear Hypothesis assumes that moral socialization is achieved through the use of punishment (Eysenck & Gudjonsson, 1989; Trasler, 1978). According to moral socialization, a healthy individual is frightened by punishment and associates fear with an action that resulted in punishment, making it less likely to engage in the action in future (Eysenck & Gudjonsson, 1989; Trasler, 1978). Because of less aversive arousal to punishment, individuals with psychopathy create weaker cognitive associations and thus are more likely to engage in the punished action in the future (Eysenck & Gudjonsson, 1989; Trasler, 1978).

The Behavior Inhibition System (BIS), a unitary fear system, generates autonomic responses to punished stimuli

(through classical conditioning) and inhibits responding following punishment (through instrumental conditioning) (Blair et al., 2005). The problem with the both BIS and DFH, according to Blair and colleagues (2005) is the claim that a unitary fear system exists; however, research strongly suggests that this is not the case. No single fear system exists but rather there is a series of partially separable neural systems engaged in the specific forms of processing that are subsumed under the term fear (Blair et al., 2005). Additionally, fear theories may not predict the very high level of antisocial behavior shown by individuals with psychopathy (Blair et al., 2005).

The Violence Inhibition Mechanism model is another cognitive theory. The activation of this system by distress cues, such as sad and fearful expressions of others, results in increased autonomic activity, attention, and activation of the brainstem threat response system, often resulting in a freezing response (Blair et al., 2005; Blair, 2001; Blair, 1995). Many social animals find the distress experiences of *conspecifics* (organisms belonging to the same species of another organism) aversive and will make instrumental responses to terminate unpleasant occurrences to similar species (Blair et al., 2005). Most humans are also predisposed to find the distress of

conspicuous (other human species) aversive and are punished by signals of another human's sadness or fear, which reduces the probability of an individual engaging in such actions (Blair, 1995; Blair et al., 1997). According to the VIM, moral socialization occurs via the pairing of the activation of the mechanism to distress cues and the acts which caused the distress cues, such as moral transgressions (Blair, 2001). Classical conditioning then establishes the representations of moral transgressions as the triggers to the violence inhibition mechanism (Blair, 2001). Blair (2001) suggests that dysfunction exists in the mechanism of individuals with psychopathy in that the representations of harm do not become triggers for the VIM, hypothesizing the signal to the learning systems responsible for emotionally aversive stimuli is not activated (Blair, 2001). Basically, the unconditioned stimulus signal is weakened impairing the ability to form the unconditioned stimulus - conditioned stimulus associations (Blair, 2001). The sad or fearful facial expressions of others do not pair with the triggering of the violence inhibition mechanism. The VIM offers another perspective from which to understand individuals with psychopathy.

Current Study Theory

The current study recognizes that one theory will not explain the development of individuals with psychopathy and that many theories explain facets of the psychopathic personality disorder in viable and significant methods. The current study draws from the personality, developmental, and cognitive perspectives of psychopathy. It is the position of this paper that individuals with psychopathy are born with a predisposition and temperament that interacts with it's environment in a way that typical moral socialization processes including empathy development are impaired, which further damages the individuals ability to continue through the development processes of learning positive interactions and cognitive processes thus influences future decision making and actions. The individual begins a cycle of reinforcement of negative behaviors and cognitions through the person's lack of empathy and inaccurate evaluations of the consequences of his or her negative behaviors.

Specific Components of Psychopathy in Children

Factor analyses demonstrate the emergence of two psychopathic factors in a sample of 160 clinic-referred children (Frick et al., 1994) and three (Frick et al., 2000) dimensions of psychopathy in a community sample of

1,136 elementary school-age. The three factors in the community sample included callous-unemotional traits, narcissistic traits, and impulsive behaviors (Frick et al., 2000). While the clinic-referred sample also demonstrated callous-unemotional traits, less evidence surfaced for a discrepancy between the narcissism and impulsivity dimensions (Frick, et al., 1994). The factors found to be most related to psychopathic traits in adults and in children included the impulsivity/conduct problems factor and the callous-unemotional factor (Frick et al., 1994). Other studies have also shown that in both clinic-referred children (Christian et al., 1997) and adjudicated adolescents (Caputo, Frick, & Brodsky, 1999), the narcissism and impulsivity dimension do not differentiate within severely antisocial youth. Due to the inconsistency in findings concerning the dimensions of psychopathy in youth, the current study utilizes the three-factor model identified by Frick and colleagues (2000) including the impulsivity/conduct problems, callous-unemotional traits, and narcissism traits in order to further identify psychopathic characteristics in a sample of aggressive community youth.

Impulsivity/Conduct Problems

The behaviors associated with psychopathy include impulsivity and antisocial behaviors and relate to Factor 2 in Hare's two-factor model of psychopathy (Hare, 1993). In children, factor analysis reveals the impulsivity/conduct problems factor includes impulsivity, poor impulse control, and delinquent behaviors (Frick et al., 1994). The understanding of impulsivity suffers from poor operationalizing and measurement of the construct (Loeber et al., 2001). The Pittsburgh Youth Study attempted to improve both of these areas with a multisource and multimethod approach to impulsivity (Loeber et al., 2001). The study found that impulsivity does not exist as a unidimensional construct and can be broken down into two correlated but distinct types, cognitive impulsivity and behavioral impulsivity (Loeber et al., 2001). Behavioral impulsivity includes a lack of behavioral control, disinhibited, and undercontrolled behavior (Loeber et al., 2001). Cognitive impulsivity consists of effortful and planful cognitive performance, specifically, mental control and mental effort to change adaptively between mental sets (Loeber et al., 2001). Loeber and colleagues (2001) found both types of impulsivities to be significantly and positively related to conduct problems in adolescents, with

behavioral impulsivity having a stronger relationship with conduct problems. Cognitive and behavioral impulsivity accounts for 16% of conduct problems when controlling for both IQ and SES (Loeber et al., 2001). Loeber and colleagues (2001) argue that the relation between behavioral impulsivity and conduct problems implies that children with poor self-control may be more likely to display externalizing behaviors. Subsequently, behaviorally undercontrolled individuals may steal and fight on the spur of the moment when the rewards associated with a behavior appear large and the potential of negative consequences in the future seem small (Loeber et al., 2001).

Another view of impulsivity includes its relation to a deficit in the section of the brain associated with executive functioning. It has been hypothesized that psychopathic behavior may be a result of underactivity in the neurobiological system that is receptive to cues of punishment and "frustrative reward" (Loney, Frick, Clements, Ellis, & Kerlin, 2003). Interestingly, children with psychopathic traits demonstrate behavioral and neurocognitive profiles similar to those of adults (Viding, 2004). Researcher demonstrates psychopaths' executive functions of the brain to be impaired (Gorenstein, 1982). These functions control an individual's ability to plan,

sustain attention, concentrate, and inhibit inappropriate or impulsive behaviors (Gorenstein, 1982), which may offer insight into the development of the impulsivity/conduct problem facet of the psychopathic personality.

Antisocial behaviors or conduct problems encompass the second component of Factor 2 (impulsivity/conduct problems) in children with psychopathic traits (Frick et al., 1994). Conduct problems include such behaviors as aggressive conduct that causes harm or threatens physical harm to others, nonaggressive behaviors that causes property loss or damage, serious violations of rules, bullying, threatening, intimidating, frequent physical fights, physical cruelty to people, mugging, armed robbery, etc. (DSM-IV; APA, 1994). Conduct problems do not distinguish individuals with psychopathy from other individuals demonstrating antisocial behavior, except that individuals with psychopathy evidence greater patterns of proactive or instrumental aggression as discussed earlier in this chapter (Cornell et al., 1996).

Symptoms of both ADHD (not including the inattentive type) and Conduct Disorder include those of impulsivity and antisocial behaviors, which are the basis for defining Factor 2 psychopathy in youth. The impulsivity related to externalizing disorders includes a difficulty in inhibiting

activated responses and acting without considering consequences (Fowles & Dindo, 2006). Researchers argue that the combination of early-onset Oppositional Defiant Disorder or Conduct Disorder, hyperactivity or ADHD (not including inattentive type) and neuropsychological deficits often develops into adult psychopathy (Lynam, 1998; Moffitt, 1993; Moffitt & Caspi, 2001; Moffitt & Lynam, 1994).

Callous/Unemotional Trait

The second component of psychopathy consists of the personality dimension, which corresponds with Factor 1 of Hare's two factor model. The main trait associated with psychopathy in children is the callous-unemotional (CU) factor (Frick et al., 1994). According to factor analysis, the callous-unemotional factor includes components such as a lack of guilt, lack of empathy, and superficial charm (Frick et al., 1994). Antisocial youth in juvenile forensic facilities (Caputo et al., 1999), outpatient mental health clinics (Christian et al., 1997; Frick et al., 1994), and in school-based samples (Frick et al., 2003) who demonstrate elevated levels of the CU factor appear to display a particularly severe, aggressive, and stable pattern of conduct problems (Frick & Marsee, 2006). Specifically, clinic-referred children with conduct problem

diagnoses demonstrated a more severe and varied pattern of conduct problems when evidencing elevated CU traits compared to clinic-referred children with conduct problems who did not demonstrate elevated levels of CU traits (Christian et al., 1997). Nonreferred community children with both conduct problems and CU traits showed more aggression overall and were more likely to demonstrate proactive and instrumental patterns of aggression than children with conduct problems, not evidencing CU traits (Frick et al., 2003).

A longitudinal study demonstrated that children who exhibit both CU traits and conduct problems have a greater number and variety of conduct problems after one year than those children with only conduct problems (Frick, Cornell, Barry, Bodin, & Dane, 2003a). The children with CU traits and conduct problems demonstrated higher levels of self-reported delinquency and aggression, particularly proactive aggression (Frick et al., 2003a). Children with both conduct problems and CU traits exhibit significantly more conduct problems and a greater variety of conduct problems than those children with conduct problems alone (Christian et al., 1997). The children that exhibit both conduct problems and CU traits also tend to engage in more thrill-seeking behavior, are less sensitive to punishment cues

when there is the possibility of reward, and react less to threatening and emotionally distressing stimuli than children without CU traits (Frick et al., 2003a).

In order to fully understand the callous-unemotional traits in children exhibiting psychopathic characteristics, it is vital to investigate the models explaining how this trait develops. There are multiple explanations of the preference for novel and dangerous activities, lack of emotional responsiveness to negative emotional material, and lack of sensitivity to cues to punishment found in the CU trait (Frick & Marsee, 2006) including low fearfulness (Rothbart & Bates, 1998), low behavioral inhibition (Kagan & Snidman, 1991), low harm avoidance (Cloninger, 1987), or high daring (Lahey & Waldman, 2003); however, these explanations, seem to bypass the basic developmental process underlying their theories: empathy development.

Empathy has been defined in various ways including simply cognitive, simply affective, and a combination of cognitive and affective factors. Cognitively, empathy includes an ability to understand the affective and cognitive state of another individual (Borke, 1971; 1973). The individual is aware of and understands another person's feelings and can discern another's thoughts (Borke, 1971; 1973). The affective definition states that empathy is a

vicarious matching of an emotional response, feeling the same emotions of another and feeling sympathetic or compassionate toward another (Feshbach & Roe, 1968). The combination of the cognitive and affective definition is conceptualized as: (a) the interaction between an awareness of another's feelings, thoughts, and intentions and the vicarious response of others (Hoffman, 1977), (b) a process that causes a person to have feelings that are more congruent with another's situation than with his/her own (Hoffman, 2000), and (c) the individual's emotional response that stems from another's emotional state that is congruent with the other individual's emotional state/situation; the empathic reaction can be a response to an overt cue of another's emotional state such as a facial expression or an indirect cue such as the features of another's situation (Eisenberg & Strayer, 1987).

There are a number of ways to describe emotional development. The following description outlines how empathy develops when examining empathy through the affective definition. From this perspective there are four steps to empathy development (Hoffman, 1984), beginning with emotional expression or the intensity of the experienced and displayed emotion (Hoffman, 1984). Positive affect or emotional expression leads to appropriate behavior whereas

negative affect (fear, sad, etc) leads to less favorable behavior (Hoffman, 1984). Increased levels of negative affect can affect an individual's empathetic response with decreased levels of emotional expression relating to low levels of empathy and moderate levels of emotional expressivity relating to greater empathetic responding (Hoffman, 1984). The second phase in affective empathy development is emotional insight, defined as the recognition that one's own emotions directly influence the ability to display empathy (Hoffman, 1984). During this phase, an increased level of accuracy in the reflection of others develops when the other people respond positively to a child's emotions (Hoffman, 1984). This stage focuses on self introspection concerning one's own emotions than examining others. The third step of role-taking contributes directly to an individual's ability to understand someone else's emotions (Hoffman, 1984). This ability should have a positive impact on empathy development, increasing the individual's empathetic responding (Hoffman, 1984). Role-taking influences a person's prosocial behavior in that it augments empathy rather than directly motivating prosocial behavior (Hoffman, 1984). Emotion regulation comprises the final phase of affective empathy development (Hoffman, 1984). Emotional regulation determines whether a response

leads to sympathy or distress in an individual (Hoffman, 2005). Sympathy allows a person to feel sorrow or concern for another based on the perception of another's emotional state (Hoffman, 1984). Personal distress consists of a self-focused aversive emotional response that results from apprehension of another's emotional state (Hoffman, 1984). Examples of an emotional response include a raised brow, licking one's lips, touching one's face, and increased heart rate (Hoffman, 1984).

Research demonstrates aggressive and antisocial behavior correlates with dysfunctional parenting and low intelligence more strongly for aggressive children without CU traits than those with CU traits (Loney, Frick, Elis & McCoy, 1998; Wootton et al., 1997). This difference between aggressive children with and without CU traits may lend support to the argument that a different developmental pathway or process underlies their aggressive and antisocial behavior (Frick, Cornell, Bodin, Dane, Barry, & Loney, 2003b). Consequently then these studies indicate that children who are aggressive and antisocial that do not exhibit CU traits may have difficulty regulating their behaviors and emotions related to high levels of emotional reactivity (Frick et al., 2003b). Poor emotional regulation can result from a number of factors such as poor

socialization, low intelligence which may make it more difficult to delay gratification and anticipate consequences, or problems with response inhibition due to temperamental troubles (Frick et al., 2003b). Emotional regulation difficulties can lead to impulsive and aggressive acts that the child has difficulty controlling but for which he or she does show remorse for afterward (Frick et al., 2003b). Children who exhibit CU traits lack the remorse for their actions that children who are aggressive but without CU traits are capable of demonstrating.

Frick and colleagues (2003b) examined children from the community who demonstrated conduct problems with and without the presence of CU traits and their relationship with emotional and behavioral dysregulation. They found that children with conduct problems excluding CU traits demonstrated evidence of emotional and behavioral regulation (Frick et al., 2003b). The children who exhibited both conduct problems and CU traits scored the highest on measures of impulsivity-hyperactivity, which the researchers termed behavioral dysregulation (Frick et al., 2003b). These same children also demonstrated a lack of behavioral inhibition in that they showed a preference for novel and dangerous activities and a decreased sensitivity

to punishment cues when a reward response set was formulated (Frick et al., 2003b). This study claimed to be the first to show that children demonstrating CU traits without conduct problems also exhibited characteristics associated with behavioral inhibition, specifically in terms of the reward dominant response style (Frick et al., 2003b). Frick and colleagues (2003b) suggested that this finding may indicate that the connection between CU traits and low behavioral inhibition may not be unique to a certain crowd of severely antisocial children. Interestingly, this study concluded the combination of emotional and behavioral dysregulation and conduct problems did not designate children as similar to adult psychopaths (Frick et al., 2003b). However, the presence of CU traits joined with emotional and behavioral inhibition and conduct problems distinguished a group of children sharing characteristics most similar to the adult psychopath (Frick et al., 2003b). The researchers only found an association between CU traits and low emotional reactivity in young children (Frick et al., 2003b). They offered several explanations for this finding. First, older children with conduct problems may be more heterogeneous regarding the developmental process which led them to demonstrate antisocial behaviors including age of onset (Frick et al.,

2003b). Second, it is possible that a deficit in behavioral inhibition exists that may be related to a cognitive deficit in children with CU traits where they have difficulty shifting their goal-oriented response set (Frick et al., 2003b).

Cognitive empathy involves the individual's awareness that an event is happening to another person, an examination of the causal attributions of an event, and the impact that has on another person (Hoffman, 1984). There are 3 developmental stages to cognitive empathy development (Hoffman, 1984). During the first stage of person permanence, children become aware of another person's physical existence as completely separate from the self (Hoffman, 1984). At approximately six months of age, children internally reproduce images of objects (Hoffman, 1984). By eighteen months, object permanence develops and by one year of age, children can keep a mental image of another person in their head (Hoffman, 1984). The second stage is perspective taking during which a child is able to understand the internal states of others with increased complexity (Hoffman, 1977, 2000). At approximately two or three years old, children begin to sense that they are physically distinct from others and are capable of attributing simple internal states to others (Hoffman,

1984). The final phase of cognitive empathy development occurs around three years of age (Hoffman, 1984). During this time, children are able to put themselves into another person's shoes, demonstrating the ability to put themselves in another person's place and imagine how he/she feels (Hoffman, 1984).

The CU factor specifically states that individuals with psychopathy demonstrate a lack of empathy; it is unknown at this point exactly how empathy development becomes impaired. Research demonstrates individuals with psychopathy demonstrate detached patterns of social interaction and poor ability to identify emotions in others (Soderstrom et al., 2002). Many models have attempted to address the CU trait including previously mentioned amygdala dysfunction, the dysfunctional fear hypothesis, and the violence inhibition mechanism (Blair, Mitchell, & Blair, 2005). One model suggests a connection between the elements of the CU trait and lower scores on measures of conscience development (Asendorpf & Nunner-Winkler, 1992; Kochanska, 2002). This model leads theorists to suggest that a temperamental style including the lack of emotional responsiveness to negative stimuli, preference for novel and dangerous activities, and the lack of sensitivity to cues to punishment may be involved with conscience

development (Frick & Morris, 2004). Research suggests that low behavioral inhibition in children may place the child at risk for poor conscience development in that the child may demonstrate deficiency in the early signs of empathetic concern involving emotional arousal brought about by the misfortune of others (Loney et al., 2003). The child then could be insensitive to forbiddance or approval of parents or other caregivers (Loney et al., 2003). Possibly resulting in the child developing an interpersonal style concentrated on the potential rewards contained in aggressive or antisocial acts toward others with the disregard for the prospective harm to himself/herself or others (Loney et al., 2003).

Kochanska and colleagues (1993, 1995, 1997; Kochanska, 2002) proposed a specific model focusing on emotional arousal as a vital component to conscience development. This model suggests an optimal arousal for moral socialization is achieved through interactions of the child's temperament and parenting received (Kochanska, 2002). Studies demonstrate that children with fearfulness obtain higher scores on conscience development measures if they had experienced gentle, consistent, and nonpower assertive parenting; conversely, children displaying fearlessness did not obtain improved scores on measures of

conscience development when they experienced the same type of parenting (Kochanska, 2002). Another model suggests that the development of a negative arousal to punishment is dependent on the development of moral socialization and internalizing parental and societal norms (Kagan, 1998). Children with such temperaments that do not associate guilt or anxiety with anticipated or actual wrongdoing will experience a lack of anxiety which would typically inhibit their negative behavioral response (Kagan, 1998).

Research suggests that adults with psychopathic traits demonstrate difficulty processing emotional stimuli (Patrick, 1994). This finding extends to adolescents as well (Loney et al., 2003). Specifically, children exhibiting antisocial behavior and CU traits did not process affective stimuli similarly to those children evidencing only antisocial behavior (Loney et al., 2003). The adolescents with CU traits demonstrated a lack of facilitation to emotional words, which the researchers suggest implies a diminished reactivity to emotional stimuli in comparison to their peers with antisocial behaviors alone (Loney et al., 2003). This implies that children with both conduct problems and CU traits may display temperamental styles that have low emotional reactivity to aversive stimuli which can be identified

through physiological underactivity and poor responsiveness to punishment cues (Kagan & Snidman, 1991). Research demonstrates that antisocial and delinquent youth who also exhibit CU traits are less distressed by their behaviors' negative effects on others, have more impaired empathetic concern and moral reasoning, expect more instrumental gain from their negative behaviors, and are more predatory in their violence than antisocial youth who do not display CU traits (Pardini et al., 2003). Aggressive children without CU traits tend to be highly reactive to emotional and threatening stimuli (Loney et al., 2003) and tend to react more strongly in social situations when provoked (Pardini et al., 2003).

Although many different perspectives have attempted to explain the CU trait found in individuals with psychopathy, there appears to be general agreement that low levels of fearful inhibitions can impair empathy development, moral socialization, and the development of conscience (Frick & Marsee, 2006). These theories have been demonstrated in research examining children who exhibit both conduct problems and CU traits (Frick & Marsee, 2006). For example, children with CU traits and conduct problems compared to children with only conduct problems tend to be less responsive to typical parental socialization practices

(Oxford, Cavell, & Hughes, 2003; Wootton et al., 1997), are less distressed by the negative effects of their behaviors on others (Blair, 1999; Frick et al., 1999; Pardini et al., 2003), are more impaired in moral reasoning and empathic concern for others (Blair, 1999; Pardini et al., 2003), and are less able to recognize facial and vocal expressions of sadness of other children (Blair et al., 2001).

Narcissism

A third characteristic thought to be associated with the psychopathic personality is narcissism. As stated previously, this characteristic has been evidenced in a community sample of youth evidencing psychopathic traits (Frick et al., 2000) and less so in clinic-referred samples demonstrating psychopathic traits (Frick et al., 1994). Although this characteristic has appeared in these samples, research has not focused on it as a main characteristic but has recognized the quality as a condition for a subtype of psychopathy (Poythress & Skeem, 2006). Narcissistic personality disorder regularly loads on the first factor of psychopathy in adults (Harpur et al., 1989). Narcissistic characteristics that are found on the first factor include such traits as a grandiose sense of self-importance, arrogant self-appraisal, lack of empathy, an unwillingness to recognize or identify with feelings or needs of others,

and interpersonal exploitation (Widiger, 2006). Although similarities exist, there are a number of key differences between the narcissistic personality disorder and antisocial personality disorder, under which the DSM-IV includes psychopathy (Widiger, 2006). First, those with a narcissistic personality disorder are often more grandiose while those with antisocial personality disorder are more exploitative, have a superficial value system, and engage in a recurrent pattern of antisocial behavior (Ronningstam, 1999). Further, the exploitiveness found in those with antisocial personality disorder tends to be more of a conscious choice related to material or sexual gain compared to the more passive and self-image serving tendency found in those with narcissistic personality disorder (Ronningstam, 1999). One of the most important differences to recognize is that those with a narcissistic personality disorder demonstrate the ability to feel guilt and remorse; whereas those with psychopathic characteristics lack these emotions (Kernberg, 1998). Possibly, instead of considering these two disorders as separate or one in the same, they should be conceptualized as disorders on a continuum (Kernberg, 1998), which may explain why narcissistic characteristics are sometimes

evidenced and sometimes vacant in children with psychopathic traits.

To summarize, research has found evidence for the extension of the adult conceptualization of the psychopathic personality in children and more specifically have identified two predominant characteristics found in most samples of children including the impulsivity/conduct problems trait and the callous/unemotional characteristic. Multiple explanations have been offered to explain the development of the psychopathic traits in children such as temperament, poor parenting, amygdala dysfunction, and low fearfulness. This paper offers a supplemental explanation for the development of psychopathic characteristics, in particular that social-information/cognitive processing deficits relates to the development and/or maintenance of the psychopathic characteristics.

Social-Cognitive Processes

The Center for Disease Control (2005) identified social cognitive deficits as a risk factor for increasing the probability of violence during adolescence and young adulthood. Social cognitive processes are defined as the mechanisms that lead to social behaviors that are the basis of social adjustment evaluations made by others (Crick & Dodge, 1994). Researchers argue that examining social

cognitions of children will help explain the construct of psychopathy in youth. That is, impaired social cognition offers a possible explanation for the evidence of persistent conduct problems of children with significant psychopathic, or in terms consistent with Frick and colleagues' (1994) work, callous/unemotional (CU) traits. Pardini et al., (2003) demonstrated children high on CU traits had significant difficulty in modifying their social cognitions for goal-driven behavior when punished. Specifically, they concluded this group of children may have trouble considering the probability of various outcomes, particularly when outcomes are negative, of their antisocial behavior (Pardini et al., 2003). Further, some research shows individuals with significant psychopathic traits demonstrate adequate intellect (e.g., cognitive abilities) (Loney et al., 1998; Newman & Wallace, 1993), are free from symptoms of a thought disorder yet frequently fail to utilize good judgment in decision-making (Newman & Wallace, 1993). Second, research consistently finds errors made in social-information processing in the development and maintenance of delinquent behavior in antisocial children who are not evidencing psychopathy (Dodge, Lochman, Harnish, Bates, & Pettit, 1997). Thus, a more complete understanding of the factors shown to be

associated with psychopathy traits in youth is needed. Specifically how each factor (callous/unemotional, impulsivity and conduct problems, and narcissism) is related to social-information processing is underdeveloped.

The following is a discussion of Crick and Dodge's (1994) popular social cognitive process and research examining the connection between the processes and individuals demonstrating aggressive and psychopathic characteristics. Crick and Dodge (1994) have developed a five step social cognitive process. The five steps including encoding, interpretation of cues, clarification of goals, response access or construction, and finally, response decision (Crick & Dodge, 1994).

Steps 1 and 2

In steps one and two, encoding and interpretation of cues, social cues and schemas play an integral role. During these steps, children develop a mental representation of the social situation confronting them (Crick & Dodge, 1994). They focus on particular cues in a situation, encode the cues, and then interpret them (Crick & Dodge, 1994). Any relevant knowledge from past experiences is recalled from memory and used as a guide for interpreting and understanding the present situation (Crick & Dodge, 1994). Children utilize schemata, which are memory structures that

organize information in a way that facilitates comprehension (Gerrig, 1988). Research demonstrates that individuals who are confronted with overwhelming stimulus information often rely on cognitive heuristics in order to simplify the cognitive tasks involved in processing that information (Crick & Dodge, 1994). Although the simplification process may make processing more efficient, it can also result in judgment and reasoning errors (Kahneman & Tversky, 1973). Perhaps for some children, the reliance on particular heuristics or schemata contributes to the display of problematic behavior and resulting social maladjustment (Crick & Dodge, 1994).

Tomlin (1987) showed that aggressive children are more likely than non-aggressive kids to base interpretations on their schemata (information that was not a part of the social stimuli presented). There exists a higher probability that aggressive children base their interpretations on social cues that occurred at the end of the social interaction and were less likely to recall cues that occurred at the beginning of the interaction (Tomlin, 1987). Gouze (1987) found that aggressive boys attended to more aggressive social cues than non aggressive boys. Dodge and Newman (1981) found that aggressive boys used less social cues of any type than peers. Theories drawn from

these findings include: 1) maladjusted children have memory deficits that don't allow them to store or recall presented social information adequately; 2) maladjusted children may selectively attend to particular social cues; 3) may have well-developed schemata for social interaction that interfere with ability/motivation to process and use immediate social cues because they feel that they already have it figured out so they do not need more info or because the schema evoked strong emotional reaction that preempted further processing of immediate cues (Crick & Dodge, 1994).

It is important then to examine children's causal attributions to events when examining how they will process the information during encoding and interpretation. Causal attributions, defined as inferences made by individuals about the reasons why specific social events have occurred (Weiner & Graham, 1984), allow an individual to judge the motivations for social events, which is necessary information when attempting to understand or learn the connections between actions and reactions in social contexts (Crick & Dodge, 1994). Additionally, causal attributions aid in goal construction and response access and selection (Weiner & Graham, 1984). Research demonstrates socially adjusted kids create attributions

that lead to positive self-evaluations whereas maladjusted kids are more likely to have external attribution for positive social outcomes (Ames, Ames, & Garrison, 1977). The external attributions may keep the maladjusted kids from developing a positive social efficacy or competence even when they experience social success (Crick & Dodge, 1994). However, research states that rejected children make internal attributions (Crick & Dodge, 1994). Crick and Dodge (1994) conclude that the evidence does not provide enough support for the connection between attributional styles and aggressive patterns.

Another vital aspect to steps one and two includes an individual's attributions of intent. Attributions of intent initiate with children's moral development, progressing into their social and aggressive behavior (Crick & Dodge, 1994). Researchers hypothesize retaliatory aggressive behavior with peers relates to hostile attributions of peers intent, labeled "Hostile Attribution Bias" by Nasby, Hayden, and DePaule in 1979 (Crick & Dodge, 1994). During these interactions, aggressive behavior serves as a defense or retaliation against an act by a peer that is seen as intentionally harmful (Crick & Dodge, 1994). Several studies found evidence of hostile attribution bias in aggressive boys living in residential treatment centers

(Nasby, Hayden & DePaule, 1979), hyperactive-aggressive children in outpatient clinics (Milich & Dodge, 1984), school-based populations (McClaskey, 1988), incarcerated adolescent boys with undersocialized conduct disorder (Dodge, Price, Bachorowski, & Newman, 1990), and adolescent offenders in jail for violent acts (Slaby & Guerra, 1988). Crick and Dodge (1994) conclude it is likely hostile attribution biases antecede aggressive behavior and peer status but the reciprocal could be true as well (Crick & Dodge, 1994).

During the encoding and interpretation steps, children evaluate the accuracy of their outcome expectation and self-efficacy predictions that they made during previous interactions with peers (Crick & Dodge, 1994). Children may compare the predicted outcome with the outcome that was actually obtained (Crick & Dodge, 1994). These evaluations may lead to the strengthening of the children's initial beliefs or the development of new beliefs (Crick & Dodge, 1994).

Step 3

Step three of the social cognitive process includes the clarification of goals (Crick & Dodge, 1994). The goals focus on arousal states that function as orientations toward producing or wanting to produce specific outcomes

(Crick & Dodge, 1994). Social situation goals may include internal (feel happy, regulate negative feeling, etc.) or external (first in line etc.) states or outcomes (Crick & Dodge, 1994). Children bring goal orientations/tendencies to peer situations but can revise goals and construct new goals in response to the immediate social stimuli (Crick & Dodge, 1994). Interpretations of the immediate social stimuli or internal/external cues influence their goal orientations (Crick & Dodge, 1994). Sources of goal orientation include feelings, temperament, adult instruction, cultural or subcultural norms, and media (Crick & Dodge, 1994). Subsequent response accessing and behavior also influence goal orientations (Crick & Dodge, 1994). Research demonstrates that children who construct or pursue inappropriate goals are more likely to become socially maladjusted (Dodge, Asher & Parkhurst, 1989).

Step 4

The fourth step of information processing, according to Crick and Dodge's (1994) model, is the response access or construction phase. During this step, children access behavioral responses from their long term memory. Some responses consist of strategies for attaining the goal and others are responses to social stimuli that are not clearly goal driven (Crick & Dodge, 1994). Children's choices for

social responses include their ideas about how they could behavior in a specific social situation (Crick & Dodge, 1994).

Three aspects create children's response access 1) the number of behaviors generated in response to social stimuli (response repertoire) 2) the actual content of the responses and 3) the order in which children access particular types of responses (Crick & Dodge, 1994).

Children who demonstrate aggressive behaviors access a fewer number of responses to social situations than peers (Asarnow & Callan, 1985; Dodge et al., 1986). Additionally, these children access responses that are more aggressive and less prosocial than peers for provocation, group entry, object acquisition, and friendship initiation situations (Asarnow & Callan, 1985; Dodge et al., 1986). Research shows, the response repertoires of aggressive kids are maladaptive across a broad range of social contexts (Crick & Dodge, 1994). Even when aggressive children can access an initial prosocial response, subsequent responses include more aggressive than nonaggressive peers and therefore, it appears that the responses available to children demonstrating aggressive behaviors at the response decision step includes many aggressive acts (Crick & Dodge, 1994).

Step 5

During the final information processing step, response decision, children engage in response evaluation (Crick & Dodge, 1994). Response evaluation consists of children's assessments of the quality of social behaviors with respect to a specified, evaluative dimension (Crick & Ladd, 1990). The evaluation depends on the children's moral rules or values (Crick & Dodge, 1994). Remember, individuals with psychopathy demonstrate difficulty developing moral socialization (Blair, Mitchell, & Blair, 2005). Favorable evaluations of a response are positively related to the subsequent behavioral enactment of that response (Crick & Dodge, 1994). Children who are socially maladjusted engage in maladaptive social behaviors partly because they evaluate the maladaptive behaviors favorably (Asarnow & Callan, 1985; Dodge et al., 1986).

Outcome expectancies also play a role in children's response decisions (Crick & Dodge, 1994). Outcome expectancies are defined as children's ideas about what is likely to occur in a social interaction after the enactment of a designated social response (Crick & Ladd, 1990). The expectation of a favorable or desired outcome for a particular behavior positively relates to enactment of the behavior (Crick & Dodge, 1994). Outcome expectancies serve

as an excitatory or an inhibitory function depending on whether the outcome expected is positive or negative, respectively (Crick & Dodge, 1994). Research demonstrates favorable expectations for an outcome of physical and verbal aggression is positively related to the display of observed, peer assessed, and self-reported aggressive behavior (Crick & Dodge, 1994). Importantly, this relation may be specific to children who use instrumental aggression (Crick & Dodge, 1992). Conversely, children who display aggressive behavior tend to expect less positive outcomes than peers who are not aggressive for prosocial behavior (Crick & Dodge, 1989; Dodge et al., 1986).

A tendency to respond frequently to reward stimuli and decrease avoidance of punishment stimuli when presented with conditions for both reward and punishment is the theory of reward dominance (Quay, 1992). Antisocial individuals will be more likely than non-antisocial individuals to persist in responding to stimuli that had previously been rewarded even if the punishment for the stimuli increased (O'Brien & Frick, 1996). Consistent with the reward-dominant response theory, studies show psychopathic offenders will continue to choose previously rewarded stimuli, such as choosing cards, even when the stimuli no longer produced rewards (Kosson & Newman, 1986).

In regards to adolescents, O'Brien and Frick (1996) found the reward-dominant response style was evident in a distinct subgroup of children with conduct problems and this subgroup closely resembled the construct of psychopathy. Pardini et al. (2003) found higher CU traits to be associated with higher expectation and values associated with positive consequences of aggression and decreased expectations and values related to the negative consequences of deviant behavior. Interestingly, no significant relationship existed between CU traits and using aggression against a provocative peer to prevent future conflicts (Pardini et al., 2003). Children with CU traits did have lower expectancies and values concerning inhibiting aggression even with the threat of punishment (Pardini et al., 2003). The researchers explained this result coincides with the idea that children with CU traits tend to experience less fear when punished for their negative behavior (Pardini et al., 2003).

Another aspect of the response decision is a self-efficacy evaluation, defined as the degree to which individuals believe that they can successfully perform behaviors that are necessary for achieving the desired outcomes (Bandura, 1978). To select a generated response for enactment, children must first feel confident that they

can produce the behavior or interest (Crick & Dodge, 1994). Research demonstrates that children who engage in aggressive behavior feel more efficacious than peers about performing physically and verbally aggressive behaviors (Crick & Dodge, 1989; D.G. Perry et al., 1986). Again, this may be specific to children engaging in instrumental or proactive aggressive (Crick & Dodge, 1994).

Finally, a response is selected during which children select the most positively evaluated response to enact (Crick & Dodge, 1994). Children considered socially maladjusted are more likely to make response decisions that involve aggression or nonnormative behaviors and are less likely to make decisions involve friendly behaviors (Pettit et al., 1988). The types of behavior children considered socially maladjusted evaluate favorably are the same behaviors that they choose to enact (Crick & Dodge, 1994). Children's response decisions are predictive of behaviors actually exhibit in peer interactions (Crick & Dodge, 1994).

Dodge and colleagues (1997) hypothesized that social information processing patterns may distinguish between proactive and reactive aggression. To review, Bandura (1978) explained aggression as a goal-driven and instrumental behavior dependent on the expectation of

external rewards or reinforcement. Instrumental or proactive aggression occurs when the acquisition of a goal or external reward is more important than the individual who may be injured in the process of obtaining it (Woodworth & Porter, 2002). Reactive aggression involves impulsive, immediate, and emotion-driven reactions when an individual perceives to be threatened or in danger (Woodworth & Porter, 2002). Building off previous research which suggested that the early stages of cue-related processing patterns related to reactive aggressive and later stages of outcome-related processing related to proactive aggression, Dodge and colleagues (1997) believed that a child's failure to attend to social cues, interpreting peers' interactions as hostile, and a tendency to react aggressively to supposed provocations would more often lead to retaliatory aggression rather than proactive aggression. Subsequently, outcome-related processing that perceived positive consequences of aggressive behavior would be more correlated with proactive than reactive aggression (Dodge et al., 1997). The results were inconsistent in terms of the attention to social cues where the reactively aggressive group demonstrated more difficulty attending to relevant social cues than the proactively aggressive and non-aggressive groups (Dodge et

al., 1997). As predicted, the group of elementary students classified as proactively aggressive anticipated more positive intrapersonal consequences for aggression than the reactive aggression or non-aggression groups (Dodge et al., 1997). The proactively aggressive group also indicated that it would be easier for them to engage in aggressive behavior than the non-aggressive group (Dodge et al., 1997).

Other research found that youth displaying reactive aggressive demonstrate a bias at early stage of social-information processing; whereas children engaging in proactive/predatory aggression demonstrate social information processing deficits at a later stage and expect significantly more positive expectations of their aggressive behavior than children demonstrating reactive aggression and also evaluate themselves as skilled in responding to others with aggression (Matthys, Cuperus, & Van Engeland, 1999), which leads to the use of aggression to obtain objects from others or establish social dominance over them (Connor, 2002).

From the research discussed on social cognitive processes, one can conclude that children who engage in antisocial and aggressive acts demonstrate impairment in the social information processes. Interestingly, many

deficits in social information processing are witnessed in those children demonstrating instrumental or proactive aggression, a characteristic also evident in individuals with psychopathy. With the exception of a few studies, research is lacking that specifically addresses social cognitive processes and psychopathic traits in youth.

Purpose of the Current Study

The purpose of the current study was to expand previous research conducted by Pardini and colleagues in 2003. Pardini and colleagues examined the definition of psychopathy in a sample of adjudicated youth as well as the relation of social-cognitive processes and psychopathic traits. The current study sought to clarify how the findings from an incarcerated sample of youth who exhibit various levels of psychopathy are comparable to youth who require treatment for aggression outside of the scope of services typically provided by a student's home school district but who do not require incarceration. Much of the research on psychopathy utilizes incarcerated psychopaths for practical reasons such as the availability of the criminals (Kirkman, 2002). However, not all psychopaths are recidivist criminals in incarcerated settings (Cleckley, 1976; Hare, 1993). Some psychopaths have no criminal record at all and are doctors, lawyers, and store owners in our

own neighborhoods; therefore, it is essential to study those psychopaths who are able to avoid the prisons and jails in order to fully understand psychopathy (Hare, 1993; Kirkman, 2002). Additionally, clinic-referred and forensic samples make it unclear whether the callous/unemotional traits found in antisocial children who exhibit these traits are also characteristic of all children demonstrating callous/unemotional traits or only those who demonstrate serious antisocial behavior and are thus adjudicated (Frick, et al. 2003b). By studying psychopathy in the community, there is not only the opportunity to expand the depth and breadth of knowledge in this area but also to assist in learning about the conditions in the social environment that creates or hinder the development of such a disorder (Kirkman, 2002). Additionally, if children with psychopathic traits can be correctly identified, then the social environment of a school would be an excellent place to study the functioning of the psychopaths who are, according to Lynam (1997), the "truly successful or noninstitutionalized people" and it's possible that by studying those that show evidence of psychopathic traits but whose behavior has not reached the level for incarceration, we can eventually classify the

traits that are specific to psychopathy and those simply related to criminality (Kirkman, 2002; Lynam, 1997).

The current study examined psychopathy, via callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits as they related to social-cognitive processes (e.g., values and outcome expectations) on a range of social interactions/events in a community sample of children with behavioral and emotional difficulties. The narcissism factor was included in this study as a preliminary investigation of the psychopathy factor structure in the current community sample due to the investigation which identified narcissism as a distinct factor in a community sample of 1,136 elementary school-age children (Frick et al., 2000).

Research Questions and Hypotheses

The first research question investigated how much variance the callous/unemotional factor explained in both emotional (personal distress and empathic concern) and cognitive (perspective taking) empathy and likewise, how much variance the impulsivity/conduct problems factor explained in both emotional (personal distress and empathic concern) and cognitive (perspective taking) empathy and how much variance the narcissism factor explained in both emotional (personal distress and empathic concern) and

cognitive (perspective taking) empathy? The current study hypothesized that the callous/unemotional trait would predict emotional and cognitive empathy; however, the impulsivity/conduct problems factor would not. Because the narcissism factor has been found to load on Factor 1 of Hare's two factor model (1993) as does the callous/unemotional factor (Harpur et al., 1989), it was hypothesized that the narcissistic factor could share variance with the callous/unemotional trait in predicting emotional and cognitive empathy. However, in the one study where the narcissism factor emerged in the community sample, the narcissism traits were more closely related to measures of impulsivity/conduct problems (Frick et al., 2000). Therefore, it was also possible that the narcissism factor, similar to the hypothesis concerning the impulsivity/conduct problems factor, would not predict cognitive or emotional empathy.

The second research question examined whether the impulsivity/conduct problems factor predicted dysregulated behaviors (behavioral, cognitive, and emotional), the callous/unemotional factor predicted dysregulated behaviors (behavioral, cognitive, and emotional), and the narcissism factor predicted dysregulated behaviors (behavioral, cognitive, and emotional)? It was hypothesized that

impulsivity/conduct problems would explain variance in the dysregulated behaviors variables including behavioral, emotional, and cognitive dysregulation; however, the callous/unemotional factor would not. Again, previous findings were unclear concerning the narcissistic factor; therefore, it was unclear whether the narcissism factor would explain variance in dysregulated behaviors, as hypothesized with the impulsivity/conduct problems factor, or would not, as hypothesized with the callous/unemotional factor.

The third research question investigated how much variance in behavioral inhibition or fearfulness was uniquely explained by the callous/unemotional, impulsivity/conduct problems factors, and narcissism factor? It was hypothesized that the callous/unemotional trait would not explain variance within the behavioral inhibition or fearfulness variable and in fact would demonstrate a negative relationship; whereas, the impulsivity/conduct problems factor would predict behavioral inhibition/fearfulness. Again, previous findings were unclear concerning the narcissistic factor; therefore, it was unclear whether the narcissism factor would explain variance in behavioral inhibition, as hypothesized with the

impulsivity/conduct problems factor, or would not, as hypothesized with the callous/unemotional factor.

Finally, did callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits independently predict social-cognitive processes in community youth displaying aggressive behaviors? It was hypothesized that the callous/unemotional factor, but not the impulsivity/conduct problems factor would predict a higher value placed on aggressive acts and a disregard for the negative consequences of aggressive behavior. More specifically, the callous/unemotional factor would predict increased expectations and values associated with the positive outcomes of aggressive behavior and decreased expectations and values associated with the negative consequences for aggressive behavior. It was expected that the impulsivity/conduct problems factor would not be related to the outcome expectations or values. Again, previous findings were unclear concerning the narcissism factor; therefore, it was unclear whether the narcissism factor would explain variance in social cognition, as hypothesized with the callous/unemotional factor, or would not, as hypothesized with the impulsivity/conduct problems factor.

CHAPTER 3

METHOD

General Purpose

The purpose of the current study was to expand previous research conducted by Pardini and colleagues in 2003. Pardini and colleagues (2003) examined the definition of psychopathy in a sample of adjudicated youth as well as the relationship between social-cognitive processes and psychopathic traits. The current study examined if the findings from an incarcerated sample were similar to a community sample of youth who require treatment for aggression outside of their home school district but who do not require incarceration. The current study examined psychopathy, via callous/unemotional traits, impulsivity/conduct problems, and narcissism. The three-factor structure was examined due to inconsistent findings of the psychopathy construct in children with two-factors (impulsivity/conduct problems and callous/unemotional traits) being found with clinic-referred sample (Frick et al., 1994) and three-factors (impulsivity/conduct problems, callous/unemotional traits, and narcissism) emerging with a community based sample (Frick et al., 2000). Further, as examined in the incarcerated sample, the role of social-cognition (e.g., values and outcome expectations) when

presented with a range of social interactions/events was examined.

The current chapter 3 contains the methodology of the study including a description of the setting, instruments utilized, recruitment of participants, participants in general, procedures, research design, and the statistical analysis.

Method

Setting

The current study took place at an alternative education school in a metropolitan area as part of a school-wide program evaluation process. The school was conducting program evaluations that examine academic, behavioral and personality variables in order to examine the efficacy of the treatment programs set up in this alternative education center. The current study was permitted the use of a portion of the data collected during this school-wide program evaluation. The school services approximately 19 school districts in the surrounding metropolitan area from grades 5 through 12. Students at the school had been removed from their home school districts for a variety of reasons including behavioral and emotional concerns. Examples of behavioral concerns include truancy, physical aggression with teachers or peers, verbal

aggression, defiance, and rule-breaking behaviors.

Emotional concerns include emotional dysregulation or behavioral reactions that are not consistent with normative developmental expectation. Some students presented with formal mental health diagnoses such as bipolar disorder, schizophrenia, and other severe emotional disturbances.

Many, but not all of the students, also demonstrate poor academic progress in various areas. Length of stay at this alternative school is highly variable and determined by the needs of the individual students and how they were referred for attendance. For example, some of the students attend the school for 45 days as an alternative placement as a result of specific concerns or suspensions (e.g., weapon or drug violations) when attending their home school district. These students are evaluated at the end of the 45 day placement to determine which setting is required for their academic and social success. As such, there are students who have been attending this school for months or years because this setting is the least restrictive setting that allows them to benefit from the educational environment. Some students may remain in this setting until they graduate due to their inability to prosper from a general education environment.

The majority of the classrooms have a student to teacher ratio of approximately 15:1. Each classroom also provides a behavior specialist who assists the teacher in monitoring the students' behaviors and providing support to work through concerns that may arise. There are approximately 140 total students attending the alternative school. The students follow a typical school day schedule. The school provides curriculum for grades 5 through 12; however, each grade is not necessarily represented by its own classroom. The students are placed in a specific classroom based on academic, behavioral, and emotional concerns. Much effort is made, especially in the mainstream classrooms, to create classrooms that encompass students from the same grade level.

There are 5 mainstream classrooms with a general science, social studies, english, math, and reading teacher. These students, while demonstrating emotional and behavioral difficulties, have been determined to be capable of coping with a more typical daily school schedule. The students from these classrooms change classes after each period among the 5 possible teachers. These students also participate in a gym class and attend a lunch period. The majority of the students enrolled at this school are involved in these classrooms.

There are two semi-self contained classrooms with students who are typically enrolled at a high school grade level. These classrooms do not switch classes with the mainstream classrooms; however, they do switch between each other. The two teachers for these classrooms divide the general academic areas they specialize in. These students also engage in a gym period and attend a lunch time. The students in these classrooms tend to demonstrate more severe emotional and behavioral concerns and have been determined to need a more structured school day with less opportunity for an unstructured school environment.

There are three additional semi-self contained classrooms that include students who are enrolled in lower grades such as middle school to the beginning of high school. However, there are less specific criteria for being placed in these classrooms compared to the previously mentioned semi-self contained rooms. The group is more heterogeneous and these students show more instability in their behavioral and emotional states and their academic functioning is much slower. These students may switch classrooms among the three rooms for some but not all subjects. The five semi-self contained classrooms mentioned comprise approximately 40 to 50 students. Finally, the school runs a life skills program, for children diagnosed

with mental retardation, where there are approximately 5-10 students at any given time. This classroom is self-contained and follows a standardized life-skills curriculum. That is, an extremely structured environment with more adaptive and life-based curriculum. Many students in these rooms present with multiple disabilities including a diagnosis of mental retardation.

As noted, the information collected in this study was gathered as part of a comprehensive school-wide program evaluation. The examiner for the current study participated in data collection as part of the school team. This author served as a school psychology practicum student for the school. As an employee/practicum student, this author was asked to generate the packet of instruments to be utilized per the objective of the school's program evaluation, which included an examination of various behaviors and personality traits of their students. The current study was a separate data analyses that was conducted with the permission of the school, and utilized specific elements of the existing school-wide data set. It should noted that data collection did not change or alter the students' educational environment/placement.

Instruments

The instruments utilized in the data collection were standardized measures used to examine behavioral and personality characteristics in children. There were a total of eight instruments; however, for the purposes of this study, some subscales on each measure were not utilized. The rationale for using each measure, is provided in subsequent sections.

Demographic Questionnaire. This questionnaire gathered demographic information. Participants were asked to provide information that is detailed in their student files including sensitive personal information that is collected by school personnel. Of the data collected the following was used in this study: date of birth, age, ethnicity, gender, participation in gang activity, and history of incarceration. Other demographic information gathered through record review included participants' IQ, current educational program, and current diagnosis.

Antisocial Process Screening Device (APSD; Frick & Hare, 2001). The APSD is a 20-item behavior rating scale with each item scored either 0 (Not at all true), 1 (Sometimes true), or 2 (Definitely true). It was adapted from Hare's Psychopathy Checklist-Revised (Hare, 1991) in order to measure psychopathic traits in youth. A factor

analysis revealed the APSD included three dimensions: a 7-item Narcissism dimension, a 5-item Impulsivity dimension, and a 6-item Callous-Unemotional dimension that can identify community, clinic-referred and incarcerated samples of children (Frick, Bodin, & Barry, 2000). The impulsivity/conduct problems factor and the narcissism dimension were utilized in the current study. Due to the inconsistency in the research identifying two-factors in clinic-referred children (Frick et al., 1994) and three-factors in community sample children (Frick et al., 2000), the narcissism factor was included in this study, although it was not included in the Pardini et al (2003) investigation. There is substantive support for the validity of the APSD for designating a distinct subgroup of antisocial youth with more severe and aggressive behavior and who show characteristics similar to adults with psychopathy (Frick et al., 2003; Frick et al., 1999). Although the published version of the APSD was designed to be completed by parents and teachers, the current study utilized the newly developed self-report version that has been used in research studies. Although there is less data on the self-report version of the APSD, it is comprised of the same three factor structure (Vitacco, Rogers, & Neumann, 2003), it has been shown to designate a more

severe, chronic, and violent juvenile offender (Caputo, et al., 1999; Kruh, Frick, & Clements 2005), with deficits in emotional functioning (Kimonis et al., 2004; Loney et al., 2003) and who are insensitive to punishment in social situations (Pardini et al., 2003). Additionally, research suggests that the validity of self-report increases from childhood to adolescence when assessing most types of psychopathology, while the validity of parent and teacher ratings decreases (Kamphus & Frick, 1996). Thus, the self-report version was selected for use with the current sample.

Internal consistency for the self-report version of the total APSD are reported at .78 - .81, which is comparable to the parent reports (.85 - .89) (Munoz & Frick, personal communication, February 21, 2006). The coefficient alpha's for the subscales of the self-report APSD are reported in the modest range from .50 to .68; whereas the internal consistency of the parent report was in the modest range: callous-unemotional = .72-.76, narcissism = .79 - .82, and impulsivity = .65-.75 (Munoz & Frick, personal communication, February 21, 2006). Due to modest internal consistency in the APSD self-report, item statistics were computed (Munoz & Frick, personal communication, February 21, 2006). Item statistics revealed

that item-total correlations across scales and time periods exceeded .20 with one item falling below .10; however, eliminating items did not demonstrate substantial increases in alpha for the subscales (Munoz & Frick, personal communication, February 21, 2006). Stability estimates for the self-report APSD total score was between .70 and .72 for one year intervals and .64 across two years (Munoz & Frick, personal communication, February 21, 2006). Estimates were somewhat lower for subscales with one-year estimates ranging from .49 (Narcissism) to .63 (Impulsivity) and two year estimates from .43 (Narcissism) to .58 (Impulsivity) with all p 's < .01 (Munoz & Frick, personal communication, February 21, 2006).

Predictive utility was also investigated for the APSD self-report and future antisocial behavior. Researchers found that both the parent and self-report versions of the APSD predicted antisocial behavior two years later (Munoz & Frick, personal communication, February 21, 2006). However, for both versions, the least predictive scale was the callous-unemotional scale (Munoz & Frick, personal communication, February 21, 2006). In order to address the psychometric limitations of the callous-unemotional subscale, Frick (2003) developed a measure specifically addressing that single construct, the Inventory of Callous-

Unemotional Traits. The current study conducted a correlation in order to examine the relationship between the callous-unemotional trait from the APSD and the ICU in order to assure validity and reliability of the ICU measure. The measure with the highest reliability was included in the current study. Logic predicts that the ICU would produce greater reliability for the callous/unemotional construct due to the increase in items and will be the measure of the callous/unemotional trait in the current study.

Inventory of Callous-Unemotional Traits (ICU; Frick, 2003). The ICU was based on the six-item CU scale found on the Antisocial Process Screening Device (APSD; Frick & Hare, 2001). This scale was created in order to provide a more comprehensive assessment of the callous-unemotional trait by addressing the small number of items available on the APSD that examined the callous-unemotional factor, the limited 3-point scale ratings, and the dominate positively directed wording of the callous-unemotional APSD subscale (Essau, Sasagawa, & Frick, in press). The four items found to load consistently on the CU scale (i.e., "Is concerned about how well he/she does school or work", "Feels bad or guilty when he/she does something wrong", "Is concerned about the feelings of others", "Does not show feeling or

emotions") in both community and clinical samples were the foundation in creating the ICU (Frick et al., 2000). Three positively (e.g. "Easily admits to being wrong") and three negatively worded (e.g. "Shows no remorse when he/she has done something wrong) items were developed from each original item which led to the creation of a 24-item scale with equal numbers of both positively and negatively worded items (Essau et al., in press). In order to further differentiate ICU traits, the rating scale for the items was expanded to a four point Likert scale ranging from "0" ("Not at all true") to "3" (Definitely true"). Before calculating the total scores, the twelve positively worded items (items 1, 3, 5, 8, 13, 14, 15, 16, 17, 19, 23, 24) required reverse scoring (Essau et al., in press). Factor analysis found that the ICU described three dimensions of behavior including callousness, uncaring, and unemotional (Essau et al., in press). The callousness factor depicted an aspect of behavior that included lack of empathy, guilt, and remorse for misdeeds (Essau et al., in press). The uncaring factor captured a dimension of behavior that included a lack of caring about ones performance in tasks and for the feelings of other people (Essau et al., in press). The third factor, unemotional, depicted an element of behavior that focused on an absence of emotional

expression (Essau et al., in press). A confirmatory factor analysis found that the 3-factors loaded onto a higher-order factor representing the "callous-unemotional" dimension and therefore, provided the best fit (Essau et al., in press). Although parent, teacher, and self-report versions of the ICU exist, the current study only used the self-report version. The current study utilized the entire measure.

Internal consistency for the entire ICU scale has been reported as good, with a coefficient alpha of .77 and a Guttman Split half reliability of .70 (Essau et al., in press). Internal consistency of the three subscales was also determined to be good for two out of the three with a coefficient alpha of .70 for the callousness factor, .73 for the uncaring factor, and a marginal coefficient alpha of .55 for the unemotional factor (Essau et al., in press). Item-total correlation and coefficient alpha did not propose the deletion of any item would significantly increase the internal consistency of the scale (Essau et al., in press). The three scales demonstrated moderate inter-correlation with the callousness scale correlating with the unemotional scale at .21 ($p < .001$) and uncaring scale at .31 ($p < .001$) and the uncaring scale correlating with the unemotional scale at .20 ($p < .001$). Additionally,

construct validity was supported by the association of the ICU and the Big Five personality dimensions (Essau et al., in press).

Gender affects have been evidenced with this measure with significant main effects found for the total ICU scores ($F(1, 1282) = 218.36, p < .001$), as well as the callousness ($F(1, 1340) = 152.23, p < .001$), uncaring ($F(1, 1413) = 84.48, p < .001$), and unemotional ($F(1, 1384) = 139.81, p < .001$) subscales (Essau et al., in press). In every case, the girls demonstrated significantly lower rates of callous-unemotional traits than boys (Essau et al., in press).

Abbreviated Dysregulation Inventory (Mezzich et al., 1997). The Abbreviated Dysregulation Inventory is a self-report measure designed to assess various types of dysregulation in adolescents including behavioral, emotional, and cognitive. Participants rate each item on a 4-point scale (0 = "never true" to 3 = "always true"). Scale items are summed and then averaged, thus higher scores indicate increased levels of the dysregulation construct assessed. Adequate internal consistency coefficients were found for each subscale in previous studies (Mezzich et al., 1997). An internal consistency of .80 was previously found for the behavioral dysregulation

subscale (Pardini et al., 2003). The current study utilized all three dysregulation measures including behavioral (e.g. "I get very fidgety after a few minutes if I am supposed to sit still"), emotional (e.g. "I easily become emotionally upset when I am tired"), and cognitive (e.g. "I develop a plan for all my important goals").

Interpersonal Reactivity Index (IRI; Davis, 1983). The IRI is a 28-item, self-report measure designed to measure cognitive and affective dispositions related to empathy. Four subscales comprise the IRI including perspective taking which "reflect(s) a tendency or ability of the respondent to adopt the perspective or point of view of other people" (e.g. "I try to look at everybody's side of a disagreement before making a decision"), fantasy which measures "a tendency of the respondent to identify strongly with fictitious characters in books, movies or plays" (e.g. "When I watch a good movie, I can very easily put myself in the place of a leading character"), empathic concern which measures "a tendency for the respondent to experience a feeling of warmth, compassion, and concern for others undergoing negative experiences" (e.g. "I often have tender concerned feelings for people less fortunate than me"), and personal distress which "indicate(s) the respondent experience(s) feelings of discomfort and anxiety when

witnessing the negative experiences of others (e.g. "Being in a tense emotional situation scares me) (Davis, 1980, p. 4). The perspective taking scale comprises the cognitive component of empathy where empathic concern, fantasy, and personal distress scales comprise the affective components of empathy (Davis, 1980). In an attempt to more closely extend the findings of the previous study, the fantasy scale was excluded from the current study consistent with the Pardini et al., (2003) investigation. It should be noted that researchers (Davis & Franzoi, 1991) have found that the construct personal distress decreases during adolescence due to it measuring an early and egocentric precursor to empathy, similar to sympathy.

Items on the IRI were rated on a 5-point Likert type scale (1 = "does not describe me well" to 5 = "describes me very well). Scale items are summed and then averaged, thus higher scores indicate increased levels of the construct assessed. Acceptable internal consistency and predictive and convergent validity were displayed in previous studies (Davis, 1983; Davis & Franzoi, 1991). Adequate test-retest reliability was found (ranging from .62 - .71) in Davis' (1980) initial presentation of the measure while working with college students. Internal reliabilities are reported to range from .71 to .77 (Davis, 1980). Good convergent and

discriminate validity were also reported through correlation of the IRI and existing tests of empathy and other studies, demonstrating good construct validity (Davis & Franzoi, 1991).

Early Adolescent Temperament Questionnaire- Revised: Short Form (EATQ-R; Capaldi & Rothbart, 1992). The EATQ-R short form is a self-report measure designed to assess temperament in early adolescence. The measure includes 12 temperament scales including activation control, affiliation, attention, fear, frustration, surgency/high intensity pleasure, inhibitory control, perceptual sensitivity, pleasure sensitivity, shyness, aggression, and depressive mood. Only the seven-item fearfulness subscale was utilized in the current study as a measure of behavioral inhibition. The fear dimension of temperament is described as unpleasant affect related to anticipation of distress (Capaldi & Rothbart, 1992). Items consist of general statements (e.g. "I am nervous of some of the youth at school who push people into lockers and throw your books around") followed by a 5-point Likert scale inquiring how true each statement was for the participant (1 = "almost always untrue of you" to 5 = "almost always true of you"). Items are summed and then averaged, thus higher scores indicate increasing levels of temperamental fear. Adequate

internal consistency and convergent validity have been found for this measure with participants aged 11 - 24 years (Capaldi & Rothbart, 1992). Coefficient alpha's for the scales ranged from .65 - .82 in previous examinations (Capaldi & Rothbart, (1992); Putnam, Ellis, & Rothbart, 1992). Specifically, the fear subscale evidenced a coefficient alpha of .74 and a test-retest correlation of .81 (Capaldi & Rothbart, 1992).

Outcome Expectancy Questionnaire (OEQ; Perry et al., 1986). This version of the OEQ consisted of eight brief vignettes designed to measure juveniles' expectations that aggressive behavior against a same-sex peer would produce various outcomes. In half of the vignettes, participants imagine using aggressive behavior to obtain tangible rewards from a same-sex peer (e.g. physically threatening a peer to get his/her money) and in the other half, participants were asked to imagine using aggression to retaliate against aversive treatment (e.g. kicking a person in the leg because he/she kicked you). After reading/hearing each vignette, participants were asked to rate the likelihood that various outcomes would occur on a 4-point Likert scale (1 = "very sure the outcome would not occur" to 4 = "very sure the outcome would occur). For vignettes describing the use of aggression to obtain a

tangible reward, participants were asked to rate the likelihood that they would successfully obtain the desired outcome, be punished for their actions, feel bad about their actions, make the peer feel bad, and gain a sense of dominance over the peer. Equivalent questions were asked for vignettes depicting the use of aggression in retaliation against aversive behavior, except that participants rated the likelihood they would be successful in reducing the aversive treatment rather than obtain tangible rewards. Items on the scales are summed and averaged, higher scores indicate increased expectations that a particular outcome would occur. All scales were utilized in the current study. Studies utilizing similar measures were able to discriminate antisocial youth from controls (Hall et al., 1998; Perry et al., 1990). Reliability estimates for the outcome expectancy subscales have been variable ($\alpha = .56 - .83$) (Hall et al., 1998; Pardini et al., 2003; Perry et al., 1990).

Outcome Values Questionnaire (OVQ; Boldizar et al., 1989). This version of the OVQ consists of eight brief vignettes designed to assess the values that children place on the outcomes of aggression against a same-sex peer. The format of the stories followed that of the OEQ. The participants were presented with four vignettes depicting

the use of aggression to obtain tangible rewards and four vignettes describing the use of aggression in retaliating against aversive behaviors. Participants were asked to rate how much they would care if specific outcomes occurred as a result of their behaviors on a 4-point Likert scale (1 = "not care at all" to 4 = "really care a lot"). Participants were asked to rate how much they cared about obtaining a tangible reward, reduce the aversive treatment of a provocative peer, being punished for their actions, feeling bad about what he/she did, feeling bad about making the peer feel bad, and gaining a sense of dominance over the peer. Items for each scale were averaged, with higher scores indicating increased importance being placed on the outcome. The entire measure was utilized in the current study. Similar measures have discriminated between aggressive and non-aggressive youth (Hall et al., 1998). Reliability estimates for the outcome values subscales have been variable ($\alpha = .56 - .91$) (Hall et al., 1998; Pardini et al., 2003; Perry et al., 1990).

Recruitment

Assessment occurred during the 2004-2005 and 2005-2006 school years. The assessment was conducted as a school-wide program evaluation process used to gather information concerning the students' behaviors and personalities.

Participants were recruited by school personnel and then tested by trained school psychology practicum students working at the alternative education center in partial fulfillment of the requirements of their doctoral training program. The goal of the school-wide data collection project was to assess every student in the school capable of completing the battery of tests. Students in the life skills classroom could not be included in the assessment due to limited ability to complete the measures. All remaining students were assigned to complete the assessments. Of the approximate 130 remaining students, approximately 100 were able to complete the testing battery. Those who did not complete the assessments did not do so because of chronic absenteeism, or refusal to participate.

Although required by the school, examiners recruited participants by coordinating times with the teachers and going from class to class asking for volunteers to participate in the project. The administrators limited the number of students per testing period to no more than 8 participants, with no minimum number. During this recruitment phase in the classrooms, the researchers explained that participation was voluntary and that they would be completing a lengthy battery of surveys that would

take approximately 1 ½ to 2 hours to complete. At this time, the students were informed that they would receive a candy bar of their choice as well as Kool-aid and/or pop along with the opportunity to participate. Those who agreed to learn more about participating followed the administrators to the designated classroom which was isolated from surrounding rooms to minimize distractibility. The steps taken once the students were within the classroom are described in the procedures section.

Participants

As previously stated, all attempts were made to include the entire school population that was capable of completing the battery, which included approximately 100 students. The approximate 140 students at the school comprise both community adolescents and adolescents who live in residential placements (approximately 5% of the students live in residential placement). The purpose of the current study was to examine characteristics of the community based students and therefore, the adolescents living in residential placement were not included in the sample examined for this study. The school hosts approximately 32% female and 68% male students. The current study sample consisted of approximately 76 community based

participants (57 males and 19 females) with an age range of 10 to 19 years old (mean = 15.36; SD = 1.69). The majority of participants for the current study were African American (approximately 63%), with the remainder identifying as Caucasian (approximately 17%) and multiracial groups (e.g., African American and Caucasian, Hispanic and African American, Hispanic, African American, and Caucasian, Indian, African American, and Caucasian, among others (approximately 20%). The racial make-up of the sample was representative of the entire school's racial composition.

Client file information revealed the participants' average Full-Scale IQ fell within the Low Average Range (68% of participants: mean = 86, SD = 13.78). However, it should be noted that Intelligence Quotient scores were not available for all students due to missing file information or because the student was involved in regular education and thus, had never been administered a cognitive ability measure. Approximately, 13% of participants identified themselves as gang involved. Approximately, 36% of participants reported a history of incarceration.

Procedure

Participants were first presented with an assent form which explained the purpose of the data collection and their role in the process. Because information collected

was to be used in aggregate form, any single students individual answers would not be evaluated thus confidentiality was assured; the participants were instructed that their names would only appear on the assent form. The questionnaires were all numbered to protect their identities. Assent forms were separated from questionnaires following the administration. Participants were informed that participation was voluntary, would not affect grades or status at the educational placement, and they could discontinue administration at any time. Participants were informed that after completing the assessment, they would receive a candy bar. Breaks to stretch and walk around the room as well as Kool-aid/Soda were provided throughout the testing session on an as needed basis determined by the participant.

The administrators of the test battery included two doctoral level graduate students trained in test administration. The test battery was administered in a group format (maximum of 8 participants in a session). Although there were no more than 8 participants at a time, there were occasions that only one or two participants engaged in the test battery per testing session. Each participant was given the complete test battery, including the assent form and nine measures, when they agreed to

participate. Each test packet was arranged in the same order. However, a minority of participants would choose to skip certain measures and complete them in a different order. Test administrators were available at all times during the assessment period to assist all participants who needed help in reading some or all of the questionnaires or to answer questions regarding vocabulary, etc. Participants were encouraged to ask questions if they did not understand an item or could not read an item. The administrators continuously walked around the room assisting participants as needed and assuring that the participants were reading and taking their times with the test battery.

Research Design and Statistical Analysis

The following section is a description of the research designs/statistical analyses utilized in this study including a priori analysis, descriptive statistics, t-tests, and a series of multiple regressions.

An a priori statistical analysis was conducted to determine the number of participants needed to achieve adequate power and high power with medium and high effect sizes using three predictors. The GPower Program - Version 2.0 developed by Franz Faul and Edgar Erdfelder (1992) was utilized in this analysis.

Table 3

A priori Statistical Analysis

Effect Size	Alpha	Power	Predictors	<i>N</i>
.15	.05	.80	3	77
.15	.05	.95	3	119
.35	.05	.80	3	36
.35	.05	.95	3	54

Because of the limited research in this area, a conservative approach was used with the power analysis. Assuming a medium effect size, at the .05 level, a priori analysis results suggested a sample size of between 77 and 100 participants would be needed to detect differences.

Demographic data, utilized to further describe the sample, showed age, IQ, ethnicity, current educational program, current diagnosis, prior incarceration, and gang affiliation for the current sample.

Table 4

Descriptive Statistics

Descriptor	Mean	SD	Percent
Age	15.36	1.69	
Gender			
Male			75%
Female			25%
IQ	85.87	13.78	
Ethnicity			
African American			63%
Caucasian			17%
Multi			20%
Educ. Program			
Regular			29%
Learning			20%
Emotional			51%
Diagnosis			
None			24%
LD			11%
ED			37%
MR			3%
LD/ED			7%

Table 4 (continued).

Descriptor	Mean	SD	Percent
Other			13%
Prior Incarc.			36%
Gang Affil.			13%

Note. These calculations are based on the current number of participants ($N = 76$).

Two-tailed independent samples t tests were conducted to investigate gender differences between male and female participants on the demographic variables listed above in an attempt to further describe the sample.

The main research design of the current study utilized a series of multiple regressions. The general purpose of multiple regression is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable (StatSoft, Inc. 1984-2003). Multiple regression is widely used in the social and natural sciences (StatSoft, Inc. 1984-2003). Multiple regression allows the researcher to ask the general question "what is the best predictor of ..." (StatSoft, Inc. 1984-2003). The current study asked which of the

psychopathic traits (callous/unemotional, impulsivity/conduct problems, or narcissism) best predicted level of empathy, dysregulation, behavioral inhibition, and social-cognitive processes in a sample of aggressive children. Multiple regression allows for the further clarifying of the predictor constructs and clarified these constructs in the current study sample. Additionally, the use of multiple regression in the current study was consistent with the Pardini et al. (2003) investigation from which the current study extended findings.

When deciding to run a multiple regression, it is important to recognize the problem of multicollinearity. Multicollinearity occurs when moderate to high intercorrelations exist among the predictors (Stevens, 2002). This is a problem for three reasons: 1) the predictors are accounting for much of the same variance, limiting the size of R, 2) due to the correlations among the predictors, it is difficult to determine the importance of each predictor, 3) it increases the variances of the regression coefficients, producing a more unstable prediction equation (Stevens, 2002). Multicollinearity was investigated through an examination of the simple correlations among the predictors and an examination of the

variance inflation factors for the predictors (Stevens, 2002). If multicollinearity was expected, three methods could assist in combating it: 1) combining predictors that are highly correlated, 2) using a principal components analysis to reduce the number of predictors if there is a large set, 3) utilizing a technique called ridge regression (Stevens, 2002).

There were a number of selection models to choose from when entering variables for a multiple regression analysis, including simultaneous, forward, backward, and stepwise. In simultaneous selection all predictors are entered into the analyses at the same time. With forward selection, the model begins with no predictors entered (Stevens, 2002). The researcher enters the predictor with the highest correlation into the analysis first followed by the predictor that increases the R^2 (variance accounted for in the dependent variable) the most (Stevens, 2002). This process continues until all the predictors are entered or the increase in the R^2 is no longer significant (Stevens, 2002). In backward selection, the model begins with all the predictors entered (Stevens, 2002). The predictor that contributes the least to the R^2 is removed first (Stevens, 2002). This process is continued until the R^2 is reduced to

a point that it is no longer statistically significant (Stevens, 2002). Stepwise selection utilizes both the forward and backward selection methods (Stevens, 2002). Stepwise begins utilizing the forward selection method; however, through that method, predictors can be removed if they no longer demonstrate significance in the model (Stevens, 2002). This model allows for the constant assessment of each predictors importance (Stevens, 2002). The current study utilized the stepwise selection method when possible. This method was appropriate for the current study in that it allowed for each predictor, callous/unemotional, impulsivity/conduct problems, and narcissism, to be entered in the model in terms of their correlations and then removed when they did not contribute to the variance in the dependent variable being examined for the particular question. When the stepwise selection method yielded no significant results, the variables were entered simultaneously for explanatory purposes.

Before examining the predictor variables and the dependent variables, the interaction of gender and the predictor variables was examined. If gender served as a moderator to the predictor variables, it would have been included in each of the multiple regression analyses as an interaction variable. Each dependent variable was

independently regressed on to the C/U, I/CP, and narcissism factors for the purpose of examining the unique relation between each factor of psychopathy and various constructs. The β values reported for the C/U, I/CP, and narcissism factors represent the unique relationship between each factor of psychopathy and the dependent variable after controlling for the effects of the other factor. The overall R^2 reported represents the total variance the I/CP, C/U, and narcissism factor accounted for in the dependent variable. After conducting the primary regression analysis, post hoc tests would be conducted to determine whether the significant effects remained after controlling for demographic information including gender, minority status, intellectual abilities (Full Scale IQ), and the severity of the participants' criminal behavior (i.e. prior incarceration, gang involvement).

The following table summarizes the research questions, corresponding variables, whether the variable is a predictor or a dependent variable, and the instruments utilized in measuring the variables.

Table 5

Clarification of Variables

Question	Variable	Predictor/DV	Instrument
1-4	CU factor	Predictor	ICU
1-4	ICP factor	Predictor	APSD
1-4	Narcissism	Predictor	APSD
1	Empathic Concern	DV	IRI
1	Perspective Taking	DV	IRI
1	Personal Distress	DV	IRI
2	Behavioral Dysregulation	DV	ADI
2	Emotional Dysregulation	DV	ADI
2	Cognitive Dysregulation	DV	ADI
3	Fearfulness	DV	EAT-Q
4	Tangible Rewards	DV	OEQ OVQ
4	Reduction of	DV	OEQ

Table 5 (continued).

Question	Variable	Predictor/DV	Instrument
	Aversive TX		OVQ
4	Punishment	DV	OEQ
			OVQ
4	Dominance	DV	OEQ
			OVQ

Four research questions were investigated in the current study.

Research Questions

Question 1. How much variance does the callous/unemotional factor explain in both emotional and cognitive empathy and likewise, how much variance does the impulsivity/conduct problems factor explain in both emotional and cognitive empathy, and how much variance does the narcissism factor explain in both emotional and cognitive empathy?

Hypothesis. The current study hypothesized that the callous/unemotional trait would predict emotional and cognitive empathy; however, the impulsivity/conduct problems factor would not. Because the narcissism factor

has been found to load on Factor 1 of Hare's two factor model (1993) as does the callous/unemotional factor (Harpur et al., 1989), it was hypothesized that the narcissistic factor may share variance with the callous/unemotional trait in predicting emotional and cognitive empathy. However, in the one study where the narcissism factor emerged in the community sample, the narcissism traits were more closely related to measures of impulsivity/conduct problems (Frick et al., 2000). Therefore, it may also be that the narcissism factor, similar to the hypothesis concerning the impulsivity/conduct problems factor, would not predict cognitive or emotional empathy.

Statistical Method. Stepwise Multiple Regression (3 multiple regressions were run, each examining the three predictors and one DV at a time). Predictors included: Callous/unemotional factor, Impulsivity/conduct problems factor, and Narcissism factor. Dependent Variables included: Cognitive Empathy (Perspective Taking) and Emotional Empathy (Empathic Concern and Personal Distress).

Why Selected? Multiple regression is utilized in identifying constructs that can predict or explain the variance in other constructs. The purpose of this investigation was to further explain the construct of psychopathy. Multiple regression allows the factors of

psychopathy to be clarified by investigating how much they explain variables often associated with the psychopathy construct. In particular for Question 1: the emotional (empathic concern and personal distress) and cognitive (perspective taking) variables were regressed onto the callous/unemotional trait, impulsivity/conduct problems, and narcissism factors in order to demonstrate the unique and shared variance these factors explain in empathy.

Assumptions. There are four main assumptions that apply to multiple regression analyses. 1) Linearity: assumes that the relationship between variables is linear. Practically, this assumption can almost never be confirmed; fortunately, multiple regression procedures are not greatly affected by minor deviations from this assumption (StatSoft, Inc., 1984-2003). However, examining a bivariate scatterplot of the variables is suggested (StatSoft, Inc., 1984-2003). If curvature in the relationships is evident, the researcher can either transform the variables, or explicitly allow for nonlinear components, 2) Normality: assumes that the residuals (predicted minus observed values) are distributed normally. Even though most tests (specifically the F -test) are quite robust with regard to violations of this assumption, a review of the distributions of the major variables in the form of

histograms for the residuals and normal probability plots is suggested (StatSoft, Inc., 1984-2003), 3) Independence: assumes that errors are independent, that participants are responding independently of one another (Stevens, 2002), 4) Homoscedasticity: assumes the residuals (errors in prediction) are evenly spread around the regression line or the variance of errors across all values of the predictors is constant (Stevens, 2002). This assumption can be assessed by examining the residual plots (Stevens, 2002).

Question 2. Does the impulsivity/conduct problems factor predict dysregulated behaviors (behavioral, emotional, and cognitive), does the callous/unemotional factor predict dysregulated behaviors (behavioral, emotional, and cognitive), and does the narcissism factor predict dysregulated behaviors (behavioral, emotional, and cognitive)?

Hypothesis. It was hypothesized that impulsivity/conduct problems would explain variance in the dysregulated behaviors variables including behavioral, emotional, and cognitive dysregulation; however, the callous/unemotional factor would not. Again, previous findings were unclear concerning the narcissistic factor; therefore, it was unclear whether the narcissism factor would explain variance in dysregulated behaviors, as

hypothesized with the impulsivity/conduct problems factor, or would not, as hypothesized with the callous/unemotional factor.

Statistical Method. Stepwise Multiple Regression (3 multiple regressions were run, each examining the three predictors and one DV at a time). Predictors included: Callous/unemotional factor, Impulsivity/conduct problems factor, and Narcissism factor. Dependent Variables included: Dysregulated Behaviors (Emotional, Behavioral, and Cognitive).

Why Selected? Multiple regression is utilized in identifying constructs that can predict or explain the variance in other constructs. The purpose of this investigation was to further explain the construct of psychopathy. Multiple regression allows the factors of psychopathy to be clarified by investigating how much they explain variables often associated with the psychopathy construct. In particular for Question 2: the behavioral, emotional, and cognitive variables were regressed onto the callous/unemotional trait, impulsivity/conduct problems, and narcissism factors in order to demonstrate the unique and shared variance these factors explain in dysregulation.

Assumptions. There are four main assumptions that apply to multiple regression analyses. Refer to question 1.

Question 3. How much variance in behavioral inhibition or fearfulness is explained by the callous/unemotional, impulsivity/conduct problems, and narcissism factors?

Hypothesis. It was hypothesized that the callous/unemotional trait would not explain variance within the behavioral inhibition or fearfulness variable and in fact would demonstrate a negative relationship; whereas, the impulsivity/conduct problems factor would predict behavioral inhibition/fearfulness. Again, previous findings were unclear concerning the narcissistic factor; therefore, it was unclear whether the narcissism factor would explain variance in behavioral inhibition, as hypothesized with the impulsivity/conduct problems factor, or would not, as hypothesized with the callous/unemotional factor.

Statistical Method. Stepwise Multiple Regression (1 multiple regression was run, each examining the three predictors and one DV at a time). Predictors included: Callous/unemotional factor, Impulsivity/conduct problems factor, and Narcissism factor. Dependent Variable included: Behavioral Inhibition (fear).

Why Selected? Multiple regression is utilized in identifying constructs that can predict or explain the variance in other constructs. The purpose of this investigation was to further explain the construct of

psychopathy. Multiple regression allows the factors of psychopathy to be clarified by investigating how much they explain variables often associated with the psychopathy construct. In particular for Question 3: the fear variable was regressed onto the callous/unemotional trait, impulsivity/conduct problems, and narcissism factors in order to demonstrate the unique and shared variance these factors explain in behavioral inhibition.

Assumptions. There are four main assumptions that apply to multiple regression analyses. Refer to question 1.

Question 4. Do callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits predict social-cognitive processes in community youth displaying aggressive behaviors?

Hypothesis. It was hypothesized that the callous/unemotional factor, but not the impulsivity/conduct problems factor would predict a higher value placed on aggressive acts and a disregard for the negative consequences of aggressive behavior. More specifically, the callous/unemotional factor would predict increased expectations and values associated with the positive outcomes of aggressive behavior and decreased expectations and values associated with the negative consequences for aggressive behavior. It was expected that the

impulsivity/conduct problems factor would not be related to the outcome expectations or values. Again, previous findings were unclear concerning the narcissism factor; therefore, it was unclear whether the narcissism factor would explain variance in social cognition, as hypothesized with the callous/unemotional factor, or would not, as hypothesized with the impulsivity/conduct problems factor.

Statistical Method. Stepwise Multiple Regression (8 multiple regressions were run with the three predictors and each of the 8 DVs). Predictors included: Callous/unemotional factor, Impulsivity/conduct problems factor, and Narcissism factor. Dependent Variables included: Outcome Expectancy (tangible rewards, reduction of aversive treatment, punishment, and dominance) and Outcome Value (tangible rewards, reduction of aversive treatment, punishment, and dominance).

Why Selected? Multiple regression is utilized in identifying constructs that can predict or explain the variance in other constructs. The purpose of this investigation was to further explain the construct of psychopathy. Multiple regression allows the factors of psychopathy to be clarified by investigating how much they explain variables often associated with the psychopathy construct. In particular for Question 4: the social-

cognition (tangible reward, reduction of aversive treatment, punishment, and dominance) variables were regressed onto the callous/unemotional trait, impulsivity/conduct problems, and narcissism factors in order to demonstrate the unique and shared variance these factors explain in social cognition.

Assumptions. There are four main assumptions that apply to multiple regression analyses. Refer to question 1.

CHAPTER 4

RESULTS

The results section is organized as follows.

Descriptive statistics present information concerning all variables in this study including predictors and dependent variables. Following descriptive statistics, pre-analyses investigate correlations and significant differences among the variables in this study. Statistical assumptions for each research question are then examined in order to assure the appropriateness of running the main analyses for each research question. Lastly, the statistical results for each research question are offered.

Before examining the descriptive statistics, the callous/unemotional construct must be addressed. The current study examined the relationship between the callous-unemotional trait from the APSD and the ICU in order to determine the ICU measure could be used instead of the c/u scale on the APSD. The measure with the highest reliability was included in the current study. Because the ICU was created and expanded from the exact items found on the APSD, it would appear that the ICU would be a more thorough measure to examine the callous/unemotional trait. A pre-analysis examined the relationship between the APSD callous/unemotional factor and the ICU callous/unemotional

construct. The APSD callous/unemotional scale and the ICU measure were significantly positively correlated ($r = .664$, $p < .001$) at the $p < .01$ level which is indicative of moderate to strong criterion related validity or demonstrates that the ICU callous/unemotional measure demonstrates validity when compared to a previously established measure of callous/unemotional trait, the c/u scale on the APSD. Cronbach's alpha indicates the current sample reliability of the APSD c/u scale was .397 and .760 for the ICU. Therefore, it was determined from previous research discussed in chapter 3 concerning the construction of the ICU and the current correlation and reliability measures that the ICU appears to be the better measure for this study and will be utilized throughout all analyses when addressing the callous/unemotional traits.

Descriptive Statistics

Descriptive statistics describe and summarize data. The descriptive statistics utilized included means, standard deviations, and internal consistency for each variable in the study. Descriptive statistics were run with the predictors: callous/unemotional traits, impulsivity/conduct problems, and narcissism. Results are presented in Table 6.

Table 6

Descriptive Statistics for Predictor Variables

Predictor	Mean	Standard Deviation	Cronbach's Alpha
C/U	31.947	8.806	.760
I/CP	.888	.330	.441
N	.718	.396	.645

Note. C/U = callous/unemotional, I/CP = impulsivity/conduct problems, N = narcissism.

The C/U scores range from 0 to 72 with a higher number representing more callous/unemotional traits. The current sample reported callous/unemotional traits at a slightly lower level (mean = 31.947) than the middle range of the scale (middle = 36). The I/CP scale ranges from a total converted score (total raw score divided by number of scale items [5]) of 0 to 2 with a higher number representing more impulsivity/conduct problems reported. The current sample reported scores slightly lower (mean = .888) than the middle (middle=1) of the I/CP total converted scale range or on average the students reported median levels of impulsivity/conduct problems. The low reliability of the

I/CP variable should be considered when examining the results of this study. The N scale ranges from a total converted score (total raw score divided by number of scale items [7]) of 0 to 2 with a higher number representing more narcissism traits reported. The current sample reported scores somewhat lower (mean = .718) than the middle (middle = 1) of the N total converted scale range.

Descriptive statistics were also run for the dependent variables in the study. Results are presented in Table 7.

Table 7

Descriptive Statistics for Dependent Variables

Dependent Variable	Mean	Standard Deviation	Cronbach's Alpha
Empathic Concern	1.948	.656	.358
Personal Distress	1.719	.641	.278
Perspective Taking	1.821	.630	.207
Behavioral Dysregulation	1.243	.560	.817
Emotional Dysregulation	1.381	1.190	.795
Cognitive Dysregulation	1.520	.584	.816
Behavioral Inhibition	2.413	.7099	.520
Outcome Expectancy			
Tangible	2.918	.686	.582
Aversive Tx	2.568	.834	.612
Punishment	.437	.673	.792
Dominance	2.819	.672	.819
Outcome Value			
Tangible	2.023	.815	.681
Aversive Tx	2.220	.902	.734
Punishment	2.950	.759	.905
Dominance	2.168	.845	.885

The Empathic Concern scale ranged from a total converted (total raw score divided by number of scale items [6]) scale score of 0 to 4 with higher values indicating more empathic concern for others. The current sample reported scores slightly lower (mean = 1.948) than the middle (middle = 2) of the empathic concern total converted scale range or on average the students reported close to median levels of empathic concern. The low reliability of the variable empathic concern should be considered when interpreting the results of this study. The Personal Distress scale ranged from a total converted (total raw score divided by number of scale items [7]) scale score of 0 to 4 with higher values indicating more feelings of personal distress. The current sample reported scores slightly lower (mean = 1.719) than the middle (middle = 2) of the personal distress total converted scale range or on average the students reported close to median levels of empathic concern. The low reliability of the variable personal distress should be considered when interpreting the results of this study. The Perspective Taking scale ranged from a total converted (total raw score divided by number of scale items [7]) scale score of 0 to 4 with higher values indicating more reported perspective taking. The current sample reported scores slightly lower (mean =

1.821) than the middle (middle = 2) of the perspective taking total converted scale range or on average the students reported close to median levels of perspective taking. The low reliability of the variable perspective taking should be considered when interpreting the results of this study.

The Behavioral Dysregulation scale ranged from a total converted (total raw score divided by number of scale items [10]) scale score of 0 to 3 with higher values indicating more reported behavioral dysregulation. The current sample reported scores slightly lower (mean = 1.243) than the middle (middle = 1.5) of the behavioral dysregulation total converted scale range or on average the students reported close to median levels of behavioral dysregulation. The Emotional Dysregulation scale ranged from a total converted (total raw score divided by number of scale items [10]) scale score of 0 to 3 with higher values indicating more reported emotional dysregulation. The current sample reported scores slightly lower (mean = 1.381) than the middle (middle = 1.5) of the emotional dysregulation total converted scale range or on average the students reported close to median levels of emotional dysregulation. The Cognitive Dysregulation scale ranged from a total converted (total raw score divided by number of scale items [10])

scale score of 0 to 3 with higher values indicating more reported cognitive dysregulation. The current sample reported scores (mean = 1.520) at the middle (middle = 1.5) of the cognitive dysregulation total converted scale range or on average the students reported median levels of cognitive dysregulation.

The Behavioral Inhibition (fear) scale ranged from a total converted (total raw score divided by number of scale items [6]) scale score of 1 to 5 with higher values indicating more behavioral inhibition or fear. The current sample reported scores somewhat lower (mean = 2.413) than the middle (middle = 3) of the behavioral inhibition total converted scale range or on average the students reported somewhat lower than median levels of behavioral inhibition or fear.

The Outcome Expectancy measure was composed of four subscales including tangible (expectation of gaining a tangible reward by engaging in the negative behavior), aversive treatment (expectation of reducing future aversive treatment by engaging in the negative behavior), punishment (expectation of being punished or getting in trouble for actions by engaging in the negative behavior), and dominance (expectation of demonstrating dominance or showing who is in charge/the boss by engaging in the

negative behavior). The Outcome Expectancy Tangible scale ranged from a total converted (total raw score divided by number of scale items [4]) scale score of 1 to 4 with higher values indicating more expectation of gaining a tangible reward. The current sample reported scores slightly higher (mean = 2.918) than the middle (middle = 2.5) of the tangible total converted scale range or on average the students reported slightly higher than median levels of expectation of gaining a tangible reward by engaging in the negative behavior. The Outcome Expectancy Aversive Treatment scale ranged from a total converted (total raw score divided by number of scale items [4]) scale score of 1 to 4 with higher values indicating more expectation of gaining a tangible reward. The current sample reported scores (mean = 2.568) at the middle (middle = 2.5) of the aversive treatment total converted scale range or on average the students reported median levels of expectation of reducing future aversive treatment by engaging in the negative behavior. The Outcome Expectancy Punishment scale ranged from a total converted (total raw score divided by number of scale items [8]) scale score of 1 to 4 with higher values indicating more expectation of being punished or getting in trouble for the negative behavior. The current sample reported scores (mean = .437)

at the lower end of the aversive treatment total converted scale range or on average the students reported low levels of expectation of being punished or getting in trouble for engaging in the negative behavior. The Outcome Expectancy Dominance scale ranged from a total converted (total raw score divided by number of scale items [8]) scale score of 1 to 4 with higher values indicating more expectation of demonstrating dominance or showing who is in charge/the boss by engaging in the negative behavior. The current sample reported scores slightly higher (mean = 2.819) than the middle (middle = 2.5) of the aversive treatment total converted scale range or on average the students reported slightly higher than the median level expectation of demonstrating dominance or showing who is in charge/the boss by engaging in the negative behavior.

The Outcome Value measure was composed of four subscales including tangible (the value placed in or how much the student cares about gaining a tangible reward by engaging in the negative behavior), aversive treatment (the value placed in or how much the student cares about reducing future aversive treatment by engaging in the negative behavior), punishment (the value placed in or how much the student cares about being punished or getting in trouble for actions by engaging in the negative behavior),

and dominance (the value placed in or how much the student cares about demonstrating dominance or showing who is in charge/the boss by engaging in the negative behavior). The Outcome Value Tangible scale ranged from a total converted (total raw score divided by number of scale items [4]) scale score of 1 to 4 with higher values indicating more value placed in gaining a tangible reward. The current sample reported scores slightly lower (mean = 2.023) than the middle (middle = 2.5) of the tangible total converted scale range or on average the students reported slightly lower than median levels of value placed in gaining a tangible reward by engaging in the negative behavior. The Outcome Value Aversive Treatment scale ranged from a total converted (total raw score divided by number of scale items [4]) scale score of 1 to 4 with higher values indicating more expectation of gaining a tangible reward. The current sample reported scores slightly lower (mean = 2.220) than the middle (middle = 2.5) of the aversive treatment total converted scale range or on average the students reported slightly lower than median levels of value placed in reducing future aversive treatment by engaging in the negative behavior. The Outcome Value Punishment scale ranged from a total converted (total raw score divided by number of scale items [8]) scale score of 1 to 4 with

higher values indicating more value placed in being punished or getting in trouble for the negative behavior. The current sample reported scores somewhat higher (mean = 2.950) than the middle (middle = 2.5) of the aversive treatment total converted scale range or on average the students reported somewhat higher than median levels of value being placed in being punished or getting in trouble for engaging in the negative behavior. The Outcome Value Dominance scale ranged from a total converted (total raw score divided by number of scale items [8]) scale score of 1 to 4 with higher values indicating more value being placed in demonstrating dominance or showing who is in charge/the boss by engaging in the negative behavior. The current sample reported scores slightly lower (mean = 2.168) than the middle (middle = 2.5) of the aversive treatment total converted scale range or on average the students reported slightly lower than the median level of value placed in demonstrating dominance or showing who is in charge/the boss by engaging in the negative behavior.

Preliminary Statistical Analyses

The first pre-analysis examined the differences, if any, between male ($N = 57$) and female ($N = 19$) participants on demographic variables. This analysis was conducted in order to further describe the sample. Independent sample t-

tests were conducted with the continuous demographic variables; whereas, chi-square analyses investigated non-continuous demographic variables. Results are presented in Tables 8 (continuous demographic variables) and 9 (non-continuous demographic variables). The results of the pre-analyses examining gender differences should be interpreted with caution due to the difference in number of males to females. If no significant gender differences are evident, it is possible the lack of females compared to males did not allow for a true comparison between genders.

Table 8

Gender Differences on Continuous Demographic Variables

	Levene's Test For Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig.	Mean Diff
Age	.454	.503	-1.619	74	.110	-.772
IQ	.040	.842	1.948	50	.057	8.600

Note. These statistics are those assuming equal variances. Degrees of freedom are listed as less than 74 when demographic data was missing from some participants.

The mean age for females was 16 with a standard deviation of 1.706. The mean age for males was 15.325 with a standard deviation of 1.817. The mean IQ for females was 79.25 with a standard deviation of 13.692. The mean IQ for males was 87.85 with a standard deviation of 13.337. T-test results indicate no significant gender differences on the continuous demographic variables of age and IQ. These results should be interpreted with caution due to the difference in the number of males ($N = 57$) and females ($N = 19$) in this study.

Table 9

Gender Differences on Non-Continuous Demographic Variables

	%Males	%Females	Value	df	Asymp.Sig (2-sided)
Educ. Prog.			2.572	2	.276
Regular	24.6	42.1			
Learning	19.3	21.1			
Emotional	56.1	36.8			
Ethnicity			.364	2	.834
Afr.Amer.	64.9	57.9			
Caucasian	15.8	21.1			
Mixed	19.3	21.1			
Diagnosis			-8.162	5	.148
No Diag.	20.8	38.9			
LD	15.1	0.0			
ED	41.5	33.3			
MR	1.9	5.6			
LD & ED	9.4	0.0			
Other	11.3	22.2			
Incar.			-3.842	1	.050
Previous	42.1	16.7			
No Prev.	57.9	83.3			

Table 9 (continued).

	%Males	%Females	Value	df	Asymp.Sig (2-sided)
Gang			1.193	1	.275
Involved	16.4	5.9			
Not Inv.	83.6	94.1			

Note. Pearson chi-square analyses are utilized. Afr.Amer. = African American. No Diag. = no diagnosis. LD = learning disability. ED = emotional disturbance. MR = mentally retarded. LD & ED = learning disability and emotional disturbance. Incar. = incarceration. No Prev. = no previous incarceration. Not Inv. = not involved.

Results indicate no significant gender differences between genders on the non-continuous demographic variables of education program, ethnicity, diagnosis, prior incarceration, and gang involvement. These results should be interpreted with caution due to the difference in the number of males ($N = 57$) and females ($N = 19$) in this study.

The second pre-analysis examined gender differences on the three predictor variables. If gender differences exist,

gender will be included in the multiple regression analyses as an interaction variable. Independent samples t-tests were utilized to investigate this difference. Results are presented in Table 10.

Table 10

Gender Differences on Predictor Variables

	Levene's Test For Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig.	Mean
Diff						
C/U	1.501	.224	1.769	74	.081	4.070
I/CP	.302	.584	.830	74	.409	.073
N	.110	.741	1.610	74	.112	.167

Note. These statistics are those assuming equal variances.

Results indicate no significant differences between genders among the three predictor variables, callous/unemotional traits, impulsivity/conduct problems, and narcissism. Therefore the interaction of gender and any of the three predictors will not need to be included as an interaction variable in the multiple regression analyses.

These results should be interpreted with caution due to the difference in the number of males ($N = 57$) and females ($N = 19$) in this study.

The third pre-analyses for this study included the investigation of any demographic variables that are significantly associated with the predictor variables. Demographic variables were examined in order to determine if any demonstrated possible covariate status for the main analyses, meaning the demographic variable was found to be significantly correlated with a predictor variable. Demographic variables considered consisted of Sex (male or female), Age, Race (African American, Caucasian, Hispanic, Mixed/Multi-racial, Other), Intelligence Quotient (IQ), Education Program (Regular Education, Learning Support, Emotional Support, or Both Learning Support and Emotional Support), Diagnosis (no diagnosis, learning disability, emotional disturbance, mental retardation, both learning disability and emotional disturbance, and other), Prior Incarceration, and Gang Affiliation. Pearson correlation analysis was utilized with the variables age and IQ due to their continuous variable status. Sex, prior incarceration, and gang affiliation are all dichotomous variables thus requiring the Pearson correlation method. Correlation results are presented in Table 11. Race, educational

program, and diagnosis are all variables with more than two groups; therefore, one-factor ANOVAs were utilized to examine whether these variables are related to the continuous independent variables. ANOVA results are presented in Table 12.

Table 11

Correlation Matrix of Demographics and Predictor Variables

	Demographics				
	Age	Sex	IQ	Incar	Gang
PVs					
C/U	-.155	-.201	.331*	-.019	-.354**
I/CP	-.241*	-.096	.277*	.076	-.236**
N	-.361*	-.184	.423**	.074	-.165

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

Results indicate significant relationships at the $p = .05$ level between age of participant and impulsivity/conduct problems ($r = -.241$) and narcissism ($r = -.361$). This relationship indicates that as the age of the participants increase, they report less

impulsivity/conduct problems and less narcissism. Significant relationships were also found between all three predictors and IQ of participants, which indicates that as IQ increases so does the participants' reporting of callous/unemotional traits, impulsivity/conduct problems, and narcissism. Gang involvement was significantly negatively correlated with both callous/unemotional traits and impulsivity/conduct problems. The students indicating gang involvement also indicated less callous/unemotional traits and less impulsivity/conduct problems.

Table 12

ANOVA Results for Demographics and Predictor Variables

	Demographics		
	Race	Educ. Prog.	Diagnoses
PVs			
C/U	.371	.446	.425
I/CP	.171	.936	.652
N	.747	.579	.100

Note. PVs = predictor variables. Values listed are the *p* (significance) values found in the ANOVA summary table.

Results indicate no significant ANOVA analyses. This indicates the groups were not significantly different and therefore related with each independent variable.

A fourth pre-analysis examines the relationship among the predictor variables, callous/unemotional traits, impulsivity/conduct problems, and narcissism. Although it is important for predictor variables to be related in multiple regression analyses, a moderate or high relationship could result in multicollinearity.

Correlations are examined among the predictor variables and results are presented in Table 13.

Table 13

Correlations among the Predictor Variables

	C/U	I/CP	N
C/U	---	.361**	.389**
I/CP		---	.396**
N			---

Note. ** $p < .01$

Results indicate that all three predictor variables are significantly correlated at a low to moderate level. Thus, multicollinearity will be investigated during these analyses by considering the correlations found above and investigating the variance inflation factors of the predictors.

Assumptions and Main Analyses

The following section reports the results of the tests of assumptions and the main analyses for each of the four research questions.

Research Question 1

The first research question examined the amount of variance each predictor, the callous/unemotional factor,

impulsivity/conduct problems, and narcissism explained in both emotional and cognitive empathy. Three separate multiple regression analyses were utilized in this research question to examine how psychopathic characteristics in youth were related to levels of empathy. The predictor variables consisted of the callous/unemotional factor, impulsivity/conduct problems factor, and the narcissism factor. The dependent variables for this study were emotional (empathic concern & personal distress) and cognitive (perspective taking) empathy.

Before running the main multiple regression analyses, the tests of assumptions were examined. These results are for all three of the multiple regressions examined in the first research question. First, the independence assumption is considered and determined not to be violated based on the design of the study and the administration of the tests to small groups of students seated randomly and distanced from one another. It is also suggested to examine the Durbin-Watson statistic to examine the independence assumption in order to examine the autocorrelation of errors over the sequence of cases (Tabachnick & Fidell, 2007). Values should be between 1.5 and 2.5. The Durbin-Watson statistic was examined for all three multiple regression analyses in the first research question. All

values were found to be between the suggested 1.5 and 2.5 and therefore, any correlation among the residuals is acceptable or the cases are found to be independent.

Second, the test of normality was investigated utilizing histograms and normal probability plots for each dependent variable. The results indicate that all dependent variables followed a normal distribution based on the histogram graph and the cumulative probability graphs follow a straight line on the normal probability plots. Skewness and Kurtosis were also examined to investigate the normality assumption. Two methods were utilized to examine whether the skewness and kurtosis were skewed. Both methods utilized the skewness values obtained from SPSS. The first method suggested comparing the skewness/kurtosis value with twice the standard error of skewness/kurtosis including the range from +/- twice the standard error of skewness/kurtosis (Price, 2000). If the value for skewness/kurtosis fell within this range, the skewness/kurtosis is considered not seriously violated (Price, 2000). For example, the skewness value for the variable empathic concern was $-.544$ and the standard error was $.276$. Two times the standard error ($2 * .276$) equals $.552$. So the range that the skewness value should fall between to not be considered seriously violated is $-.552$ to

.552, which is does and therefore skewness is not seriously violated. The second method to investigate whether or not skewness and kurtosis were violated involved dividing the skewness and kurtosis SPSS values by the corresponding standard error to obtain a z-score. If the z-score fell outside the +/- 3 range, it was determined that the skewness or kurtosis was violated. Skewness was found to be within the expected range for all three dependent variables. Kurtosis for perspective taking and personal distress was found to be within the expected range. Kurtosis for empathic concern was found to be outside of the expected range for the first method, however, not significantly. Using an alpha level of .001 is considered conventional but conservative to evaluate the significance of skewness and kurtosis with small to moderate samples (Tabachnick & Fidell, 2007). The kurtosis for empathic concern was 1.907 outside of the -1.09 to 1.09 range (z-score = 3.50 outside of the +/-3 range); however, the Shapiro-Wilk test of normality found this to be non significant at the .001 alpha level ($p = .002$). Therefore, the normality assumption was not violated for all three dependent variables.

Third, the test of linearity was investigated in order to determine whether the relationship between the

independent and dependent variables were linear. This was accomplished through the examination of plots that displayed the residuals versus the predicted dependent variable. Each dependent variable was examined. All three dependent variables evidenced points scattered randomly around the line originating from the mean of the residuals and therefore, do not violate the assumption of linearity. Fourth, the assumption of homoscedasticity was examined by looking at the residual scatter plots and whether or not the points scatter evenly about the line originating from the mean of the residuals. The examination of the scatter plots of each of the dependent variables indicated points evenly scattered and therefore, there is no violation of homoscedasticity. Finally, multicollinearity was assessed due to the moderate correlation among the independent variables. The Variance Inflation Factor (VIF) was examined for this purpose. The VIF for the independent variables were all below 10 and therefore, multicollinearity is not an issue. No assumptions were violated for the three multiple regressions and therefore all three multiple regression main analyses can be run.

Demographic statistics and the correlation matrix for all three predictor variables and dependent variables for research question 1 are presented in Table 14.

Table 14

Correlation Matrix and Descriptive Statistics: Three Predictors and Dependent Variables (Empathic Concern, Personal Distress, Perspective Taking)

	Mean	SD	1	2	3
Emp. Conc.	1.948	.656	-.577***	-.210*	-.357**
Per. Dist.	1.719	.641	-.107	.000	-.107
Pers. Tak.	1.820	.630	-.324*	-.102	-.106
Predictor Var.					
1. C/U	31.947	8.806	---	.361***	.389***
2. I/CP	.888	.330		---	.396***
3. Narcissism	.718	.396			---

Note. $N = 76$. Emp. Conc. = Empathic Concern; Per. Dist. = Personal Distress; Pers. Tak. = Perspective Taking.

*** $p < .001$ ** $p = .002$ * $p < .05$

Results indicate empathic concern was significantly negatively correlated with all independent variables. Perspective taking was significantly negatively correlated with callous/unemotional traits.

Each dependent variable was independently regressed onto the three predictor variables. Results are presented separately in Tables 14-18.

The first regression analysis for the first research question examined the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) and the dependent variable empathic concern (a measure of emotional empathy). Stepwise analyses were utilized for this multiple regression. Results are presented in Table 15.

Table 15

Stepwise Regression Analysis Summary for Independent Variables Predicting Empathic Concern

Model	B	SEB	β	t	Sig.
<i>1</i>					
C/U	-.043	.007	-.577	-6.072	.000
<i>Excluded IVs</i>					
I/CP				-.022	.983
Narc.				-1.532	.130

Note. Predictors in the Model: (Constant), callous/unemotional. Dependent Variable: empathic concern. $R^2 = .333$, $F(1,74) = 36.874$, $p < .001$.

Stepwise analyses indicate Model 1 to include the independent variable callous/unemotional. The variables impulsivity/conduct problems and narcissism were removed from the model due to insignificant contribution to the variance of empathic concern (emotional empathy). This model explains 33.3% of the variance in emotional empathy. Results indicate Model 1 (including only the callous/unemotional variable) significantly predicts

empathic concern ($F = 36.874, p < .001$).

Callous/unemotional traits explain 33.3% of variance in empathic concern. This suggests the higher level of callous/unemotional traits significantly predicts lower levels of empathic concern for others or emotional empathy. Results of this analysis should be interpreted with caution due to the low reliability found for the variable empathic concern (Cronbach's Alpha = .358). Additionally, although the regression analysis did not identify narcissism as a significant predictor variable, it should not be ruled out as important in explaining empathic concern due to its significant relationship/effect size ($-.357, p = .002$) with this dependent variable.

The second regression analysis examined the independent variables and the dependent variable personal distress (a measure of emotional empathy). Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 16.

Table 16

Multiple Regression Analysis Summary for Independent Variables Predicting Personal Distress

Model	B	SEB	β	t	Sig.
1					
C/U	-.007	.010	-.095	-.727	.470
I/CP	.142	.254	.073	.560	.577
N	-.160	.215	-.099	-.745	.459

Note. $R^2 = .021$, $F(3,72) = .507$, $p = .679$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in insignificant results ($F = .507$, $p = .679$). The model explains an insignificant 2.1% of the variance in personal distress (emotional empathy). This suggests any model of callous/unemotional traits, impulsivity/conduct problems, and narcissism did not significantly predict personal distress or one measure of emotional empathy. Results of this analysis should be interpreted with caution due to the

low reliability found for the variable personal distress (Cronbach's Alpha = .278).

The third regression analysis examined the independent variables and the dependent variable perspective taking (cognitive empathy). Stepwise analyses were utilized. Results are presented in ..

Table 17

Stepwise Regression Analysis Summary for Independent Variables Predicting Perspective Taking

Model	B	SEB	β	t	Sig.
1					
C/U	-.023	.008	-.324	-2.945	.004
<i>Excluded IVs</i>					
I/CP				.017	.142
Narc.				.023	.195

Note. Predictors in the Model: (Constant), callous/unemotional. Dependent Variable: perspective taking. $R^2 = .105$, $F(1,74) = 8.675$, $p = .004$.

As predicted, the callous/unemotional trait significantly negatively correlated with perspective taking (Table 13; $r = -.324$).

Stepwise analyses indicate Model 1 to include the independent variable callous/unemotional. The variables impulsivity/conduct problems and narcissism were removed from the model due to insignificant contribution to the variance of perspective taking (cognitive empathy). This model explains 10.5% of the variance in cognitive empathy. Results indicate Model 1 (including only the callous/unemotional variable) significantly predicts perspective taking ($F = 8.675, p = .004$). This model suggests higher levels of callous/unemotional traits significantly predicts lower levels of perspective taking or cognitive empathy. Results of this analysis should be interpreted with caution due to the low reliability found for the variable perspective taking (Cronbach's Alpha = .207).

Research Question 2

The second research question examined if the callous/unemotional factor, impulsivity/conduct problems factor, and narcissism factor predict dysregulated behaviors (behavioral, emotional, and cognitive). The predictor variables were callous/unemotional factor, impulsivity/conduct problems factor, and narcissism factor. The dependent variables were behavioral dysregulation, emotional dysregulation, and cognitive dysregulation. Three

multiple regression analyses were run with the three predictors and each dependent variable separately.

Before running the main multiple regression analyses, the test assumptions were examined. First, the independence assumption is considered and determined not to be violated based on the design of the study and the administration of the tests to small groups of students seated randomly and distanced from one another for all three dependent variables. It is also suggested to examine the Durbin-Watson statistic to examine the independence assumption in order to examine the autocorrelation of errors over the sequence of cases (Tabachnick & Fidell, 2007). Values should be between 1.5 and 2.5. The Durbin-Watson statistic was examined for all three multiple regression analyses in the second research question. All values were found to be between the suggested 1.5 and 2.5 and therefore, any correlation among the residuals is acceptable or the cases are found to be independent.

Second, the test of normality was investigated utilizing histograms and normal probability plots for each dependent variable. The results indicate that the dependent variables behavioral dysregulation and cognitive dysregulation followed a normal distribution based on the histogram graph and the cumulative probability graphs

follow a straight line on the normal probability plots. Skewness and Kurtosis were also examined to investigate the normality assumption. Two methods were utilized to examine whether the skewness and kurtosis were skewed. Both methods utilized the skewness values obtained from SPSS. The first method suggested comparing the skewness/kurtosis value with twice the standard error of skewness/kurtosis including the range from +/- twice the standard error of skewness/kurtosis (Price, 2000). If the value for skewness/kurtosis fell within this range, the skewness/kurtosis is considered not seriously violated (Price, 2000). For example, the skewness value for the variable empathic concern was $-.544$ and the standard error was $.276$. Two times the standard error ($2 * .276$) equals $.552$. So the range that the skewness value should fall between to not be considered seriously violated is $-.552$ to $.552$, which it does and therefore skewness is not seriously violated. The second method to investigate whether or not skewness and kurtosis were violated involved dividing the skewness and kurtosis SPSS values by the corresponding standard error to obtain a z-score. If the z-score fell outside the +/- 3 range, it was determined that the skewness or kurtosis was violated. Skewness and kurtosis were found to be within the expected range for the

dependent variables: behavioral dysregulation and cognitive dysregulation. These results indicate no violation of the normality assumption for the dependent variables of behavioral dysregulation and cognitive dysregulation.

The assumption of normality was found to be violated with the dependent variable of emotional dysregulation. Examination of the histogram graph and cumulative probability graphs indicate the presence of an outlier. Skewness (5.132) and kurtosis (36.792) were found to be outside of the expected range. According to the first method of examining skewness and kurtosis, the skewness was outside of the expected $-.552$ to $.552$ range and the kurtosis was outside of the expected -1.09 to 1.09 range. According to the second method of examining skewness and kurtosis, the skewness z-score (18.594) was outside the ± 3 range and the kurtosis z-score (67.508) was also outside the \pm range.

There are many suggestions to correct violations of normality such as removing outlier cases and transforming variables (Tabachnick & Fidell, 2007). It was determined that the most efficient way to correct this violation would be to remove the outlier case (case 30). Removing this case resulted in the correction of the normality assumption. The dependent variable emotional dysregulation followed a

normal distribution based on the histogram graph and the cumulative probability graphs follow a straight line on the normal probability plots. With the removal of case 30, skewness and kurtosis were found to be within the expected ranges with both methods for emotional dysregulation.

Third, the test of linearity was investigated in order to determine whether the relationship between the independent and dependent variables were linear. This was accomplished through the examination of plots that displayed the residuals versus the predicted dependent variable. Each dependent variable was examined. All three dependent variables evidenced points scattered randomly around the line originating from the mean of the residuals and therefore, do not violate the assumption of linearity.

Fourth, the assumption of homoscedasticity was examined by looking at the residual scatter plots and whether or not the points scatter evenly about the line originating from the mean of the residuals. The examination of the scatter plots of the dependent variables behavioral and cognitive dysregulation indicated points evenly scattered and therefore, there is no violation of homoscedasticity for those two dependent variables. Homoscedasticity was found to be violated for the dependent

variable emotional dysregulation. The removal of the outlier case corrected this violation.

Multicollinearity was also assessed due to the moderate correlation among the independent variables. The Variance Inflation Factor (VIF) was examined for this purpose. The VIF for the independent variables were all below 10 and therefore, multicollinearity is not an issue. No assumptions were violated for two of the multiple regressions behavioral and cognitive dysregulation and therefore multiple regression main analyses can be run. The normality and homoscedasticity assumptions were violated for the dependent variable emotional dysregulation. Removing the outlier case resulted in correction of these violations and therefore, the multiple regression main analyses will be run minus the one outlier case.

Demographic statistics and the correlation matrix for all three predictor variables and dependent variables for research question 2 are presented in Table 18.

Table 18

Correlation Matrix and Descriptive Statistics: Three Predictors and Dependent Variables (Behavioral Dysregulation, Emotional Dysregulation, and Cognitive Dysregulation)

	Mean	SD	1	2	3
Beh. Dys.	1.243	.560	.134	.134	.130
Emot. Dys.	1.266	.647	.018	.118	.072
Cog. Dys.	1.519	.584	.277*	.108	-.079
Predictor Var.					
1. C/U	31.947	8.806	---	.361***	.389***
2. I/CP	.888	.330		---	.396***
3. Narcissism	.718	.396			---

Note. *N* = 76 for behavioral dysregulation and cognitive dysregulation. *N* = 75 for emotional dysregulation. Beh. Dys.= Behavioral Dysregulation; Emot. Dys.= Emotional Dysregulation; Cog. Dys.= Cognitive Dysregulation.

*** *p* < .001 * *p* < .05

Results indicate cognitive dysregulation was significantly correlated with callous/unemotional traits.

The first regression analysis examined the independent variables and the dependent variable behavioral dysregulation. Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 19.

Table 19

Multiple Regression Analysis Summary for Independent Variables Predicting Behavioral Dysregulation

Model	B	SEB	β	t	Sig.
1					
I/CP	.132	.221	.078	.599	.551
C/U	.005	.008	.079	.607	.546
N	.097	.187	.069	.520	.604

Note. $R^2 = .030$, $F(3,72) = .741$, $p = .531$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in no significance ($F = .741$, $p = .531$). The model explains an insignificant 3% of the variance in behavioral

dysregulation. Callous/unemotional traits, impulsivity/conduct problems, and narcissism do not significantly predict behavioral dysregulation.

The second regression analysis examined the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) and the dependent variable emotional dysregulation. As previously mentioned, the one outlier case was removed from the main regression analysis.

Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 20.

Table 20

Multiple Regression Analysis Summary for Independent Variables Predicting Emotional Dysregulation

Model	B	SEB	β	t	Sig.
1					
I/CP	.396	.254	.204	1.559	.123
C/U	-.005	.010	-.062	-.473	.638
N	.026	.216	.016	.118	.906

Note. $R^2 = .038$, $F(3,71) = .941$, $p = .426$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in no significance ($F = .941$, $p = .426$). The model explains an insignificant 3.8% of the variance in emotional dysregulation. Callous/unemotional traits, impulsivity/conduct problems, and narcissism do not significantly predict emotional dysregulation.

The third regression analysis examined the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) and the dependent variable

cognitive dysregulation. Stepwise analyses were utilized. Results are presented in Table 21.

Table 21

Stepwise Regression Analysis Summary for Independent Variables Predicting Cognitive Dysregulation

Model	B	SEB	β	t	Sig.
1					
C/U	.018	.007	.277	2.484	.015
<i>Excluded IVs</i>					
I/CP				.070	.945
Narc.				-1.848	.069

Note. Predictors in the Model: (Constant), callous/unemotional. Dependent Variable: cognitive dysregulation. $R^2 = .077$, $F(1,74) = 6.170$, $p = .015$.

Stepwise analyses indicate Model 1 to include the independent variable callous/unemotional. The variables impulsivity/conduct problems and narcissism were removed from the model due to insignificant contribution to the variance of cognitive dysregulation. This model explains 7.7% of the variance in cognitive dysregulation. Results indicate Model 1 (including only the callous/unemotional

variable) significantly predicts cognitive dysregulation ($F = 6.170, p = .015$). Higher levels of callous/unemotional traits significantly predict higher levels of cognitive dysregulation.

Interpretation of the three previous regression analyses should consider the low reliability of the I/CP variable (Cronbach's Alpha = .441) and the affect this may have had on its predictive relationship with the dependent variables.

Research Question 3

The third research question investigated how much variance in behavioral inhibition or fearfulness is explained by the callous/unemotional, impulsivity/conduct problems, and narcissism factors. One multiple regression analysis was run to examine whether the predictor variables (callous/unemotional, impulsivity/conduct problems, narcissism) explained a low level of fear or behavioral inhibition (dependent variable) in community aggressive youth.

Before running the main multiple regression analyses, the test assumptions were examined. First, the independence assumption is considered and determined not to be violated based on the design of the study and the administration of the tests to small groups of students seated randomly and

distanced from one another. It is also suggested to examine the Durbin-Watson statistic to examine the independence assumption in order to examine the autocorrelation of errors over the sequence of cases (Tabachnick & Fidell, 2007). Values should be between 1.5 and 2.5. The Durbin-Watson statistic was examined for all three multiple regression analyses in the second research question. All values were found to be between the suggested 1.5 and 2.5 and therefore, any correlation among the residuals is acceptable or the cases are found to be independent.

Second, the test of normality was investigated utilizing histograms and normal probability plots for each dependent variable. The results indicate that the dependent variable followed a normal distribution based on the histogram graph and the cumulative probability graphs follow a straight line on the normal probability plots. Skewness and kurtosis were also investigated to examine the assumption of normality. Two methods were utilized to examine whether the skewness and kurtosis were skewed. Both methods utilized the skewness values obtained from SPSS. The first method suggested comparing the skewness/kurtosis value with twice the standard error of skewness/kurtosis including the range from +/- twice the standard error of skewness/kurtosis (Price, 2000). If the value for

skewness/kurtosis fell within this range, the skewness/kurtosis is considered not seriously violated (Price, 2000). For example, the skewness value for the variable empathic concern was $-.544$ and the standard error was $.276$. Two times the standard error ($2 * .276$) equals $.552$. So the range that the skewness value should fall between to not be considered seriously violated is $-.552$ to $.552$, which it does and therefore skewness is not seriously violated. The second method to investigate whether or not skewness and kurtosis were violated involved dividing the skewness and kurtosis SPSS values by the corresponding standard error to obtain a z-score. If the z-score fell outside the ± 3 range, it was determined that the skewness or kurtosis was violated. Skewness and kurtosis for the dependent variable behavioral inhibition or fear were found to be within the expected range. These results indicate no violation of the normality assumption.

Third, the test of linearity was investigated in order to determine whether the relationship between the independent and dependent variables were linear. This was accomplished through the examination of plots that displayed the residuals versus the predicted dependent variable. The dependent variable evidenced points scattered randomly around the line originating from the mean of the

residuals and therefore, did not violate the assumption of linearity.

Fourth, the assumption of homoscedasticity was examined by looking at the residual scatter plot and whether or not the points scatter evenly about the line originating from the mean of the residuals. The examination of the scatter plot of the dependent variable indicated points evenly scattered and therefore, there is no violation of homoscedasticity. Finally, multicollinearity was also assessed due to the moderate correlation among the independent variables. The Variance Inflation Factor (VIF) was examined for this purpose. The VIF for the independent variables were all below 10 and therefore, multicollinearity is not an issue. No assumptions were violated for the multiple regression and therefore the main analysis can be run.

Demographic statistics and the correlation matrix for all three predictor variables and the dependent variable for research question 3 are presented in Table 22.

Table 22

Correlation Matrix and Descriptive Statistics: Three Predictors and Dependent Variable (Fear/Behavioral Inhibition)

	Mean	SD	1	2	3
Fear/Beh. Inh.	2.413	.709	-.376***	-.063	-.050
Predictor Var.					
1. C/U	31.947	8.806	---	.361***	.389***
2. I/CP	.888	.330		---	.396***
3. Narcissism	.718	.396			---

Note. N = 76. Fear/Beh. Inh.= Fear/Behavioral Inhibition.

*** p < .001

Results indicate fear/behavioral inhibition was significantly negatively correlated with callous/unemotional traits.

The multiple regression analysis for the third research question examined the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) and the dependent variable fear (behavioral inhibition). Stepwise analyses were utilized for this multiple regression. Results are presented in Table 23.

Table 23

Stepwise Regression Analysis Summary for Independent Variables Predicting Fear (Behavioral Inhibition)

Model	B	SEB	β	t	Sig.
1					
C/U	-.039	.009	-.376	-3.490	.001
<i>Excluded IVs</i>					
I/CP				.084	.725
Narc.				.967	.337

Note. Predictors in the Model: (Constant), callous/unemotional. Dependent Variable: fear/behavioral inhibition. $R^2 = .141$, $F(1,74) = 12.183$, $p = .001$.

Stepwise analyses indicate Model 1 to include the independent variable callous/unemotional. The variables impulsivity/conduct problems and narcissism were removed from the model due to insignificant contribution to the variance of fear or behavioral inhibition. This model explains 14.1% of the variance in fear/behavioral inhibition. Results indicate Model 1 (including only the callous/unemotional variable) significantly predicts empathic concern ($F = 12.18$, $p = .001$). Callous/unemotional

traits explain 14.1% of variance in empathic concern. Higher levels of callous/unemotional traits significantly presents lower levels of behavioral inhibition or fear.

Research Question 4

The final research question examined whether the predictors callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits predict social-cognitive processes in community youth displaying aggressive behaviors. The dependent variable social-cognitive processes were defined further into outcome expectancies and outcome values. Each of these two variables were broken into 4 subcategories including gaining tangible rewards, reducing aversive treatment, receiving punishment for his/her actions, and demonstrating who is the boss or in charge. Therefore, eight multiple regression analyses were run with three predictors and all eight dependent variables examined separately.

Before running the main multiple regression analyses, the test assumptions were examined. The results of the test assumptions for the first four multiple regressions concerning the outcome expectancy variables are discussed here. First, the independence assumption is considered and determined not to be violated based on the design of the study and the administration of the tests to small groups

of students seated randomly and distanced from one another. It is also suggested to examine the Durbin-Watson statistic to examine the independence assumption in order to examine the autocorrelation of errors over the sequence of cases (Tabachnick & Fidell, 2007). Values should be between 1.5 and 2.5. The Durbin-Watson statistic was examined for all four multiple regression analyses in the outcome expectancy component of research question four. All values were found to be between the suggested 1.5 and 2.5 and therefore, any correlation among the residuals is acceptable or the cases are found to be independent.

Second, the test of normality was investigated utilizing histograms and normal probability plots for each dependent variable. The results indicate that the dependent variable followed a normal distribution based on the histogram graph and the cumulative probability graphs follow a straight line on the normal probability plots. Skewness and kurtosis were also investigated to examine the assumption of normality. Two methods were utilized to examine whether the skewness and kurtosis were skewed. Both methods utilized the skewness values obtained from SPSS. The first method suggested comparing the skewness/kurtosis value with twice the standard error of skewness/kurtosis including the range from +/- twice the standard error of

skewness/kurtosis (Price, 2000). If the value for skewness/kurtosis fell within this range, the skewness/kurtosis is considered not seriously violated (Price, 2000). For example, the skewness value for the variable empathic concern was $-.544$ and the standard error was $.276$. Two times the standard error ($2 * .276$) equals $.552$. So the range that the skewness value should fall between to not be considered seriously violated is $-.552$ to $.552$, which it does and therefore skewness is not seriously violated. The second method to investigate whether or not skewness and kurtosis were violated involved dividing the skewness and kurtosis SPSS values by the corresponding standard error to obtain a z-score. If the z-score fell outside the ± 3 range, it was determined that the skewness or kurtosis was violated. Skewness and kurtosis for the outcome expectancy dependent variables reduce aversive treatment, being punished for his/her actions, and showing who is in charge or the boss was found to be within the expected range as well as kurtosis for the outcome expectancy dependent variable gaining a tangible reward. Skewness for the outcome expectancy dependent variable gaining a tangible reward was found to be outside of the expected range, however, not significantly. Using an alpha level of $.001$ is considered conventional but conservative

to evaluate the significance of skewness and kurtosis with small to moderate samples (Tabachnick & Fidell, 2007). The skewness for the outcome expectancy gaining a tangible reward was .588 outside of the $-.552$ to $.552$ range according to the first method (z-score = 2.13 within the \pm range according to the second method); however, the Shapiro-Wilk test of normality found this to be non significant at the .001 alpha level ($p = .003$). These results indicate no violation of the normality assumption for all four outcome expectancy dependent variables.

Third, the test of linearity was investigated in order to determine whether the relationship between the independent and dependent variables were linear. This was accomplished through the examination of plots that displayed the residuals versus the predicted dependent variable. Each dependent variable was examined. The dependent variables evidenced points scattered randomly around the line originating from the mean of the residuals and therefore, did not violate the assumption of linearity. Fourth, the assumption of homoscedasticity was examined by looking at the residual scatter plot and whether or not the points scatter evenly about the line originating from the mean of the residuals. The examination of the scatter plot of the dependent variables indicated points evenly

scattered and therefore, there is no violation of homoscedasticity. Finally, multicollinearity was also assessed due to the moderate correlation among the independent variables. The Variance Inflation Factor (VIF) was examined for this purpose. The VIF for the independent variables were all below 10 and therefore, multicollinearity is not an issue. No assumptions were violated for the multiple regressions and therefore the main analyses can be run.

Demographic statistics and the correlation matrix for all three predictor variables and the dependent variables for research question 4 are presented in Table 24.

Table 24

Correlation Matrix and Descriptive Statistics: Three Predictors and Outcome Expectancy Dependent Variables (Tangible, Reduce Aversive Treatment, Trouble/Punished, Boss/In Charge).

	Mean	SD	1	2	3
Tangible	2.918	.686	.151	.055	.120
Avers. Tx.	2.568	.834	.050	-.082	-.008
Trbl/Punish.	2.437	.673	.166	-.055	.113
Boss/In Charge	2.189	.672	.158	.121	.221*

Predictor Var.	Mean	SD	1	2	3
1. C/U	31.947	8.806	---	.361***	.389***
2. I/CP	.888	.330		---	.396***
3. Narcissism	.718	.396			---

Note. N = 76. Avers.Tx. = Aversive Treatment; Trbl/Punish = Trouble/Punished. * p < .05 *** p < .001

Results indicate the outcome expectancy variable showing who is the boss or in charge was positively correlated with narcissism at the .05 level.

The first multiple regression analysis for the outcome expectancy research question examined whether the

independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predicts the dependent variable gaining a tangible reward. Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 25.

Table 25

Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Obtaining a Tangible Reward

Model	B	SEB	β	t	Sig.
1					
C/U	.010	.010	.128	.986	.327
I/CP	-.046	.271	-.022	-.169	.867
N	.136	.229	.079	.505	.554

Note. $R^2 = .028$, $F(3,72) = .681$, $p = .567$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in insignificance ($F = .681$, $p = .567$). The model explains an

insignificant 2.8% of the variance in the expectancy of obtaining a tangible reward (outcome expectancy: tangible). Callous/unemotional traits, impulsivity/conduct problems, and narcissism do not significantly predict the outcome expectancy of gaining a tangible reward.

The second multiple regression analysis for the outcome expectancy research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the outcome expectancy dependent variable reducing aversive treatment. Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 26.

Table 26

Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Reducing Aversive Treatment

Model	B	SEB	β	t	Sig.
1					
C/U	.009	.012	.091	.695	.489
I/CP	-.292	.332	-.116	-.881	.381
N	.004	.280	.002	.015	.988

Note. $R^2 = .014$, $F(3,72) = .342$, $p = .795$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in insignificance ($F = .342$, $p = .795$). The model explains an insignificant 1.4% of the variance in the outcome expectancy of reducing aversive treatment.

Callous/unemotional traits, impulsivity/conduct problems, and narcissism did not significantly predict the outcome expectancy of reducing aversive treatment.

The third multiple regression analysis for the outcome expectancy research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the dependent variable outcome expectancy: getting in trouble or being punished. Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 27.

Table 27

Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Getting in Trouble or Punished

Model	B	SEB	β	<i>t</i>	Sig.
1					
C/U	.014	.010	.184	1.432	.156
I/CP	-.334	.263	-.164	-1.273	.207
N	.181	.222	.107	.818	.416

Note. $R^2 = .052$, $F(3,72) = 1.311$, $p = .278$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then

attempted with all three independent variables. All three variables entered into the regression analyses resulted in insignificance ($F = 1.311$, $p = .278$). The model explains an insignificant 5.2% of the variance in the outcome expectancy of getting in trouble or being punished. Callous/unemotional traits, impulsivity/conduct problems, and narcissism did not significantly predict the outcome expectancy of getting in trouble or being punished.

The fourth multiple regression analysis for the outcome expectancy research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the dependent variable outcome expectancy: showing who is the boss or in charge. Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 28.

Table 28

Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Expectancy: Showing who is the Boss or who's in charge

Model	B	SEB	β	t	Sig.
1					
C/U	.006	.010	.080	.623	.535
I/CP	.042	.261	.021	.160	.874
N	.309	.221	.182	1.398	.166

Note. $R^2 = .055$, $F(3,72) = 1.408$, $p = .247$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in insignificance ($F = 1.408$, $p = .247$). The model explains an insignificant 5.5% of the variance in the outcome expectancy of showing who's the boss or who's in charge. Callous/unemotional traits, impulsivity/conduct problems, and narcissism do not significantly predict the outcome expectancy of showing who the boss is or who is in charge.

The next section of research question four examined whether the predictors callous/unemotional traits, impulsivity/conduct problems, and narcissistic traits predict outcome value social-cognitive processes in community youth displaying aggressive behaviors. The outcome values variable was also broken down into 4 subcategories including gaining tangible rewards, reducing aversive treatment, receiving punishment for his/her actions, and demonstrating who is the boss or in charge. Before running the main multiple regression analyses, the test assumptions were examined. The results of the test assumptions for the set of four multiple regressions concerning the outcome values variables are discussed.

First, the independence assumption is considered and determined not to be violated based on the design of the study and the administration of the tests to small groups of students seated randomly and distanced from one another. It is also suggested to examine the Durbin-Watson statistic to examine the independence assumption in order to examine the autocorrelation of errors over the sequence of cases (Tabachnick & Fidell, 2007). Values should be between 1.5 and 2.5. The Durbin-Watson statistic was examined for all four multiple regression analyses in the outcome expectancy component of research question four. All values were found

to be between the suggested 1.5 and 2.5 and therefore, any correlation among the residuals is acceptable or the cases are found to be independent.

Second, the test of normality was investigated utilizing histograms and normal probability plots for each dependent variable. The results indicate that the outcome values dependent variables of getting in trouble or punished and showing who is the boss or in charge followed a normal distribution based on the histogram graph and the cumulative probability graphs follow a straight line on the normal probability plots. The outcome values dependent variables of tangible reward and reducing aversive treatment evidenced non-normal distributions that appeared slightly positively skewed. Skewness and kurtosis were also investigated to examine the assumption of normality. Two methods were utilized to examine whether the skewness and kurtosis were skewed. Both methods utilized the skewness values obtained from SPSS. The first method suggested comparing the skewness/kurtosis value with twice the standard error of skewness/kurtosis including the range from +/- twice the standard error of skewness/kurtosis (Price, 2000). If the value for skewness/kurtosis fell within this range, the skewness/kurtosis is considered not seriously violated (Price, 2000). For example, the skewness

value for the variable empathic concern was $-.544$ and the standard error was $.276$. Two times the standard error ($2 * .276$) equals $.552$. So the range that the skewness value should fall between to not be considered seriously violated is $-.552$ to $.552$, which it does and therefore skewness is not seriously violated. The second method to investigate whether or not skewness and kurtosis were violated involved dividing the skewness and kurtosis SPSS values by the corresponding standard error to obtain a z-score. If the z-score fell outside the ± 3 range, it was determined that the skewness or kurtosis was violated. Skewness and kurtosis for the outcome values dependent variables being punished for his/her actions and showing who is in charge or the boss was found to be within the expected ranges. Kurtosis was within expected ranges for the outcome values dependent variables gaining a tangible reward and reducing aversive treatment; however, skewness for these two variables was found to be significantly outside of the expected range according to the first method of examining skewness. Using an alpha level of $.001$ is considered conventional but conservative to evaluate the significance of skewness and kurtosis with small to moderate samples (Tabachnick & Fidell, 2007). The skewness for the outcome value gaining a tangible reward was $.604$ outside of the -

.552 to .552 range for the first method (z-score=2.188 within the +/-3 range for the second method); the Shapiro-Wilk test of normality found this to be significant at the .001 alpha level ($p < .001$). The skewness for the outcome value reducing aversive treatment was .569 outside of the -.552 to .552 range according to the first method (z-score = 2.062 within the +/-3 for the first method); the Shapiro-Wilk test of normality found this to be significant at the .001 alpha level ($p < .001$).

There are many suggestions to correct violations of normality such as removing outlier cases and transforming variables (Tabachnick & Fidell, 2007). Square root transformations are suggested for positive skews that differ moderately from normal (Tabachnick & Fidell, 2007) as is the case here. Square root transformations were performed with both the outcome value dependent variables of gaining a tangible reward and reducing aversive treatment. For the outcome values dependent variable of gaining a tangible reward, the new skewness was .256, within the -.552 to .552 range (z-score = .928 within the +/-3 range). For the outcome values dependent variable of reducing aversive treatment, the new skewness was .284, within the -.552 to .552 range (z-score = 1.029 within the +/- 3 range). Both square root transformations were

successful, reducing the skewness to within the expected ranges.

Third, the test of linearity was investigated in order to determine whether the relationship between the independent and dependent variables were linear. This was accomplished through the examination of plots that displayed the residuals versus the predicted dependent variable. Each dependent variable was examined. The dependent variables evidenced points scattered randomly around the line originating from the mean of the residuals and therefore, did not violate the assumption of linearity. Fourth, the assumption of homoscedasticity was examined by looking at the residual scatter plot and whether or not the points scatter evenly about the line originating from the mean of the residuals. The examination of the scatter plots of the dependent variables indicated points evenly scattered and therefore, there is no violation of homoscedasticity. Finally, multicollinearity was also assessed due to the moderate correlation among the independent variables. The Variance Inflation Factor (VIF) was examined for this purpose. The VIF for the independent variables were all below 10 and therefore, multicollinearity is not an issue. In summary, assumptions were not violated for the outcome values dependent

variables of getting in trouble or being punished and showing who is the boss or in charge. The normality assumption was violated for both the outcome values dependent variables of gaining a tangible reward and reducing aversive treatment. Square root transformations successfully corrected this violation. All other assumptions for these two variables were not violated. Main analyses are investigated below.

Demographic statistics and the correlation matrix for all three predictor variables and the dependent variables for research question 4 are presented in Table 29.

Table 29

Correlation Matrix and Descriptive Statistics: Three Predictors and Outcome Values Dependent Variables (Tangible, Reduce Aversive Treatment, Trouble/Punished, Boss/In Charge).

	Mean	SD	1	2	3
Tangible	1.394	.283	.287**	.187	.242*
Avers. Tx.	1.460	.299	.175	-.077	.027
Trbl/Punish.	2.950	.759	.372***	.134	.147
Boss/In Charge	2.168	.845	.010	.074	.048
Predictor Var.					
1. C/U	31.947	8.806	---	.361***	.389***
2. I/CP	.888	.330		---	.396***
3. Narcissism	.718	.396			---

Note. $N = 76$. Avers.Tx. = Aversive Treatment; Trbl/Punish = Trouble/Punished. * $p < .05$ ** $p < .01$ *** $p < .001$

Results indicate callous/unemotional traits, impulsivity/conduct problems, and narcissism were significantly correlated with the outcome value dependent variable of gaining a tangible reward. Callous/unemotional

traits were also correlated with the outcome value dependent variable of getting in trouble or being punished.

The first multiple regression analysis for the outcome values research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the dependent variable tangible reward. Stepwise analyses were utilized for this multiple regression. Results are presented in Table 30.

Table 30

Stepwise Regression Analysis Summary for Independent Variables Predicting Outcome Values: Obtaining a Tangible Reward

Model	B	SEB	β	t	Sig.
1					
C/U	.009	.004	.287	2.578	.012
<i>Excluded IVs</i>					
I/CP				.805	.424
Narc.				1.276	.206

Note. Predictors in the Model: (Constant), callous/unemotional. Dependent Variable: outcome value: tangible. $R^2 = .082$, $F(1,74) = 6.647$, $p = .012$.

Stepwise analyses indicate Model 1 to include the independent variable callous/unemotional. The variables impulsivity/conduct problems and narcissism were removed from the model due to insignificant contribution to the variance of outcome value: tangible. This model explains 8.2% of the variance in value of obtaining a tangible outcome. Results indicate Model 1 (including only the callous/unemotional variable) significantly predicts the value of obtaining a tangible outcome ($F = 6.647$, $p = .012$). Callous/unemotional traits explain 8.2% of variance in the value of obtaining a tangible outcome. Higher levels of callous/unemotional traits significantly predict higher levels of value in obtaining a tangible outcome. Although the regression analysis did not identify narcissism as a significant predictor variable, it should not be ruled out as important in explaining the outcome value of obtaining tangible reward due to its significant relationship/effect size ($.242$, $p < .05$) with this dependent variable.

The second multiple regression analysis for the outcome values research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the outcome values dependent variable: reducing aversive treatment. Stepwise analyses were attempted but did not

produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 31.

Table 31

Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Values: Reducing Aversive Treatment

Model	B	SEB	β	t	Sig.
1					
C/U	.008	.004	.233	1.812	-.074
I/CP	-.146	.117	-.161	-1.252	.215
N	.000	.098	.001	.004	.997

Note. $R^2 = .053$, $F(3,72) = 1.345$, $p = .267$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in non significant results ($F = 1.345$, $p = .267$). The model explains an insignificant 5.3% of the variance in the outcome value of reducing aversive treatment.

Callous/unemotional traits, impulsivity/conduct problems,

and narcissism do not significantly predict the outcome value of reducing aversive treatment.

The third multiple regression analysis for the outcome values research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the dependent variable getting in trouble or being punished. Stepwise analyses were utilized for this multiple regression. Results are presented in Table 32.

Table 32

Stepwise Regression Analysis Summary for Independent Variables Predicting Outcome Values: Getting in Trouble/Being Punished

Model	B	SEB	β	<i>t</i>	Sig.
1					
C/U	.032	.009	.372	3.448	.001
<i>Excluded IVs</i>					
I/CP				-.005	.996
Narc.				.020	.984

Note. Predictors in the Model: (Constant), callous/unemotional. Dependent Variable: outcome value: getting in trouble/being punished. $R^2 = .138$, $F(1,74) = 11.889$, $p = .001$.

Stepwise analyses indicate Model 1 to include the independent variable callous/unemotional. The variables impulsivity/conduct problems and narcissism were removed from the model due to insignificant contribution to the variance of outcome value: getting in trouble/being punished. This model explains 13.8% of the variance in the

value of getting in trouble/being punished. Results indicate Model 1 (including only the callous/unemotional variable) significantly predicts the value of obtaining a tangible outcome ($F = 11.889$, $p = .001$). Callous/unemotional traits explain 13.8% of variance in the value of getting in trouble/being punished. Higher levels of callous/unemotional traits significantly predicted higher outcome value of not caring about getting in trouble or being punished.

The fourth multiple regression analyses for the outcome values research question examined whether the independent variables (callous/unemotional traits, impulsivity/conduct problems, and narcissism) predict the outcome values dependent variable: showing who's the boss or who's in charge. Stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. Results are presented in Table 33.

Table 33

Multiple Regression Analysis Summary for Independent Variables Predicting Outcome Values: Showing who's the boss or who's in Charge

Model	B	SEB	β	t	Sig.
1					
C/U	-.003	.013	-.028	-.210	.834
I/CP	.184	.337	.072	.544	.588
N	.064	.285	.030	.224	.823

Note. $R^2 = .006$, $F(3,72) = .156$, $p = .926$.

Again, stepwise analyses were attempted but did not produce any significant models. Enter analyses were then attempted with all three independent variables. All three variables entered into the regression analyses resulted in insignificance ($F = .156$, $p = .926$). The model explains an insignificant .6% of the variance in the outcome value of showing who's the boss or who's in charge.

Callous/unemotional traits, impulsivity/conduct problems, and narcissism did not significantly predict the outcome value of showing who the boss is or who is in charge.

Follow-up Regression Analyses

Follow-up regression analyses originally proposed in chapter 3 to be used to examine if the significant effects remained after controlling for significantly related demographic variables were not included do to the fact that the number of participants with data including all three significant demographic variables (age, IQ, and gang involvement) decreased the sample size to 49 and with 4 predictor variables to enter into the regression analyses it was determined that any results from these analyses would be suspect.

CHAPTER 5

DISCUSSION

Chapter 5 discusses the implications of the analyses presented in chapter 4. Findings are compared to current research. Limitations of the current study are discussed including recommendations for future research.

Research Findings

As hypothesized, youth who reported more callous/unemotional traits also reported significantly less empathic concern for others and less perspective taking. Callous/unemotional traits predicted these youth reporting difficulty in relating to and understanding how another person feels. These youth (reporting more callous/unemotional traits) unexpectedly reported significantly more cognitive dysregulation. Thus youth reporting callous/unemotional traits reported difficulty with such things as making a plan for important goals, putting plans into action, and consider consequences of behaviors. Further endorsing callous/unemotional traits did significantly predict cognitive dysregulation contrary to prediction. Additionally, as hypothesized, this group evidencing more callous/unemotional traits reported significantly less behavioral inhibition/fear and unexpectedly, callous/unemotional traits significantly

predicted behavioral inhibition/fear. Therefore, youth reporting callous/unemotional traits also reported having less fear in situations typical of inducing such a feeling such as fear when driving with someone who is speeding or fear when entering a darkened room.

Reporting all three characteristics (IVs) callous/unemotional traits, impulsivity/conduct problems, or narcissism did not significantly predict personal distress (the second measure of emotional empathy), or behavioral or emotional dysregulation. In other words, these variables did not predict negative feelings in distressing situations (personal distress), difficulty in controlling one's behaviors (behavioral dysregulation), or difficulty in controlling one's emotions (emotional dysregulation).

Social-cognitive processes associated with increased expectations and values associated with the positive outcomes of aggressive behavior and decreased expectations and values associated with the negative consequences for aggressive behavior were examined in terms of psychopathic traits. Reporting all three characteristics (IVs) callous/unemotional traits, impulsivity/conduct problems, and narcissism did not predict positive expectations for the outcome of their behaviors (expecting to receive a

tangible reward, expecting to reduce aversive treatment, and expecting to demonstrate dominance) or decreased expectations in terms of the negative consequences of their aggressive behaviors (expecting to not get in trouble or punished). However, youth reporting more callous/unemotional traits did predict the value placed in obtaining tangible rewards and not getting in trouble or being punished by engaging in aggressive behaviors. These youth (reporting callous/unemotional traits) cared about being able to obtain the tangible reward as well as not getting in trouble or punished for their aggressive behaviors.

Results of the current study should be interpreted with caution in terms of the low reliability of the variables impulsivity/conduct problems (Cronbach's Alpha = .441), empathic concern (Cronbach's Alpha = .358), personal distress (Cronbach's Alpha = .278), and perspective taking (Cronbach's Alpha = .207).

Additionally, the practical significance of the narcissism variable in predicting or explaining variance in both the empathic concern and outcome value of gaining a tangible reward should be considered. Although regression analyses for both of these variables did not identify narcissism as a significant predictor, narcissism

demonstrated a significant correlation with these variables that could result in a meaningful effect if the sample size had been larger.

Results Compared with Pardini et al. (2003) study

The current study was designed to extend the findings reported by Pardini, Lochman, and Frick in 2003. The current sample investigated aggressive adolescents who were served in the community as compared to Pardini's (2003) sample examining adjudicated youth. All of the measures used in the 2003 study were included in this study along with several updates. For example, the current study used the three factor model when examining psychopathic traits including callous/unemotional traits, impulsivity/conduct problems, and narcissism whereas the previous study used the two factor callous/unemotional traits and impulsivity/conduct problems. Also, the current study examined three types of dysregulation including emotional, behavioral, and cognitive as compared to the Pardini et al. (2003) study, which included only the behavioral dysregulation scale. Unique to the current study is an updated ICU measure (Frick, 2003). These similarities and differences are considered in the interpretation of findings with the community-based adolescents (current

study) and adjudicated adolescents in residential treatment settings (previous study).

Several findings were consistent across the samples. First, callous/unemotional traits and not impulsivity/conduct problems (or narcissism) was significantly negatively related to and predictive of both empathic concern and perspective taking. Callous/unemotional traits did not significantly relate or predict behavioral dysregulation. The callous/unemotional trait demonstrated a negative relationship with personal distress; however, this relationship was not found to be significant. Callous/unemotional traits insignificantly related to less personal distress or less negative affect when confronted with typically stress inducing situations such as medical emergencies. Finally, callous/unemotional traits were significantly negatively related to and predictive of behavioral inhibition/fear. In other words, youth reporting callous/unemotional traits also report a lack of unpleasant affect in the anticipation of distress (behavioral inhibition/fear).

In contrast, several findings were not consistent across community and adjudicated samples. Impulsivity/conduct problems were not significantly related to or predictive of behavioral dysregulation. Unlike

adjudicated youth, community youth reporting impulsivity/conduct problems did not report significant behavioral dysregulation or the inability to control behaviors such as staying in their seat, remaining on-task, and refraining from arguing with others. Unlike the Pardini et al. (2003) study, neither callous/unemotional traits nor impulsivity/conduct problems demonstrated a significant relationship with personal distress and neither was predictive of personal distress when entered into a regression analysis.

Regression analyses concerning psychopathic traits and social cognitive processes resulted in findings that are inconsistent with the Pardini (2003) study. For example, Pardini et al., (2003) found that callous/unemotional traits were positively related to the outcome expectancy variables gaining a tangible reward and showing who is the boss or in charge and negatively related to getting in trouble/punished. In the community sample, the callous/unemotional factor was positively related to all outcome expectancy variables but not significantly. In the previous study, callous/unemotional traits significantly predicted the outcome expectancy of gaining tangible rewards, getting in trouble/punished, and demonstrating dominance; however, none of these predictions were

evidenced in the current study. Callous/unemotional traits were not found to be significantly related to or predictive of the expectation that aggression would reduce future aversive treatment.

Consistent with the previous study, impulsivity/conduct problems were not found to be significantly related to or predictive of any of the outcome expectation subscales in the current study.

In terms of the outcome values placed on aggressive behaviors, the Pardini et al. (2003) study found callous/unemotional traits to be positively related to outcome values of tangible rewards and demonstrating dominance and negatively related to values placed on getting in trouble or being punished. The current study found callous/unemotional traits to be significantly positively related to and predictive of the outcome value placed on obtaining tangible rewards and not getting in trouble/being punished. It should be noted that the interpretation of the findings from the community sample and the adjudicated sample concerning the expectation of getting in trouble or being punished was similar in that both the adjudicated and community samples reporting callous/unemotional traits placed more value in not getting in trouble or being punished.

Consistent with the Pardini and colleagues (2003) study, the impulsivity/conduct problems was not significantly related to or predictive of any of the four outcome value subscales.

Results Compared to other Relevant Literature

These results contribute to the current literature base discussed in chapter 2. First, the current study did not appear to support the three factor model of callous/unemotional traits, impulsivity/conduct problems, and narcissism previously found with community samples of elementary students (Frick et al., 2000). Neither the impulsivity/conduct problems nor the narcissism trait predicted any of the dependent variables. It is especially important to note that the impulsivity/conduct problems variable was not predictive of behavioral impulsivity as found in past research (Loeber et al., 2001; Frick et al., 1994). The narcissism variable had been included as an exploratory variable in order to investigate how it related to and/or predicted variables typically associated with psychopathic traits. The narcissism variable did not result in any significant predictions and even very few significant relationships with the dependent variables; therefore, from this study, it appears that the narcissism factor alone does not distinguish psychopathic traits in

this sample of community youth. Narcissism as defined by this construct may have meaning for younger children but not for adolescents. It may be that the narcissism factor is more predictive when combined with the impulsivity/conduct problems factor. Previous research demonstrated difficulty in discriminating between the impulsivity/conduct problems and narcissism variables (Caputo et al., 1999; Christian et al., 1997; Frick et al., 1994) and therefore, it is possible that separating the narcissism and impulsivity/conduct problems in the current study reduced the predictability of these constructs when examined together. Further, it is possible that impulsivity may manifest differently in younger community samples.

Second, consistent with previous research (Frick et al., 2003; Soderstrom et al., 2002; Blair, 1999) the current study found a relationship between less empathy and callous/unemotional traits. Callous/unemotional traits were found to predict low levels of both emotional and cognitive empathy. Therefore, the current participants reporting more callous/emotional traits also reported less of an ability to understand the affective and cognitive state of another individual as well as feel the same emotions of another (Borke, 1971; 1973) and/or feeling sympathetic or compassionate toward another (Feshbach & Roe, 1968). This

demonstrates that aggressive community youth reporting callous/unemotional traits demonstrate a similar relationship with low levels of empathy as adjudicated (Pardini et al., 2003), clinic-referred (Frick et al., 1994) and community (Frick et al., 2003b) youth as well as adults (Soderstrom et al., 2002; Hare, 1993). This consistent finding has implications for both categorizing and planning for interventions with aggressive youth.

Third, the current study found a connection between callous/unemotional traits and cognitive dysregulation that was not evidenced in previous research studies. Cognitive dysregulation has been related to conduct problems (Loeber et al., 2001), and found in both children with psychopathic traits and adult psychopaths (Viding, 2004). Similarly, researchers have also demonstrated impairments in adult psychopaths' executive functions which control an individual's ability to plan, sustain attention, concentrate, and inhibit inappropriate or impulsive behaviors (Gorenstein, 1982). However, cognitive dysregulation/impulsivity has not specifically related to the callous/unemotional trait alone. This finding could be suggestive of how callous/unemotional traits are defined in community youth. The separation of the impulsivity/conduct problems and narcissism traits may have affected the

impulsivity/conduct problem variable's ability to predict cognitive dysregulation. Additionally, impulsivity/conduct problems were not related to dysregulation as expected. In previous research, the presences of both the callous/unemotional trait and conduct problems when compared with conduct problems alone predicted higher levels of impulsivity-hyperactivity or behavioral dysregulation (Frick et al., 2003b). The current study lacked support for this finding with neither the callous/unemotional trait or impulsivity/conduct problems predicting behavioral dysregulation. In the current sample of community aggressive youth, dysregulation related differently than typically expected and warrants further study.

Fourth, the current study's finding concerning less fear evidenced in those displaying callous/unemotional traits is consistent with previous research (Frick et al., 2003b; Rothbart & Bates, 1998; Kagan & Snidman, 1991) where children evidencing callous/unemotional traits also demonstrate less behavioral inhibition. Although not examined specifically in this study, it is possible as previously theorized (Frick & Morris, 2004; Loney et al., 2003) that these community youth's reported less fear/behavioral inhibition affected their conscience

development and/or their ability to develop empathy and thus resulted in the reported callous/unemotional traits.

Finally, the current study findings offered inconsistent evidence for a connection between psychopathic traits and social cognitive processes. The current research did not demonstrate the connection between callous/unemotional traits and the expectation of reward as found in previous research (O'Brien & Frick, 1996; Kosson & Newman, 1986). However, consistent with previous research (Pardini et al., 2003) callous/unemotional traits were related to the youth reporting that they cared about gaining the tangible reward as well as getting in trouble. Interestingly, previous research has suggested that a lack of behavioral inhibition may affect a child's development of empathy, leading to an interpersonal style focused on the possible rewards of their aggressive acts rather than the harm they may cause to themselves or others (Loney et al., 2003). While the youth in this study reported a relationship between callous/unemotional traits and behavioral inhibition, they did not report an expectation of obtaining a tangible reward. Therefore, the current study may offer clarification for the previous research in that community youth reporting callous/unemotional traits may not "expect" to receive a tangible reward through their

aggressive acts but may place a high value in obtaining the reward. In other words, they may not assume they will get the reward but they do really care about being able to obtain the reward.

Limitations

As in all studies, the current study is not without its limitations. One of the first limitations is the use of self-report data. Rutter (2005) argues that self-report measures draw on subjective judgments of their own emotional concern and regard for another's feelings. It is unclear how similarly young people view themselves in comparison with the way others view them (Rutter, 2005). However, multivariate taxonic analyses suggest that youth self-report were significantly more valid than parent and teacher reports (Vasey, Kotov, Frick, & Loney, 2005). Additionally, Loney and colleagues (2003) offer substantial evidence supporting the use of self-report measures to assess psychopathic features in adolescents. Evidence suggests that there is actually an increase in the reliability of child self-report data during adolescence on most types of child psychopathology, whereas parent and teacher report validity decreases (Kamphaus & Frick, 1996). Second, accurate parent report is often unavailable due to many out of home placements (Loney et al., 2003). Finally,

self-report measures, such as the Antisocial Personality Screening Device, have demonstrated success in differentiating subgroups of juvenile offenders and assessing psychopathic traits in adolescent and young adult samples (Caputo et al., 1999; Kruh, Frick & Clements, 2005; Loney et al., 2003; Silverthorn, Frick & Reynolds, 2002; Lilienfeld & Andrews, 1996; Lynam et al., 1999; Salekin et al., 2003).

Other cautions include sample considerations. First, results can only be applied to community samples that are placed in an alternative education setting. Caution should be used when considering findings in relation to other groups such as incarcerated or adjudicated youth or those who live in the community but attend typical educational settings. Finally, it should be acknowledge that none of these samples are totally pure. That is, a student who is now in the community may have been adjudicated or incarcerated in the past. Relatedly, although the sample size was adequate it was not large. A larger sample may have provided stronger effect sizes. Further, a larger sample size may have improved internal consistencies for some of the variables. For example, impulsivity/conduct problems, empathic concern, personal distress, perspective taking, behavioral inhibition, and outcome expectancy of

gaining a tangible reward were in the low ($< .60$) range which may have affected the reliability of these variables.

This sample included both males and females. While there were no gender effects in the sample, researchers are unclear how psychopathic traits look in females (Verona & Vitale, 2006). Study results need to be interpreted with the caution that there is lack of knowledge concerning females and psychopathic traits, especially adolescent females and psychopathic traits.

Finally, although psychopathy has been described as a stable, unchangeable, and biologically based personality trait that defines those that will be lifelong criminals (Pardini et al, 2003). This is not a conclusion that should be applied to the participants in this study. The existence of psychopathic traits in the youth in this study should not be used for diagnosis, adjudication, or sentencing (Pardini et al., 2003). Alternatively, the information obtained should be used as support for applying the construct of psychopathy to youth that may contribute to the maintenance of antisocial behavior of some aggressive community adolescents.

Future Research

In the future, research focusing on larger samples of community-based youth would allow for a more thorough

understanding of psychopathic traits in this population. Longitudinal studies with community populations would greatly improve the understanding of psychopathic traits as they manifest through development and allow for a connection between the adult psychopathy literature and the emerging literature focusing on youth who evidence similar psychopathic traits.

The current study examined three factors including callous/unemotional traits, impulsivity/conduct problems, and narcissism. It would be important for future research to extend the findings of the current study by examining two factors, the callous/unemotional trait and the combination of the impulsivity/conduct problems and narcissism factors, with a community sample of youth displaying aggressive behaviors who attend an alternative education center in order to further define psychopathic traits in this population.

Future research may benefit from examining the relationship of psychopathic traits and each factor of dysregulation including behavioral, emotional, and cognitive with various samples in order to investigate if the current findings are similarly evidenced in other populations.

Continuing to examine psychopathic traits as they apply to youth will offer further understanding into the nature of these traits in children and what implications the findings may have for children demonstrating these traits early in life. The more psychopathic traits are understood throughout the lifespan, the more information will be available to develop interventions that may prevent or alter the effects these traits could have when developed into adulthood.

Conclusion

To summarize, severe antisocial behavior affects many facets of today's society (Connor, 2002). Not only are these behaviors being witnessed in adults but also their roots are traced to childhood (Broidy, 2003; Loeber, 1982; Waschbusch, 2002). Yet, simply downward extending adult criteria to youth is problematic (Lynam, 1997; Salekin et al., 2001). Not all antisocials will evidence the trait patterns consistent with psychopathy (Gacono et al., 2001; Hughes & Gacono, 2004). However, those who show psychopathic traits also show severe and violent aggressive behaviors, poor treatment outcomes and high rates of recidivism (Hare, 1993; Salekin et al., 2004; Serin & Amos, 1995). In youth, conduct problems and callous/unemotional characteristics are associated with characteristics of

adulthood psychopathy (Loeber, 1982; Lynam, 1997; Porter et al., 2001). This study adds to the developing literature clarifying the construct of psychopathy in community aggressive youth, including the nature of psychopathic traits and the relationship to social-cognitive processes.

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