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Developmental Pathways for Children with Disruptive Behavior Disorders

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DEVELOPMENTAL PATHWAYS FOR
CHILDREN WITH DISRUPTIVE BEHAVIOR DISORDERS

A Dissertation

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy
in
The Department of Psychology

by

Deborah Mahan Phillips

B.A., University of South Alabama, 1978
M.S., University of New Orleans, 1996

December 2003

Dedication

This research project could not be complete without a dedication to my mother, Janet Hamilton Mahan, who died in August, 1979, of metastatic breast cancer. Her death was not immediate, there was a long period during which she fought hard to survive and her cancer went into remission. In retrospect, it appears that a number of stressful circumstances subsequently entered her life, and she suffered a reoccurrence which ultimately claimed her life. This experience produced in me a deep respect for the impact of individual determination to overcome obstacles, as well as a deep respect for the impact of stress and the importance of handling stressful situations effectively. I regret that my mother died when I was so young. There are so many things that I would like to understand about my early relationship with her that I can only guess about now. I miss her presence in my life.

Acknowledgment

There are a number of acknowledgements which demand to be made. First and foremost, many thanks to my husband Steven, who married me during the course of this dissertation. He not only allowed me the time and space to work on my dissertation, but also provided incredible technical support during the process. I am deeply indebted to his expertise and tolerance during this period of my life.

Also, many thanks to the staff at West Jefferson Child and Family Services where I collected the data for this dissertation. The entire staff was extremely supportive and I could not have selected a more accommodating facility to conduct my research. A special acknowledgement needs to be made to Joann Turner, who helped me negotiate the clinic system. Her cheerful willingness to help me and tireless consideration of my needs helped me immensely and made data collection manageable in a busy clinic.

I would also like to thank my committee members who have persevered along with me. My dissertation took a considerable amount of time to complete and I appreciate the time and commitment they made in seeing me through this project. I deeply appreciate their consideration and cooperation.

My deepest gratitude goes to Paul Frick, who became my advisor midway through the graduate program. I have benefited from his exceptional skills as a researcher and as a mentor. His sound advice helped me through difficult periods and ultimately made this dissertation possible. My regret is that my work with Paul was restricted to my dissertation. I feel as though I was not able to take full advantage of all he had to offer as

a mentor, but I am very thankful and appreciative that I was able to do my dissertation with him.

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Abstract

The purpose of this study was to incorporate attachment theory and psychopathy into a transactional model to explain the development of disruptive behavior disorders in children. The model tested in this study proposed two broad pathways leading to the development of disruptive behavior disorders. Each pathway was characterized by an at-risk child temperament, negative reactivity and psychopathy, which when embedded in an at-risk environment, would result in conduct problems. Hyperactivity and negative life events were hypothesized to be broad band risk factors for both pathways. The first pathway, characterized by callous-unemotional traits (CU), was hypothesized to be positively associated with thrill seeking behavior and proactive aggression in the child, and insecure attachment in the caregiver. A second pathway, characterized by child negative reactivity, was hypothesized to be positively associated with reactive aggression in the child and disorganized attachment in the caregiver.

Data was collected from 48 low income caregiver/child dyads. Children were between the ages of 6 and 12 (mean age=9.3, SD=1.85), and received services from a state mental health clinic. A series of hierarchical regression analyses were performed to evaluate the relationship between the predictor variables and conduct problems. A primary finding was an extremely strong positive correlation between CU traits and conduct problems. Also, several distinct differences were found between groups of children low and high on CU traits. For those children low on CU traits, thrill seeking

behaviors were positively associated with conduct problems, while negative life events, attachment insecurity, and attachment disorganization were all negatively associated with conduct problems. For the children high on CU traits, thrill seeking and attachment insecurity had no meaningful impact on conduct problems, while negative life events and attachment disorganization were positively associated with conduct problems.

Hyperactivity, proactive aggression, reactive aggression, and negative reactivity were all broad risk factors for conduct problems in this study. The findings of this study suggest that several developmental pathways do exist for children who develop conduct problems, and that future research should utilize developmental models that include a number of broad risk factors, as well as factors that may be specific to certain developmental pathways.

Introduction

One of the most alarming social issues of the past century was the disturbing presence of violence and aggression in our global community. The shocking pictures that emerged after World War II of concentration camps and mass graves served as a testimony to the base side of human nature. And even more recently, the ethnic cleansings in Bosnia and Kosovo testified again that we as individuals and as cultures are capable of immense cruelty as well as interpersonal violence.

The United States has not escaped this violent picture. In a summary of crime statistics in the United States, Coie and Dodge (1998) reported a 40-year trend of an increase in violent crime, resulting in a 600% increase since 1953. American youth also reflect this increase in violence. The murder rate more than doubled between 1982 and 1992 for the under 18 age bracket, with homicide now the leading cause of death for urban males between the ages of 15 and 24 (Coie & Dodge, 1998).

Violence statistics indicate that a small percentage of criminal offenders (5-6%) are responsible for more than half of known crimes (Farrington, Ohlin, & Wilson, 1986). Thus, focusing on a small group of offenders will address a large proportion of crime. Typically, criminal careers are associated with diagnoses of Antisocial Personality Disorder and are preceded by significant childhood behavioral problems and juvenile delinquency (Farrington, 1986), supporting childhood interventions as an important

aspect of crime reduction.

A large body of research indicates that aggression is stable over time (Huesmann, Eron, Lefkowitz, & Walder, 1984; Olweus, 1979). In a meta-analysis of aggression in males, Olweus (1979) obtained correlations of .69 and .60 for aggression over five and ten year intervals, respectively. The subjects' age range was from two to eighteen years at the initial evaluation, with a mean age of eight across studies. These data indicate that aggressive patterns are established in early childhood, and that they are moderately stable by middle childhood.

In consideration of the growth of violence and the early establishment of aggressive patterns, one emphasis in clinical research has been the early determinants of aggression. Clinically, abnormal childhood hostility and aggression are included in the diagnoses of Oppositional Defiant Disorder and Conduct Disorder. Much of traditional research on childhood aggression has used correlations between various risk factors and the presence of either a clinical diagnosis or externalizing behaviors. While this research has been useful in identifying risk factors for externalizing behavior disorders, no apparent causal pathway has emerged to elucidate the developmental process of such disorders

A general consensus among researchers is that the development of a disruptive behavior disorder (DBD) is not the main effect of any single risk factor, but is associated with a number of risk factors working in conjunction with one another. Identified risk factors fall under the broad domains of child characteristics, parenting, and psychosocial stressors (Deater-Deckard, Dodge, Bates, & Pettit, 1998). Many current research designs now utilize transactional models (Sameroff & Chandler, 1975) in an effort to

accommodate the more complex developmental models that are needed. The goal of such research is to identify developmental pathways leading to childhood behavior disorder, and ultimately, to adult antisocial behavior. The identification of such pathways will enable early detection and intervention for at-risk children, long before adult antisocial behavior begins.

There is an intersection between child clinical research and developmental research. The point of intersection is attachment theory, a developmental theory that addresses optimal and non-optimal social and emotional development in children. Attachment research indicates that aggression and behavior disorders in children are associated with specific kinds of attachment histories. An important aspect of this particular area of research is that it breaks down traditional barriers between research and clinical casework, barriers that have impeded the growth of empirical knowledge regarding non-optimal child development.

Theoretically, attachment theory incorporates many of the risk factors associated with DBD in children, including parent and child characteristics as well as parenting characteristics (Ainsworth, Blehar, Waters, & Wall, 1978). Attachment research also addresses high-risk populations and the impact of psychosocial stressors on non-optimal child development (Keenan & Shaw, 1994; Shaw & Vondra, 1995; Sroufe, Egeland, & Kreutzer, 1990). Additionally, a growing body of research indicates an association between non-optimal attachment relationships in childhood and the development of externalizing behaviors and conduct problems (Cowan, Cohn, Cowan, & Pearson, 1996; Lyons-Ruth, Alpern, & Repacholi, 1993; Speltz, Greenberg, & Deklyen, 1990). In this dissertation project, findings of both clinical and developmental research addressing

behavior problems in children will be reviewed and integrated. A developmental model for DBD will be proposed, and the findings of this study presented.

Clinical Research and Disruptive Behavior Disorders

Clinical Nosologies

Clinically, externalizing behavior includes behaviors such as noncompliance, aggression, destructiveness, attention problems, impulsivity, hyperactivity, as well as delinquent behaviors (McMahon, 1994). In the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition, or DSM-IV (Association, 1994), diagnoses for clinically significant externalizing problems are included in the attention-deficit and disruptive behavior disorder (DBD) section of the manual. This paper will focus on DBD, which includes oppositional defiant disorder (ODD) and conduct disorder (CD).

Estimates of prevalence rates for both ODD and CD are widely variable. These rates range from 3% to 25% for ODD and from 0.0% to 11.9% for CD, with median estimates of 3.2% and 2.0%, respectively (Lahey, Miller, Gordon, & Riley, 1999b).

Oppositional Defiant Disorder

ODD, which is generally characterized by less serious symptomology than CD, is described in the DSM-IV as a "recurring pattern of negativistic, defiant, disobedient and hostile behavior toward authority figures that persists for at least 6 months" (pg. 91). At least four of eight criteria must be met (see Table 1).

Before DSM-III (Association, 1980), ODD did not exist as a clinical diagnosis. The inclusion of the ODD diagnostic category in DSM-III, which was perpetuated in DSM-IV, was questioned by some researchers (Reeves, Werry, Elkind, & Zametkin, 1987; Werry, Reeves, & Elkind, 1987). Specifically, they questioned whether a

dimensional model would be more appropriate (Achenbach, 1993; Hinshaw, Lahey, & Hart, 1993; Werry et al., 1987). Such a model would not view ODD as a separate diagnostic category but simply as a milder form of CD (Werry et al., 1987). This argument was supported by research such as Achenbach's, which found a large single factor for children's externalizing behavior problems. Quay (1999) speculated that the inclusion of ODD in the DSM-III was not due to observed group differences, but because of clinicians' reluctance to diagnose and thereby stigmatize young children with CD, a disorder with a poor history of treatability and prognosis.

A strong effort has been made by researchers to verify the validity of the separate diagnosis for ODD. Frick et al. (1991) factor analyzed patterns of covariation among externalizing symptoms in clinic referred children. Two dimensions emerged bearing strong similarities to the ODD and CD classifications. On the large first factor, labeled Aggression, a number of ODD symptoms loaded. However, two CD symptoms, fighting and lying, also loaded moderately on this factor as well as on the second factor. The second and smaller factor that emerged, labeled delinquency, included delinquent behaviors and covert conduct problems. A subsequent meta-analysis of factor analytic studies of externalizing symptoms in children further supported separate ODD and CD factors (Frick et al., 1993).

In a review of the literature, Loeber, Lahey, and Thomas (1991) conclude that ODD and CD represent different clinical disorders. They argue that each diagnostic category possesses distinct symptomology, with a few common symptoms between them. Additionally, onset is earlier for ODD and the severity and seriousness of the aggression found among CD children is not present in children diagnosed with ODD. However, for

older children diagnosed with CD, the comorbidity of ODD is extremely high, ranging from 84-96% (Hinshaw et al., 1993). It appears that ODD symptoms are retained as the more serious and aggressive behaviors associated with a CD emerge. It must be noted that approximately half of children who are diagnosed with ODD do not progress on to develop CD (Hinshaw et al., 1993).

Table 1

DSM-IV Criteria for Oppositional Defiant Disorder

- (1) often loses temper
 - (2) often argues with adults
 - (3) often actively defies or refuses to comply with adults' requests or rules
 - (4) often deliberately annoys people
 - (5) often blames others for his or her mistakes or misbehavior
 - (6) is often touchy or easily annoyed by others
 - (7) is often angry and resentful
 - (8) is often spiteful or vindictive
-

Conduct Disorder

The criteria and descriptions for CD have changed with each revision of the DSM, reflecting different theoretical conceptualizations (Lynam, 1996). In the current DSM-IV (APA, 1994), 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" (APA, 1994; pg. 85). Three of fifteen symptoms (see Table 2) must have been present within the preceding year and one criteria must have been present within the previous six months. The criteria are broken into four major areas: aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of rules.

An important diagnostic distinction made in the DSM-IV is the identification of

two major CD subtypes, Childhood-Onset and Adolescent-Onset. In the Childhood-Onset Type, one criterion must be present before 10 years of age. This subtype is predominately comprised of males and is characterized by physical aggression and disturbed peer relationships. Individuals in this group are more likely to experience persistent CD and to develop APD as adults. Conversely, the Adolescent-Onset Type is characterized by the absence of any CD symptoms before age 10. Aggression is less common for this subtype, peer relationships are more normative, and CD is less likely to be persistent.

Additionally, the Adolescent-Onset is comprised of a greater percentage of females than the Childhood-Onset (APA, 1994).

Table 2

DSM-IV Criteria for Conduct Disorder

<u>Aggression to people and animals</u>
(1) often bullies, threatens, or intimidates others
(2) often initiates physical fights
(3) has used a weapon that can cause serious physical harm to others
(4) has been physically cruel to people
(5) has been physically cruel to animals
(6) has stolen while confronting a victim
(7) has forced someone into sexual activity
<u>Destruction of property</u>
(8) has deliberately engaged in firesetting, with the intention of causing serious damage
(9) has deliberately destroyed others' property (other than by firesetting)
<u>Deceitfulness or theft</u>
(10) has broken into someone else's house, building, or car
(11) often lies to obtain goods or favors or to avoid obligations
(12) has stolen items of nontrivial value without confronting a victim
<u>Serious violations of rules</u>
(13) often stays out at night despite parental prohibitions, beginning before age 13 years
(14) has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period)
(15) is often truant from school, beginning before age 13 years

The distinction between age of onset in the DSM-IV reflects clinical research

findings indicating two different developmental courses for CD (Moffitt, 1993; Patterson, Capaldi, & Bank, 1991). Two longitudinal studies of antisocial behavior, one in New Zealand (Moffitt, 1993) and one in Oregon (Patterson et al., 1991), both came to similar conclusions regarding two broad developmental patterns of antisocial behaviors. It is notable that only boys were included in both studies.

In Moffitt's (1993) New Zealand study, a cohort of children born in 1972-1973 was followed through age 15. Study findings indicated that a small group of boys, identified as aggressive by age three, maintained above average levels of aggression throughout the study. This is consistent with previous findings that there are large individual differences in the stability of aggression, with the most and least aggressive individuals demonstrating the greatest stability (Loeber, 1982). Moffitt's early starter group, who maintained extreme and consistently high levels of aggression, was identified as a life-course persistent antisocial group. Aggression was not unique to the life-course group. The vast majority of the remaining boys in the study periodically demonstrated above normal levels of aggression, but these levels were maintained over shorter periods of several years or less, and then desisted (Moffitt, 1993).

The New Zealand study also found that arrests, reports of delinquency, diagnoses of conduct disorder, and antisocial behavior all showed a steep incline in early adolescence (Moffitt, 1993). This later development of antisocial behavior, termed adolescent-limited, began and ended fairly quickly and was not cross-situational as with life-course persistent. These two developmental pathways parallel the Childhood-Onset and Adolescent-Onset subtypes identified in the DSM-IV.

The focus of this research proposal is on developmental pathways for CD in pre-

pubertal children. Therefore, the research findings presented will be relevant to the Childhood-Onset pathway. Additionally, ODD will be viewed as a developmental stage preceding CD. This approach is consistent with several developmental theories (Achenbach, 1993; Patterson et al., 1991). From a research standpoint, several studies have also previously combined these two groups. The groups were combined because both groups are conceptually similar, and because the groups do not differ significantly on many clinical variables (Reeves et al., 1987). In studies where groups are so combined, the diagnosis will be cited as DBD.

A number of important studies addressing behavior problems in children have not used clinical diagnoses for the identification of subjects. Rather, they have used clinical cutoffs on continuously rated diagnostic measures, such as the Child Behavior Checklist (Achenbach, 1991). This approach is consistent with a dimensional approach to CD and a number of important longitudinal studies have used such criteria (Maziade, Cote, Bernier, & Thivierge, 1989; McGee, Williams, & Silva, 1984; Sanson, Smart, Prior, & Oberklaid, 1993). While these cutoffs are not necessarily indicative of a diagnosis of CD, they are predictive of children who are clinic referred for behavioral problems. As such, these data are relevant to this proposal. Dimensional data findings will be referenced as “clinically significant” behavior problems.

Subgroups of Disruptive Behavior Disordered Children

The identification of subgroups of DBD children has a long history in clinical research (Achenbach & Edelbrock, 1978; Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Frick, O'Brien, Wootton, & McBurnett, 1994; Moffitt, 1993). Research indicates that certain forms of externalizing, namely aggressive behaviors, are predictive of chronic

and more severe forms of later antisocial behavior (Moffitt, 1993). Thus the identification of subtypes, the etiology of each subtype, and the outcomes for the subtypes will help in determining the chronic and most severe pathways for DBD. This research can generally be divided into statistically driven atheoretical research and theory driven research.

Statistically Defined Subgroups

A number of factor analytic studies have looked at the covariance of DBD symptoms in an effort to identify subtypes. The primary dimension that has emerged in these studies has been the distinction between overt and covert aggression (Frick et al., 1993; Frick et al., 1991b; Loeber & Schmalting, 1985). Overt behaviors include interpersonal confrontations and aggression while covert behaviors largely include legal violations of a non-interpersonal nature, such as property destruction, truancy, and substance abuse.

Frick et al. (1993) conducted a large meta-analysis of published factor analytic studies of childrens' and adolescents' behavior problems. Using multidimensional scaling, a two-dimensional solution emerged that included two bipolar scales. The first dimension was the primary dimension of overt-covert conduct problems. However, a second smaller and significant dimension emerged labeled destructive-nondestructive. The destructive pole of the second dimension included behaviors such as vandalism and assault. The nondestructive pole included behaviors such as substance abuse and stubbornness. This two-dimensional solution created four quadrants: oppositional (overt and nondestructive), aggression (overt and destructive), property violations (covert and destructive), and status violations (covert and nondestructive). The median age for the emergence of each quadrant's symptoms occurred in a progression beginning with

oppositional (6.0 years), aggression (6.75 years), property (7.25 years), and status (9.0 years).

To test the utility of the two-dimensional model, Frick et al. (1993) conducted a cluster analysis of the quadrant scores for a group of clinic referred boys. Each boy was assigned a quadrant deviance score for each of the four quadrants, and these scores were analyzed. A conservative three-cluster solution produced three distinct groups, an ODD group (high on oppositional), a CD group (high on aggression and oppositional), and a not deviant group. A four-cluster solution split the CD group in half, creating a younger CD group (high on aggression and oppositional) and an older CD group (high on aggression, oppositional, and status offences). The ODD cluster captured 70% of the boys given a clinical diagnosis of ODD while the CD cluster included half of those boys given a CD diagnosis. The remaining CD boys were grouped in the ODD cluster. Clearly, this two-dimensional conceptualization supports the clinical structure of ODD. However, this model does not differentiate a clinical CD group well, which may be due to the overlap of ODD and CD symptomology for many children.

From a developmental standpoint, factor analytic models suggest two things. First, they suggest that there is a developmental progression in the expression of DBD behaviors, with oppositional behaviors emerging earlier and status offences emerging later. Second, the poorer predictive value of these models for CD suggests that factor analytic models do not capture well the clinical nature of CD. Simply clustering types of DBD behaviors has not aided in identifying developmental pathways. Whether the weakness lies in the methodology, the clinical diagnostic system, or both is unknown.

Theoretically Derived Subgroups of CD Children

Theoretical conceptualizations of the nature and meaning of aggressive acts have been used to help understand the wide variety of aggressive behaviors associated with DBD, and to guide how subgroups of externalizing behaviors might be designated. Two theoretical approaches for differentiating aggressive acts include the distinction between reactive and proactive aggression (Dodge and Coie, 1987) and the use of psychopathy (Frick, Bodin, & Barry, 2000; Frick et al., 1994).

Proactive and Reactive Aggression. Among animals, ethologists and psychobiologists have noted two distinctive types of aggression. As summarized by Dodge and Coie (1987), one type is associated with heightened emotionality and defense against provocation, goal blocking, or frustration. The second type is a relatively unemotional goal directed behavior, such as predation, dominance or territoriality. This distinction is supported by animal studies, in which stimulation of different areas of the brain can produce either heightened arousal and defensive posturing, or organized predatory behavior and biting (Dodge, 1991). Dodge and Coie (1987) termed these two types of aggressive behaviors as reactive and proactive aggression, respectively.

As described by Dodge and Coie (1987), reactive aggression (RA) in humans is retaliatory and defensive in nature. Since it is related to the perception of threatening or hostile antecedents, cognitive hostile biases or distortions will influence the level of perceived threat and aggressive behavior. Typically, RA is produced by goal blocking or provocation, and is likely to be expressed as interpersonal hostility. Proactive aggression (PA), on the other hand, is related to the achievement of a goal (Dodge & Coie, 1987). As such, PA is influenced and reinforced by the rewarding properties of the achieved goals.

Thus, instead of being directed by antecedent conditions, PA is based on internal motivations and outcomes.

Several studies have used the concept of proactive and reactive aggression to subtype groups of behavior disordered children (Dodge et al., 1997; Waschbusch, Willoughby, & Pelham, 1998). Waschbusch, Willoughby, and Pelham (1998) compared PA and RA in clinically identified behavior disordered children. While both types of aggression contributed significantly to variance in aggression scores, RA was a much more powerful predictor and was correlated more strongly with overall impairment. The shortcoming of this study was that children who exhibited both types of aggression were not assigned an independent group, but were categorized according to the predominant form of aggression expressed.

Dodge et al. (1997) found that for aggressive school-age children, different developmental histories were associated with each aggression type. In this study, three aggression categories were included: PA, RA, and pervasive (both proactive and reactive). Childrens' histories in the RA and pervasive groups were both associated with abuse and harsh discipline, early onset of behavior problems (average age 4 ½), and poor peer relations. The RA and pervasive groups differed in that the pervasive group came from families with lower SES and more family stressors. The pervasive group also scored significantly higher on measures of social problems. The PA group did not differ from the non-aggressive group on any of the measures of early life experiences, and they did not experience negative peer relations as did other aggressive groups.

Group differences between aggression subgroups also existed on measures of inattention and impulsivity. Dodge et al. (1997) found that attention problems correlated

positively with both RA and PA, but the correlation was significantly stronger for RA. All three aggression groups scored significantly higher on impulsivity than a non-aggressive control group. As with inattention, impulsivity was more strongly correlated with RA than PA.

Overall, the characteristics of the RA and pervasive aggression groups are similar to the characteristics of Childhood-Onset CD in the DSM-IV. Both are associated with abuse and harsh discipline, with families at-risk, with early onset of behavior problems, with inattention/impulsivity, and with poor peer relations. These findings suggest that for early-starters, two possible groups of behavior disordered children may exist. Members in the first group, who are characterized by RA, begin exhibiting aggression prior to school years and have a high-risk developmental history. Members of the second group, who are characterized by both RA and PA, are similar to the first group except they come from the most at-risk environments and experience the greatest impairment of all groups.

Psychopathy. In a more recent approach, Frick and colleagues used the concept of psychopathy to distinguish between subgroups of CD children (Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick et al., 2000; Frick et al., 1994). Clinically, psychopaths represent a subset of APD adults. Research into adult psychopathy identifies two moderately related but distinct dimensions (Hare, Hart, & Harpur, 1991). The first dimension includes affective and interpersonal characteristics, such as low anxiety, shallow emotions and relationships, and remorselessness. The second dimension reflects the social failures associated with an impulsive and antisocial lifestyle, such as arrests and poor employment history. This second dimension is positively correlated with APD, as well as psychopathy. In general, psychopaths represent a subset of APD adults who

experience typical problems associated with a diagnosis of APD, but they are distinct in their affective style.

Frick and Hare (2001) developed a children's psychopathy scale which extended the concept of psychopathy downward into younger age groups. The Antisocial Process Screening Device (APSD) is conceptually derived from adult measures, and uses rating scales to evaluate the presence of psychopathic traits. Frick and associates conducted a series of studies using the APSD to explore the relationship between psychopathic or callous-unemotional traits in children and CD (Christian et al., 1997; Frick et al., 2000; Wootton, Frick, Shelton, & Silverthorn, 1997). One of the specific questions addressed by these studies was whether a subgroup of CD children existed with callous-unemotional traits, that followed a distinct and separate developmental path from other CD children. In a clinic referred sample, two groups of CD children emerged with one of the groups showing high scores on the Callous/Unemotional (CU) scale of the APSD. A number of risk factors associated developmentally with severity and persistence were significant for the group of children high on CU traits. The CU group exhibited more conduct problems as well as a greater variety of conduct problems (Christian et al., 1997). Additionally, parental history of APD existed in 40% of the cases, compared with up to 14% of the other groups of children with conduct problems but no CU traits (Christian et al., 1997).

Wootton, Frick, Shelton, and Silverthorn (1997) investigated the parental characteristics of CU children. In a group of children identified as DBD, the CU group was differentially responsive to poor parenting practices (Wootton et al., 1997). While poor parenting is a well known risk factor for DBD, the CU group exhibited behavior

problems regardless of the quality of parenting. This suggests that the problematic behavior exhibited by the CU group may not be reflective of poor parenting skills, as is indicated by research for DBD children in general.

Placing these findings into the context of other CD research, behavior disordered children identified as CU appear to represent a subset of the early-onset group as identified by Moffitt (1993). These children appear to possess a cluster of traits resembling those found among psychopathic adults. They are distinctive in that their behavior problems appear more severe, there is evidence of greater parental deviance, and their behavior problems appear to develop regardless of parenting skills. These findings suggest that the CU trait may be a highly significant risk factor for DBD, but with a differing etiology and course. Interventions for this group would necessarily be divergent from traditional therapies for DBD.

Risk Factors Correlated with Disruptive Behavior Problems

A second, and widely used approach in DBD research uses correlational methodology in identifying risk factors for DBD. A wide variety of correlates are associated with DBD in children and are identified in clinical research as risk factors for ODD/CD. The vast majority of this research addresses preschool and school age children, and is pertinent to ODD and CD-Childhood Onset populations. Deater-Deckard, Dodge, Bates, and Pettit (1998) subcategorize these correlates into four domains: sociocultural risks, parenting and caregiving, peer experiences, and child risk factors.

Sociocultural Risks

Several longitudinal studies indicate a relationship between sociocultural risks and externalizing behavior (Bolger, Patterson, Thompson, & Kupersmidt, 1995; Deater-

Deckard et al., 1998; Moffitt, 1990; Sanson et al., 1993). Deater-Deckard et al. (1988) found that low SES, single parenting, negative life events, more siblings, teenage pregnancy, and unplanned pregnancy all correlated significantly with ratings of externalizing behaviors for children ages five to ten. Similarly, Moffitt (1990) found a significant relationship between delinquency and family adversity, a broad category that included measures of SES, teen-aged motherhood, single parenting, family size, maternal health problems, maternal IQ, and social environment. Sanson et al. (1993) also identified low SES and more negative life events as predictive of clinically significant aggression in school-age children.

The longitudinal studies cited above used different age groups, as well as different criteria for defining behavior problems. The research results are remarkable for their consistency. The findings indicate that a broad band of sociocultural risk factors are predictive of behavior problems in children. The specific mechanism for the risk is not apparent from the data. But undoubtedly, childrens' behavior is impacted by stressful family circumstances.

Parenting and Parent Characteristics

The role of parents in the etiology of behavior problems has received wide attention in research. Numerous studies have implicated parent characteristics and parenting practices as contributing to behavior problems and antisocial characteristics. Loeber and Stouthamer-Loeber (1986) performed a meta-analysis of research on family factors and their relationship to conduct problems and delinquency. The children in the studies were both school-age and adolescent. Analysis of the longitudinal data indicated that a lack of parental involvement, lack of parental supervision, and parental rejection

were the most powerful predictors of conduct problems and delinquency. A separate analysis of concurrent data supported these findings. Additionally, the seriousness of the child's delinquency was associated with the extent of parenting deficiencies.

Rothbaum and Weisz (1994) also performed a meta-analysis of parenting characteristics associated with child aggression, hostility, and noncompliance. A factor analysis of variables indicated that parental approval, guidance, positive motivational strategies, synchrony, and the absence of coercive control were negatively associated with behavior problems. This factor was described as acceptance-responsiveness. Both meta-analyses indicate that positive, consistent, and active parental involvement in children's development reduces the likelihood of externalizing problems.

Parent criminality, typically in the father, is consistently associated with delinquency and conduct problems (Loeber & Stouthamer-Loeber, 1986). Adult criminality is historically related to the presence of APD, which is typically preceded by CD. This relationship is clearly illustrated in the study by Tapscott, Frick, Wootton, and Kruh (1996) in which 40% of the fathers of DBD children received an APD diagnosis. Interestingly enough, the association between parent and child antisocial behavior existed regardless of whether the parent had lived in the household with the child (Tapscott, Frick, Wootton, & Kruh, 1996). These findings suggest some form of intergenerational transmission of at least a vulnerability to DBD. The mechanism could be biological (temperament or impulsivity), social (selective mating), and/or cultural (impoverished environment).

Peer Experiences

In a review of DBD and peer experiences, Ledingham (1999) found a strong

correlation between aggression and peer rejection. Half of the children diagnosed with CD were identified as rejected by peers. As this figure indicates, all aggressive children did not experience social rejection. Rejection was not associated with either physical aggression or prosocial behavior, but rather with argumentative, disruptive, and inattentive characteristics (Ledingham, 1999). Research indicates that the probable pathway is for aggression to lead to rejection, and not vice versa (Coie & Kupersmidt, 1983; Dodge, 1983). The importance of peer rejection is twofold. First, it is associated with greater aggression at later ages, and second, it is also predictive of adolescent antisocial behavior (Coie & Dodge, 1998).

Child Risk Factors

Gender. The most consistent child risk factor is gender, with ODD and CD more prevalent among males (Anderson, Williams, McGee, & Silva, 1987; Christian et al., 1997; Reeves et al., 1987; Robins, 1966; Sanson, Oberklaid, Pedlow, & Prior, 1991; Stormshak & Bierman, 1998; Webster-Stratton, 1996). Overall, the male to female ratio is estimated to be 4:1 (Cohen et al., 1993). However, Lahey, Miller, Gordon, and Riley (1999) note that specific gender ratios for CD have limited value because of different research methodologies and because these ratios change with age, with gender differences diminishing after puberty.

In a review of the literature, Keenan and Shaw (1997) report that gender differences in aggression and conduct problems do not appear until approximately 4 years of age. Prior to age 4, boys and girls exhibit similar rates of difficult temperament, activity level, and noncompliance. Gender differences emerge during the preschool years, with conduct problems in girls generally showing a consistent decline. However, conduct

problems for boys may decline, but not as consistently, or they may increase. By school age, gender differences stabilize and remain stable until puberty. At puberty, when adolescents begin exhibiting late-onset CD, proportionately more girls than boys begin to exhibit CD. Several possibilities exist that may explain why young girls appear to desist in their antisocial behaviors until adolescence: differential socialization, greater maturity and language abilities, and/or inappropriate measurement of girls' antisocial behaviors.

With the exception of the gender ratio, research findings indicate there are remarkably few gender differences between childhood-onset CD boys and girls (Guerin, Gottfried, & Thomas, 1997; Lahey et al., 1999a; Webster-Stratton, 1996; Zoccolillo, 1993; Zoccolillo, Pickles, Quinton, & Rutter, 1992). Guerin, Gottfried and Thomas (1997) found no gender differences in the early temperament of boys and girls who later developed significant externalizing and internalizing problems. In a study of young children age 4 to 7 with a diagnosis of DBD, Webster-Stratton (1996) found no significant differences between boys and girls on measures of total externalizing behaviors, noncompliance to parental requests, and verbal hostility. Webster-Stratton (1996) also found no gender differences on family variables, and parents reported similar ages of onset for both sexes. One significant gender difference found was that boys engaged in more overt aggression and destructive behaviors (Webster-Stratton, 1996). Lahey et al. (1999a) found no significant gender differences in mean age of onset of conduct problems in a cross-sectional sample of 9 to 17-year-old youths. Additionally, a similar pattern emerged for both sexes with early onset of symptoms predicting more chronic and severe behavior problems later in childhood and adolescence (Lahey et al., 1999a). Finally, Zoccolillo et al. (1992) found that for both males and females, a

diagnosis of CD in childhood was associated with similar poor outcomes of personality disorder and social maladaptation in adulthood.

Although gender specific research is very limited for females with DBD, the existing literature suggests that gender differences are limited for boys and girls with childhood-onset CD. The primary gender difference is the greater incidence of CD among males. Boys also exhibit greater overt hostility and aggression. For this age group, the research indicates that girls and boys with childhood-onset CD are far more similar than dissimilar.

Impulsivity/Hyperactivity. ADHD is commonly comorbid with ODD and CD (Lahey et al., 1999b), with comorbidity figures typically ranging from 30% to 50% (Lynam, 1996). Reported comorbidity figures have ranged as high as 85% in some studies, where a solo diagnosis of ODD/CD was an exception rather than the rule (Reeves et al., 1987). This general rule of comorbidity does not extend to ADHD, where children are often diagnosed with only attentional/hyperactive problems (McGee et al., 1984; Reeves et al., 1987; Sanson et al., 1993).

The overlap between ADHD and the disruptive behavior disorders has led some researchers to theorize that inattention/impulsivity is an early component of the developmental process of persistent CD (Moffitt, 1993). Indeed, White, Moffitt, Caspi, Bartusch, Needles, and Stouthamer-Loeber (1994) found that impulsivity correlated positively and significantly with a measure of antisocial behavior. Additionally, both ADHD and ODD/CD share a number of personality, activity, interpersonal, neurodevelopmental, academic, and cognitive characteristics (Werry et al., 1987), and both diagnoses are significantly more common in males (McGee et al., 1984; Reeves et

al., 1987). However, although the syndromes are moderately correlated, each syndrome is associated with different parental and social-economic correlates, suggesting independence (Hinshaw, 1987). Additionally, while both ADHD children and CD children exhibit similar inattentive/hyperactive behavior, the aggressive and antisocial behavior of CD children is more severe, further supporting the independence of each disorder (Reeves et al., 1987).

Data indicates that the combined presence of ADHD with ODD and/or CD results in more severe clinical impairment and poorer outcomes than does a single diagnosis (Loeber, Brinthaup, & Green, 1990; Moffitt, 1990; Sanson et al., 1993).

Developmentally, comorbid children demonstrate more physical aggression, more varied antisocial behaviors, greater persistence of antisocial behavior, more peer rejection, and more severe underachievement (Hinshaw et al., 1993), factors all correlated with severity and persistence of CD. There are also indications that this group experiences greater environmental risk factors. In a large longitudinal study, Sanson et al. (1993) found that children with clinically significant levels of aggression and hyperactivity had more environmental disadvantage, lower SES, more siblings, and more negative life events.

Intelligence. Numerous studies have identified low Verbal IQ as a risk factor for externalizing behavior problems and delinquency (Hinshaw, 1987). In a review of studies addressing IQ and behavior disorders, Hinshaw (1992) concludes that hyperactivity and inattention, which are often comorbid with CD, are stronger correlates with lower VIQ. However, findings from several large longitudinal studies indicated that the persistence of CD symptoms into adolescence and adulthood was associated with lower intelligence scores (Farrington, 1991; Moffitt, 1990; Robins, 1966), although this finding has not been

universal (Huesman, Eron, & Yarmel, 1987).

Difficult Temperament. In transactional models, the role of the child's behaviors and characteristics in the developmental process are acknowledged and considered to be fundamentally important. Compelling and consistent research findings indicate an association between children's temperamental characteristics and the development of behavior disorders. Several large longitudinal studies have specifically identified a "difficult temperament" as predictive of later externalizing behavior problems (Bates, Bayles, Bennett, Ridge, & Brown, 1991; Caspi & Silva, 1995; Sanson et al., 1993; Thomas, Chess, & Birch, 1968).

In 1956, the seminal New York Longitudinal Study began studying child temperament and its relationship to behavior disorders (Thomas et al., 1968). It was begun during a period of time when interest in behaviorism was very strong, and innate personal characteristics were not widely studied. The purpose of the project was to test the clinical observations of Thomas and his colleagues regarding child development. It was their observation that the reactive characteristics of the child, particularly temperamental organization, contributed to the child's course of development. The goals of the project were to define temperament characteristics in children and to determine the impact of these characteristics on normal and abnormal development. A total of 85 families, with 141 children, were studied in the project. The children were followed from birth to adulthood, with parents, teachers, and independent observers providing data.

Thomas et al. (1968) identified nine categories of temperament characteristics: activity level, rhythmicity, approach or withdrawal, adaptability, intensity of reaction, threshold of responsiveness, quality of mood, distractibility, and attention

span/persistence. Of these nine categories, five were associated with a temperament described as "difficult," including irregularity, predominantly negative withdrawal to new stimuli, slow adaptability, and intense negative reactions. Characteristically, this pattern began before the age of five. Difficult children experienced irregular sleeping and feeding cycles, and responded to new stimuli with intensely negative reactions. Since early development involves new experiences and exploration, the preschool years would likely be volatile times for these children and their parents.

Of those children identified as difficult by Thomas et al. (1968), 70% developed clinically diagnosed behavior disorders. Symptoms of behavior disorder included oppositional, aggressive, and angry behaviors. Although difficult children were not associated with any particular family characteristic or dimension, the presence of a difficult child was stressful for the parents. In a number of cases, negative parental attitudes developed toward the difficult child, resulting in increasingly maladaptive parent-child interactions. This pattern is reminiscent of the coercive familial cycles identified by Moffitt (1993) and Patterson and Bank (1987) in families with conduct disordered children. In other cases, parents negotiated their difficult child's behaviors, and adaptive functioning was eventually achieved. The development of behavior problems in this study was a transactional process, involving a combination of child and parental attributes.

The findings by Thomas and colleagues have been replicated in several additional longitudinal studies (Bates et al., 1991; Caspi & Silva, 1995; Sanson et al., 1993). In the Bloomington longitudinal study, Bates et al. (1991) found that mothers' reports of their child's difficult temperament at 6 and 24 months correlated with externalizing behavior

problems at 5 and 6 years of age. By 8 years of age, infant difficult temperament along with ratings of infant resistance to control, still retained predictive power for externalizing behaviors, although the power was low. Similarly, the results from the Australian Temperament Project indicated that clinically significant behavior problems at 8 years was predicted by early infant characteristics of inflexibility and non-persistence, along with maternal ratings of difficultness during infancy (Sanson et al., 1993).

The major criticism levied against the concept of difficult temperament is the use of parents as the major source of information. Historically, correlations between parent reports and teacher/observer reports are reported as moderate to low (Rothbart & Bates, 1998). This raises the question of whether parents provide an objective report of temperament, or are the temperament ratings merely a reflection of parental attitudes and/or difficulties. However, researchers continue to use parental reports despite the obvious shortcomings (Rothbart & Bates, 1998): these reports provide information about the child from the most knowledgeable source, and fundamentally important, they are still predictive of later child problems.

Researchers have attempted to refine and delineate the basic dimensions of temperament and their developmental outcomes for some time. While many researchers do not agree what these dimensions are, the neurophysiological model developed by Gray (1971; 1987) has been widely used to guide theoretical models of temperament and behavior. Gray's model has been particularly useful in research addressing children's psychopathology, where researchers attempt to answer questions about externalizing and internalizing disorders.

Gray's (1971; 1987) model of temperament is very useful for framing DBD

research. The model is conceptually embedded in learning theory and is based on extensive neurophysiological, pharmacological, and biochemical animal research. A unique aspect of Gray's model is the detailed neurological mechanisms utilized in support of his theory. While the model was developed in animal research, the extension of this body of research to humans has been supported by the behavioral and physiological effects of drugs on humans (Gray, 1987)

Gray proposes that temperament is directed by three neural systems, which guide behavior and emotion: a behavioral inhibition system, a behavioral activation system, and an arousal or fight/flight system. The differential sensitivities among the systems shape temperament and individual differences in reactions to stimuli. Additionally, extremes in sensitivities can contribute to psychopathology.

The behavioral inhibition system (BIS) organizes behavior in response to novelty and to conditions that signal aversive events, which includes punishment and frustrating non-reward (Gray, 1987). In simple terms, the BIS serves to stop or inhibit ongoing motor activity. The emotions associated with this system include fear and frustration, and activation of the BIS is theorized to produce anxiety. The association of anxiety with the BIS is supported by extensive research demonstrating that anxiolytic drugs impair the ability to inhibit responding. Conceptually, as reactivity of the BIS increases, so does sensitivity to stimuli associated with punishment or non-reward, anxiety, and this in turn leads to increases in behavioral inhibition.

While the BIS is a punishment mechanism, its counterpart, the behavioral activation system (BAS), relates to rewards and mediates approach behaviors (Gray, 1971). The existence of two such motivational systems as the BIS and BAS is indicated

by animal research in which electrodes implanted in different areas of the hypothalamus result in either self stimulation (positive reinforcement) or avoidance (negative reinforcement) in rats (Olds & Olds, 1962). Research indicates that these areas are anatomically distinct and that they possess rewarding and punishing properties, respectively (Gray, 1975). While both the BIS and BAS are arousal systems, the BAS functions to energize behavior while the BIS functions to inhibit behavior.

The BAS is theorized to be activated by stimuli signaling unconditioned reward or non-punishment, which would include appetitive behaviors (Gray, 1987). In Gray's theory, non-punishment becomes rewarding to the organism when an anticipated punishment does not occur (Gray, 1971). Subsequently, the stimuli associated with the relief of punishment becomes a conditioned stimulus for relief/reward. With regard to parenting, inconsistent parental discipline can inadvertently reward and provide positive reinforcement for problem behaviors. Reactivity in the BAS is also proposed to underlie impulsivity (Gray, 1987).

According to Gray (1987), the fight/flight system (FF) organizes behavior in response to unconditioned punishment and unconditioned non-reward. Reactivity of the FF system is reflected in the defensiveness of the individual. Thus, the FF organizes behaviors in response to unconditioned stimuli and the BIS and BAS organize behaviors in response to conditioned stimuli. Psychometric attempts to develop personality inventories based on these three proposed systems indicate two orthogonal factors related to anxiety and impulsivity (Strelau, 1998).

The value of Gray's theory for DBD research is threefold. First, it provides a conceptual mechanism to explain the dynamics of impulsivity (high BAS), which is

common among DBD children. Second, Gray's model is useful in explaining why some children with DBD experience anxiety concomitant with impulsive acting out (high BAS, moderately high BIS). Finally, Gray's model can be used to explain the callous and unemotional behaviors of some DBD children (high BAS, low BIS).

Transactional Models and Disruptive Behavior Disorder

The presence of such a wide number of risk factors, in a number of markedly different domains, underscores the complexity of understanding the development of DBD. Clinicians have turned to transactional models of development in an attempt to explain the complex interplay between risk factors, and to increase clinical predictive power for early identification of DBD children. Transactional models of development, as proposed by Sameroff and Chandler (1975), acknowledge the bidirectional nature of interpersonal relations and interactions within the environment. This represents a move away from simple cause-and-effect models towards more complex interactive models, models that better represent the human environment.

Patterson and Bank (1989; 1991) present one such transactional model. Using structural equation modeling, a process model was developed to explain the developmental sequence leading to delinquency. The model is based on the development of coercive cycles between parents and children, cycles which increase hostility and aggression in children, and which negatively affect peer relationships and school performance. Once these cycles begin, the nature of the problems produced by the cycles actually promotes maintenance of the cycles, making change more difficult.

Patterson and Bank's model was developed on two cohorts of approximately 100 children, who were followed from fourth to sixth grade. Parents, teachers, peers, and the

children themselves served as informants. The model includes three steps. In step 1, ineffective parenting results in aggressive and hostile behavior on the part of the child. Specifically, ineffective parental discipline and monitoring of the child produces child non-compliance and conflict escalates. Because parental threats of discipline are not followed through, child non-compliance increases, as does parent-child conflict, ultimately resulting in hostility and rejection on the part of the parents. In step 2, the child's antisocial interpersonal style, which was established in home interactions, is generalized at school and in peer relationships. Peer rejection and poor school performance represent failures of the two major developmental tasks for this age child. These failures foster depression, anger, and further inhibition of the development of prosocial skills. The child begins to form social relationships with similar children, producing step 3, which is identification with a deviant group. The antisocial nature of the group promotes drug use, delinquent behavior, and police contacts. While not all the behavior disordered children in the two cohorts followed the three-step path, 64% did.

Not included in Patterson and Bank's model are child characteristics and environmental risk factors, areas that have been identified as important aspects in the development of DBD. These two correlates of DBD can easily be incorporated into the model. Child characteristics, such as difficult temperament, can promote parent-child conflict and serve to maintain coercive cycles. Likewise, environmental risk factors can stress the family unit, thereby reducing parental tolerance and ability to monitor effectively. Environmental risk factors can also stress the child, resulting in greater fussiness and irritability for the parents to handle. Since it is apparent that there is no main effect for any one domain or risk factor in the development of DBD, more complex

transactional models are mandated. Overall, transactional models provide the qualities necessary to describe and explain the development and process of DBD.

Attachment Theory and Externalizing Behaviors

While clinical studies have researched disruptive behavior disorders in children for many years, the area is a more recent topic within attachment research. Much of early attachment work focused on individual differences in the early social-emotional development of infants, particularly in dyadic relationship with the mother. With the identification of several non-optimal infant developmental patterns, and the subsequent association of these patterns with internalizing and externalizing problems during childhood, attachment researchers have brought attachment theory into the realm of DBD.

Attachment theory lends itself naturally to the study of DBD due to several commonalities in focus. One key area of emphasis for both attachment and DBD research is social functioning of the child. The symptomology of both ODD and CD represent a child's inability to function socially in an age-appropriate manner. Similarly, attachment research explores the optimal and non-optimal social development of children. Another area of common focus is parenting and parental behaviors. DBD correlates positively with harsh parenting, inconsistent discipline, and inattentive parenting. Likewise, some of the attachment patterns are associated with similar parenting qualities of hostility, inconsistency, and neglect. Finally, both insecure attachment and behavior problems are much more common in high-risk populations. Thus, both attachment and DBD research focus on the interplay of child, parent, and sociocultural factors that result in non-optimal child development. The value of including attachment theory in DBD research designs is

that it adds a theoretical and developmental conceptualization to the process of DBD, which can be used to guide research designs, interpret findings, and direct interventions.

Attachment Theory

Attachment theory represents an evolutionary approach to human interpersonal development. Bowlby (1969) viewed attachment as a motivational system, an innate internal structure that is the result of evolutionary adaptation to insure species survival. Present at birth, it begins as a biologically innate mechanism for the infant to maintain proximity to a primary caregiver when the infant experiences stress. The caregiver provides protection and comforting, and it is the protective presence of the caregiver that serves to enhance the survival chances of the infant, and ultimately the species. Typically, the primary caregiver for an infant is the mother.

The attachment system is activated when the infant is stressed, prompting the infant to seek proximity to the caregiver. Ultimately, the caregiver's goal is to deactivate the attachment system by providing appropriate care and soothing (Solomon & George, 1999b). Thus, the early attachment system represents the child's mechanism for coping with arousal, and quality of maternal care is intimately connected to optimal or non-optimal arousal levels and experienced stress of the infant.

As the child matures cognitively, the attachment system becomes organized at the representational level, in addition to the behavioral level of infancy (Solomon & George, 1999b). This representational level is referred to as the internal working model (IWM). The IWM structures cognitive organization of memory. This process begins in late infancy and continues throughout the lifespan (Bowlby, 1969). According to Bowlby (1969), the IWM is a set of beliefs and expectations about self, others, and interpersonal

relationships. It is a working model because it is constructed and modified by experience throughout life, and it is also actively used to evaluate and test possible behavioral responses.

Thus, an infant's early experiences with the attachment figure provide the foundation for the model, which guides and organizes mental representations and behavior in subsequent relationships. For example, the infant of a mother who is loving and responsive, develops an IWM of the self as lovable and worthy of care, and of the caregiver as available and caring. It is through the IWM that individual social and emotional behavioral patterns are established and maintained. New experiences are assimilated into the model unless they are incongruent, at which point restructuring of the IWM may occur. Bowlby (1969) theorized that as a person ages the IWM becomes progressively more resistant to change, for several reasons. First, as an individual ages, the IWM is based on a larger number and wider array of experiences, and is thereby less likely to change. Second, the IWM organizes and directs attention, thereby filtering experiences of the individual.

Infant Attachment

Ainsworth and colleagues (Ainsworth et al., 1978) developed a laboratory procedure, the Strange Situation (SS), to evaluate the emerging IWM of the infant. The SS is designed to create increasingly more stressful situations for the child, with the most stressful situation involving separation from the mother. Once the attachment system is activated, the child typically engages in searching behavior, which may be combined with proximity seeking, directed toward the caregiver in order to alleviate distress. The SS provides the researcher with the opportunity to observe the functioning of the attachment

system and how the infant organizes and uses the attachment figure when under duress. Thus, infant attachment behaviors represent the development of organized social and emotional behaviors of the child.

In the SS, the mother-infant dyad is evaluated using rating scales addressing four dimensions of interaction: proximity- and contact-seeking behaviors, contact-maintaining behavior, avoidance, and resistance. Using these dimensions, Ainsworth et al. (1978) identified three distinct patterns of attachment behaviors in mother-infant dyads, and labeled them secure, avoidant, and ambivalent. An additional fourth attachment category, disorganized/disoriented, has also subsequently been identified (Main & Cassidy, 1988). For the child, the different categories of attachment behavior are theorized to reflect the child's sense of security and IWM regarding interpersonal relationships. The development of a specific pattern is the product of numerous experiences with the primary attachment figure, and her availability and responsiveness to the child's needs. Thus, each pattern represents a coherent strategy by the infant to maintain contact with the caregiver when stressed. Each pattern also represents an accommodation by the infant to maternal interpersonal characteristics.

Several research findings support the hypothesis that maternal characteristics such as sensitivity and responsiveness, and not infant characteristics, provide the major defining force in the development of an attachment pattern. First, infant attachment can be reliably predicted from maternal attachment status (van IJzendoorn, 1995), even prior to birth (Ward & Carlson, 1995). Second, the relative effects of maternal problems have a significantly greater impact on attachment security than child problems (van IJzendoorn, Goldberg, Kroonenberg, & Frenkel, 1992). Finally, attachment patterns are noted to

change in predictable ways across early childhood in response to the development of maternal stressors or buffers (Egeland & Farber, 1984).

The vast majority of attachment research utilizes an organizational perspective (Cicchetti, Cummings, Greenberg, & Marvin, 1990; Sroufe & Waters, 1977a). Within this perspective, attachment is viewed as a lifelong process of adaptation to developmental and environmental demands, with different periods of development presenting unique social and emotional developmental demands (Cicchetti et al., 1990). Successful adaptation at one stage enhances, but does not mandate, successful adaptation at the next stage. Continuity in quality of adaptation (as defined by attachment pattern) is demonstrated in numerous studies (Arend, Gove, & Sroufe, 1979; Grossmann & Grossmann, 1991; Main & Cassidy, 1988; Matas, Arend, & Sroufe, 1978; Pastor, 1981; Urban, Carlson, Egeland, & Sroufe, 1991; Wartner, 1994). In general, greater continuity in attachment category is associated with low risk populations (Solomon & George, 1999a). For example, Main and Cassidy (1988) report a stability rate of 84% between the ages of 12/18 months and 5 years in a middle class population. Conversely, Egeland and Farber (1984) report a 53% stability in attachment pattern between only 12 and 18 months in a high-risk poverty sample. Less environmental and family stability in the high risk sample was associated with attachment classification changes, for better and worse.

While the SS is firmly established as a measure of infant and toddler attachment, other measures for older children are in the developmental stage. Currently, the Cassidy-Marvin system (Cassidy & Marvin, 1992) is available for preschool age children and the Main-Cassidy system (Main & Cassidy, 1988) is available for kindergarten age children. Both attachment measures assign attachment classification in a manner similar to the SS.

Another measure created by Crittenden (Crittenden, 1994) is also available for preschoolers, but it uses distinctive attachment categories and correlates poorly with the Cassidy-Marvin system. None of the measures are extensively validated. Additionally, attachment behaviors modify as the child ages, making validation with criterion variables difficult, if not impossible, across measures. The lack of continuity in attachment measures over childhood presents a dilemma for research in the area, and probably reduces significant findings for studies utilizing attachment measures for more than one age group.

Adult Attachment

While there are numerous adult attachment measures (Bartholomew & Horowitz, 1991; George, Kaplan, & Main, 1985; Hazan & Shaver, 1987), only the Adult Attachment Interview, or AAI, (George et al., 1985) is extensively validated. It was a serendipitous finding by Mary Main that a child's attachment could be identified by the mannerisms with which the caregiver spoke of their own memories of early attachment experiences (Hesse, 1999). This finding resulted in the development of scoring and classification criteria for evaluating the quality of discourse style for adults (George et al., 1985).

The AAI is a semi-structured interview that is designed to evaluate the parental state of mind with respect to attachment. Adults are asked to describe and evaluate childhood attachment relationships, including separations and losses with regard to attachment figures (George et al., 1985). On the AAI, attachment classifications are not distinguished by the factual history, but rather by the patterning of the interview, coherence, and the availability of attachment related emotions and memories. Four adult

patterns have been identified (autonomous, dismissing, preoccupied, and unresolved), each corresponding to an infant attachment pattern (secure, avoidant, ambivalent, and disorganized, respectively).

Although the AAI and the SS represent two very different assessment modalities, concordance between the two is significant. In a meta-analysis of concordance between SS and AAI, van IJzendoorn (1995) obtained a correspondence of 70% for studies using a three-way classification (no disorganized group) and 63% for studies using a four-way classification for attachment. In this meta-analysis, the level of training for those scoring AAI protocols moderated effect sizes, with less training associated with smaller effect sizes (van IJzendoorn, 1995). A similar correspondence level of 68% has also been found for mothers assessed prenatally with the AAI, and their infants SS attachment classification 15 months later (Ward & Carlson, 1995).

Attachment Patterns

Following is a description of the four major attachment patterns, including child characteristics, adult characteristics, as well as the associated parenting qualities. Developmental outcomes identified for each major child category will also be described.

Secure/Autonomous

Parents identified as autonomous on the AAI, are able to speak coherently and objectively about early attachment experiences, even if these experiences are emotionally difficult (Hesse, 1999). They are able to freely explore attachment experiences and they regard attachment relationships as valuable. Parents of secure children (who are generally autonomous in the AAI) are flexible and objective in how they think about themselves as caregivers and of their childrens' needs (George & Solomon, 1999). When discussing

their role as a parent, their responses are forthright, and lack the appearance of defensive processing (George & Solomon, 1999). Ainsworth (1978) found that the mothers of secure infants scored highest on scales of sensitivity, acceptance, cooperation, and accessibility (Ainsworth, Bell, & Stayton, 1971). It is theorized that sensitive caregiving is an important key in the development of security. Sensitivity, by nature, precludes rejecting, ignoring, or interfering parental behaviors.

In the SS, secure infants display distress when separated from the mother (Ainsworth et al., 1978). They clearly want proximity or contact with the mother and actively seek this contact. Upon reunion, this group enthusiastically greets the mother with smiles or sometimes crying, depending on the level of stress the infant experiences. The mother is also able to effectively soothe her child. For the secure infant then, there is appropriate expression of attachment needs and the caregiver effectively alleviates the child's distress.

Secure infant attachment is associated with a number of more optimal developmental outcomes. Secure infants and toddlers are noted to engage in more effective exploratory behaviors (Ainsworth et al., 1978), presumed to provide a developmental advantage. It is hypothesized that the sense of felt security engendered by the caregiver enables the secure infant to explore without distraction. As toddlers and in preschool, secure children are more socially adept (Main, 1983; Pastor, 1981; Urban, Carlson, & Sroufe, 1992; Waters, Wippman, & Sroufe, 1979), exhibit more effective problem solving behaviors (Matas et al., 1978), and demonstrate more positive affect (Main, 1983; Matas et al., 1978), than children identified as insecure. In school years, security is associated with better peer relationships (LaFreniere & Sroufe, 1985; Main,

1983; Waters et al., 1979) and less dependency on adults (Urban et al., 1992). Likewise, relationships with parents are characterized by appropriate and warm interactions, as well as cooperative behavior (Main & Cassidy, 1988). To sum, security is associated with the development of personal and social competencies, as well as more positive affect and cooperativeness across the childhood years.

Generally, security in the child is associated with sensitive caregiving and maternal acceptance. These parental characteristics are diametrically opposed to the parenting characteristics associated with DBD. Similarly, the personal and social competencies found in secure children are often negatively correlated with behavior problems. It is not surprising that moderately negative correlations exist between attachment security (as measured continuously) and various measures of externalizing behaviors (Easterbrooks, Davidson, & Chazan, 1993; Greenberg, Speltz, Deklyen, & Endriga, 1991; Lyons-Ruth et al., 1993). In preschool and school-age samples, the vast majority of secure children (91% and 83-87%, respectively) do not exhibit significant externalizing behavior problems (Lyons-Ruth et al., 1993; Moss, Rousseau, Parent, & St. Laurent, 1998). In clinic samples of preschool boys referred for ODD, only 5% and 20% were identified as secure (Greenberg et al., 1991; Speltz et al., 1990).

These figures indicate that while behavior problems are markedly less prevalent among securely attached children, significant behavior problems exist in a minority of cases. Greenberg et al. (1991) conducted a microanalysis of the five secure children diagnosed as ODD. Case histories indicated that three of the preschoolers experienced significant psychosocial stressors just prior to the development of behavior problems. The other two children came from extremely high-risk families, both of which were

significant for maternal insecure attachment and depression. These case histories illustrate clearly the impact of environmental stressors on child functioning. From a theoretical standpoint, persistence of behavior problems would be less likely for secure children. Rather, the behavior problems would be expected to desist once the stressor was removed.

Avoidant/Dismissing

A dismissing discourse for adults on the AAI is characterized by minimal discussion of attachment related experiences and the minimization of the importance of attachment relationships (Hesse, 1999). A common occurrence is lack of memory for childhood events. Occasionally, there is derogation of attachment figures. The dismissing adult often idealizes the parent, but is either unable to support such idealizations, or childhood history may actually be contradictory. Such narratives are considered incoherent because evaluations of attachment relationships are not matched with descriptions of parental behaviors (Crowley, Fraley, & Shaver, 1999). Also, the potential negative effects of parental behaviors or unpleasant attachment experiences are denied or minimized (Hesse, 1999).

When interviewing mothers of avoidant children, George and Solomon (1999) found that they dismissed or minimized their children's attachment needs. Discussions of parental roles were highly defensive, and the strategies they used to care for their children were distancing strategies. While the mothers of avoidant children did not neglect to care for their children, they provided care on the condition of distance. These caregiving practices are congruent with behaviors observed in the SS, where physical contact with the infant is disliked and the mothers are rejecting (Ainsworth et al., 1978). Mothers of

avoidant children are also the most interfering and do not acknowledge the infants initiatives (Ainsworth et al., 1971).

In the SS, avoidant infants display little or no distress or proximity seeking when reunited with their mothers after separation. These children engage in a relatively high level of exploratory play and locomotion, and appear aloof to the mothers absence as well as her return. Because maternal interaction is associated with rejection and/or rough or painful handling, the avoidant child is believed to experience conflict when the attachment system is activated. While the attachment system prompts the child to approach the caregiver for soothing, the unpleasant consequences of interaction with the caregiver prompts distance. Upon separation from the mother, it is theorized that the avoidant child engages in play behavior as an attempt to relieve anxiety and as a way to prevent revealing the desire for maternal contact. Although the child appears to be undisturbed by separation from the mother, heart rate data indicate that the avoidant child is highly distressed (Spangler & Grossmann, 1993; Sroufe & Waters, 1977b). In short, the attachment strategy of avoidant children is to minimize the expression of attachment needs (Dozier, Stovall, & Albus, 1999). Ultimately, the child is unable to use the caregiver for soothing, and relies on self-soothing techniques which are far less effective. While this is obviously a non-optimal relationship, it still represents an organized and adaptive pattern for the child in that the child is able to maintain a form of proximity, under the maternal conditions of physical and emotional distancing.

While the majority of attachment studies address the differences between secure and insecure groups as a whole, several studies have identified characteristics specific to the insecure-avoidant group. Insecure avoidant attachment is associated with greater

anger and hostility in childhood (Ainsworth, 1979; Erickson, Sroufe, & Egeland, 1985) and adulthood (Kobak & Sceery, 1988). Lafreniere and Sroufe (1985) found that children with an avoidant attachment classification demonstrated the poorest social competence among attachment groups. An interesting study on peer victimization identified only avoidant children as victimizers in preschool (Troy & Sroufe, 1987), suggesting poor empathic development for this group. During school years, children identified as avoidant in infancy evoked significantly more anger from teachers (Urban et al., 1992) and were identified as having more behavior problems (Erickson et al., 1985). Overall, avoidant children can be described as more emotionally withdrawn, they experience greater anger from adults, and they are more hostile and angry themselves.

The research findings regarding avoidant attachment and behavior problems are mixed. Early attachment research identified avoidant attachment in infancy as a risk factor for both aggressive and passive behaviors in preschool boys (Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989). Maternal hostility, which is characteristic of dismissing caregivers, was also significantly predictive of aggression in both preschool boys and girls (Renken et al., 1989). These findings were for a high-risk sample, and subsequent studies using higher SES families have generally not supported the relationship between avoidance and clinically significant aggression (Lyons-Ruth, 1996). Additionally, the Renken et al. (1989) study was conducted before the identification of the disorganized classification, which may have confounded results.

From a theoretical standpoint, the hostility and anger associated with avoidant and dismissing attachment status are also the interpersonal and familial characteristics associated with DBD. The poor social competence and victimization noted for avoidant

attachment also corresponds with DBD and adult antisocial characteristics. While there is meager data to support a relationship between child avoidant attachment and DBD, there are indications that parental avoidance may be associated with DBD and also later antisocial behaviors. DeKlyen (1996) reports that dismissing parental classifications are more prevalent for clinic referred children for ODD. Additional clinical research findings demonstrate that, in a psychiatric inpatient population, dismissing attachment in adolescence is significantly associated with CD (Allen, Hauser, & Borman-Spurrell, 1996). Finally, adult criminal behavior is significantly more common in adults with dismissing classifications (Allen et al., 1996). The key between avoidant attachment and childhood behavior problems may not be avoidance in the child, but rather avoidance in the parent.

Ambivalent/Preoccupied

Adults identified as preoccupied on the AAI, also present incoherent accounts of their early attachment histories. Specifically, their discussions of past attachment experiences are often not objective and a preoccupation with attachment experiences or figures is present (Hesse, 1999). This preoccupation results in discourses on the AAI that are characterized by extensively long and un insightful discussions of early experiences marked by vagueness, anger and/or confusion. Preoccupied adults demonstrate poor insight into relationships, particularly the impact of their own role within a relational system.

The maternal relationship for ambivalent children is marked by ignoring, inconsistency, and/or interference on the part of the caregiver. Ambivalent mothers were found by Ainsworth et al (1978) to be inconsistent and incompetent, often misjudging

their child's signals and intrusive in their caregiving. However, these mothers do not overtly reject the child, as do the mothers of avoidant children. The mothers of ambivalent children exhibit heightened caregiving, and they utilize strategies that promote closeness and dependency (George & Solomon, 1999). Although these mothers want to be close to their children, they are at the same time insensitive to their child's cues.

Ambivalent children are distinctive in their preoccupation with the parent during the SS and their heightened expression of anxiety (Ainsworth et al., 1978). The child's preoccupation often appears ambivalent, a mixture of contact seeking and anger. For example, an ambivalent child may seek to be held by the mother, but once held will turn away from or hit the mother. This engrossment with the caregiver results in little exploration or play activities. Overall, ambivalent children demonstrate the highest distress levels of all the attachment groups, even when the mother is present. The strategy employed by the ambivalent group is a maximization of the expression of attachment needs (Dozier et al., 1999), and the mother is generally ineffective in her attempts to alleviate the child's distress.

Insecure-ambivalent attachment is the least commonly identified attachment pattern in infancy and childhood, and limited research is available specific to this attachment pattern. The available data indicate that ambivalent children are more negative towards the caregiver and ignore peer social overtures more often than other attachment groups (Pastor, 1981). Ambivalent children also exhibit the poorest attention structure (LaFreniere & Sroufe, 1985) and are rated high on ego undercontrol and low on ego resiliency (Arend et al., 1979). Socially, ambivalence is associated with peer

victimization (Troy & Sroufe, 1987) and the poorest functioning on measures of social dominance and leadership (LaFreniere & Sroufe, 1985).

As mentioned previously, ambivalent attachment is not as common as other attachment categories, and little research has addressed the developmental aspects of this group. The clinical literature for DBD indicates that ambivalent attachment is more common among groups identified with significant behavior problems, but in these studies the difference was not statistically significant (Moss et al., 1998; Speltz et al., 1990).

Disorganized/Unresolved

The original attachment patterns identified by Ainsworth et al. (1978) were derived from observations of white middle class infants. Using this classification, researchers were able to classify all but a few infants in normal middle-class populations. However, researchers investigating high-risk and abused populations reported a large number of infants who could not be classified due to atypical and unusual behaviors (Lyons-Ruth, Repacholi, McLeod, & Silva, 1991). Upon reviewing those children identified as unclassifiable, Main and Solomon (1990) created a fourth attachment category, which they labeled disorganized (D). This category is characterized by the apparent failure on the part of the infant to develop an organized strategy for maintaining proximity to the caregiver under conditions of stress. On average, 15% of infants are identified as D in normal populations, while 40% of infants from at-risk families are D (van IJzendoorn et al., 1992).

Infants identified as D exhibit a wide array of anomalous and conflicted reunion behaviors, including contradictory behavior patterns, incomplete and interrupted actions, stereotypies, freezing, fear in the presence of the caregiver, and confusion (Main &

Solomon, 1990). It is hypothesized that D attachment behaviors are elicited by frightened and/or frightening behavior by the caregiver, which stimulates conflicting behavioral systems in the infant (Main & Hesse, 1990). Specifically, stress or anxiety activates the attachment system which produces approach behaviors directed toward the caregiver. But at the same time, the caregiver is either exhibiting fear or stimulating fearfulness in the infant, and is a source of alarm for the infant. This places the infant in a paradoxical approach/withdraw position, ultimately producing the conflicted behaviors specific to D attachment.

Main and Solomon (1990) noted that disorganization often occurs within the context of one of the organized strategies, and that typically an infant will utilize one of the organized attachment patterns (secure, avoidant, ambivalent) concomitant with disorganization. For this reason, a best fitting alternate pattern is included in the classification. Thus, an infant can be described as D-secure, indicating an underlying secure attachment strategy. It is noted by some researchers that infants identified as D-secure have a distinctly different developmental pathway than those infants identified as D-insecure (Lyons-Ruth et al., 1991). The D-secure pattern is more common in lower risk populations and is more strongly associated with unresolved mourning on the part of the attachment figure. In populations with serious social risk, the D-avoidant pattern is much more prevalent, comprising 55% to 95% of study samples (Lyons-Ruth et al., 1991). With regard to child hostility and behavior problems, D-secure has been demonstrated to be equally at risk as the D-insecure patterns (Lyons-Ruth et al., 1993). Likewise, all D subgroups are similarly associated with negative maternal interactions and lags in the child's cognitive development (Lyons-Ruth et al., 1993), characteristics reminiscent of

behavior disordered children.

In a longitudinal study addressing changes in attachment patterns over time, Main and Cassidy (1988) found that D infants become relatively well organized by age six. However, the organization of their behaviors was atypical from other patterns in that they represented attempts to direct or control parental behavior. Often the children engaged in role-reversing types of behaviors. Main and Cassidy (1988) designated a new attachment category, insecure-controlling, to accommodate this older group of children. Within the insecure-controlling group, two subpatterns of controlling behavior were observed: controlling-punitive and controlling-overbright/caregiving (Main & Cassidy, 1988). In the controlling-punitive subgroup, the child acts as if to humiliate, embarrass, or to reject the parent. In the controlling-overbright/caregiving subgroup, the child behaves in an overly solicitous or protective manner, as if the adult is dependent upon the child for care. The controlling pattern was also associated with role-inappropriate behavior by the parent, who often treated the child as a playmate or companion.

As with other attachment categories, infant disorganization is associated with a corresponding adult pattern, referred to as unresolved. Adults identified as unresolved show marked lapses in their reasoning with regard to loss (such as death) or traumatic experiences, and speak in a confused and disorganized manner (Hesse, 1999). For example, they may speak of a deceased person as being alive or they may lapse into long periods of silence.

Mothers of D children describe themselves as incompetent in their caregiving, helpless to protect their children, and are concerned about losing control of themselves and their environments (George & Solomon, 1999). Some of the mothers described their

children in similar terms, as unmanageable and out of control. Conversely, another group of mothers found their children to be remarkably mature and attentive to their (the mother's) needs. In either case, George and Solomon (1999) described the mothers of D children as having abdicated caregiving, and found that they were primarily concerned with their own emotional needs.

In a review of the literature on mothers of D children, Lyons-Ruth, Bronfman, and Atwood (1999) found support for the relationship between D infants and frightened and/or frightening behaviors by the mother. Research suggests two subgroups of maternal styles for D children. The first subgroup is comprised of mothers exhibiting primarily frightened withdrawal, which is more strongly associated with D-secure attachment. The second subgroup is comprised of mothers who exhibit high rates of frightening behaviors, hostile intrusive caregiving, role reversal, and communicate confusing affective signals. The second subgroup of mothers is more strongly associated with D-insecure attachment in children.

Despite the relatively recent identification of the D attachment category, a number of research findings indicate a significant relationship between disorganized child attachment and behavior problems (DeKlyen, 1996; Easterbrooks et al., 1993; Greenberg et al., 1991; Lyons-Ruth et al., 1993; Solomon, George, & De Jong, 1995; Speltz et al., 1990). A study of low-income families revealed that 71% of the cases of serious hostile behavior in a group of preschoolers had a disorganized attachment history (Lyons-Ruth et al., 1993). Similarly, kindergarten children identified as controlling were rated as having significantly more behavior problems and scored significantly higher on measures of aggression (Solomon et al., 1995). In middle-class samples of clinic referred ODD

preschoolers, between 80% and 84% of the samples were rated as insecure, with 32% to 40% of the sample identified as controlling (Greenberg et al., 1991; Speltz et al., 1990). These percentages far exceed the prevalence rates of 4 to 12% in control groups.

While little research is available on adult attachment and psychopathology, a study by Rosenstein and Horowitz (1996) found an association between both avoidant and unresolved attachment and CD in psychiatrically hospitalized adolescents. For those adolescents with a diagnosis of only CD, all except one (who was preoccupied) were identified as dismissing. For adolescents diagnosed with CD plus an affective disorder, both dismissing and unresolved attachments were equally represented and accounted for all but one case (again preoccupied).

Attachment and Temperament

Ainsworth observed, both in her early study of Ugandan infants (Ainsworth, 1967) and later in her landmark Baltimore study (Ainsworth et al., 1978), that maternal sensitivity and competence promoted secure infant attachment. Research findings from the Baltimore study, which was largely a middle class population, did not find that infant temperament or irritability was associated with security or insecurity (Ainsworth et al., 1978). The subsequent finding that infant attachment could be predicted with reasonable reliability from maternal state of mind, while the child was still unborn (Ward & Carlson, 1995), further supported Ainsworth's stance.

In an attempt to clarify the relative effects of maternal and child characteristics on attachment security, van IJzendoorn, Goldberg, Kroonenberg, and Frenkel (1992) performed a meta-analysis of attachment in clinical and normal samples. Included were research samples with maternal problems (maltreatment, mental illness, and teen

mothers) and child problems (prematurity, physical problems, and Down syndrome). Although the samples did not include difficult child temperament, the premise that child characteristics affect attachment security can still be evaluated. Results indicated that groups characterized by maternal problems had highly divergent attachment classification distributions, with far more incidences of insecure and disorganized child attachment than normal samples. However, significant differences also existed between the child problem groups and normal samples, although these differences were not as dramatic or severe as with the maternal problem groups. Specifically, the child problem groups exhibited more disorganized attachment (van IJzendoorn et al., 1992). This indicates that both child and maternal characteristics impact attachment security in the child, but maternal characteristics are more predictive.

Studies addressing temperament and attachment indicate that there may be a more subtle and complex role of temperament in attachment security. Crockenberg (1981) found that insecurity increased for irritable infants, but only for mothers with low social support. For mothers who received adequate social support, infant irritability had no impact on attachment security. And even more interestingly, research indicates that temperament has a greater impact on attachment security as the child ages. Vaughn et al. (1992) found that negative affectivity is more highly correlated with insecurity as infants move into toddlerhood, although the correlation between temperament and attachment was not large (Vaughn et al., 1992).

A Developmental Model for Disruptive Behavior Disorders

Attachment and DBD research both indicate that transactional models are required to explain the complexities of human behavior. It is clear from the data that

interactions between parent and child characteristics both impact outcomes. It is also clear that psychosocial stressors challenge the adaptive functioning of the parent-child dyad, and serve to promote non-optimal development. Other than the early- and late-starter models proposed by Moffitt (1993) and Patterson and Bank (1989; 1991), no transactional developmental model is currently used to interpret and explain the many risk factors associated with DBD, and how they may interact with each other. This research proposal represents an attempt to place what is known about DBD from the clinical and attachment research literature into a developmental model for empirical validation. The potential value of this proposal is threefold; first, it is theoretically driven which allows predictions to be made which can then be tested; second, the theoretical base of attachment can be used to guide interpretations; and third, findings can advise current therapies in addition to directing early developmental interventions.

Broadly, both ODD and CD represent either seriously impaired or failed socialization. The list of clinical symptomology directly relates to either impaired interpersonal relationships or the inability to abide by societal rules. This proposal, then, deals with the interplay of factors which ultimately undermines the socialization process for the child. Research findings indicate that both attachment and temperament, particularly in the context of psychosocial stressors, place a child at risk for the development of DBD. Parental insecure attachment and problematic child temperament will be the core features of the model. Since this model addresses the age range from infancy to preadolescent, it is pertinent only for ODD and Childhood-Onset CD groups.

Developmentally, the model will use non-optimal attachment and at-risk temperaments as broad risk factors (see Appendix A). Non-optimal attachment will

include both insecure and unresolved parental attachment patterns. For both of these attachment categories, the maternal relationship is experienced as frustrating, angering, and/or frightening to the child, resulting in poorer social competence and functioning. Two child temperament risk factors will be included in the model marking two developmental pathways for early-starters. The first pathway will revolve around difficult child temperament, which involves intense and negative reactivity. The second pathway will involve child CU traits, which includes the characteristic of low anxiety/fearfulness. Both of these temperament features will be exacerbated by the presence of at least moderate impulsivity in the child and psychosocial stressors for the family environment, which will create additional stress in the family system.

Difficult Temperament Pathway

The key component of the difficult temperament pathway is an overwhelmed caregiving system in which adequate support for mother and child does not exist. For mothers who report their child as difficult, questions have been raised regarding the accuracy of those reports. However, the simple fact that a child is described as difficult is an excellent indicator that the parent is stressed within the caregiving role. For the purposes of this study, it is assumed that parental reports of difficult temperament are valid, but that the degree of reported difficulty is likely to reflect parental problems to some degree.

In this pathway, the child possesses a difficult temperament. Difficult temperament is associated with intense reactivity to the environment, particularly negative reactions. The caregiver, who is already stressed emotionally and who has insufficient environmental support, is overwhelmed by the emotional reactivity of her

child and caregiving is stressed further.

The attachment pattern of the mother is primarily unresolved. This attachment pattern is associated with loss and trauma, and the mother is emotionally challenged and unavailable for her child. This dynamic is intensified in at-risk families, increasing the stress level on the caregiving system. Additionally, the frightened/frightening behavior of the caregiver serves to arouse the child more. This further activates the child's attachment system, resulting in additional need for soothing, creating a vicious cycle for the dyad.

Typically, the child's attachment status in this pathway will be disorganized. As the child reaches toddlerhood, the conflicted behaviors associated with D attachment emerge, representing simultaneous arousal of the BIS and BAS systems. In addition to high arousal, the sense of a threatening environment presented by the caregiver is incorporated into the internal working model of the child, which results in hostile/threatening cognitive biases. The high arousal and perception of threat, combined with impulsivity, produces defensively hostile and oppositional interactions. Aggression will be primarily reactive aggression. This is the controlling-punitive behavior described in the attachment literature. This behavior becomes established as an interactional style for the child and is generalized into other adult and peer relationships. At this point, the coercive cycles described by Patterson and Bank (1989; 1991) are established.

Callous/Unemotional Pathway

The critical component of the CU pathway is the lack of empathy development in toddlerhood, combined with parenting characteristics that foster anger in the child. The low emotional reactivity of CU children places them at risk for poor empathy development, and hostile and/or insensitive parenting potentiates this risk and promotes

callousness and anger. The CU pathway child experiences markedly lower fear and anxiety than the average child. This could be conceptualized as the combination of an under-reactive BIS, resulting in low anxiety, and an over-reactive BAS, resulting in impulsivity. These traits result in numerous incidents that the caregiver has to deal with, incidents that tend to be more acquisitional or risk-taking in nature. These incidents generally begin in toddlerhood once the child is mobile and are stressors for the family unit.

The maternal attachment relationship is primarily insecure. Dismissing parental attachment is associated with rejection of the child, harshness, and emotional distancing, while ambivalent parental attachment is associated with unavailability and intrusive parenting behaviors. Both attachment patterns serve to promote anger and hostility in the child. In this emotional climate, an empathic connection is not established between parent and child, resulting in poor empathy development for the child and impaired prosocial development. The IWM of the child regarding interpersonal relationships is that they are negative and unrewarding. The resulting impulsive and thoughtless acts on the part of the child serve to antagonize the parental relationship further, stimulating either ignoring or anger. In the case of avoidant caregivers, they are emotionally withdrawn and constricted and are more likely to establish a relationship with an equally emotionally unavailable partner. Thus, there is a much greater likelihood of the presence of APD in one of the parents of these children, further promoting the development of antisocial characteristics in the children.

The child in the CU pathway is likely to be avoidant. Avoidant attachment in children is associated with heightened anger and hostility. The impulsive nature of the

CU child makes anger inhibition difficult, often resulting in aggression. Aggression is primarily proactive. Because empathy does not develop and interpersonal relationships are not rewarding, inhibitions associated with not hurting others do not exist or are weak. This results in superficial emotionality, limited friendships, and a significant level of social conflict. By late childhood, this pattern should be firmly established. Once the CU pathway child reaches adolescence, persistence is highly likely.

Research Proposal for Testing the Temperament-Attachment Model

Children with DBD present with heterogeneous symptomology and risk factors, suggesting multiple pathways that produce similarly impaired socialization. This research proposal utilizes a transactional model for identifying subgroups of DBD children. The identification of subgroups will aid in the identification of at-risk children, and will enable more effective interventions.

In this model, the environmental context for children who develop DBD will possess significant psychosocial stressors. An additional common characteristic for children who develop DBD will be moderate to severe impulsivity. The remainder of the model is an interaction between parent and child risk factors. For parents, Insecure and Unresolved attachment patterns represent non-optimal parenting strategies that affect children with specific temperamental characteristics.

Children who are temperamentally prone to negative reactivity when stressed, are additionally frightened by an Unresolved caregiver. For parents who are Unresolved, these children are overwhelming and the caregiving system breaks down. This results in coercive cycles in which the child attempts to force the parent to interact and provide care, and the parent resists by withdrawing or becoming childlike. This combination of

difficult child-Unresolved parent results in a fearful/defensive cognitive bias and significant reactive aggression by the child.

For children who are temperamentally less anxious and fearful, normative inhibitions about violating the rights or hurting others do not sufficiently modify their interpersonal behaviors. A CU temperament combined with an insecure caregiver, results in significantly deficient empathy development and high levels of proactive aggression.

Hypotheses

Hypotheses 1 and 2 relate to the general characteristics predicted to correlate positively with conduct problems irrespective of the CU trait. Hypotheses 3 through 5 involve predicted risk factors for children high on the CU trait, and Hypotheses 6 through 8 refer to specific risk factors for children low on the CU trait (see Table 3 for a summary of Hypotheses).

Hypothesis 1

Behavior problems will significantly correlate positively with hyperactivity as evaluated by the ADHD Rating Scale – IV (DuPaul, Power, Anastopoulos, & Reid, 1998). It is predicted that this relationship will not be attenuated by the presence of CU traits and an interaction will not be significant.

Hypothesis 2

Negative psychosocial stressors will significantly correlate positively with conduct problems, as measured by the Life Events Scale (Sarason, Johnson, & Siegel, 1978). Again, it is predicted that this relationship will not be attenuated by the presence of CU traits and an interaction will not be significant.

Hypothesis 3

Fearlessness, as measured by the Thrill and Adventure-Seeking Scale of the Sensation Seeking Scale for Children (Russo et al., 1991; Russo et al., 1993), will significantly correlate positively with conduct problems, but only for children higher on the CU trait. Therefore there will be a significant interaction between fearlessness and the CU trait for predicting conduct problems.

Hypothesis 4

Insecure attachment, as evaluated by the AAI (George et al., 1985), will significantly correlate positively with conduct problems, but only for children higher on the CU trait. Therefore there will be a significant interaction between attachment insecurity and the CU trait for predicting conduct problems.

Hypothesis 5

Proactive aggression (PA), as measured by the Aggressive Behavior Rating Scale (Brown, Atkins, & Osborne, 1996), will significantly correlate positively with conduct problems, but only for children high on the CU trait. Therefore there will be a significant interaction between PA and the CU trait for predicting behavior problems.

Hypothesis 6

Negative reactivity, as rated by the parent on the School-Age Temperament Inventory (McClowry, 1995), will significantly correlate positively with conduct problems, but only for children lower on the CU trait. Therefore there will be a significant interaction between negative reactivity and the CU trait for predicting behavior problems.

Hypothesis 7

Disorganized attachment (U/D), as evaluated by the AAI (George et al., 1985), will significantly correlate positively with conduct problems, but only for children lower on the CU trait. Therefore there will be a significant interaction between disorganized attachment and the CU trait for predicting conduct problems

Hypothesis 8

Reactive aggression (RA), as measured by the Aggressive Behavior Rating Scale (Brown, Atkins, & Osborne, 1996), will significantly correlate positively with conduct problems, but only for children lower on the CU trait. Therefore there will be a significant interaction between RA and the CU trait for predicting behavior problems.

Table 3
Summary of Hypotheses

	High CU	Low CU
<u>Model Main Effects</u>		
Impulsivity	+	+
Life Events	+	+
<u>Attachment</u>		
Avoidance	+	-
Insecurity	-	+
<u>Aggression</u>		
RA	+	++
PA	++	+
<u>Temperament</u>		
Fearlessness	+	-
Neg. Reactivity	-	+
<u>Note.</u> + indicates scoring higher on a variable, and - indicates scoring lower.		

Method

Participants

Participants, consisting of a caregiver-child dyad, were recruited from the West Jefferson Child and Family Services, an outpatient state mental health clinic operated by the Jefferson Parish Human Services Authority of Jefferson Parish, Louisiana. Of 107 potential participants contacted, 49 participated. One participant was excluded from data analyses due to parental psychosis. The ages of the children ranged from 6 to 12 years with a mean age of 9.3 years ($SD=1.85$), and 25% ($n=12$) of the children were girls. Approximately 35% ($n=18$) of the children were Caucasian. IQ estimates for the children, which were derived from a short form of the WISC-III, ranged from 54 to 132, with a mean of 80 ($SD=15.72$). The participants were predominantly lower socioeconomic status, with a mean score on Duncan's SEI (Hauser & Featherman, 1977) of 24.40 ($SD=24.13$). None of the participating children had been diagnosed at the clinic as mentally retarded or psychotic. Participating parents/guardians included 39 mothers, 1 father, 5 grandmothers, 2 aunts, and 1 cousin.

Measures

Adult Attachment Interview

The AAI (George et al., 1985) is an hour-long semi-structured interview consisting of 18 questions about losses and early attachment experiences for adults. The interview begins by asking the participant for information about family relationships. The participant is then asked to give five descriptive adjectives for each significant attachment

figure, which is followed by a request for specific examples that illustrate the chosen adjectives. Losses, early separations from attachment figures, and the quality of relationships with attachment figures are then probed. Finally, the participant is asked to evaluate the impact of their attachment experiences on their current personality and functioning. Protocols are evaluated on seven scales that evaluate the quality of the interview discourse. A review of studies addressing the test-retest reliability of the AAI revealed that an average of 84% remained stable over periods ranging from 1 to 18 months (van IJzendoorn & Bakermans-Kranenburg, 1996). The predictive ability of the AAI for infant attachment is well established over numerous studies and averages approximately 75% (van IJzendoorn & Bakermans-Kranenburg, 1996).

The AAI protocols in this sample were scored by the principal investigator who was certified to score the AAI by the Adult Attachment Institute in 2002. Certification involves a two-week training session, followed by a series of reliability checks. The entire process takes approximately a year and a half. To be certified, a scorer must accurately classify at least 80% of cases across three reliability checks.

In this sample, 42% (n=15) of the caregivers were classified as secure and 58% (n=21) were classified as insecure. These figures are similar to those found in a meta-analysis of low SES mothers (van IJzendoorn & Bakermans-Kranenburg, 1996), in which 48% were classified as secure and 52% were insecure. For disorganization in this study, 36% of the caregivers were classified U/D. This falls in the upper end of the range of scores reported in the meta-analysis of van IJzendoorn and Bakermans-Kranenburg (1996). See Table 4 for a breakdown between security, insecurity, non-U/D, and U/D.

Table 4

Attachment Classifications for Participants

Attachment Category	Not U/D	U/D	Total
Total Insecure	13	8	21
Insecure - Avoidant	11	5	16
Insecure - Preoccupied	2	3	5
Secure	10	5	15

Note. U/D = Unresolved/Disorganized

ADHD Rating Scale – IV

The ADHD Rating Scale – IV (DuPaul et al., 1998) is an 18 item scale that is scored on a four point scale (0 = never or rarely, 1 = sometimes, 2 = often, 3 = very often) by the parent (see Appendix B). Standardized norms are available for both girls and boys ages 5 to 18 . Half of the items form the Inattention subscale and half form the Hyperactivity-Impulsivity subscale. Factor analysis supports the two factor structure, which conforms with DSM-IV diagnostic criteria. Internal consistency is high for both subscales (Inattention = .96, Hyperactivity-Impulsivity = .88), and test-retest reliability is also high for both teacher and parent ratings for children age 5 to 18 (DuPaul et al., 1998). Validity studies indicate that the ADHD – IV Rating Scale is predictive of clinical diagnosis and that it discriminates between DSM-IV diagnostic subtypes (DuPaul et al., 1998).

In this sample, internal consistency was high for both the Inattention and Hyperactivity-Impulsivity subscales ($\alpha=.86$ and $\alpha=.87$, respectively). In this study, only the Hyperactivity subscale was used. On the Hyperactivity subscale, the mean rating for boys in the normative sample ranged from 6.59 to 4.79 depending on the age range, with

means declining as age increased. For girls, the mean rating in the normative sample ranged from 5.00 to 2.88, again with means declining as age increased. The mean scores for boys and girls in this study were 21.14 and 19.09, respectively, which is approximately the 98th percentile in the normative sample for both genders.

Aggressive Behavior Rating Scale

The Aggressive Behavior Rating Scale (Brown et al., 1996) consists of 28 items which are scored on a three-point scale (0 = never, 1 = sometimes, 2 = very often). The scale evaluates proactive and reactive aggression in school-age children, and can be used with teachers, parents and/or children as informants (see Appendix C). In a public school sample with teachers as informants, factor analysis identified both PA and RA aggression factors, with internal consistencies of .94 and .92, respectively (Brown et al., 1996).

While the two factors were moderately correlated with each other ($r = .70$), differences existed between the two factors on outcome measures indicating independence of the two factors (Brown et al., 1996). The factors were significantly correlated with negative peer social status and school detentions, supporting the validity of the measure.

The internal consistency for the PA and RA scales in this sample was .89 and .78 respectively. The correlation between the two scales was still moderate ($r = .54$), but distinctly less than that found by Brown et al. (1996).

Antisocial Process Screening Device

The Psychopathy Screening Device (Frick & Hare, 2001) is a 20 item rating scale that evaluates the presence of psychopathic traits and behaviors in children and adolescents (see Appendix D). Both a parent's and a children's form are available. Each item on the APSD is rated as 0 ("not at all true"), 1 ("sometimes true"), or 2 ("definitely

true”). The APSD was developed as a downward extension of the widely used adult Psychopathy Checklist (Hare, 1991) and it has exhibited a similar two-factor structure in a clinic sample (Frick et al., 1994). The two factors include a Callous/Unemotional (CU) factor, which is related to the affective interpersonal attributes common in psychopathy, and an Impulsivity/Conduct Problems (ICP) factor, reflecting the behavioral problems associated with antisocial actions (Frick et al., 1994). These factors were independent, but moderately correlated.

A validation study recently performed in a community sample of children, grades 3 through 7, supported the main two-factor structure identified in the original clinic sample (Frick et al., 2000). However, the ICP factor was additionally subdivided into a narcissism dimension and an impulsivity dimension. All of the subscales of the APSD correlated significantly with DBD in the community sample, with narcissism exhibiting the strongest correlations and CU exhibiting the weakest correlations.

Only the CU scale was used in this study. Internal consistency for this scale was .76, in a community sample (Frick, Bodin, & Barry, 2000). The internal consistency for the CU scale in this sample was .40, which is markedly lower. Mean scores for girls and boys on the CU scale in a community sample were 2.7 (SD=2.2) and 2.2 (SD=2.1), respectively (Frick, Bodin, & Barry, 2000), with girls scoring significantly lower across ages. Means on the CU scale for-girls and boys in this sample were 6.36 and 6.31, respectively, with no significant gender effects. These numbers correspond to approximately the 95th percentile of a large community sample (Frick & Hare, 2001).

Behavior Checklist

A behavior checklist was created to evaluate the extent of the presence of behavior problems in the sample. The checklist included the diagnostic criteria from the DSM-IV (APA, 1994) for Oppositional Defiant Disorder, and Conduct Disorder (see Appendix E). The checklist was administered as an interview with the caregiver. A conduct problem score was obtained by summing the number of items endorsed on the ODD and CD sections of the checklist. Internal consistency for this measure was .74.

Life Experiences Survey

The Life Experiences Survey (Sarason et al., 1978) was developed to evaluate life stresses and measure life changes (see Appendix F). This version distinguishes between positive and negative life events, and also provides a rating scale for the impact of events. The survey consists of 50 items, each rated on a seven point scale from -3 (extremely negative) to +3 (extremely positive). Three scores are produced: a positive score (sum of positively rated items), a negative score (sum of negatively rated items), and a total score. Sarason et al. (1978) report moderate test-retest reliability in young adults (.63 for the Total change score) over a five week period. High correlations would generally not be expected since the measure is designed to evaluate life changes. Validity studies with young adults indicate significant correlations between negative scores and state anxiety, and also with self-reported depression (Sarason et al., 1978).

In this study, the negative change score was used in the data analyses. The mean negative change score in the normative sample of Sarason et al. (1978) was 9.61 (SD=9.59), while the mean negative change score for an outpatient client group was

16.61 (SD=9.37). For this sample, the mean score of 11.34 was comparable to the normative sample.

The School-Age Temperament Inventory

The School-Age Temperament Inventory (McClowry, 1995) is a parent report of children's temperament (see Appendix G). The measure consists of 38 items which are rated on a scale from 1 (never) to 5 (always). Standardized norms are available for ages 8 through 11. The SATI was designed to assess four dimensions: Negative Reactivity, Task Persistence, Approach/Withdrawal, and Activity. Factor analysis resulted in four significant factors corresponding to the four temperament dimensions, supporting the structure of the measure. Test-retest correlations, using maternal ratings, ranged from .80 to .89 over a four to six month period (McClowry, 1995). The temperament dimensions also correlated significantly with similar dimensions of the Temperament Assessment Battery for Children – Revised (Presley & Martin, 1994), providing convergent validity for the SATI.

Of the four temperament dimensions, only the Negative Reactivity scale is used in this research project. For this scale, internal consistency was .90 in a school aged validation study (McClowry, 1995), with ratings provided by mothers. In the current study, internal consistency was comparable ($\alpha = .85$). The mean for Negative Reactivity in McClowry's (1995) validation study was 37.08 (SD=8.88) with no effect for gender. The mean in the current study was 51.35, and likewise there was no gender effect (boys mean=51.62, girls mean=50.45).

The Sensation-Seeking Scale for Children

The Sensation-Seeking Scale for Children (Russo et al., 1991; Russo et al., 1993)

is designed to evaluate thrill and adventure seeking behaviors in elementary and middle school children (see Appendix H). The measure consists of paired items, one item indicating a preference for sensation-seeking behaviors (e.g., “I think riding fast on a skateboard is fun”) and the other item indicating a preference against sensation-seeking behaviors (e.g., “Some of the daring acts of skateboard riders seem scary to me”). The child endorses the statement which is most self-descriptive. The SSSC has three reliable factors. These factors are the Thrill and Adventure Seeking factor, the Drug and Alcohol Attitudes factor, and the Social Disinhibition factor (Russo et al., 1993). Only the Thrill and Adventure Seeking scale (TAS) was used in this study. Internal consistency in a community sample for the TAS was .81 (Russo et al., 1993). Validity studies have found significant correlations between The Thrill and Adventure Seeking factor and children’s psychopathic traits (Frick et al., 1994). The internal consistency for the TAS scale in this sample was .77.

Wechsler Intelligence Scale for Children-III

Wechsler Intelligence Scale for Children-III (Wechsler, 1991) is a widely used intelligence test for children ages 6 to 16 years. The WISC-III is comprised of 13 subtests (3 are optional) that are used to derive a Full Scale IQ. The subtests are divided into two broad areas and summary scores are available for each of these scales. The Verbal Intelligence Quotient (VIQ) is derived from the scaled scores of six subtests (one is optional) evaluating language comprehension and mathematical abilities. The Performance Intelligence Quotient (PIQ) is derived from the scaled scores of seven subtests (two are optional) evaluating perceptual organization skills. This factor structure is well substantiated in the literature (Sattler, 1992).

The concurrent, predictive, and construct validity of the WISC-III are adequate (Sattler, 1992), although it is important to note that FSIQs are approximately 5 points lower on the WISC-III than on the earlier version. The internal consistency reliability coefficients for the three main scales of the WISC-III are excellent (FSIQ=.96, VIQ=.95, PIQ=.91). Test-retest reliabilities are also excellent, with the stability coefficients ranging from .95 to .86 across age groups. The lowest test-retest reliabilities occurred on the PIQ

Because IQ has been considered a risk factor for conduct problems in the past (Hinshaw, 1987), the WISC-III was administered to determine if IQ was related to conduct problems in this sample. If necessary, it could be used as a covariate in the data analyses. The correlation between IQ and behavior problems was virtually non-existent ($r=.02$). A short form of the WISC-III was used to estimate cognitive functioning of participating children. The short form included the Information, Block Design, and Vocabulary subtests. This particular short form correlates strongly, $r=.89$, with FSIQ (Sattler, 1992).

Procedure

The parent and/or legal guardian was contacted by phone regarding participation. It was made clear that services provided by the clinic were not affected by participation, and that participation was entirely voluntary. Data collection, in all but two cases, was conducted at the Jefferson Parish clinic. Initially, consent forms were read to the participants, and both caregiver and child completed their respective consent form. Interviews were conducted in separate and private offices for each. Data collection was done in the home for the remaining two cases, with interviews conducted in separate and private rooms for both parent/guardian and child. For the parent, data collection consisted

of approximately two one hour segments. One hour consisted of the completion of a packet of measures which included a clinical behavior checklist, a demographics form, the SATI, ADHD-IV, APSD, ABRS, and LES, in that order. In the second hour segment, the AAI was administered to the caregiver. For the child, data collection involved an hour segment during which a short form of the WISC (Information, Block Design, and Vocabulary) was administered followed by the administration of the SSSC. Participants chose whether to do the two segments back to back or on different days. The child, if present for the second segment, was allowed to play. Seventeen interviews were conducted in back-to-back sessions, while the remaining were conducted on separate days. Of the 48 participants retained in the study, 11 were unable to attend a second meeting and AAI data is unavailable for these participants. AAI data is unavailable for one additional participant due to poor recording quality during the interview.

Results

Descriptives for the predictor variables are presented in Table 5. Also included in Table 5 are correlations between demographic variables and predictor variables, of which Table 5

Descriptives for Predictors and their Correlations with Demographics

	Minimum	Maximum	Mean	Age	Ethnicity	Gender	IQ	SES
Attachment -U/D (N=36)	0	1	.36 (.49)	-.18	-.05	.31	-.15	-.04
Attachment - Insecurity (N=36)	0	1	.58 (.50)	.07	.03	.27	-.22	-.09
Behavior Problems (N=48)	0	17	9.81 (3.72)	.04	-.10	-.04	.02	-.10
Callous - Unemotional (N=48)	2	12	6.32 (2.06)	.03	-.22	-.02	-.21	-.04
Hyperactivity (N=48)	0	27	20.67 (6.10)	-.10	-.03	-.21	.07	-.27
Life Events (N=47)	0	47	11.34 (10.44)	.01	-.09	-.08	.23	-.22
Negative Reactivity (N=48)	33	60	51.35 (7.47)	-.17	.01	-.13	.14	.15
Proactive Aggression (N=48)	1	20	10.56 (5.27)	-.07	-.28*	.00	.07	-.21
Reactive Aggression (N=48)	3	12	9.56 (2.60)	-.15	.28*	-.03	.15	-.18
Thrill Seeking (N=47)	12	42	26.34 (8.24)	.26	.08	-.34*	.19	-.11

Note. SES = Duncan's Socioeconomic Index (Hauser & Featherman, 1977); U/D = Unresolved/Disorganized; IQ is an estimate based on a short form version of the Wechsler Intelligence Scale for Children-Third Edition.

Table 6

Intercorrelations among Predictor Variables

	1	2	3	4	5	6	7	8	9	10
1 Attachment-U/D	---									
2 Attachment-Insecurity	.05	---								
3 Conduct Problems	.11	.10	---							
4 Callous-Unemotional	.11	.24	.76 ***	---						
5 Hyperactivity	.10	-.27	.51 ***	.34 *	---					
6 Life Events	.01	.24	.02	.11	.10	---				
7 Negative Reactivity	.07	-.46 **	.36 *	.22	.54 ***	-.15	---			
8 Proactive Aggression	.27	-.05	.59 ***	.40 **	.53 ***	.39 **	.25	---		
9 Reactive Aggression	.03	-.21	.54 ***	.28	.56 ***	.00	.45 **	.54 ***	---	
10 Thrill Seeking	-.31	.01	.08	-.02	.06	.15	-.08	.05	.05	---

Note. U/D = Unresolved/Disorganized.

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

three are significant. There was a significant correlation between ethnicity and both Proactive and Reactive Aggression (-.28 and .28, respectively). Specifically, proactive aggression was more common among minority children and reactive aggression was more common in Caucasian children. The one additional significant correlation occurred between gender and Thrill Seeking (-.34), in which girls reported less thrill seeking behaviors. Intercorrelations among all predictor variables are presented in Table 6.

Analyses

The data was analyzed using SPSS 9.0 for Windows (1998). Multiple regression analyses were performed to test all hypotheses. Attachment variables, which are nominal data, were assigned dichotomous variables (0-1). All other predictor variables were centered for analyses, which uses the sample mean to reduce the effects of

collinearity. A summary of the regression analyses is presented in Table 7.

Table 7

Hierarchical Regression Analyses Testing Hypotheses

	Std. Beta	R ²	R ² - Change		Std. Beta	R ²	R ² - Change
Hyperactivity				Proactive Aggression			
Hyperactivity	.28**			Proactive Aggression	.34***		
C/U	.66***			C/U	.62***		
		.64***				.67***	
Hyperactivity	.25*			Proactive Aggression	.35***		
C/U	.67***			C/U	.63***		
Hyperactivity X C/U	-.07			Proactive Aggression X C/U	-.05		
		.64***	.003			.67***	.002
Life Events				Negative Reactivity			
Life Events	-.06			Negative Reactivity	.20*		
C/U	.76***			C/U	.71***		
		.57***				.61***	
Life Events	-.02			Negative Reactivity	.17		
C/U	.72***			C/U	.73***		
Life Events X C/U	.22*			Negative Reactivity X C/U	-.08		
		.61***	.044*			.62***	.005
Thrill Seeking				Attachment -U/D			
Thrill Seeking	.10			Attachment -U/D	.04		
C/U	.73***			C/U	.75***		
		.54***				.57***	
Thrill Seeking	.10			Attachment -U/D	.02		
C/U	.73***			C/U	.55***		
Thrill Seeking X C/U	-.18			Attachment -U/D X C/U	.38**		
		.58***	.035			.67**	.102**
Attachment - Insecurity				Reactive Aggression			
Attachment - Insecurity	-.09			Reactive Aggression	.35***		
C/U	.77***			C/U	.66***		
		.57***				.68***	
Attachment - Insecurity	-.09			Reactive Aggression	.33***		
C/U	.61***			C/U	.67***		
Attachment - Insecurity X C/U	.23			Reactive Aggression X C/U	-.07		
		.61***	.037			.68***	.004

Note. CU = Callous-Unemotional; U/D = Unresolved/Disorganized.

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

Hypothesis 1

Hierarchical multiple regression analysis was conducted to evaluate the relationship between hyperactivity and conduct problems. In the first step, which included hyperactivity and CU as predictors, the overall model was significant, $R^2 = .64$, $F(2, 45) = 40.15$, $p < .001$. In this analysis, both hyperactivity and CU were significant predictors of conduct problems, $\beta = .28$ ($p < .01$) and $\beta = .66$ ($p < .001$), respectively. In the second step, an interaction variable between hyperactivity and CU was added to the

regression equation to evaluate if significant additional variance could be accounted for by the interaction. For the second step, the change in R^2 was non-significant, supporting the hypothesis that hyperactivity functions as a main effect for predicting conduct problems.

Hypothesis 2

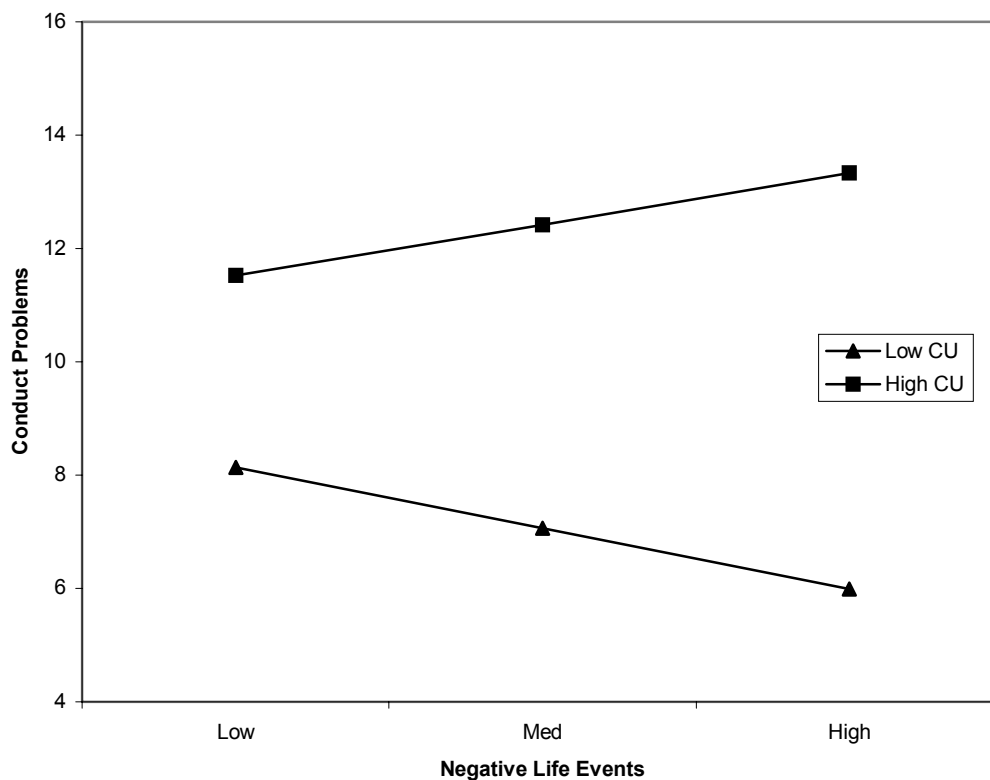
Hierarchical multiple regression analysis was conducted to evaluate the relationship between negative life events and conduct problems. In the first step, which included negative life events and CU as predictors, the overall model was significant, $R^2 = .56$, $F(2, 44) = 28.42$, $p < .001$. In this analysis negative life events, which was hypothesized as a main effect for predicting conduct problems, was not significant, while CU was significant, $\beta = .76$ ($p < .001$). In the second step, an interaction variable between negative life events and CU was added to the regression equation to evaluate if significant additional variance could be accounted for by the interaction. The addition of the interaction term resulted in a significant R^2 change of .04, $F(1, 43) = 4.87$, $p < .05$. In this interaction (see Figure 1), there was a moderately positive correlation between conduct problems and negative life events for children rated high on the CU trait. However, for children rated low on the CU trait, a moderately negative correlation existed between conduct problems and negative life events. This analysis did not support the hypothesis of a positive association between negative life events and conduct problems for children high and low on CU traits.

Hypothesis 3

Hierarchical multiple regression analysis was conducted to evaluate the relationship between thrill seeking (TS) and conduct problems. In the first step, which

included TS and CU as predictors, the overall model was significant, $R^2 = .54$, $F(2, 44) = 26.19$, $p < .001$. In this analysis TS was not significant while CU was significant, $\beta = .73$ ($p < .001$). For the second step, an interaction variable between TS and CU was added to the regression equation to evaluate if significant additional variance could be

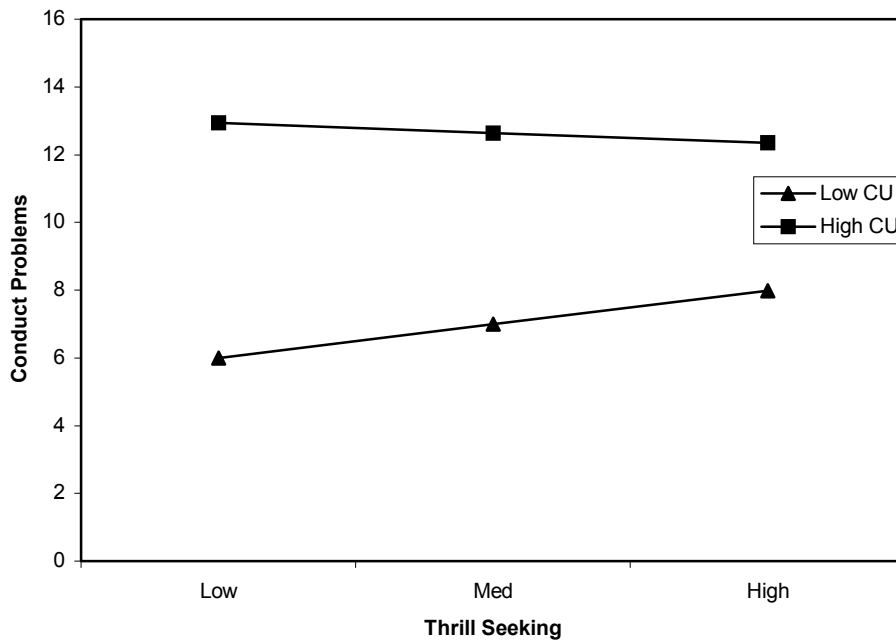
Figure 1. Interaction between Negative Life Events and Callous-Unemotional (CU) traits in predicting conduct problems.



accounted for by the interaction. For the second step, the interaction variable fell just outside the parameters of significance, R^2 change = .04, $F(1, 43) = 3.62$, $p = .06$. In this hypothesis an interaction was predicted, which was generally supported. However, the

relationship hypothesized was not supported. Rather than a positive association between TS and children high on CU traits (see Figure 2), there was a very slightly negative correlation between conduct problems and TS for children rated high on CU traits, but for children rated low on CU traits there was a moderately positive correlation.

Figure 2. Interaction between Thrill Seeking and Callous-Unemotional (CU) traits in predicting conduct problems.

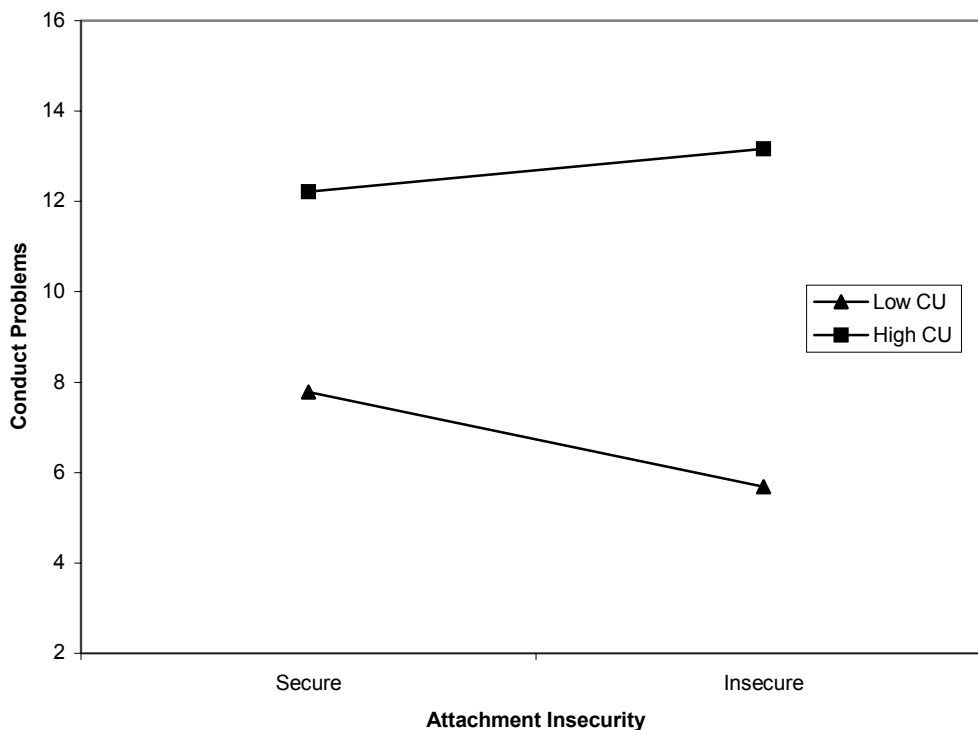


Hypothesis 4

Hierarchical multiple regression analysis was conducted to evaluate the relationship between attachment insecurity and conduct problems. In the first step, which included attachment insecurity and CU as predictors, the overall model was significant, $R^2 = .57$, $F(2, 33) = 22.00$, $p < .001$. In this analysis, attachment insecurity was a non-

significant predictor while CU was significant, $\beta=.77$ ($p<.001$). In the second step, an interaction variable between insecurity and CU was added to the regression equation to evaluate if significant additional variance could be accounted for by the interaction. For the second step, the interaction variable fell just outside the parameters of significance, R^2 change = .04, $F(1, 32) = 2.98$, $p= .09$. This hypothesis predicted a positive association between attachment insecurity and conduct problems but only for children high on CU traits. The trend suggested by this interaction (see Figure 3) supports this hypothesis for high CU children, but minimally. What this interaction additionally suggests is that a negative association exists between attachment insecurity and behavior problems for children low on CU traits.

Figure 3. Interaction between Attachment Insecurity and Callous-Unemotional (CU) traits in predicting conduct problems.



Hypothesis 5

Hierarchical multiple regression analysis was conducted to evaluate the relationship between proactive aggression (PA) and conduct problems. In the first step, which included PA and CU as predictors, the overall model was significant, $R^2 = .67$, $F(2, 45) = 45.24$, $p < .001$. In this analysis, both PA and CU were significant predictors for conduct problems, $\beta = .34$ ($p < .001$) and $\beta = .62$ ($p < .001$), respectively. In the second step, an interaction variable between PA and CU was added to the regression equation to evaluate if significant additional variance could be accounted for by the interaction. For the second step, the change in R^2 was not significant. The hypothesis that PA would interact with CU in predicting conduct problems was not supported. Rather, a positive association between PA and conduct problems was indicated regardless of CU traits.

Hypothesis 6

Hierarchical multiple regression analysis was conducted to evaluate the relationship between negative reactivity (NR) and conduct problems. The first analysis, which included NR and CU as predictors, was significant, $R^2 = .61$, $F(2, 45) = 35.16$, $p < .001$. In this analysis, both NR and CU were significant predictors for conduct problems, $\beta = .20$ ($p < .05$) and $\beta = .71$ ($p < .001$), respectively. In the second step, an interaction variable between NR and CU was added to the regression equation to evaluate if significant additional variance could be accounted for by the interaction. For the second step, the change in R^2 was not significant. It was hypothesized that NR would correlate positively with conduct problems, but only for children reported as lower on the CU trait. An interaction effect was not supported, but rather a positive association between NR and conduct problems was indicated regardless of CU traits.

Hypothesis 7

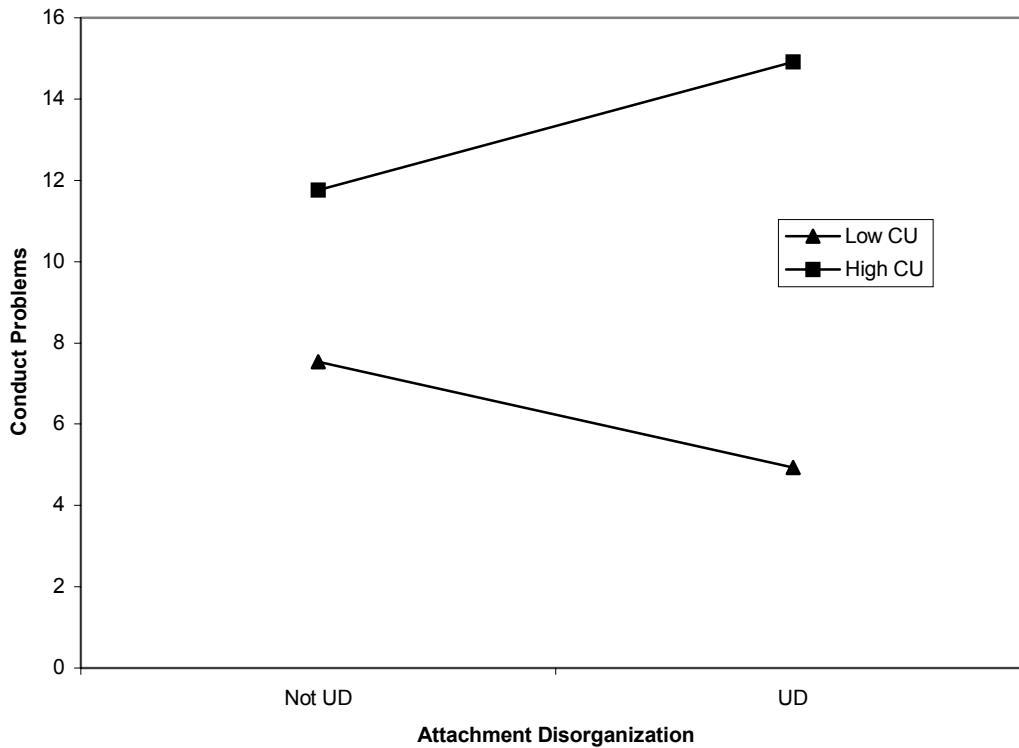
Hierarchical multiple regression analysis was conducted to evaluate the relationship between attachment disorganization (U/D) and conduct problems. In the first step, which included U/D and CU as predictors, the overall model was significant, $R^2=.57$, $F(2, 33) = 21.40$, $p<.001$. In this analysis only CU was a significant predictor, $\beta=.75$ ($p<.001$). In the second step, an interaction variable between U/D and CU was added to the regression equation to evaluate if significant additional variance could be accounted for by the interaction. For the second step, the addition of the interaction term resulted in a significant R^2 change of .10, $F(1, 32) = 9.83$, $p<.01$. In this hypothesis a positive association was predicted between U/D and conduct problems but only for children low on CU traits. The opposite of this hypothesis was indicated. In this interaction (see Figure 4), there was a moderately negative association between conduct problems and U/D for children rated low on the CU trait. However, for children rated high on the CU trait, a stronger positive correlation existed between conduct problems and U/D. This interaction is similar to that found for attachment insecurity.

Hypothesis 8

Hierarchical multiple regression analysis was conducted to evaluate the relationship between reactive aggression (RA) and conduct problems. In the first step, which included RA and CU as predictors, the overall model was significant, $R^2=.68$, $F(2, 45) = 48.63$, $p<.001$. In this analysis, both RA and CU were significant predictors for conduct problems, $\beta=.35$ ($p<.001$) and $\beta=.66$ ($p<.001$), respectively. In the second step, an interaction variable between RA and CU was added to the regression equation to evaluate if significant additional variance could be accounted for by the interaction. For

the second step the interaction effect was non-significant. The hypothesis that RA would interact with CU in predicting conduct problems was not supported. Rather, a positive association between RA and conduct problems was indicated regardless of CU traits.

Figure 4. Interaction between Attachment Disorganization and Callous-Unemotional (CU) traits in predicting conduct problems.



Discussion

The purpose of this study was two-fold. First, this project represents an attempt to incorporate some of the different variables associated with DBD into a theoretical model that could be used to understand and predict the development of conduct problems in children. Second, this study incorporates several of the more recent approaches to investigating developmental pathways to DBD, psychopathy and attachment, in an attempt to integrate these newer approaches with other lines of research.

Callous-Unemotional Traits

Applying the concept of psychopathy to the development of conduct problems in children is a relatively new approach. Psychopathy research to date suggests two different CD groups, one group experiencing impulsivity and conduct problems, and a second group experiencing impulsivity and conduct problems along with CU traits (Christian et al., 1997). The presence of psychopathic traits has been associated with greater severity and variety of conduct problems suggesting perhaps a separate and more severe developmental pathway (Christian et al., 1997).

It was hypothesized in this study that those children high on CU traits would represent a separate developmental pathway. The most striking correlation to emerge from the data analyses was the extremely strong correlation between CU traits and conduct problems ($r=.76$). In every data analysis, CU emerged as the most powerful predictor of conduct problems. These findings strongly support the finding of Christian et al. (1997), that the presence of CU traits is associated with severity of conduct problems.

Further investigation into the dataset revealed that while the overall ratings for CU in this study were high when compared to a normative community sample (Frick, Bodin, & Barry, 2000), they were not remarkably high when compared to another clinic referred group (Frick et al., 1994). The particular population that the participants in this study were drawn from was a state mental health clinic. The families were either poverty or near poverty level, living in an urban, high crime environment. While the severity of the environmental circumstances did not appear to promote elevated CU scores for these children, clearly the impact of CU traits had a more powerful impact in predicting conduct problems for this group.

Additionally, the participating DBD children treated at the clinic generally involved multiple diagnoses, and co-morbidity with ADD-HD was almost universal. Thus the children in this sample probably represent the severe end of the DBD spectrum, and children with less severe conduct problems were possibly under-represented.

Non-Significant Effects

Insecure Attachment. Attachment theory is also a relative newcomer in the field of conduct problems. Research that is available indicates that insecure attachment in children is associated with behavior problems and aggression (Troy & Sroufe, 1987; Urban et al., 1992; Erickson et al., 1985). To date, no research has evaluated the relationship between caregiver attachment and conduct problems in children. Attachment insecurity was hypothesized to function as an interaction effect with CU in the prediction of behavior problems. Insecure attachment was predicted to be positively associated with greater conduct problems but only in children high on CU traits. It was predicted that the hostile and anger producing behaviors on the part of the parent combined with low

empathy and/or low anxiety in the child, would promote conduct problems.

The interaction effect between parental insecurity and CU was marginally non-significant. This may be the result of a loss of power due to fewer subjects in this analysis. However, the data suggests that for children high on CU traits, insecurity in the parent has little impact on conduct problems. Children with CU traits show high levels of conduct problems, irrespective of their parents attachment security. The surprising possibility raised by the interaction was that behavior problems may actually be reduced for children low on CU traits when combined with insecure parental attachment. There are several possible explanations for this unexpected finding. One possibility is that insecure-avoidant parents (the majority of the insecure group was avoidant) may encourage the repression of angry and acting out behaviors in their children. In infancy, parental avoidance is associated with the repression of expressions of distress and proximity seeking in the child (Ainsworth et al., 1978). It is possible that early and continuing parental disapproval of emotional reactivity may ultimately discourage conduct problems. It is also possible that the insecure caregivers, due to their own beliefs and emotional makeup, may under report conduct problems. One of the characteristics for which avoidance is often assigned when scoring the AAI is idealization. Many avoidant adults idealize their own parents and attachment experiences (Hesse, 1999), and this quality may extend to the reporting of conduct problems in their children.

A careful review of the literature revealed associations between child insecurity and behavior problems (internalizing and externalizing) in a clinic referred sample (DeKlyen, 1996), and child insecurity and externalizing in two non-clinic referred samples (Easterbrooks, Davidson, & Chazan, 1993; Lyons-Ruth, Alpern, & Repacholi,

1993). These findings suggest a relationship between child insecurity and non-clinical levels of externalizing behaviors. However, no published research has demonstrated a link between significant child conduct problems and attachment insecurity, in either the child or the caregiver.

Additive Effects

The theoretical model for this study proposed two developmental pathways for DBD, a high CU pathway characterized by PA, and a negative reactivity temperament pathway characterized by RA. Interactions for both PA and RA, as well as negative reactivity were predicted. In the data analyses, none of these interactions were significant. Rather, all of these predictors provided significant additive variance in addition to the large amount of variance accounted for by CU. This suggests that, in this sample, these variables represent broad risk factors. Recent research findings indicate a positive association between CU traits and high levels of both PA and RA (Frick, Cornell, Barry, Bodin & Dane, 2003). Given the very high scores for this sample on CU traits, and also the very large correlation between CU traits and conduct problems, it is possible that the findings of this study are largely driven by a high CU group. A sample with a broader range in severity of conduct problems may reveal differing relationships between predictors, but the existence of such relationships cannot be determined from the findings of this study.

Interaction Effects

Three interaction effects were obtained in the data analyses. While the additive predictors just discussed indicate a broad CU pathway, the presence of these interactions support the belief by many researchers that more complex models are needed to

understand the development of DBD in children.

Disorganization. Research findings have indicated a relationship between disorganized child attachment and behavior problems in children (DeKlyen, 1996; Easterbrooks et al., 1993; Greenberg et al., 1991; Lyons-Ruth et al., 1993; Solomon, George, & De Jong, 1995; Speltz et al., 1990). Particularly salient is the controlling-punitive attachment pattern in children that is associated with early disorganization, and results in hostile and combative behaviors on the part of the child. (Main & Cassidy, 1988). An interaction was hypothesized between U/D and CU, with only the low CU group correlating positively with U/D in the prediction of conduct problems. It was anticipated that the low anxiety of the high CU group would buffer them from the fear inducing qualities of the U/D caregiver.

The interaction between U/D and CU demonstrated the opposite of what was predicted. Conduct problems were associated positively for the high CU group and negatively for the low CU group. It appears that for the high CU group, U/D is a risk factor, but for the low CU group it may possibly function as a buffer. A recent study by Frick, Cornell, Bodin, Dane, Barry, and Loney (2003) reveals a complex relationship between CU traits and anxiety. In a community sample, children were divided into four groups: control, high CU only, high conduct problems only, and high CU and high conduct problems. The group of children high on CU traits but without conduct problems reported low levels of anxiety. However, the group of children with both high CU traits and conduct problems reported the highest anxiety levels of all the groups. This research finding suggests the possibility that for this study, the children high on CU traits may have been highly anxious and differentially sensitive to the qualities of the U/D caregiver.

This finding by Frick et al. (2003) would predict a positive association between U/D and behavior problems for children high in CU traits, which was the case.

Negative Life Events. Numerous studies have associated family risks with externalizing behaviors in children using a number of different measures (Bolger, Patterson, Thompson, & Kupersmidt, 1995; Deater-Deckard et al., 1998; Moffitt, 1990; Sanson et al., 1993). The Life Experiences Survey (Sarason et al., 1978) was included in this study to evaluate the association between negative life events and conduct problems. Negative life events were hypothesized to correlate positively for all DBD children with no interaction for groups. Rather than providing significant additive variance, negative life events produced an interaction effect. Overall, families of children high on CU traits reported more negative life events than families low on CU traits, and there was a positive association between negative life events and conduct problems for high CU children. Conversely, a negative association existed for children low on CU traits.

While the correlation for the high CU group was as expected, clearly a different dynamic existed for children low on CU traits. This same dynamic was reflected in three of the interactions reported in the study: attachment insecurity, attachment disorganization, and negative life events. In all three, a negative association existed between each of these variables and conduct problems for the children low on CU traits.

It is also noteworthy that the mean negative life events score reported by the participants in this study was 11.34, which is fairly similar to the normative sample score of 9.61 (Sarason et al., 1978). The sample in this study was largely ethnic, impoverished, urban, and receiving state mental health services. As an at-risk group, it would be expected for the negative life events scores of this group to be considerably higher than a

normative sample. In retrospect, the events listed in this checklist did not include a number of the extremely stressful circumstances, particularly environmental, that the participants were exposed to, and that the scores reported may not adequately reflect the levels of stress in their lives.

Thrill Seeking. Previous research has demonstrated a low but significant positive association between thrill seeking and CU traits, but no association between thrill seeking and conduct problems in a middle to lower class clinic referred group (Frick et al., 1994). Thus, thrill seeking was hypothesized to be an interaction variable, with only high CU children predicted to show a positive correlation between thrill seeking and conduct problems.

While the interaction in this study was significant, the expression of the interaction was not as expected. For children high on the CU trait, an increase in thrill seeking had virtually no impact on reported conduct problems. Behavior problems remained very high regardless of the level of thrill seeking for children with high CU traits. For children in this study, CU traits were unusually strongly associated with conduct problems, $r=.76$, as compared to a correlation of $.30$ in another clinic sample (Frick et al., 1994). It appears that for these children, thrill seeking does not mediate levels of behavior problems.

Intelligence

The cognitive functioning of this sample was extremely broad, with IQ estimates ranging from 54 to 132. While IQ did not correlate significantly with any of the predictors, post hoc analyses were performed to evaluate the potential impact of intellectual functioning. The participants were divided into two groups, those with an IQ

estimate 70 and below ($n=15$), and those with an IQ estimate above 70 ($n=33$). All of the data analyses were performed for each group independently and the results compared for differences. Data analyses for the higher functioning group paralleled the original findings of this study, although there was some loss of power due to the smaller group size.

For the lower functioning group, the significant additive effects for hyperactivity, PA, RA, and negative reactivity also paralleled the original findings of this study. Group differences were found for two predictors, thrill seeking and negative life events. For the lower functioning group thrill seeking was a significant predictor with no significant interaction effect. Thus, for this group, thrill seeking provided significant additive variance in addition to the large amount of variance associated with CU. This is contrary to the original study findings of only a significant interaction for thrill seeking. Also for the lower functioning group, data analyses for negative life events were non-significant. The original study findings revealed an interaction effect for negative life events, although this was marginally non-significant ($p=.06$). The lack of significant findings for negative life events may be due to a loss of power. On the attachment variables, insecurity and disorganization, findings were inconclusive for the lower functioning group due to a very small group size ($n=9$).

Limitations and Future Directions

There are a number of design limitations associated with this study which fall into four broad areas. First, the research design is non-experimental and analyses are all correlational. While correlational studies have value in demonstrating potential relationships, it is not possible to determine causality or to rule out possible confounds.

An additional limitation of this correlational design was the lack of a control group for comparison purposes.

Second, the study was cross-sectional. To determine the impact of attachment and CU traits on the development of conduct problems would require a comprehensive longitudinal study that would follow children from early school age through young adulthood. This design would demonstrate the relationship between early CU traits and subsequent conduct problems, as well as illustrate the continuity in relationship between child and adult psychopathy. A longitudinal design would also demonstrate the effect of different risk factors, and provide information regarding the impact of changes of level of risk.

Third, all child measures, with the exception of the thrill seeking variable, were completed by the caregiver. It is impossible to rule out the potential for systematic bias in reporting. In this study, the addition of teacher and clinical caseworker evaluations of child attributes and behaviors would have provided a broader base for measures. Multiple informants in future research could help reduce this potential for bias and increase data reliability.

Fourth, the ability to generalize findings is limited. This was a low SES, high poverty, urban clinical sample. Additionally, the exposure to crime and violence may be considerably higher in this sample than in samples from other communities. Research findings in this study also differed in some points from other research findings, raising the question of developmental differences that may result from different environmental factors. The findings of this study may also be limited in their application due to a potentially truncated sample. The state clinic in which data collection took place

systematically referred out children with less complex symptomology. It is very possible that this policy of the clinic restricted representation for lower levels of conduct problems in the sample, and this restriction may have impacted findings. Future research will need to conduct data collection in a number of carefully chosen sites in order to control for variables such as violence, SES, and restricted population ranges. This will allow researchers to determine the potential impact these factors may have on differing developmental pathways for DBD.

Summary and Implications

This study is the first attempt to incorporate both psychopathy and attachment research into a developmental model of conduct problems in children. Findings supported parts of the model, did not support others, and at times contradicted the model. One of the primary findings was an extremely strong positive correlation between CU traits and conduct problems. And in every significant interaction analysis, children high on CU traits were reported as having greater conduct problems than children low on CU traits. For this population, findings indicate that CU traits are the strongest predictor for conduct problems, and children high on CU traits represent the most severely behavior disordered children. In addition to CU traits, hyperactivity, proactive aggression, reactive aggression, and negative reactivity were all indicated as broad risk factors in the development of conduct problems.

Another primary finding is that the concept of different pathways in the development of conduct problems was supported. Distinct differences existed between groups of children low and high on CU traits. For those children low on CU traits, thrill seeking behaviors were positively associated with conduct problems, while negative life

events, attachment insecurity, and attachment disorganization were all negatively associated with conduct problems. For the children high on CU traits, thrill seeking and attachment insecurity had no meaningful impact on conduct problems, while negative life events and attachment disorganization were positively associated with conduct problems.

The findings of this study also suggest an intricate relationship between attachment and CU traits. Only attachment disorganization was positively associated with conduct problems, and this was only for children high on CU traits. In the attachment literature, the clearest relationship between attachment and conduct problems was the relatively recent identification of the controlling-punitive attachment pattern in school age children (Main and Cassidy, 1988), which has been associated with hostility and aggression in childhood. The controlling-punitive pattern represents a developmental reorganization for earlier disorganized attachment in children. Based on the findings of this study, there may be an association between the controlling-punitive pattern and high CU traits, since both are associated with U/D attachment in caregivers.

There were several surprising findings. First was the lack of significant findings for attachment security. However, this may be in part due to lowered power for attachment analyses. Another surprise was the negative correlations between conduct problems and three predictor variables (negative life events, attachment insecurity, and attachment disorganization) for children low on CU traits. What these predictor variables have in common is that none of them is a child-risk factor. All are related to the child's context. This raises the possibility that children low on CU traits may be able to more successfully organize themselves behaviorally when stressed by external factors. It is also

possible that these factors, which directly impact or are intrinsic to the caregiver, may have affected the parental role in a manner that enhanced child compliance. Also unexpected was the lack of association between thrill seeking and behavior problems for children high on CU traits which contradicts previous findings (Frick et al., 1994). These differences suggest the possibility of a transactional process in which a high risk or poverty environment may potentiate the behavior problems associated with CU traits, and thrill seeking does not mediate this relationship for high CU children in this environment.

The findings of this project indicate several areas for future research. One research question raised by this study was whether there are population differences in the expression of CU traits. Much of the research available on psychopathy in children is based on the longitudinal study by Frick and associates. Unlike this current study, the population from which Frick's participants were drawn was not high risk, and was more rural in nature. Another area for future research is whether the concept of multiple pathways is an appropriate concept to apply to the development of childhood-onset conduct problems, and if so, are multiple pathways present in different populations. Finally, additional research is needed to address the relationship between both parent and child attachment and clinical levels of conduct problems.

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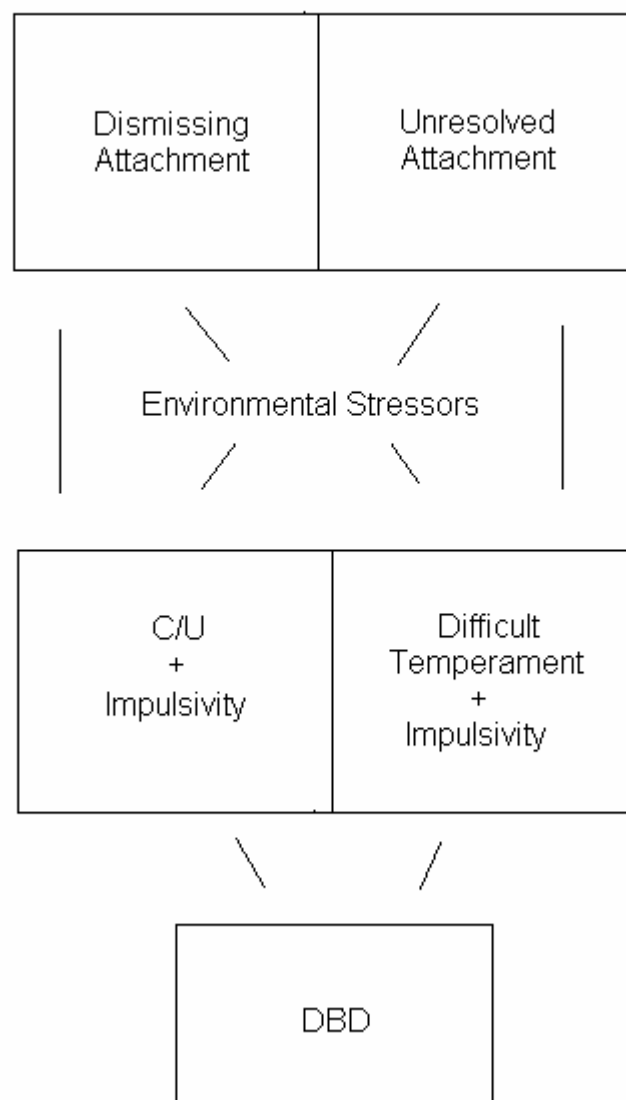
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Appendix A

Transactional model for DBD



Appendix B

ADHD Rating Scale – Parent Form

ADHD RATING SCALE-IV: HOME VERSION

Child's name _____ Sex: M F Age _____ Grade _____

Completed by: Mother _____ Father _____ Guardian _____ Grandparent _____

Circle the number that *best describes* your child's home behavior over the past 6 months.

	Never or rarely	Sometimes	Often	Very often
1. Fails to give close attention to details or makes careless mistakes in schoolwork.	0	1	2	3
2. Fidgets with hands or feet or squirms in seat.	0	1	2	3
3. Has difficulty sustaining attention in tasks or play activities.	0	1	2	3
4. Leaves seat in classroom or in other situations in which remaining seated is expected.	0	1	2	3
5. Does not seem to listen when spoken to directly.	0	1	2	3
6. Runs about or climbs excessively in situations in which it is inappropriate.	0	1	2	3
7. Does not follow through on instructions and fails to finish work.	0	1	2	3
8. Has difficulty playing or engaging in leisure activities quietly.	0	1	2	3
9. Has difficulty organizing tasks and activities.	0	1	2	3
10. Is "on the go" or acts as if "driven by a motor."	0	1	2	3
11. Avoids tasks (e.g., schoolwork, homework) that require sustained mental effort.	0	1	2	3
12. Talks excessively.	0	1	2	3
13. Loses things necessary for tasks or activities.	0	1	2	3
14. Blurts out answers before questions have been completed.	0	1	2	3
15. Is easily distracted.	0	1	2	3
16. Has difficulty awaiting turn.	0	1	2	3
17. Is forgetful in daily activities.	0	1	2	3
18. Interrupts or intrudes on others.	0	1	2	3

From *ADHD Rating Scale-IV: Checklists, Norms, and Clinical Interpretation* by George J. DuPaul, Thomas J. Power, Arthur D. Anastopoulos, and Robert Reid. Copyright 1998 by the authors. Permission to photocopy this scale is granted to purchasers of *ADHD Rating Scale-IV* for personal use only (see copyright page for details). ADHD criteria are adapted by permission from DSM-IV. Copyright 1994 by the American Psychiatric Association.

Appendix C

Aggressive Behavior Rating Scale – Parent Form

Behavior Rating Scale (Parent Form)

ID #: _____

Instructions: Please indicate the degree to which the statements below are true for your child by circling one of the numbers to the right of each statement.

	never	sometimes	very often
1. Has a good sense of humor	0	1	2
2. Gets mad when corrected	0	1	2
3. Deliberately plays mean tricks on other children	0	1	2
4. Misbehaves when your back is turned	0	1	2
5. Takes things from other children without their knowledge	0	1	2
6. Needs to be the leader all the time	0	1	2
7. Picks on kids smaller than he/she	0	1	2
8. Is a leader of games with other children	0	1	2
9. Causes trouble but doesn't get caught	0	1	2
10. Blames others when he/she gets into trouble	0	1	2
11. Gets mad when he/she doesn't get his/her own way	0	1	2
12. Says mean things about other children behind their backs	0	1	2
13. Invites children to join games or activities	0	1	2
14. Fights with other children for no good reason	0	1	2
15. Changes the rules of the game to help him/her win	0	1	2
16. Stays calm when little things go wrong	0	1	2
17. Gets mad for no good reason	0	1	2
18. Does sneaky things	0	1	2
19. Has hurt others to win a game or contest	0	1	2
20. Is a poor loser	0	1	2

	never	sometimes	very often
21. Gets others to gang up on children	0	1	2
22. Volunteers to help other children	0	1	2
23. Shares things with others	0	1	2
24. Tells people things that aren't true	0	1	2
25. Writes things on walls	0	1	2
26. Won't admit that anything is ever his/her fault	0	1	2
27. Threatens others	0	1	2
28. Makes friends easily	0	1	2

Appendix D

Antisocial Process Screening Device

APSD

ID # _____

Child's date of birth: ___/___/___

Completed by: Mother Father Other: _____

Instructions: Please complete the background information above. Then read each statement below and decide how well it describes your child. Mark your answer by circling the appropriate number (0-2) for each statement. Do not leave any statement unrated.

	Not at all True	Sometimes True	Definitely True
1. Blames others for his/her mistakes.	0	1	2
2. Engages in illegal activities.	0	1	2
3. Is concerned about how well he/she does at school/work.	0	1	2
4. Acts without thinking of the consequences.	0	1	2
5. His/her emotions seem shallow and not genuine.	0	1	2
6. Lies easily and skillfully.	0	1	2
7. Is good at keeping promises.	0	1	2
8. Brags excessively about his/her abilities, accomplishments, or possessions.	0	1	2
9. Gets bored easily.	0	1	2
10. Uses or "cons" other people to get what he/she wants.	0	1	2
11. Teases or makes fun of other people.	0	1	2
12. Feels bad or guilty when he/she does something wrong.	0	1	2
13. Engages in risky or dangerous activities.	0	1	2
14. Can be charming at times, but in ways that seem insincere or superficial.	0	1	2
15. Becomes angry when corrected or punished.	0	1	2
16. Seems to think that he or she is better or more important than other people.	0	1	2

(Over)

	Not at all True	Sometimes True	Definitely True
17. Does not plan ahead, or leaves things to the "last minute."	0	1	2
18. Is concerned about the feelings of others.	0	1	2
19. Does not show feelings or emotions.	0	1	2
20. Keeps the same friends.	0	1	2

Appendix E
Behavior Checklist

Conduct Disorder

- A. Has your child experienced the following problems in the past twelve months?
1. Often bullies, threatens, or intimidates others.
 2. Often initiates physical fights.
 3. Has used a weapon that can cause serious physical harm to others (bat, brick, knife)
 4. Has been physically cruel to people.
 5. Has been physically cruel to animals.
 6. Has stolen while confronting a victim (purse matching, armed robbery).
 7. Has forced someone into sexual activity.
 8. Has deliberately engaged in fire setting with the intention of causing serious damage.
 9. Has deliberately destroyed others' property (excluding fire setting).
 10. Has broken into someone else's house, building, or car.
 11. Often lies to get things or favors or to avoid obligations (like conning).
 12. Has stolen items of value without confronting anyone.
 13. Often stays out at night when you tell him or her not to.
 14. Has run away from home overnight at least twice or once for a long time.
 15. Often skips school.

Have these behaviors caused significant problems in social or academic functioning?

Where? _____

Oppositional Defiant Disorder

- A. In the past six months has your child had any problems with the following:
1. Often loses temper.
 2. Often argues with adults.
 3. Often actively defies or refuses to comply with adults requests or rules.
 4. Often deliberately annoys people.
 5. Often blames others for his or her mistakes or misbehavior.
 6. Is often touchy or easily annoyed by others.
 7. Is often angry and resentful.
 8. Is often spiteful or vindictive.

Have these behaviors cause significant problems at home, at school, or with friends.

Where? _____

C. *Make sure the symptoms are not present only during a psychotic or mood disorder.*

Appendix F
Life Experiences Survey

ID# _____

The Life Experiences Survey

Listed below are a number of events which sometimes bring about change in the lives of those who experience them and which necessitate social readjustment. Please check those events which you have experienced in the recent past and indicate the time period during which you have experienced each event. Be sure that all checkmarks are directly across from the items they correspond to.

Also, for each item checked below, please indicate the extent to which you viewed the event as having either a positive or negative impact on your wife at the time the event occurred. That is, indicate the type and extent of impact that the event had. A rating of -3 would indicate an extremely negative impact. A rating of 0 suggests no impact either positive or negative. A rating of +3 would indicate an extremely positive impact.

EVENT	TIME PERIOD (Check One)		Extremely Negative	Moderately Negative	Somewhat Negative	No Impact	Slightly Positive	Moderately Positive	Extremely Positive
	0-6 mo.	6-12 mo.							
1. Marriage	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
2. Detention in jail or comparable institution	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
3. Death of spouse	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
4. Major change in sleeping habits (much more or much less sleep)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
5. Death of close family member									
a. Mother	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
b. Father	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
c. Brother	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
d. Sister	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
e. Grandmother	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
f. Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
6. Major change in eating habits (much more or much less food intake)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
7. Foreclosure on mortgage or loan	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
8. Death of close friend	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
9. Outstanding personal achievement	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3

EVENT	TIME PERIOD (Check One)		Extremely Negative	Moderately Negative	Somewhat Negative	No Impact	Slightly Positive	Moderately Positive	Extremely Positive
	0-6 mo.	6-12 mo.							
10. Minor law violations (traffic tickets, disturbing the peace, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
11. Male: wife/girlfriends pregnancy	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
12. Female: pregnancy	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
13. Changed work situation (different work responsibility, major change in working conditions, working hours, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
14. New jobs	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
15. Serious illness or injury of close family member									
a. Father	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
b. Mother	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
c. Sister	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
d. Brother	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
e. Grandfather	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
f. Grandmother	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
g. Spouse	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
h. Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
16. Sexual difficulties	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
17. Trouble with employer (in danger of losing job, being suspended, demoted, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
18. Trouble with in-laws	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
19. Major change in financial status (a lot better off or a lot worse off)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+33
20. Major change in closeness of family members (increased or decreased closeness)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
21. Gaining a new family member (through birth, adoption, family member moving in, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3

EVENT	TIME PERIOD (Check One)		-3	-2	-1	0	+1	+2	+3
	0-6 mo.	6-12 mo.							
			<i>Extremely Negative</i>	<i>Moderately Negative</i>	<i>Somewhat Negative</i>	<i>No Impact</i>	<i>Slightly Positive</i>	<i>Moderately Positive</i>	<i>Extremely Positive</i>
22. Change of residence	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
23. Marital separation from mate (due to conflict)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
24. Major change in church activities (increased or decreased attendance)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
25. Marital reconciliation with mate	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
26. Major change in number of arguments with spouse (a lot more or a lot less arguments)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
27. Married Male: change in wife's work outside the home (beginning work, ceasing work, changing to a new job, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
28. Married Female: change in Husband's work (loss of job, beginning new job, retirement, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
29. Major change in usual type and/or amount of recreation	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
30. Borrowing more than \$10,000 (buying home, business, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
31. Borrowing less than \$10,000 (buying car, TV, getting school loan, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
32. Being fired from job	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
33. Male: wife/girlfriend having abortion	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
34. Female: having abortion	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3
35. Major personal illness or injury	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3

EVENT	TIME PERIOD (Check One)		Extremely Negative	Moderately Negative	Slightly Negative	No Impact	Slightly Positive	Moderately Positive	Extremely Positive	
	0-6 mo.	6-12 mo.								
36. Major change in social activities, e.g. parties, movies, visiting (increased or decreased participation)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
37. Major change in living conditions of family (building new home, remodeling, deterioration of home, neighborhood, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
38. Divorce	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
39. Serious injury or illness of close friend	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
40. Retirement from work	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
41. Son or daughter leaving home (due to marriage, college, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
42. Ending of formal schooling	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
43. Separation from spouse (due to work, travel, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
44. Engagement	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
45. Breaking up with boyfriend/ Girlfriend	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
46. Leaving home for the first time	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
47. Reconciliation with boyfriend/ girlfriend	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
<i>Other recent experiences which have had an impact on your life. List and rate</i>										
48. _____	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
49. _____	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	
50. _____	<input type="checkbox"/>	<input type="checkbox"/>	-3	-2	-1	0	+1	+2	+3	

Appendix G

School-Age Temperament Inventory

ID# _____

School-Age Temperament Inventory

Using the scale below, please circle the number that tells you how often your child's behavior is like the behavior described in each item.

Never	Rarely	Half of The Time	Frequently	Always
1	2	3	4	5

1. Walks quietly in the house when moving from room to room.	1	2	3	4	5
2. Gets upset when he/she can't find something.	1	2	3	4	5
3. Approaches children his/her age even when he/she doesn't know them.	1	2	3	4	5
4. Switches from one activity to another before finishing the first.	1	2	3	4	5
5. When he/she disagrees, speaks in a quiet and calm manner.	1	2	3	4	5
6. Returns to responsibilities (homework, chores) after friends call or visit.	1	2	3	4	5
7. Smiles or laughs with new adult visitors at home.	1	2	3	4	5
8. Does not complete homework unless reminders are given.	1	2	3	4	5
9. Is shy with adults he/she doesn't know.	1	2	3	4	5
10. Gets mad even when mildly criticized.	1	2	3	4	5
11. Leaves own projects unfinished (drawings, models, crafts, etc.).	1	2	3	4	5
12. Seems nervous or anxious in new situations (visiting relatives, new playmates).	1	2	3	4	5
13. Runs when entering or leaving the house.	1	2	3	4	5
14. Reacts strongly (cries or complains loudly) to a disappointment or failure.	1	2	3	4	5
15. Gets very frustrated with projects and quits.	1	2	3	4	5
16. Remembers to do homework without being reminded.	1	2	3	4	5
17. Gets angry when teased.	1	2	3	4	5
18. Quits routine household chores before finished.	1	2	3	4	5

Never	Rarely	Half of The Time	Frequently	Always
1	2	3	4	5

19. Bursts loudly into the room when entering.	1	2	3	4	5
20. Gets very frustrated when he/she makes a mistake.	1	2	3	4	5
21. When meeting new children, acts bashful.	1	2	3	4	5
22. Stays with homework until finished.	1	2	3	4	5
23. When angry, yells or snaps at others.	1	2	3	4	5
24. Runs or jumps when going up or down stairs.	1	2	3	4	5
25. Goes back to the task at hand (chore, housework, etc.) after an interruption.	1	2	3	4	5
26. Moody when corrected for misbehavior.	1	2	3	4	5
27. Moves right into a new place (store, theater, playground).	1	2	3	4	5
28. Runs to get where he/she wants to go.	1	2	3	4	5
29. Responds intensely to disapproval (shouts, cries, etc.).	1	2	3	4	5
30. Has difficulty completing assignments (homework, chores, etc.).	1	2	3	4	5
31. Prefers to play with someone he/she already knows rather than meeting someone new.	1	2	3	4	5
32. Makes loud noises when angry (slams doors, Bangs objects, shouts, etc.).	1	2	3	4	5
33. Gets upset when there is a change in plans.	1	2	3	4	5
34. Avoids (stays away from, doesn't talk to) new guests or visitors in the home.	1	2	3	4	5
35. Seems to be in a big hurry most of the time.	1	2	3	4	5
36. When an activity is difficult, gives up easily.	1	2	3	4	5
37. Has off days when he/she is moody or cranky.	1	2	3	4	5
38. Seems uncomfortable when at someone's house for the first time.	1	2	3	4	5

Appendix H

Sensation Seeking Scale for Children

Child's Interest and Preference Test
(SSS-C, ASAS)

Directions: We have some sentences below and we are interested in which choice best describes what you like or how you feel. In some cases you may find it difficult to decide between the two choices. Please tell me the one that is most like you. We are interested only in your likes or feelings, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers, so please be honest in your answers.

Let me explain how these questions work. Here is a sample question. I'll read it out loud and you follow along with me.

		Sample Item				
Really True for Me	Sort of True for Me		Or		Sort of True for Me	Really True for Me
		I like to do fun things with a lot of other people.		I like to do fun things with just a few people.		

First, I want you to decide whether the sentence on the left side describes you better because you would rather do fun things with a lot of other people, or whether the sentence on the right side describes you better because you would rather do fun things with just a few people. Don't mark anything down yet, but first decide which sentence describes you better, and go to that side.

Now that you have decided which sentence describes you better, I want you to decide whether that is only "sort of true" or "really true" for you. If it's only sort of true, then put an X in the box under "sort of true"; if it's really true for you, then put an X in that box under "really true".

For each sentence you only check one box. Sometimes it will be on one side of the page, another time it will be on the other side of the page, but you can only check ONE box for each sentence. You don't check both sides, just the one side that describes you better.

OK, that one was just for practice. Now we have some more sentences which I'm going to read out loud. For each one, just check one box, the one that goes with what is most true for you.

Really True for Me	Sort of True for Me		Or		Sort of True for Me	Really True for Me
		1. I'd like to try mountain climbing.	Or	I think people who do dangerous things like mountain climbing are foolish.		
		2. Too many movies show people falling in love and kissing.	Or	I enjoy watching movies which show people kissing each other.		
		3. I would like to try smoking marijuana.	Or	I would never smoke marijuana.		
		4. It's more exciting to be around kids older than myself.	Or	I like to be with kids my own age or younger.		
		5. I'd never do anything that's dangerous.	Or	I sometimes like to do things that are a little scary.		
		6. I think riding fast on a skateboard is fun.	Or	Some of the daring acts of skateboard riders seem scary to me.		
		7. I like to be with large groups of kids with something exciting happening.	Or	I like quiet times with only 1 or 2 friends.		
		8. I would not like to learn to fly an airplane.	Or	I think it would be fun to learn to fly an airplane.		
		9. I don't like to swim in water that is over my head.	Or	I like to swim in deep water.		
		10. I would like to try jumping from a plane with a parachute.	Or	I would never try jumping from a plane with a parachute.		
		11. People probably feel good after drinking alcoholic drinks.	Or	Something must be wrong with people who need a few drinks to feel good.		

Really True for Me	Sort of True for Me		Or		Sort of True for Me	Really True for Me
		12. I like kids who make jokes even if they sometimes hurt other kid's feelings.	Or	I don't like kids who think it's fun to hurt other kids' feelings.		
		13. I don't like it when people get drunk, talk loud, and act silly.	Or	When people get drunk, it seems like they're having fun.		
		14. Sailing on the ocean in a small boat would be dangerous and foolish.	Or	I think it would be fun to sail on the ocean in a small boat.		
		15. I think skiing fast down a snowy mountain would be dangerous.	Or	I think skiing fast down a snowy mountain would be exciting and fun.		
		16. I'd never touch a bug or snake.	Or	Bugs or snakes are fun to hold and play with.		
		17. I think it would be exciting to go on a date.	Or	I'm not interested in dating yet.		
		18. I enjoy the feeling of riding my bike fast down a big hill.	Or	Riding my bike fast down a hill is scary for me.		
		19. I think it's too dangerous for people to take drugs.	Or	I sometimes wonder what it would feel like to be high on drugs, even though I know it would be dangerous.		
		20. I don't enjoy being around kids who act wild and crazy.	Or	I enjoy being around kids who sometimes act wild and crazy.		
		21. I don't think I'd like the feeling of getting drunk.	Or	I think I might like to find out what it feels like to get drunk.		
		22. I don't do anything I think I might get in trouble for.	Or	I like to do new and exciting things, even if I think I might get in trouble for doing them.		

Really True for Me	Sort of True for Me		Or		Sort of True for Me	Really True for Me
		23. Riding dirt-bikes or motorcycles seems like a lot of fun.	Or	It seems scary and dangerous to ride dirt-bikes or motorcycles.		
		24. I like to do "wheelies" on my bike.	Or	Kids who do "wheelies" on their bikes will probably get hurt sometime.		
		25. The worst thing a kid can do is be rude to his/her friends.	Or	The worst thing a kid can do is be boring around his/her friends.		
		26. If I could, I'd see a movie with an "R" rating.	Or	I am not interested in movies made for older people.		

Vita

Deborah Phillips was born in Mobile, Alabama, and currently resides in New Orleans, Louisiana.